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ASSOCATION BETWEEN DIFFERENT CULTURAL LEVELS AND WORK-RELATED ATTITUDES OF INFORMATION TECHNOLOGY PROFESSIONALS

DOCTORAL THESIS

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"Carpe diem quam minimum credula postero"
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Tuğba KOÇ
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ABBREVIATIONS

A : Adaptation (ITOC value)

AJIG : Abridged Job in General Scale

ASPIRE : Autonomy in Decision-Making, Structure in Environment, Precision in Communication, Innovation in Technology, Reverence for Technical Knowledge, and Enjoyment at the Workplace

AVE : Average Variance Extracted

B : Bureaucratic (construct)

C : Collectivism (construct)

CB : Covariance Based

CGT : Constructivist Grounded Theory

E : Enjoyment (ITOC value)

EDA : Exploratory Data Analysis

ERG : Existence, Relatedness and Growth

ERP : Enterprise Resource Planning

GC : Group Consciousness (ITOC value)

GT : Grounded Theory

HTMT : Heterotrait-Monotrait Ratio

I : Innovative (construct)

IJS : Index of Job Satisfaction

IS : Information System

IT : Information Technology

ITOC : Information Technology Occupational Community

JDI : Job Descriptive Index

JDS : Job Diagnostic Survey

JIG : Job in General Scale

JS : Job Satisfaction (construct)

JSS : Job Satisfaction Survey

LO : Long-term Orientation (construct)

M : Masculinity (construct)

MS : Management Support (ITOC value)

MSQ : Minnesota Satisfaction Questionnaire

NC : National Culture (second-order construct)

OC : Occupational Commitment (construct)

OcC : Occupational Culture (construct)

OrC : Organizational Culture (second-order construct)

PD : Power Distance (construct)

PIC : Precise in Communication (ITOC value)

PLS : Partial Least Square

QDA : Qualitative Data Analysis

S : Supportive (construct)

SCORRE : Structure of Power, Control, Open Communication, Risk, Reverence for Knowledge, and Enjoyment

SEM : Structural Equation Modelling

SET : Social Exchange Theory

SI **:** Social Image (ITOC value)

SIJS : Short Index of Job Satisfaction

SIP : Social Information Processing

SITS : Strategic Information Technology Service

SPSS : Statistical Package for the Social Science

SRMR : Standardized Root Mean Square Residual

T : Teamwork (ITOC value)

TJ : Technical Jargon (ITOC value)

UA : Uncertainty Avoidance

UDC : 3U Demands of the Customers (ITOC value)

U.K. : United Kingdom

U.S. : United States

UTL : Uncertainty Tasks Limits (ITOC value)

VIF : Variance Inflation Factor

WVS : World Values Survey

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Title of the Thesis: "Assocation Between Different Cultural Levels and Work-Related Attitudes of Information Technology Professionals"

Author: Tuğba KOÇ **Supervisor:** Assoc. Prof. Adem AKBIYIK

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There have been several calls to conduct researches about occupational culture since it is believed as a more important driver of behaviors when compared to organizational and national culture. However, in IS/culture literature, there is a lack of understanding on IT and occupational culture which requires critically thinking and deeply investigating. Related literature also suffers from the studies attempting to integrate different cultural levels into one research model. Thus, the main aim of this thesis is to develop a valid and reliable multicultural model in order to test their effects on IT professionals' job satisfaction.

To do so, an exploratory sequential design (qualitative method dominates and shapes the next quantitative level) was followed by utilizing a Constructivist Grounded Theory approach. At the qualitative stage, eleven semi-structured interviews were conducted with IT professionals who were experienced more than ten years in the industry. Obtained data were coded and analyzed by QDA Miner software. In the end, ten occupational cultural values were identified namely: adaptation, precision in communication, enjoyment, teamwork, 3U demands of the customers, management support, social image, group consciousness, technical jargon, and uncertainty of task limits. Following this stage, revealed cultural values were turned into measurable dimensions by compiling items derived from literature and interviews at the first phase of the qualitative stage. To transform occupational culture construct into a formative structure, an expert panel and a pilot study were also conducted. Finally, occupational culture was observed based on ten items that were determined as the best representatives for each ITOC value category. National culture was measured by Hofstede's Value Survey and organizational culture was determined by Wallach's Organizational Cultural Index.

Finally, the theoretical research model was tested at the second phase of qualitative phase by using PLS-SEM procedure, and the results indicated that organizational and occupational culture had a significant (p=0.00) and positive (0.258 and 0.438, respectively) impacts on job satisfaction whereas national culture did not. Results also indicated that job satisfaction had a significant and positive effect on occupational commitment at the level of 0.05 (p= 0.000). This finding proved the fact that IT employees who are more adapted to their occupational cultural values rather than their organizational culture are inclined to feel more satisfied with their jobs. Thus, it can be simply stated that, among other cultural levels, occupational culture has the most critical role in IT professionals' job satisfaction that also causes higher occupational commitment.

Keywords: IT occupational culture, job satisfaction, occupational commitment, mixed methods

Tezin Başlığı: "Bilişim Profesyonellerinin İşe İlişkin Tutumları ve Farklı Kültür Seviyeleri Arasındaki İlişki"

Tezin Yazarı: Tuğba KOÇ **Danışman:** Doç. Dr. Adem AKBIYIK

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Anabilimdalı: Yönetim Bilişim Sistemleri

Ulusal ve organizasyonel kültüre kıyasla kişilerin davranışlarının şekillenmesinde daha belirleyici olan kültür meslek kültürü olmasına rağmen konu hakkında gerçekleştirilen çalışma sayısı oldukça kısıtlıdır. Bu durum bilişim sistemleri/kültür literatüründe de önemli bir eksiklik olarak göze çarpmakta, pek çok araştırmacı tarafından da önerildiği üzere derinlemesine araştırılması gereken bir konu olarak karşımıza çıkmaktadır. Aynı literatürdeki bir başka eksiklik ise, farklı kültür seviyelerini bir araya getiren araştırma modellerinden ziyade çalışmaların genellikle sadece bir kültür düzeyine odaklanmasıdır. Bu tez çalışmasının amacı, geçerli ve güvenilir bir araştırma modeli sunarak bilişim çalışanlarının iş tatminlerini etkileyen kültürel seviyelerin ortaya çıkarılmasıdır.

Bu amacı gerçekleştirebilmek için, karma yaklaşım yöntemlerinden birisi olan keşfedici ardışık tasarımdan (nitel kısmın dominant olup bir sonraki aşama olan nicel kısım için veri sağlaması), Yapılandırmacı Gömülü Teori yaklaşımının süreçleri kullanılarak faydalanılmıştır. Araştırmanın nicel kısımda, sektörde en az on yıl tecrübeye sahip on bir bilişim profesyoneli ile yarı-yapılandırılmış mülakatlar gerçekleştirilmiştir. Elde edilen verilerin QDA Miner yazılımı kullanılarak kodlanması ve analiz edilmesi sonrasında bilişim mesleğini temsil eden on farklı kültürel değer ortaya çıkarılmıştır. Bunlar: adaptasyon, açık iletişim, haz, takım çalışması, müşterilerin bitmeyen/belirsiz/beklenmedik ihtiyaçları, üst yönetim desteği, sosyal imaj, grup bilinci, teknik jargon ve görev sınırlarının belirsizliğidir. Bu süreci takiben başlatılan nicel kısımda ise ilk olarak elde edilen kültürel değerlerin ölçülebilir hale getirilmesi amaçlanmıştır. Bunu yapabilmek için literatürden ve mülakatlardan derlenen bir soru havuzu oluşturulmuştur. Elde edilen soru havuzu hem uzman paneli hem de pilot çalışma verileri ile incelenmiş, sonuç olarak her bir kategoriyi en iyi temsil edecek şekilde on soruluk formatif bir yapıya sahip meslek kültürü değişkeni ortaya çıkmıştır. Ulusal kültürü ölçmek için Hofstede'nin Değerler Anketi'nden, organizasyonel kültürü ölçmek için ise Wallach tarafından geliştirilen Organizasyonel Kültür İndeksi'nden faydalanılmıştır.

Sonuç olarak, önerilen araştırma modeli Yapısal Eşitlik Modellemesi kullanılarak test edilmiştir. Elde edilen sonuçlara göre, organizasyonel ve meslek kültürünün, iş tatmini üzerinde anlamlı (p=0,00) ve pozitif (0.258 and 0,438) etkisi bulunurken, ulusal kültürün herhangi bir etkisi tespit edilememiştir. Bunun yanında, iş tatmininin mesleki bağlılık üzerine olan pozitif ve anlamlı etkisi de 0,05 anlamlılık düzeyinde doğrulanmıştır (p=0,000). Bu sonuçlara göre, bilişim profesyonellerinin organizasyonel kültüre kıyasla meslek kültürlerine daha fazla adapte oldukları ve bu durumun onların iş tatmini olumlu düzeyde etkilediği ortaya çıkmıştır. Bu yüzden, bilişim meslek kültürünün diğer iki seviye kültüre kıyasla iş tatmininde daha belirleyici bir etkisi olduğu ve sonuçta bilişim çalışanlarının mesleki bağlılıklarını arttırdığı söylenebilir.

Anahtar Kelimeler: Bilişim meslek kültürü, iş tatmini, mesleki bağlılık, karma yöntem

INTRODUCTION

"Culture is often partially blamed when organizations and individuals experience failure" (Leidner & Kayworth, 2006).

Orlikowski and Baroudi (1989) claim that, conducting researches about Information System (IS) or Information Technology (IT)[1] occupation is critical for various reasons. First, IT employees generally performance in the sector with rapid developments which exponentially grows year by year. Second, IS workers have a significant influence on other organizational practices which shapes the way that other employees do their businesses. Third, IT profession can be considered more technical and the department itself cannot locate under the main business functions; yet, all the critical processes undeniably depend on information technology (Lamb & Kling, 2003). Studies about Information Technology (IT) professionals[2] have generally focused on three issues: (1) differences between IT people and the others, (2) how IT deals with different task assignments, and (3) high labor turnovers (Niederman, 1993); however, the first issue is still in its nascent especially regarding with empirical researches. Indeed, Leidner and Kayworth (2006) insist on conducting more empirical researches in order to understand IT occupational culture and its impacts because cultural studies in IS have generally focused on two levels of analysis: national culture and organizational culture.

Majority of the studies in IS literature have accepted that IT employees are professional and already the member of an occupational community (Baroudi & Ginzberg, 1986; Baroudi, 1985). In other words, it has been already legitimated that IT can create its own world which means it has its own cultural values that should be investigated (Gallivan & Srite, 2005; Guzman et al., 2004). Even though there have been some early nonempirical attempts to explore differences between IT professionals and other employees (Kaarst-Brown & Robey, 1999; Kwantes & Boglarsky, 2004; Orlikowski & Baroudi, 1989; Marschall, 2002), there is still a lack of empirical studies which seek to explain core cultural values of IT profession (Jacks & Palvia, 2014; Guzman, 2006;

[1] IS is an umbrella term and sometimes includes non-technical systems. Thus, it is preferred to use the term "IT" which refers to the field of studies about development of computing technologies and their applications as well as their management (Ward & Griffiths, 1996) when describing a group of people who are responsible for IT related tasks in businesses (Markus & Bjorn-Andersen, 1987). The term "IS" is used when describing the whole literature or the practical implications.

[2] IT proffesionals may also be called "IT group", "IT employees", "IT staff", "IT people", "IT worker", or simply "IT" throughout the thesis.

Jacks et al., 2018). Thus, this study is firstly dedicated to giving insights into this gap by revealing the core values of IT occupational culture and its impacts on job satisfaction.

At this point, there is another gap noticed in the literature in terms of the rareness of multilevel cultural studies in IS (Karahanna et al., 2005). Cultural research has been primarily conducted as a single cultural level, which is dominated by national culture and organizational culture as previously discussed. This deficiency is the driver behind this study's research model which integrates three cultural levels to show their separate effects on IT professionals' job satisfaction. This study can be seen as a first step that conceptualizes IT occupational culture with other cultural levels in developing country context.

Research Questions

This study focuses on the impact of culture on job satisfaction among IT employees. Within this scope, the main research question is: "which of the three cultural levels – national, organizational, and occupational- has the most impact on IT employees' job satisfaction?" To answer the main research question, six sub-questions should be investigated:

1-) Does an occupational community for IT employees (ITOC) exist in Turkey? (Chapter 4-Part I)

2-) What are the core cultural values of ITOC? (Chapter 4-Part II)

3-) What are the measurable items of ITOC's cultural values? (Chapter 5-Part I)

4-) Is there an association between national culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 1)

5-) Is there an association between occupational culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 2)

6-) Is there an association between organizational culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 3)

In addition to these six sub-questions, the relationship between job satisfaction and occupational commitment (Hypothesis 4) is also investigated since there is no consensus about the causal relationship between job satisfaction and occupational commitment in IS literature.

Purpose and the Objectives of the Study

At this point, there is a need to develop a research model that covers all three cultural levels that are expected to affect the job satisfaction of IT professionals. Thus, this study aims to develop a valid and reliable multicultural model that explains the job satisfaction of IT professionals. Four objectives must be achieved in order to reach the final aim. These are:

Objective 1: Legitimating the existence of ITOC and revealing the core cultural values of it.

Objective 2: Integrating the ITOC values with other well-known occupational cultural models and proposing a research model.

Objective 3: Making ITOC cultural values measurable to test the proposed research model.

Objective 4: Testing and interpreting the research model using an appropriate data set and methods.

Contributions to Knowledge

There are several important contributions to this study. First of all, there has been no empirical measurement attempted to create for ITOC cultural values within the scope of developing countries. Nor has an integrated multilevel cultural model proposed and tested. This study is such a precious effort that has answered the call that "research on IT values is still at a nascent stage and much remains to be done in understanding IT-related values and the impact of these values." (Leidner & Kayworth, 2006, p.371)

Another important theoretical more specifically methodological contribution is the usage of mixed methods. In IS literature, using mixed methods has been long recommended as an appropriate strategy (Landry & Banville, 1992); however, there have been some doubts about combining qualitative and quantitative methods properly and productively (Benbasat et al., 1987). Due to these concerns, it is reported a lack of mixed-method researches in IS field (Mingers, 2003). In response to the persistent call for using mixed-method approach in IS researches (Caplan & Duchon, 1988; Venkatesh et al., 2013; Johnson and Turner, 2003), the current study follows mixed methods research design.

Another important methodological contribution of this thesis is the usage of a formative construct in the research model. Using a formative construct and assessing its results correctly are generally neglected in IS research (Petter et al., 2007). Although formative structures are generally discouraged by some scholars due to their weakened external consistency (Jarvis et al., 2003; Kim et al., 2010; MacKenzie et al., 2005; Petter et al., 2007), recent studies prove the usefulness of formative structures if used properly (Jarvis et al., 2012; Ringle et al., 2012; Mackenzie et al., 2011; Petter et al., 2012). Petter et al. (2012) especially stress the importance of formative structures in IS field when grounded theory is constructed properly.

Finally, the study's results also offer practical implications. Understanding ITOC cultural values facilitate the interactions between IT, other employees, and business. Another contribution to practice is the evidence that occupational culture plays an important role in IT professionals' job satisfaction. This means IT people who are more attuned to their professional values are expected to be more satisfied and finally have higher occupational commitment. Thus, before making a possible career choice or hiring someone in IT department, people must be sure about their adaptation towards ITOC cultural values. In other words, people who are aware of and understand the ITOC's core values perform more effectively and make good progress through their careers.

Methodology of the Study

This study follows a mixed-methods approach under the category of "exploratory sequential design" which means the qualitative method dominates and shapes the next quantitative level and they are chronologically conducted.

At the qualitative phase, eleven semi-structured interviews with IT professionals who are experienced more than ten years are conducted. The existence of ITOC is proved by using an Occupational Community Model and obtained data are coded and analyzed with QDA Miner. As a result, ten ITOC cultural values are revealed.

At the quantitative phase, an instrument is developed to turn theoretically described ITOC values into measurable items. After specifying the measurement model, a pilot study is conducted with 89 IT professionals. Assessment of scale purification and

refinement is performed, and final data are collected from 1020 IT professionals via LinkedIn. Finally, measurement and structural model assessment are provided.

Assumptions

The key assumption of this thesis is that ITOC cultural values can be measured, however in the tradition of sociology, culture should be deeply meaningful rather than being simply numeric (Schein, 1985). This main objection may be mitigated since the first part of this thesis is dedicated to qualitative methods in order to understand the nature of occupational culture. Furthermore, some popular sociologists have already demonstrated the proper use of surveys in cultural studies (Hoftsede, 1980; House et al., 2004; Iivari & Huisman, 2007).

Another assumption is the honesty of the participants who are conducted semi-structured interviews with and fulfilled the survey. It is assumed that both interviewers and survey participants are honest and willingly take part in the data collection process.

Limitations

Like any other research, this study is not without limitations. First, it should be emphasized that the research model proposed in this study can not be considered a universal model. Although the research model includes multilevel cultural constructs, understanding the ITOC cultural values is still in the early stages. The current situation in Turkey is similar to the 1990s when IS researchers were struggling the prove the existence of it. Thus, proposed ITOC cultural values will continue to evolve, may change since it cannot forecast every aspect of the profession at this time.

Second, the final data set were collected from IT professionals on LinkedIn. Although it is a popular way to collect data via social media platforms for IS scholars (Schmiedel et al., 2014; Gupta & George, 2016), there may be a need for collecting data from face to face interactions in order to further validate to the research model.

Third, the first phase is qualitative which means interpretation of data depends on the researcher's experience and worldview. Even though a software package program-QDA Miner- were used to discover, analyze, and interpret the data, it cannot supplant the role of the researcher (LaPan, 2013). This means that obtained results were mediated

through the author of this thesis and may vary in terms of coding with different researchers.

Fourth, this study focused on IT professionals from Turkey. Since IS is a global sector, this study can be expanded by including IT professionals from other countries. Indeed, it will be interesting to test research hypotheses with different cultures. In addition to that, most of the respondents were young male IT professionals. In case of a more homogenous distribution of the sample, results may differ.

Finally, national and organizational cultures are taken into consideration as whole constructs rather than separate dimensions. Results may differ if each factor is considered separately. Additionally, occupational culture is structured as a formative construct however there is another way to construct it as a reflective one with its ten categories.

Organization of the Study

This study includes five main sections under the names of Culture and IS, Job Satisfaction and Occupational Commitment in IS Sector, Research Design, Qualitative Phase, and Quantitative Phase. The Introduction is followed by *Section 1: Culture and IS* that is dedicated to understanding the phenomena of culture from general to specific. Besides providing a detailed and general literature review for each three cultural levels (national-organizational-occupational), this section also discusses IS specific cultural studies at the end of each sub-section.

Chapter 2: Job Satisfaction and Occupational Commitment in IS Sector focuses the theoretical approaches on job satisfaction and occupational commitment as well as their measurements. In addition to separate discussion of each three cultural levels and job satisfaction/occupational commitment relationships, IS related literature is also summarized. Theoretical background of the hypotheses is also discussed throughout this section.

Chapter 3: Research Methodology mainly focuses on the paradigmatic assumptions of this thesis. After an introduction of the main approaches used in IS literature, the properties and, position of the current study are explained. At the end of this section, a research design framework (Figure 9) which offers a helicopter view is presented.

Chapter 4: Qualitative Phase follows an interpretivist approach and divides into two parts. The first part is dedicated to proving the existence of ITOC. To do this, an Occupational Community Model (Figure 10) has been developed based on a previous study (Duliba and Baroudi, 1991). The second part is guided by Constructivist Grounded Theory (CGT) (Charmaz, 2006) and aims to reveal the core values of ITOC. After describing the foundations of Grounded Theory (GT), differences between three different GT approaches are discussed and the reasons for choosing CGT are explained. Finally, the processes of CGT are applied and ten core ITOC values are identified.

Chapter 5: Quantitative Phase follows a positivist approach and also divides into two parts. The first part aims to create an instrument for ITOC values and to present an integrated research model. The proposed research model consists of two second-order reflective (national culture and organizational culture), two first-order reflective (job satisfaction and occupational commitment), and one formative (occupational culture) construct. The final instrument includes nine demographic and seventy-three 5-point Likert type questions. In the second part of this chapter, the validity and reliability of the proposed research model are investigated by using SEM techniques with Smart-PLS. Finally, the discussion and conclusion part summarizes the findings as well as presenting the main contributions, limitations, and suggestions for further studies.

CHAPTER 1: CULTURE AND INFORMATION SYSTEMS

"When I hear anyone talk of culture, I reach for my revolver."
Hermann Goering

Culture can be regarded as the most problematic issue for all social sciences (Malinowski, 1939). Walsh and Kefi (2008) quote from Passeron (2003:209) "culture is the most protean of sociological concepts and leads us to the most vertiginous maze of a Babelian library." Indeed, culture is such a notion that is hard to be defined. Kroeber and Kluckhohn (1952) review the concept of culture in 1952 and reach a list of 164 different definitions of it. As a summary of their review, mostly repeated words defining the culture are as follows according to their rank order: group reference, historical product, totality, behavior, non-generic transmission, patterned, adjustive-adaptive, ideas, carriers of culture, group product, values and ideals, learning, and way or mode. Finally, they define culture "is an an abstraction from behavior and the products of behavior which is itself a product, historical, selective, learned, based upon symbols and includes ideas, patterns, and values.

The complexity of the culture concept may arise from different approaches taken by different schools. According to Allaire and Firsiotu (1984), some theorists see culture as a structure intertwined with the social system whereas the other side accepts culture as a completely separate intellectual and individual system. According to their approach, there are six different schools lead cultural studies and each school has its major theorists. Details of their classification scheme (Figure 1) and different thoughts related to culture (Table 1) are given on the following pages. As quoted by Walsh and Kefi (2008), Bloch (2002) also identifies 4 different schools of thoughts: (1) the culturalists, (2) the transactionnalist, (3) the socio-biologists, and (4) the cognitivists. Among them, those who adopt the cognitive approach mostly come from anthropology which is probably the most popular form of cultural issues. Hofstede (2003) also states that anthropologists and sociologists are the only ones who know about culture and Devereux (1956) indicates culture as the key concept of anthropology.

As a result of appealing a wide range of social sciences, researchers feel free to identify culture according to their sensitivity and needs (Details are given in Figure 1). Although there is no common understanding on the definition of culture (Groeschl & Doherty, 2000), Spencer (2012) strikes a balance between several definitions of culture and

identified its 11 different but interrelated features: (1) culture not only influences behavior but also interpretations of it, (2) culture can be differentiated from both universal and individual human nature, (3) culture affects biological processes, (4) culture is associated with social groups, (5) culture can be regarded as both an individual and a social concept, (6) culture is a fuzzy term, (7) culture contains both emic (related to universal rules) and etic (related to specific group's rules) elements, (8) culture gradually changes, (9) culture can be learned, (10) culture is a descriptive effort rather than being evaluative, (11) culture has different layers of depth.

Besides its definitions, researchers also have different opinions in terms of contextualizing the culture. For example, White (1948) lists six components of culture: tools, utensils, traditional habits, customs, sentiments, and ideas. Hofstede and Hofstede (2005) divide culture into practices, symbols, values, heroes, and rituals while Deal and Kennedy (1982) believe environmental factors must become other elements of culture. The celebrated psychologist Schein (1985, 1999) distinguishes culture using three different levels: artifacts, espoused values, and unconscious assumptions. According to him, taken-for-granted assumptions are the most powerful layer since they are unconsciously accepted and less questionable; however, espoused values are post facto acquired which makes them more debatable. Artifacts, on the other hand, can be physically seen or felt such as dress code, smell, annual reports, etc. The values and the assumptions are generally referred to as intangible resources (beliefs, thoughts, acceptance, attitude, etc.) while, artifacts are related to the real world. Thus, obtaining data for the former two are more difficult, while it is relatively easier in terms of artifacts. The dilemma here is that interpreting data obtained from artifacts is more struggle since it is hard to find an answer to a "why" question rather than "what" question. As said, culture can be understood as a series of basic assumptions about how the world is and how it should be, which a group of people shares and determines their perceptions, thoughts, and feelings (Schein, 1996).

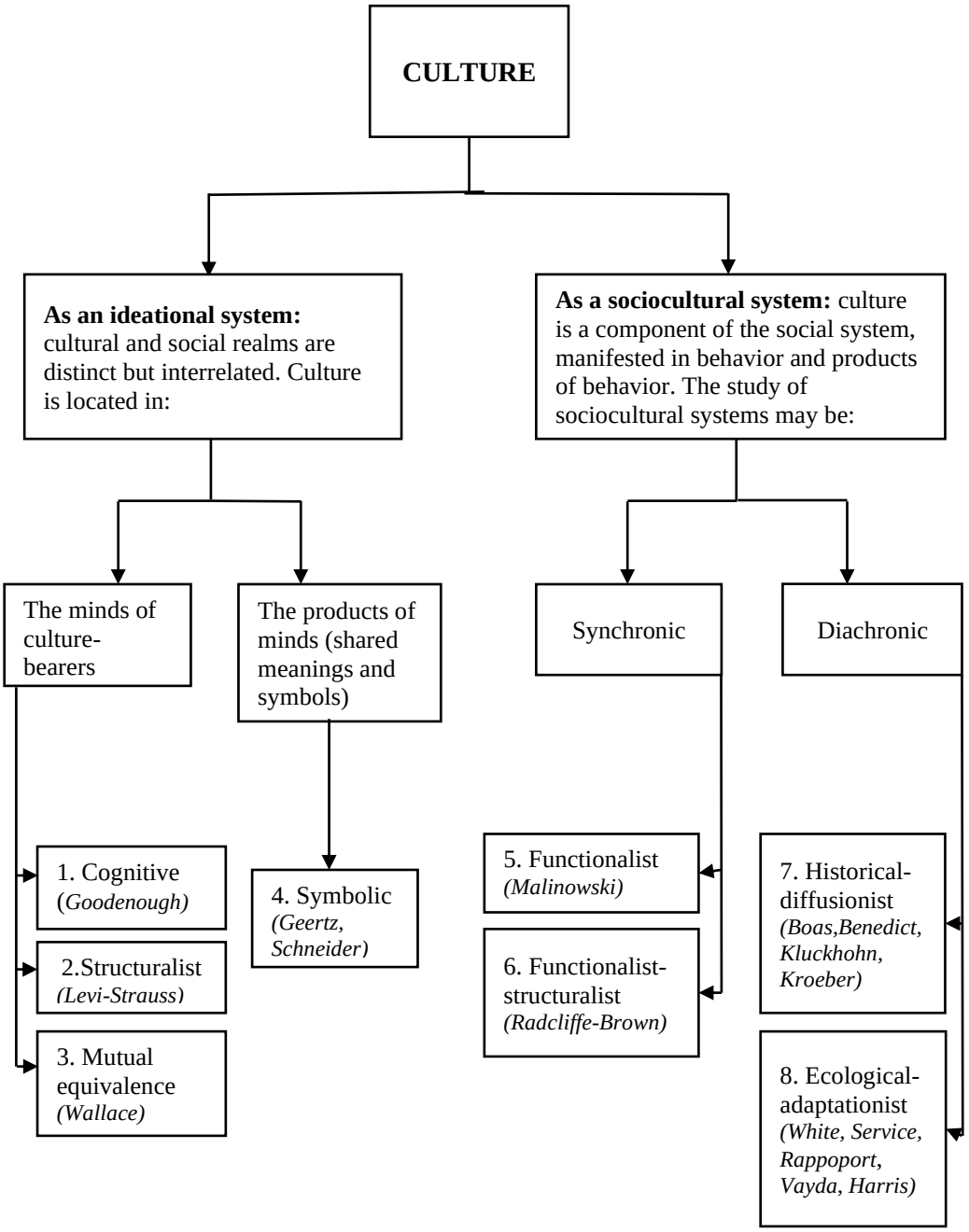


Figure 1. Eight Different Typologies of Culture

Source: Minor adaptation of Allaire, Y., & Firsiotu, M. E. (1984). Theories of Organizational Culture. Organization Studies, 5(3), 193–226.

Although definitions of culture can vary depending on where you stand, what is your purpose, and how you interpret the world, scientists are in general agreement (Bidney, 1944) that culture can be created by humans and it can be learned (Hofstede, 1994) or acquired (Mead, 1937). Indeed, borderlines between human-nature and culture-personality are still regarded as a problematic and debatable issue (Spencer, 2012). At

this point, it should be noted that ‘culture’ and ‘a culture’ have distinctly different meanings. Linton (1936), who is remembered as the discovery of differentiation between culture and society, admits that *culture* refers to the social heredity whereas *a culture* represents a particular strain of social heredity. Later, Mead (1937) also explains this difference in a better way. According to her, *culture* captures all the traditional behaviors developed by the early generations and transferred to the next generations. *A culture*, however, is more ambiguous. It can be defined as the forms of traditional behaviors which are belong to specific society, or a group, or a certain race, or even a certain period of time.

Table 1: Different Approaches According to Different Thoughts about Culture

CULTURE AS ⬇	SCHOOL	MAJOR THEORISTS	THOUGHTS	MOTTO
AN IDEATIONAL SYSTEM	Cognitive	Goodenough (1957)	"A society's culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members."	Culture is not a material phenomenon.
	Structuralist	Levi-Strauss (1973)	"Culture is elaborated by the mind at the level of unconscious thought; and the reappearance, in distant regions and deeply different societies."	There are universals in human nature that will be never found at the level of act.
	Mutual equivalence	Wallace (1970)	"Culture is made of policies tacitly and gradually concocted by groups of people for the furtherance of their interests…"	Culture is a set of standardized processes
	Symbolic	Geertz (1966)	"Culture is a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life."	Culture is located in the meanings and thinkings rather than people's head.

CULTURE AS ↓	SCHOOL	MAJOR THEORISTS	THOUGHTS	MOTTO
A SOCIOCULTURAL SYSTEM	Functionalist	Malinowski (1944)	"Culture comprises inherited artifacts, goods, technical processes, ideas, habits, and values"	As a whole, culture is the self-liberation of human kind where heritage plays important role.
	Functionalist-structuralist	Radcliffe-Brown (1949)	"Culture is the process by which language, beliefs, usages, etc., are handed on."	Culture is a set of rules. Indeed, something artificial in rules.
	Historical-diffusionist	Kroeber & Kluckhohn (1952)	"Culture means the total life way of a people, the social legacy the individual acquires from his group."	Culture is an abstraction from behavior.
	Ecological-adaptationist	White (1959)	"Culture consists of *n* different social signals correlated with *m* different responses."	Culture exists only in the mind

In addition to the complexity of the meaning of itself and its multi-dimensional features, more recent theorists believe culture is an ambiguous, unstable, and limits-free entity. Followers with this approach have a pluralistic view and strongly claim cultural issues require interpretation and reinterpretation (Fleury, 2006; Walsh & Kefi, 2008). Accordingly, a multi-level, pluralistic view and the definition of Hofstede (1980) "the collective programming of the mind which distinguishes the members of one human group from another" –because of the inclusiveness and the parsimony of it- are adopted within the scope of this thesis. Inspired by Harris' (1951) idea who claims culture is a composite term and overlaps with other sub-cultures, this thesis is an effort to cite different kinds of cultures rather than addressing the issue in general. Similarly, Hofstede (2001) also states that everyone belongs to several groups which is called mental programming within people, corresponding to different levels of culture such as national, organizational, and occupational. Thus, Section 1 will be discussed in three different parts namely national culture, organizational culture, and occupational culture. Separate sub-titles are also opened for every three sub-sections for example National culture and the IS literature since the main scope of this thesis is Information Technology Employees and their cultural values.

1.1. National Culture

It is strongly stated researches can make sense of cultural phenomena in terms of understanding their national culture (Yeganeh, 2000). Fukuyama (1995) defines national culture as inherited ethical habits such as relationships, ideas, and values. In a more inclusive definition, national culture is defined as the collective mental programming which shapes people's behaviors, attitudes, competencies, etc. Simply stated, national culture is about the value and assumption differences between groups of nations or/and regions. According to Hofstede's (2001) cultural layers (Figure 2), beliefs, values (or other words basic assumptions) are strongly related to national culture which makes it a deeply rooted layer. That is why awareness of national culture is critically important for all cultural studies.

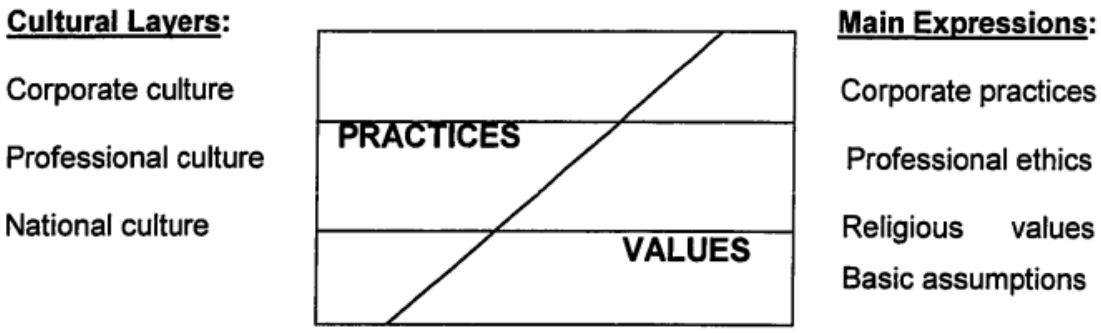


Figure 2: Hofstede's Cultural Layers

Source: Hofstede G. (2001). Culture's Consequences: Comparing Values, Behaviours, Institutions, and Organisations. Sage Publications.

The purpose of this section is to present an assessment of different national cultural models and literature review within the scope of IS-related studies.

1.1.1. National Cultural Models

Morden (1999) classifies cultural models into three groups according to their different approaches: single dimension models, multiple dimension models, and historical-social models. In the following section, Hofstede's (1980) model will be described in detail since it covers the scope of this thesis, while the other models will be briefly mentioned.

1.1.1.1. Single Dimension Models

The national culture models discussed in this section are designed according to only one dimension or variable. Three different models are described below.

1.1.1.1.1. Hall's High and Low Context Cultures

One of the earliest communication-based approaches on cultural differences is proposed by Edward T. Hall (1976, 1990) which describes broad-brush cultural varieties between nations. He distinguishes people in terms of their ability and preferences to understand and interpret information and knowledge. According to this theory, individuals' background and upbringing style affect their responses to the same messages (Hornikx & le Pair, 2017).

People from high-context cultures are expected to use their informal information channels such as family/friends' suggestions when they make a decision. Thus, they prefer to use their messages to rely on more internalized understanding like body

language paraverbal cues or silence which is not directly uttered. On the other side, people from low context cultures generally need more sources -especially scientific-based ones- before they decide what to do. Of course, it does not mean that people from low context culture don't care about their relatives' or colleagues' opinions. It means they are more likely to trust anonymous information (McKay-Semmler, 2017). Thus, they prefer to send direct and detailed messages which are not allowed to be interpreted. Japanese, Chinese and Mediterranean peoples tend to show high context characteristics while North Americans, Australians, Germans, and Swiss are closer to the other pole (Würtz, 2005).

1.1.1.1.2. Lewis's Monochronic and Polychronic Cultures

As an adventurer linguist, Lewis worked over more than 100 countries and then decided to focus on cross-cultural communication issues (Niemi, 2019). He suggests classifying countries according to their perception towards time orientation in his popular book "When Cultures Collide". One side that he proposed is the monochronic or linear-active societies are those in which people concentrate on one thing at a time. These kinds of people treat time as a tangible asset and care a lot to time management. The other side is called polychronic or multi-active societies where people do many things at the same time and not willing to schedule their daily life (Morden, 1999). According to them, communication with people is much more important than keeping schedules (Holtbrügge et al., 2013). Benabou (1999:264) defines polychronic individuals as: "who are comfortable with several activities conducted simultaneously, attach less importance to procedures, prefer to organize work to suit themselves, and perceive the world in a less compartmentalized fashion." Germans, Swiss, and Austrians can be regarded as the most monochronic societies whereas Latin Americans, Arabs, and Africans show more polychronic cultural values. For example, any German will probably be more introverted, punctual, patient, job-oriented, and play a role within the team with his/her strict plans than any Arabic one (Morden, 1999).

Some researchers associate Lewis's classification with the Hall's (1976) categorization and state that monochronic cultures are the ones which are closest to share low-context culture's features and the polychronics are more likely to show high-context cultural norms (Manrai & Manrai, 1995). Indeed, for instance, Germany is the most

representative sample of monochronic and low-context culture while Mediterranean people are good examples of polychronic and high-context culture.

1.1.1.1.3. Fukuyama's High and Low Trust Societies

In his popular book "Trust: the social virtues and the creation of prosperity" Fukuyama (1995) interrogates the impact of national culture on economic development. He examines the relationship between trust, social capital, and economical development. According to his opinion, high trust in national culture or greater social capital has a great impact on growth through decreased transaction costs (Quddus et al., 2000). In his book review, Williams (2004) agrees with the Fukuyama's idea and states that if the trust is sustained, its reputational effect can be seen.

High trust societies are more flexible and team-oriented with their highly flattened workplace structures. Since managing the hierarchy is easier in high trust societies, their private sector firm sizes are significantly larger than the low trust societies. On the other side, low trust societies are generally dominated by small family businesses due to the lack of mutual understanding. Internal ties like family relations are crucial for low trust societies which makes them more insecure towards outside of their groups (Ward et al., 2014). The United States, Germany, and Japan are the top representative countries for high trust societies. At the other end of the spectrum, France, Italy, Taiwan are the delegates of the low trust societies.

1.1.1.2. Multiple Dimension Models

The national culture models discussed in this section are designed according to more than one dimension or variable. Four different models are described below.

1.1.1.2.1. Hofstede's Research

Hofstede has dedicated his career to investigating the theoretical meaning of national culture. His "theory of cultural value" (1980) suggests that all the values and beliefs of members of the society affect their decisions and decision-making, and consequently affect the behavior of individuals, groups, and institutions in society. People living in the same nation share a collective national character which represents their cultural mental programming. He inspires from several anthropologists such as Edward T. Hall,

Florence Kluckhohn, Fred Strodtbeck, Mary Douglas, and sociologists like Talcott Parsons and Edward Shilsand and finally develops his 'theory of cultural value model'.

The model is created by Geert Hofstede during his time at IBM as a human resources manager. He conducts research involving approximately 116,000 managers, employees, and counselors in 40 countries between 1968 and 1972 to identify patterns of intercultural behavior. Based on the obtained data, he classifies countries according to four dichotomous, independent dimensions: power distance (equal vs. unequal), uncertainty avoidance (rigid vs. flexible), individualism (alone vs. together), and masculinity (ego vs. social). Later, based on the Bond's (1988) research, another dimension called long term/short term orientation (known as Confucian dynamism) is added into the model with the support of Hofstede (Hofstede & Bond, 1992). In the 2000s, using World Values Survey (WVS) data, Minkow suggests a new calculation for the long term/short term orientation and adds a new dimension called indulgence/restraint (Hofstede, Hofstede, & Minkow, 2010). Hofstede summarizes what happened between him and Minkow as follows:

"Michael Minkov, a Bulgarian linguist and sociologist whom I had met on the e-mail at the turn of the millennium, took up the challenge of exploring the riches of the WVS. In 2007 he published a book with a Bulgarian publisher, in which he described three new cross-national value dimensions extracted from recent WVS data, which he labeled Exclusionism versus Universalism, Indulgence versus Restraint and Monumentalism versus Flexumility (the latter a combination of flexibility and humility). Exclusionism versus Universalism was strongly correlated with Collectivism/Individualism and could be considered an elaboration of aspects of it. The other two dimensions were new, although Monumentalism versus Flexumility was moderately but significantly correlated with Short Term/Long Term Orientation."

Definitions of each construct and the differences for two different aspects of each factor (for example weak/strong uncertainty avoidance) are given below:

- **Power Distance:** This construct refers to the degree to which unequal distribution of power in a society (e.g. family or workplace) can be accepted by individuals. Hofstede (2011) believes that all societies are unequal, but some of them are more unequal. In societies with large power distance, the ideal boss is like a father and organizations are away from having flattened structures. According to him, societies with small power distance and large power distance show differences in terms of their understanding of equality which is shown in Table 2.

Table 2: Differences Between Small/Large Power Distance Societies

Small Power Distance	Large Power Distance
Top 5 representatives: Austria, Israel, Denmark, New Zealand, Ireland	*Top 5 representatives:Malaysia, Guatemala, Panama, Philippines, Mexico*
Use of power should be legitimate and is subject to criteria of good and evil	Power is a basic fact of society antedating good or evil: its legitimacy is irrelevant
Parents treat children as equals	Parents teach children obedience
Older people are neither respected nor feared	Older people are both respected and feared
Student-centered education	Teacher-centered education
Hierarchy means inequality of roles, established for convenience	Hierarchy means existential inequality
Subordinates expect to be consulted	Subordinates expect to be told what to do
Pluralist governments based on majority vote and changed peacefully	Autocratic governments based on co-optation and changed by revolution
Corruption rare; scandals end political careers	Corruption frequent; scandals are covered up
Income distribution in society rather even	Income distribution in society very uneven
Religions stressing equality of believers	Religions with a hierarchy of priests

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

- **Uncertainty Avoidance:** This construct means the degree of ambiguity tolerance within society. In other words, this statement refers to the points where individuals are threatened by unknown situations. The main issue is how society struggles with the fact that the future will be never known. From the uncertainty avoiding cultures' view, "there can only be one truth and we have it." The members of this type of culture try to reduce disapproval of pervert beliefs and actions. Differences between weak/strong uncertainty avoidance societies are summarized in Table 3.

Table 3: Differences Between Weak/Strong Uncertainty Avoidance Societies

Weak Uncertainty Avoidance	Strong Uncertainty Avoidance
Top 5 representatives: Singapore, Jamaica, Denmark, Sweden, Hong Kong	*Top 5 representatives: Greece, Portugal, Guatemala, Uruguay, Belgium*
The uncertainty inherent in life is accepted and each day is taken as it comes	The uncertainty inherent in life is felt as a continuous threat that must be fought
Ease, lower stress, self-control, low anxiety	Higher stress, emotionality, anxiety, neuroticism
Higher scores on subjective health and well- being	Lower scores on subjective health and well-being
Tolerance of deviant persons and ideas: what is different is curious	Intolerance of deviant persons and ideas: what is different is dangerous
Comfortable with ambiguity and chaos	Need for clarity and structure
Teachers may say 'I don't know'	Teachers supposed to have all the answers
Changing jobs no problem	Staying in jobs even if disliked
Dislike of rules - written or unwritten	Emotional need for rules – even if not obeyed
In politics, citizens feel and are seen as competent towards authorities	In politics, citizens feel and are seen as incompetent towards authorities
In religion, philosophy and science: relativism and empiricism	In religion, philosophy and science: belief in ultimate truths and grand theories

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

- **Individualism:** This construct represents the extent to which people tend to act in groups. It indicates the degree of social/community integration (Jones, 2007). For example, if someone is more willing to act by his/her own, to make his/her own decisions, to take his/her responsibility, prefer to say "I" rather than "We"**,** then the individualistic character is more dominant with him/her. Since being individualistic is closely related to the desire of being independent and be a self-made man, more protective societies are generally encountered as more collectivists. Table 4 shows the differences between societies associated with this dimension.

Table 4: Differences Between Collectivist and Individualist Societies

Individualism *Top 5 representatives:United States, Australia, UK, Netherlands,New Zealand*	**Collectivism** *Top 5 representatives: Guatemala, Ecuador, Panama, Venezuela, Colombia*
Everyone is supposed to take care of him- or herself and his or her immediate family only	People are born into extended families which protect them in exchange for loyalty
"I" – consciousness	"We" –consciousness
Right of privacy	Stress on belonging
Speaking one's mind is healthy	Harmony should always be maintained
Others classified as individuals	Others classified as in-group or out-group
Personal opinion expected: one person one vote	Opinions and votes predetermined by in-group
Transgression of norms leads to guilt feelings	Transgression of norms leads to shame feelings
Languages in which the word "I" is indispensable	Languages in which the word "I" is avoided
Purpose of education is learning how to learn	Purpose of education is learning how to do
Task prevails over relationship	Relationship prevails over task

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

- **Masculinity:** Contrary to commonly believed, this construct does not refer to the dominance of gender nor individual characteristic. Instead, it represents the dominance of specific values among women and men. Traits like assertiveness, performance, and success-focused life, and authority represent the masculine pole, whereas the traits like personal communication, well-being, and being modest are preferred by the feminine pole. In feminine countries, males are as compassionate as females; however, females are somewhat competitive and repressive, but not as much as their counterparts, in masculine countries. Hofstede et al. (1998) state that, a taboo happens more often in masculine countries around this dimension compared to feminine. The main differences between these two poles can be shown in Table 5.

Table 5: Differences Between Feminine and Masculine Societies

Feminity *Top 5 representatives: Sweden, Norway, Netherlands, Denmark, Costa Rica*	**Masculinity** *Top 5 representatives: Japan, Hungary, Austria, Venezuela, Italy*
Minimum emotional and social role differentiation between the genders	Maximum emotional and social role differentiation between the genders
Men and women should be modest and caring	Men should be and women may be assertive and ambitious
Balance between family and work	Work prevails over family
Sympathy for the weak	Admiration for the strong
Both fathers and mothers deal with facts and feelings	Fathers deal with facts, mothers with feelings
Both boys and girls may cry but neither should fight	Girls cry, boys don't; boys should fight back, girls shouldn't fight
Mothers decide on number of children Many	Fathers decide on family size
Many women in elected political positions	Few women in elected political positions
Religion focuses on fellow human beings	Religion focuses on God or gods
Matter-of-fact attitudes about sexuality; sex is a way of relating	Moralistic attitudes about sexuality; sex is a way of performing

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

- **Long/Short Term Orientation:** The original name of this construct -Confucian Work Dynamism- is labeled by Michael Harris Bond who is the first author of the study in which this dimension comes out. Later, Hofstede (1991) integrates this construct into his model as a fifth and observed that this dimension is strongly correlated with economic growth. Hofstede prefers to call this dimension as the name of long/short term orientation since most of the countries –a total of 23 countries selected by the data- has never heard about Confucius or his principles.

  According to the final version, long-term people correspond to Bond's Confucian Work Dynamism which means they have a sense of shame and persistence as well as their thrifty state. The other side values are personal steadiness and stability, reciprocation of favors, and following the traditions. Table 6 summarizes the differences between short vs. long term oriented societies.

Table 6: Differences Between Short and Long Term Oriented Societies

Short-term orientation *Top 5 representatives: Sierra Leone, Nigeria, Ghana, Philippines, Norway*	**Long term orientation** *Top 5 representatives: China, Hong Kong, Taiwan, Japan, South Korea*
Most important events in life occurred in the past or take place now	Most important events in life will occur in the future
Personal steadiness and stability: a good person is always the same	A good person adapts to the circumstances
There are universal guidelines about what is good and evil	What is good and evil depends upon the circumstances
Traditions are sacrosanct	Traditions are adaptable to changed circumstances
Family life guided by imperatives	Family life guided by shared tasks
Supposed to be proud of one's country	Trying to learn from other countrie
Service to others is an important goal	Thrift and perseverance are important goals
Social spending and consumption	Large savings quote, funds available for investment
Students attribute success and failure to luck	Students attribute success to effort and failure to lack of effort
Slow or no economic growth of poor countries	Fast economic growth of countries up till a level of prosperity

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

- **Indulgence/Restraint:** The sixth dimension is firstly introduced by Minkov using with the WVS data. According to Hofstede (2011), this new dimension is more or less complementary to long/short term orientation but weakly and negatively correlated with it. Although the other five dimensions pertain to the general structure of the societies, the new one is much more related to the inner world of people and their subjective well-being. Indulgence reflects the tendency to freely satisfy human desires especially related to enjoying life. Restraint refers to the suppression of earthly pleasures utilizing strict rules and social norms. The main differences between these two opposite poles are shown in Table 7.

Table 7: Differences Between Indulgent and Restrained Societies

Indulgence	Restrained
Top 5 representatives: Venezuela, Mexico, Puerto Rico, El Salvador, Nigeria	*Top 5 representatives: Pakistan, Egypt, Latvia, Ukraine, Albania*
Higher percentage of people declaring themselves very happy	Fewer very happy people
A perception of personal life control	A perception of helplessness: what happens to me is not my own doing
Freedom of speech seen as important	Freedom of speech is not a primary concern
Higher importance of leisure	Lower importance of leisure
More likely to remember positive emotions	Less likely to remember positive emotions
In countries with educated populations, higher birthrates	In countries with educated populations, lower birthrates
More people actively involved in sports	Fewer people actively involved in sports
In countries with enough food, higher percentages of obese people	In countries with enough food, fewer obese people
In wealthy countries, lenient sexual norms	In wealthy countries, stricter sexual norms
Maintaining order in the nation is not given a high priority	Higher number of police officers per 100,000 population

Source: Hofstede, G., Hofstede, G. J., & Minkow, M. (2010). Cultures and Organizations: Software of the Mind. McGraw-Hill; Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1), 1–26.

During the 1980s, Hofstede's model has become the most appreciated work and implemented in many business systems. However, like Shaiq, Khalid, Akram, and Ali (2011), some other scholars complain about the deficiencies and inconsistencies within this model. For example, Schwartz (1999) defends that survey is not a valid instrument in cultural studies. In parallel with this dissenter opinion, Dorfman and Howell (1988) also state Hofstede's study based on an individual assessment which restricts its generalizability. Besides the whole model, some constructs such as masculinity and uncertainty avoidance have been also criticized since they may be time-sensitive (Søndergaard, 1994). Other complaints about his model derive from reasons such as out-dated study, based on a single company data, including very few dimensions and lack of statistical integrity (Jones, 2007).

Despite the existence of many doubts and controversies about the model, it has been cited so many times since it provides both a theoretical foundation and is supported by

empirical findings and remains the most worthful research among scholars and practitioners (Jones, 2007).

1.1.1.2.2. Hampden-Turner & Trompenaars's Research

According to Hampden-Turner & Trompenaars's opinion, people from different cultures are not randomly diverging from each other but somehow, they have their way of thinking, their values and norms, and different preferences. The best way to understand these differences is to comprehend how certain problems are solved. These problems may arise in three different ways: (1) relationships with other people, (2) environmental issues, and (3) passage of time (Nilsson, 2012). With these assumptions, after their theoretical approach to individual cultural differences was announced in 1994, Hampden-Turner and Trompenaars develop their cultural model based on data gathered from 40 different countries and approximately 46,000 managers (Hampden-Turner & Trompnaars, 1994, 1997). They offer seven dimensions of culture: (1) Universalism versus particularism distinguishes the societies in terms of their tendency to be rule-based, hierarchic, and equal, (2) individualism versus communitarianism reflects the desire to live with the society rather than being alone, (3) effective versus neutral concerns the way expressing our emotions, (4) specific versus diffuse refers to the level of relationship with your colleagues when you outside the work, (5) achievement versus ascription focuses on how status is accorded, (6) sequential versus synchronic is about time management, (7) internal versus external orientation is about environmental awareness.

In his study, Dahl (2003) points out the convergences between Hofstede's and Trompenaars and Hampden-Turner approaches towards the culture. As well as their methodological conformity (survey-based study), some dimensions of these two models also show similarities. For example, Trompenaars and Hampden-Turner's individualism/ communitarianism value closely relates to Hofstede's individualism/collectivism dimension. Additionally, achievement/ascription value is in close relationship with Hofstede's power distance and universalism/particularism appears to be linked to Hofstede's uncertainty avoidance. Besides this, sequential/versus classification is closely related to Hall's monochronic and polychronic time orientation. As the last words, Trompenaars and Hampden-Turner's seven dimensions model seems to focus on more behavioral aspects rather than the value itself.

1.1.1.2.3. Lessem & Neubauer's Research

Lessem and Neubauer (1994) analyze the European management system. They categorize the impact of national culture with four dimensions instead of describing the different poles among societies. Their four inter-related criteria are: (1) pragmatism in which cooperations are willing to the initiative, competitive and incremental, (2) idealism/wholism emphasizes on being integrated and system-oriented, (3) humanism is associated in being flexible and having a sense of personal obligation, (4) rationalism in which there is an emphasis on the hierarchical structures and dirigisme. According to their classification, the best representative countries for pragmatism are English speaking Anglo-Saxon societies such as Denmark and the Netherlands. Wholism is associated with German-speaking countries and humanism is closely related to Italy, Spain, Greece, and Ireland. Lastly, the best representative country for rationalism is France and the rest of Northern Europe (Morden, 1999).

1.1.1.2.4. Schwartz's Value Inventory

Although Morden (1999) did not mention Schwartz's Value Inventory (SVI) in his work, Dahl (2003) believes that SVI brings a unique contribution to cultural studies. Shalom Schwartz, who is also known as the creator of the Theory of Basic Human Values, considers intercultural differences from a different perspective compared to the other three researches (Hofstede, Hampden-Turner and Trompenaars, and Lessem and Neubauer). Shwartz asks 25,863 respondents to evaluate fifty-six specific values in terms of their importance in their life rather than asking their preferred outcomes or behaviors (Schwartz, 1994a). He identifies ten universal and distinct values namely: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Among them, self-direction, stimulation, and a part of hedonism refer to being *open-minded*; while tradition, conformity, and security refer to being *conservative.* Achievement, power, and the rest of hedonism can be evaluated as the *self-enhancement* related factors whereas benevolence and universalism are closely related to *self-transcendence.* Schwartz (1994b) believes his universal values can be used for individual-level cultural studies (Rogers & Tan, 2011). Although it is stated, most of these values overlap with Hofstede's; it is also believed that Schwartz's study differs from its radical measurement instrument (value vs. behavior) (Dahl, 2003).

1.1.1.3. Historical-Social Models

The national culture models discussed in this section are designed according to historical/social dimensions or variables. Two different models are described below.

1.1.1.3.1. Bloom's Euro-Management Study

Bloom et al. (1994) focus on European countries and try to find out if there are common characteristics among European managers or not. According to their results, five similar values appear. These are: (1) *a degree of informality* which reflects the skeptical attitude towards formal rules, (2) *international diversity* is the ability to manage people from different cultures, (3) *people-driven* is about making people feel that they are valuable rather than treating them as a resource, (4) *responsibility* is closely related to wholism and aims to become a member of society and acts socially responsible way, (5) *internal negotiation* means preparation and characterized by trustworthiness and long-term orientation.

1.1.1.3.2. Chen, Cragg & Seagrave's South East Asian Management Study

In 1995, three different researches (Chen, 1995; Cragg, 1995; Seagrave, 1995) started a collateral study with Bloom's (1994) Euro-Management Study and investigated the characteristics of historical-social influences on national culture in South East Asia. According to the consensus among these researchers, ten types of influencer which are critically shaped the practices in the region. These are: (1) *Taoism* which emphasis the interconnections between all the entities in the world. According to this religious tradition, nothing is static but openness to change. (2) *Confucianism (Ruism)* is based on two basic thoughts namely ren and social order/social harmony. Ren is related to become kind to other people while the other two (social order and social harmony) deal with the hierarchical structure of the society. According to this doctrine, mankind divides into two different social groups: inferiors and superiors. The former ones are responsible for obeying the rules whereas the latter ones should guarantee the welfare of the society. (3) *the role of the mandarin* comes from the name of mander in Portuguese and means to command. This dimension refers to be hard-working and diligent. (4) *guanxi* emphasis on maintaining relationships and having strong interpersonal bonds. (5) *face* is accepted as prestige and needs for the achievement of social harmony. (6) *the five cardinal relations* are closely related to Confucianism whereas the formers are the

most fundamental. These relations capture the relationships between father and son, husband and wife, siblings, friends, ruler, and subjects. (7) *Sun Tzu* strategies pretend at the marketplace as a battlefield and offer some strategies including moral influence, the ability of generals (benevolence, strictness, wisdom, sincerity, and courage), regulation/delegation/training, and strategic management. (8) *the taipans* represent the managers who deserve to have great respect, (9) *Buddhism* is characterized by proper ethical conduct, self-discipline, and understanding. (10) *Western influences* represent philosophies like the Christian religion, social democracy, and materialism.

Table 8: Summarized and Compared National Cultural Models

	Hall	Lewis	Fukuyama	Hofstede	Hampden-Turner	Lessem	Schwartz	Bloom	Chen
Seeking information	X								
Concentrated behavior		X							
Diffused behavior		X							
Low trust			X						X
Familism			X			X			X
High trust			X						
Power distance			X	X			X		X
Uncertainty avoidance				X					X
Individualism			X	X	X	X	X	X	X
Masculinity				X					
Managing exceptions					X	X			
Constructing					X				
Managing communities			X	X	X	X		X	X
Boundary management					X				
Time orientation					X				
Status					X	X			X
Equality			X	X	X	X			X
Pragmatism						X			
Rationalism						X	X		
Wholism						X	X		X
Humanism			X			X		X	
Diversity					X	X		X	
Responsibility					X	X	X	X	
Negotiative						X		X	
Informality						X		X	
Taoism						X			X
Elitism						X			X
Ethic			X	X		X	X		X
Guanxi									X

Face					X
The five cardinal relations					X
Sun Tzu			X		X
Leadership	X	X	X	X	X
Delegation		X			X
Taipans	X				X

Source: Adapted from Morden, T. (1999). Models of National Culture - A Management Review. *An International Journal*, 6(1), 19–44.

1.1.2. IS and National Culture

As a consensus, national culture studies (also referred to as cross-cultural or transnational) are the important and non-negligible part of IS literature. According to Ein-Dor et al. (1993), national culture captures all the multiple factors including individual, organizational, and societal which makes it hard to understand the concept. To put aside its complexity, much earlier (Couger, 1986; Harris & Davison, 1999; Tan et al., 1995) and recent (Huang & Palvia, 2017; Mandler et al., 2018; Udo et al., 2016) studies in IS field argue that understanding cultural differences between nations is the only way to deploy IT all over the world successfully.

Ein-Dor et al. (1993) emphasize the lack of a theoretical approach to this field and no existing guide for further researches. Beyond addressing the problems, they review all the related studies and propose a list of variables used in IS cultural studies. They categorize variables into two groups namely: "Constants" such as language, social norms, religion etc. are the first category which shows more resistance to change and "Changeables" such as average education level, attitude towards technology, life-style etc. which are more ready to change. Their categorization is followed by Hill et al. (1998) whose study is worth to be mentioned because of its critical approach. They use no pre-defined cultural models but prefer to conduct a qualitative study to examine five Arab countries' cultures deeply in terms of IT transfer. Another study (McHenry et al., 1990) suggests four drawbacks in IS/national culture field. These are: (1) struggle to find related literature, (2) cultural mismatch problems, (3) getting access to the right people, and (4) biases. Among them, the last three are closely related to personal factors and can be only overcomed by living the culture and integrate with it. However, the first one is related to the maturity of literature. Following these criticisms, Ford et al. (2003) and Myers and Tan (2002) call for researches which are expected to make contributions in the national culture/IS field with findings and suggestions.

This critical gap is closed by Leidner and Kayworth (2006) in terms of conducting a systematic review study. Among eighty-two articles reviewed, fifty-one belongs to the national culture and IS studies whereas the other thirty-one belongs to organizational culture and IS which will be discussed in Section 1.2.3. IS and Organizational Culture. According to their results, six main themes observed namely: (1) culture and information systems development, (2) culture, IT adoption, and diffusion, (3) culture, IT use, and outcomes, (4) culture, IT management, and strategy, (5) IT's influence on culture, (6) IT culture. Among them, Theme 5 is found to be the most commonly used topic in the national culture/IS field. Authors also claim that all the reviewed national cultural studies belong to the Martin's (1992)[3] integration perspective which means IS literature fails to understand to dynamic nature of culture. Since, Leidner and Kayworth's (2006) study present a specific stream of related research, we also follow their guideline and give examples for each category in the rest of this section.

Theme 1 tries to investigate the different approaches towards how an ideal IT system would be. It is indicated that national culture is a contributor to the success or failure of IT projects (Dwivedi et al., 2013). To reveal the critical factors in two different cultures, Rees-Caldwell and Pinnington (2013) conduct an empirical study. They examine cultural differences between British and Arab project managers within a project management process. Results show that British manager rates Scope, Time Planning, Integration, and Innovation/Technology higher than Arabs which is related to the low uncertainty and monochromic characteristics of Western culture. Related with the high uncertainty and power-distance characteristics of Eastern culture, Arab managers rate Communication higher than their counterparts. Another example of this theme is a policy-capturing study (Dawson et al., 2013) and focuses on a more interesting topic. The authors aim to investigate the moderate effect of national culture between constraint mechanisms and different causes of opportunism (information asymmetry, tacit knowledge, explicit knowledge). They collect their data from China and U.S. respondents through the surveys and use the regression method to analyze. In the end, they approve the moderate effect of national culture. They also find it suitable to use legal constraints in China and social constraints are the U.S. to be more effective.

Theme 2 mainly focuses on IT adoption. Among adaptation issues, "IT transfer" is one of the most widely studied topics because there are generally more disappointments

[3] Martin's (1992) three-perspectives approach is defined in Section 1.2.Organizational Culture.

than successes within the scope of multi-cultural IT transfer agreements. Thus, practitioners need suggestions from academicians to complete IT transfer process successfully. For this purpose, Al-Mabrouk and Soar (2009) analyze major issues in IT transfer with the Delphi technique. In the end, they define ten major issues and possible suggestions from the stakeholder perspectives. Another IT adoption example is Erumban and de Jong's (2006) study which explains differences in ICT adoption across forty-two countries. They follow Hofstede's framework and find a very close relationship between these two variables especially for power distance and uncertainty avoidance dimensions.

Considering for Theme 3, Reinecke and Bernstein's (2013) design science approach is a very representative example. In this study, they introduce a cultural user modeling ontology and a user interface adaptation ontology as well as empirically tested them by using a prototype. In the end, they develop a culturally adaptive user interface which helps to increase user satisfaction using approximating users' cultural preferences. What makes their study valuable is that their attempt is the first in IS/national culture literature. Another example of this theme is a multi-dimensional approach that investigates the effect of trust between the users and e-retailers in terms of perceived risk and willingness to depend on the retailers (Park et al., 2012). Unlike other related literature, this article is defined as trust as a multidimensional (includes competence, benevolence, and integrity) construct to examine its effects on different national cultures.

Theme 4 deals with strategic IT management (IT alignment) and a very recent example proves the importance of it. In his qualitative based study, Husain (2020) interview with thirty-two executives working in a multi-national organization and find that managing IT strategically results from active collaboration, capability development, and increased competitiveness. In a similar line, Kerr et al. (2013) emphasize the need for toolkits that support strategic technology management decisions. They identify seven operationalized principles –human-centric, workshop-based, neutrally facilitated, lightly processed, scalable, visual, modular- that helps organizations when deciding the suitable form of any toolkit.

Theme 5 differs from the others in a way that examines the impact of IT on culture rather than investigating the cultural effects on IT. Since culture is treated as stable and

difficult to change in most IS studies, there is a lack of studies that argue that IT can change the culture. Although this theme is still largely unexplored, there is some evidence that accepts technology as a social construct and proves its impacts on nations. For example, Ganju et al. (2016) find that IT improve the well-being of nations. For having increased well-being, more developed countries use any IT system whereas less developed ones rather use mobile phones primarily. Another study (Salehan et al., 2018) examines the relationship between national culture and IT from the lens of technological determinism theory. The authors state IT causes a cultural convergence in terms of the domination with two cultural values: lower power distance and higher individualism.

As last but not least, Theme 6 (IT Culture) is the one who gets the least attention until now and deserves to critically think and deeply investigating (Leidner & Kayworth, 2006, Jackson, 2012). Thus, this thesis is dedicated to the Theme 6 and related articles are discussed in "Section 1.3.4. IT and Occupational Culture" in detail.

1.2. Organizational Culture

Over the years, many scholars from different fields across sociology to anthropology, psychology, and management point out the importance of understanding and managing organizational culture. There are more than 4,600 articles around which attempt to investigate the role of organizational culture in organizational life (Hartnell et al., 2011). According to Nord and Nord (2007), understanding and managing organizational culture is critically important because of four reasons: First, organizational culture can be a positive trigger in the performance of the organizations. Second, a shared meaning brings all employees together in a common purpose. Third, employees can aware of their responsibilities in favor of the defined rules provided by the organizational culture. Fourth, organizational culture is such a guide that shows what is good and bad for the greater good. Besides the importance of the concept, organizational, or corporate culture is a hard-to-understand. It has more than 54 different definitions (Tharp, 2009), and still, there is no clear consensus about what organizational culture is (Zammuto et al., 2000; Guzman & Stanton, 2009). In the setting of this chaos, Schein's (1996) definition is regarded as one of the most comprehensive ones. According to him, organizational culture is a pattern of shared basic assumptions, values, and beliefs expressed through the components of the organizations like stories, myths, sagas etc. which affect the behavior of people (Schein, 1996). In contrast to the length of this definition, Wallach

(1983) defines organizational culture in a more simplistic but as a precise way stating "the shared understanding of employees -how we do things around here."

If it is left aside the little differences with several definitions, Linda Smircich's (1983) and Joanne Martin's (1992, 2002) holistic views are the most popular and the epitomist ones. Firstly, Smircich (1983) argues that cultural studies within the organization cover five main themes: unconscious processes and organization, organizational cognition, organizational symbolism, comparative management, and organizational culture. She continues to explain and states that: in the first three culture is regarded as a metaphor (interpretivist) whereas the final two are accepted organization as a variable (functionalist). Finally, she suggests two theoretical approaches called Functionalism versus Interpretivism. Functionalism assumes organizational culture "has" variables which means culture can be measured through surveys. In comparison, interpretivism relies on the anthropological traditions (Walsh & Kefi, 2008c) and states "something an organization is" which means the only way to decide cultural values is to conduct field works. In her later study (Calás & Smircich, 1987), she criticized the functionalist approach due to the lack of sensitivity for components of organizational culture such as rituals, sagas, stories etc. It is also stated that because of easy use of functionalist approach, organizational culture becomes a popular but dead topic anyway.

With the advancement of post-modernist thoughts like realism, truth, clarity, some researchers start to look for another approach in addition to functionalism and interpretivism. Martin (1992) identifies three perspectives of organizational culture namely integrated, differentiated, and fragmented which is later named as the third approach called Constructionism (Barinaga & Kärreman, 2013). The integration perspective stresses out that there are equality and consensus among all members of the organization. In other words, three layers (artifacts, values, and assumptions) defined by Schein (1996) are consistent with each other in integrated cultures. If there are some differences between any of these layers, differentiation or fragmentation cultures appears. Differentiation perspective supports the idea that there is a consensus but only among the subcultures within the organization. More specifically, for example, business and IT groups generally have disaggrements which results into lack of business-IT alignment. Fragmentation perspective goes one step further utilizing not focusing consistency between groups but emphasizing the role of ambiguity and paradox.

1.2.1. Components of Organizational Culture

Generally speaking, any organizational culture shows/has three common characteristics (Tharp, 2009). (1) “shared meaning” has critical importance for organizational culture, (2) it is a social concept and has both internal and external effects, (3) it consists of many different sub-layers. To explain these characteristics, Schein's (1999) three-dimensional approach can be a useful framework. According to his view, understanding the organizational culture is possible only by interpreting its sub-layers namely artifacts, espoused values, and shared tacit assumptions. Artifacts are visible structures and processes. Krefting and Frost (1985) separate artifacts into three groups: verbal, physical, and behavioral. Stories, jargon, myths, gossip, humor etc. are the verbal ones that are spread by word of mouth. Rituals, routines, and ceremonies are the behavioral artifacts whereas buildings, published mission and vision statements, clothing, technologies fall into the physical categorization of phsycial artifacts. In order to understand and interpret the artifacts, it is important to investigate the second layer called espoused values. These are norms, values, attitudes which have evidential clues about ‘what an organization wants to be’. Schein (2003) argues that there is strong disconnection between artifacts and espoused values (in US, many organizations espouse teamwork and collaboration, however, all the artifacts and decision processes are designed for individual performance) which indicates the presence of a deeper layer, called shared tacit assumptions. As the last but not least layer, tacit assumptions are taken-for-granted values which are explicitly worked so well and become unconscious assumptions.

In the following sub-sections, it is aimed to explain the most commonly used cultural components in the organizations. While doing this, we outline each component by avoiding giving details; however, more detailed information can be obtained from Trice and Beyer's (1984) study which consolidates multiple cultural forms and present their similarities as well as differences.

1.2.1.1 Values and Norms

Schwartz and Bilsky (1987) argue that the root of values is based on three basic requirements: biological needs, social needs, and institutional demands. These requirements become our values over time. According to Walsh and Kefi (2008c), understanding this cognitive process is very important to interpret our motivation

towards our values. The term value has different but related meanings for several disciplines. Among them, Rokeach's (1973, p.5) definition is the most understandable and comprehensive one. According to him, a value is: "an enduring belief that a specific mode of conduct [instrumental value] or end-state of existence [terminal value] is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence". When he makes this description, he also stresses not to confound values and norms. According to him, values are more internal whereas norms are more external. Although some norms are taught and the others are tacit, the main idea is being external. Secord and Buckman (1964) also agree and state that norms are behavioral expectations which are shared by group members and not always come through the inner world of the individuals. Therefore, norms are generally called as 'a standard' instead of 'desired one'. In brief, norms can be considered as the standard (external) tools reaching the desirable (inner) values.

1.2.1.2. Assumptions

Assumptions, also known as taken-for-granted values, underlying assumptions, or tacit assumptions, are "known facts" but not easily found within the organizations. They have a long history since the establishment of the organization, so they are not open to dispute and automatically applied. Schein (2009) argues the necessity of understanding and managing assumptions for the success of organizations. However, researchers generally tend to investigate organizational values instead of assumptions since the former one is easier to measure (Schein, 2010; Jacks et al., 2018).

1.2.1.3. Leaders and Heroes

Both leaders and heroes contribute to organizational culture through their intellectualness, knowledge, characteristics, attitudes, and behaviors. Both of them have a critical and positive effect on the performance of the organizations (Durak, 2019). Although leaders can be also heroes and vice versa, there are some main differences between them. All in all, leadership can be learned by training programs however becoming a hero is an innate one. Generally speaking, heroes have fans however leaders have followers who are acted with their leaders. Leaders take care of gaining people's trust and have strong relationships.

1.2.1.4. Ceremonies, Rites, and Rituals

Ceremonies, rites, and rituals are the behavioral artifacts of the organizational culture. Among all the organizational cultural components, these three the ones which provide rich texts to make the culture more understandable (Trice & Beyer, 1984).

Although the term rite and ritual both have the meaning of "regular organizational activity" and are used interchangeably by some scholars (Turner, 1969), the former refers to the specific situation of which the latter addresses the general (Grimes, 1990). Ceremonies, however, are used to describe the context where rites and rituals occur (Trice & Beyer, 1984). In his reviewing study, Islamro (2009) makes a detailed description of rituals and states that; it is necessary to examine various rites and ceremonies to comprehend the rituals such as a graduation ceremony or a formal speech.

1.2.1.5. Myths, Stories, and Sagas

These are the earliest and verbal ways to express organizational culture. Among them, myths are based on imagined events and not supported by demonstrated facts (Trice & Beyer, 1984). Unlike myths, stories, and sagas generally based on true events and life experiences. The differences between the two are: Sagas are the kinds of stories which are unique, usually consist of heroic terms, and mixture of the history and the heritage of the organizations. In a brief, sagas are the ancient stories.

1.2.2. Organizational Cultural Models

Kono and Clegg (1998) list the advantages of having an organizational culture as follows: Firstly if a certain number of characteristics features are known, other potential features become predictable. As a result, organizations' possible strengths and weaknesses are easily preassumed. Secondly, knowing which factors affect a particular type of culture can also help understand what can be done to change it.

According to Scott et al. (2003), there are mainly two types of organizational cultural models according to adopts either a typological approach or a dimensional approach. The main difference between these two approaches is, as a result of using a typological approach (consists number of items instead of questions), there may appear more than one organizational culture type for an organization. In contrast, the dimensional approach uses a few continuous variables to assess the organizational cultural type.

Therefore, there exists one culture type for each organization. In this section, we will discuss five commonly studied organizational cultural models and their components according to their historical hierarchy.

1.2.2.1. Harrison's Organizational Ideology Questionnaire

One of the earliest studies about developing an instrument to measure organizational culture emerges in the literature by Harrison's researches (1972, 1975). Harrison's approach is a typology which aims to reveal organizational ideology (Ashkanasy et al., 2000). The instrument includes fifteen items and easy to answer. It also has strong theoretical underpinning and good face validity (Chandler, 2015). In the end, there are four possible cultural types namely: *power, role, task, and person.*

Power cultures are based on inequality in accessing resources. It is based on the acceptance of the legitimacy of hierarchy and inequality. The success in this type of culture heavily depends on the leadership abilities of people at the center and people are loyal to the leader of the company. At the end, how close you are to the center, the much more you able to become win. *Role cultures* include values such as reliability, consistency, and rationality. These kinds of cultures generally tend to become bureaucratic. Individuals' performances are not be controlled by the leaders of the organization but with rules and procedures. Thus, people have selected their roles fairly. The main weakness is that they are unable to cope with constantly changing requirements and demands. *Task cultures* are result-oriented and generally have a matrix or project-based structure. Teamwork and collaboration are the main values in this type of organization. Every employee has their own responsibility and there is no need for a hierarchy to control them. Results are more important than the procedures and flexibility is welcomed. *Person cultures* are characterized by people-oriented and complete independence. Employees are so professional and well educated that they do not need any managerial processes. Academic project groups or specialists in organizations are good examples to understand this culture. Since it is not clear who will be the last decision-maker, this type of culture is rarely found and eventually evolves to one of three.

Harrison's researches give inspiration to Handy (1979) who discusses these four types of organizational cultures in terms of using Greek Gods and extends suggested types a

little. Handy adds two main dimensions namely power distribution and level of cooperation to provide a more abstract view (Figure 3).

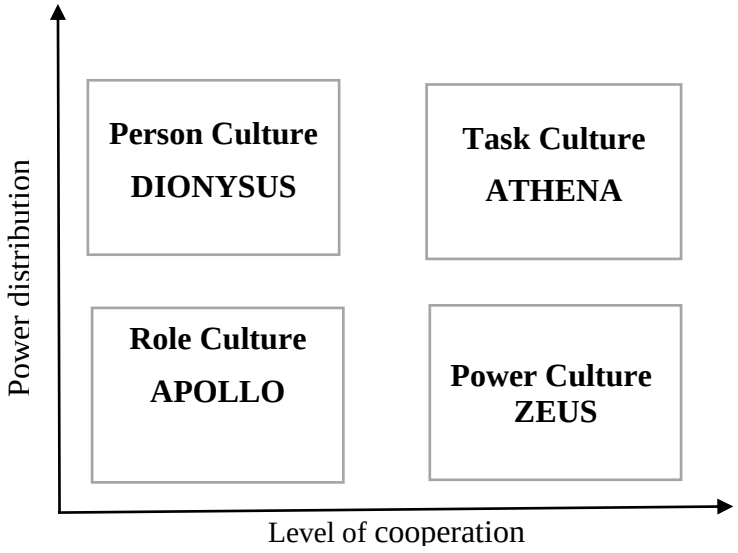


Figure 3: Harrison and Handy's Organizational Cultural Model
Source: Handy, C. (1979). *Gods of Management: The Changing Work of Organizations*. Oxford University Press.

1.2.2.2. Wallach's Organizational Cultural Index

Ellen Wallach (1983, p.28) defines organizational culture as "the shared understanding of employees as to how things are done." Based on these shared norms, values, and beliefs, people in organizations can act in three different ways which decide their organizational culture. These three independent cultures are: innovative, supportive, and bureaucratic. In organizations with an innovative culture, members are encouraged to risk-taking and challenging. According to Wallach (1983), risk-taking, enterprising, stimulating, driving, result-oriented, pressurized, creative, and challenging are the best adjectives to describe this kind of organizational culture. In contrast to innovative organizational culture, bureaucrats are the ones which do not lean towards change but rather being stable and mature. The most distinctive features of bureaucratic cultures are: highly hierarchical, structured, ordered, procedural, solid, relatively cautious, power-oriented, regulated, and established. Finally, supportive cultures are common in organizations in which people tend to help each other without looking after one's interests. The idea of "being like a family" is the motto of this culture. Other adjectives which well matches with the supportive organizational culture are: trusting, safe, social, collaborative, and relationship-oriented.

According to her view, organizational culture can not be considered as a monolithic concept (unlike Smircich's idea) and therefore it can only make sense talking about the dominant organizational culture instead of imposing on one. Thus, to assess, which of the three organizational culture types is most dominant in individuals' existing organization, Wallach (1983) develops a 24-item index, each culture type is represented by eight items based on the mentioned adjectives above.

As Kanungo et al. (2001) argue, Wallach's (1983) organizational cultural index covers almost all early defined parameters by other popular researchers (Allen & Dyer, 1980; Glaser et al., 1987; Sashkin & Fulmer, 1985) and more recently identified dimensions (Tsui et al., 2006). It is also one of the most used organizational cultural models in the field of IS researches (Jackson, 2011) and is used in this study.

1.2.2.3. Cooke and Lafferty's Organizational Culture Inventory

In 1989, Cooke and Lafferty come up with the idea which adds psychometric characteristics of individuals into organizational culture (Cooke & Lafferty, 1989). They develop a Likert-type dimensional instrument with one hundred twenty questions. Although their instrument has good face validity and offers a rich graphic illustration, it is to complex to fulfill and also has copyright problems (Chandler, 2015).

Based on shared norms and expectations of group members, there are twelve thinking styles of individuals within a group which is assumed to have a direct effect on organizational culture. These are: humanistic/helpful, affiliative, approval, conventional, dependent, avoidance, oppositional, power, competitive, competence/perfectionist, achievement, self-actualization. These twelve styles can be harmonized in two dimensions: task versus people, and satisfaction versus security. At the end of the final factor analysis, they propose three main culture types: Constructive, Passive/Defensive, and Aggressive/Defensive. Constructive culture cares a lot for the satisfaction of the needs and teamwork. Passive/defensive culture emphasizes interpersonal relationships with the harmony of people and security dimensions. Finally, aggressive/defensive (task and security) culture are the one which focuses on process and internal control (Kummerow & Neil, 2013).

1.2.2.4. Cameron and Quinn's Competing Values Framework

In 1999, Cameron and Quinn develop an organizational culture framework based on their previously suggested model called Competing Values Framework (Quinn & Cameron, 1983). According to their theoretical model, it is defined eight organizational culture dimensions: internal focus and integration, flexibility and discretion, stability and control, external focus, and differentiation. Based on these dimensions, four distinctive organizational culture types are identified in their latter study (Cameron & Quinn, 1999) which of three of them overlap with the Wallach's (1983) organizational cultural types (Dubkevics & Barbars, 2010). Cameron and Quinn's (1999) four culture types are showed in Figure 4.

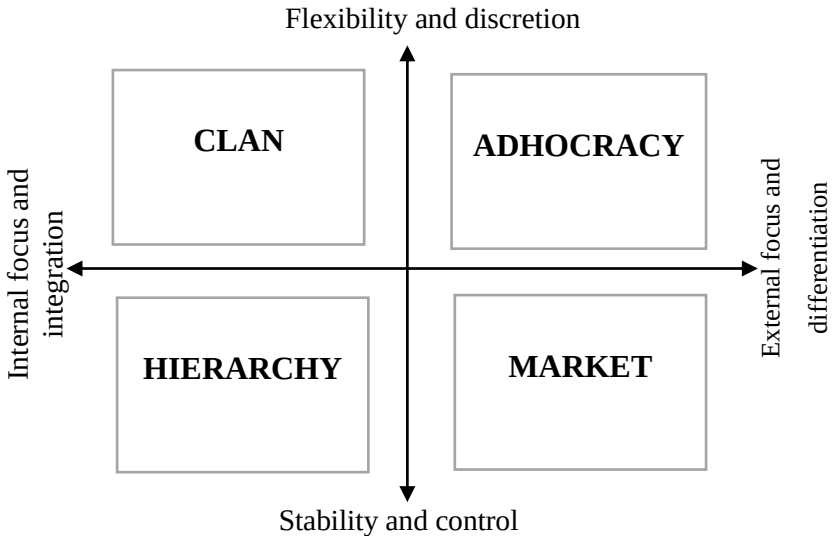


Figure 4: Cameron and Quinn's Competing Values Framework

Source: Quinn, R. E., & Cameron, K. (1983). Organizational Life Cycles and Shifting Criteria of Effectiveness: Some Preliminary Evidence. *Management Science*, *29*(1), 33 51; Cameron, S. K., & Quinn, R. E. (1999). *Diagnosing and Changing Organizational Culture Based on Values Framework*. Wesley Publishing Company.

Type of clan culture harmonizes the values of flexibility and discretion as well as internal focus and integration. Instead of focusing on competitive markets or hierarchical processes, members of this culture are willing to work together, have intimate relationships, and have sensitivity for customers. They want to feel like his/her supervisor is his/her parents and the organization is his/her family. In contrast to the clan culture that cares about maintaining relationships, hierarchical cultures are the typical structured and ordered ones which consist of lots of formal rules and procedures.

In these types of cultures, there, generally, is a leader or hero who regulates all the dynamics within the organization. If the mentioned hero in hierarchical culture is replaced with an external strength like "be the most innovative organization in 2020", then the culture type turns into the market one. In such a culture, people are generally result-oriented and competitive and mostly focus on reputation and success. Like market culture, adhocratic one also sensitive to external powers but it is not so rigid as the former does. Instead of being popular, members of the adhocratic culture generally stick their neck out. They are described as innovative, dynamic, and entrepreneurial.

1.2.2.5. O'Reilly, Chatman, and Caldwell's Organizational Culture Profile

Do employees share the same core values as the company which they work for? As an answer to this speculative question, some researchers (Crichton et al., 2004; Dawson et al., 2018; O'Reilly et al., 1991) argue that understanding practices that people engage, may help to comprehend their world which results from understanding the organizational culture. By acting with this logic, O'Reilly et al. (1991) develop an instrument to investigate the person- organizational culture fit. They describe their aim as follows (p.494): "we define a set of value statements that can be used to idiographically assess both the extent to which certain values characterize a target organization and an individual's preference for that particular configuration of values." They follow a four-step process (describing organizational values, assessing characteristics of firms, assessing individual preferences, calculating the person-organizational culture fit score) with a Q-Sort technique. Like Wallach (1983), their instrument contains fifty-four value statements such as flexibility, adaptability, being careful etc. instead of using Likert-type questions. After principal component analysis with 395 students, there appear seven different core values which can be used to describe the dominant organizational culture labeled: Innovation, Stability, Respect for people, Outcome orientation, Attention to detail, Team orientation, and Aggressiveness. According to them, every organization can be characterized by using at least one of them and their results can provide meaningful insights towards adjustment to organizations. Indeed, some studies prove the positive effect of person-organizational culture fit on individuals' performance (Schneider et al., 2013; Zhong et al., 2016).

1.2.3. IS and Organizational Culture

IT offers some magical qualities even for its frequent users (Markus & Benjamin, 1997). Understanding this magical aspect may help organizations to cope with their uncertainty about IT and create their own IT culture. Starting from this point, Kaarst-Brown and Robey (1999) extend the magic metaphor into an organizational culture context in order to understand the management of IT. They conduct two ethnographic studies using unobtrusive methods such as document analysis and historical-biographic interviews. Finally, they describe five IT management archetypes:

- **Revered IT Culture:** This archetype believes in and uses technology as a powerful source, and has scientific rationality. These kinds of organizations are generally early adopters and IT investments are the reason for the success of the company.
- **Controlled IT Culture:** In this archetype, IT is controlled by executives. IT workers have not their own resources and there is a line between users and them. Investment decisions on IT are taken by executives as well.
- **Demystified IT Culture:** In this culture, business people also aware the technological developments and acquire new skills through IT. Actually, they do not need an information system department to construct their systems.
- **Integrated IT Culture:** There is an ideal partnership between IT people, businesses, and users in this type of culture. Positiveness and creativeness are the core values.
- **Fearful IT Culture:** This culture represents the "resistance and fear towards IT". Businesses and users do not prefer to use IT even if it is available.

Kaarst-Brown and Robey's (1999) effort is a novel way to understand IT adoption within organizations. Their approach is a useful foundation to build on studying IS and organizational cultural issues; however, Leidner and Kayworth (2006) contend that there are other several aspects of this topic. Indeed, after reviewing the twenty-five year period of cultural studies in the IS field, they propose "Theory of IT-Culture Conflict". This theory focuses on potential conflicts caused by IT and includes six main themes as follows: (1) culture and information systems development, (2) culture, IT adoption, and diffusion, (3) culture, IT use, and outcomes, (4) culture, IT management, and strategy, (5) IT's influence on culture, (6) IT culture (Kaarst-Brown's study belongs to the theme sixth). Among their eighty-two articles reviewed, thirty-one of them belong to

organizational culture whereas the rest of them examine culture at the national level. Among the organizational cultural studies, theme third (culture, IT use, and outcomes) appears as the most commonly studied and theme sixth (IT culture) gets the least attention. Finally, they identify twenty-one possible values of IT for further researches which would be examine IT culture. Leidner and Kayworth's (2006) study is a precious effort with its well-defined themes for following IS researchers. Yet, in order to prevent reinvent the wheel, many researchers use their theory in order to structured their studies by focusing only one theme and explore it deeply. In the rest of this section, related literature will be addressed regarding their belonging theme among the suggested six.

Kappos and Rivard (2008) focus on Theme 1 and aims to reveal the relationships between IT, culture, and the development/use/operate process. To do so, they conduct a literature review based on Ives et al.'s (1980) study and classify reviewed articles by using Martin's (1992) three perspectives approach. Finally, they propose an integrated model that comes up with five main propositions as follows: (1) culture has an effect on the development process, (2) culture moderates the relationship between the IS characteristics and the development process, (3) usage of IS affects culture, (4) culture moderates the relationship between acceptance/resistance of IS and its characteristics, (5) culture moderates the relationship between the use and IS characteristics. They call for future researches which focus on multiple perspectives (integration-differentiation-fragmentation) rather than single one

Within the context of Theme 2, Jackson (2011) focuses on IS adoption and addresses two main questions: (1) how culture influences IS adoption?, (2) how do different cultural values shaped by different members affect IS adoption? This study is important because it has a strong theoretical background by combining two approaches, Martin's (1992) three perspectives on culture (mentioned earlier) and Douglas' (1978, 1982) group-grid dimension (will be mentioned) and offers empirical evidence, unlike the previous studies. To answer the first question, he reviews the related articles within the context of Martin's (1992) approach and finds all three perspectives (integration, differentiation, fragmentation) are related. However, Jackson (2011) identifies three challenges in IS/ organizational culture researches. First, studies generally tend to use Martin's integration perspective instead of focusing on multiple perspectives. Second, studies generally focus on cultural values however nature of culture is more complex than it is and symbolic metaphors should not be downplayed. Finally, most of the

studies adopt Smircich's (1983) "has" approach (details are available in Section 1.2. Organizational Culture) rather than "is". To answer the second research question, he conducts a longitudinal case study in a college by following an interpretative approach. As a result, Martin's (1992) all three perspectives come into play simultaneously which plausibly proves the dynamic nature of the culture. Within the scope of Theme 2,
Vance et al.'s (2008) empirical study test whether system quality and culture affect trust in IT artifacts. They find both two independent variables have a direct effect on user trust in IT artifacts as well as culture also has a moderate role. As a final example for Theme 2, Guo et al.'s (2014) multi-case study is also a good example of explaining how organizational culture influences the assimilation of IS.
Covered by Theme 3, researchers focus on different cultural values that are expected to predict user satisfaction. For example, Jones et al. (2006) conduct a multi-site case study to examine the effect of different organizational cultural values on knowledge sharing. Another example is Wang et al.'s (2010) study, which aims to reveal what kind of environmental factors, including organizational culture, influence ERP's user customer satisfaction. They find a direct relationship between organizational culture and user satisfaction.
Tang et al.'s (2016) study is a good example for Theme 4 which includes ethics, privacy, governance, and IT/Business alignment. In their study, they try to reveal how organizational culture may possibly affect information security culture. They propose four dimensions that represent information security culture namely: compliance, communication, accountability, and governance. Finally, they define causal relationships between organizational culture and suggested dimension and make a call for future research to test their propositions. Another good example of Theme 4 is the study which examines the effects of organizational culture on the success of e-government initiatives (Kanungo & Jain, 2013). A more recent study (El-Mekawy et al., 2016) is also a good effort within the scope of Theme 4.

Waring and Skoumpopoulou (2012) also follow Martin's (1992) popular three perspectives but focus on another theme called "the impact of IT on culture" (Theme 5). They aim to examine cultural changes that occur during the implementation of a strategic information system. To do so, they conduct a three-year-period case study within a high school. Finally, they identify eight cultural manifestations from all three perspectives and present their Strategic Information Technology Services (SITS)

kaleidoscope concept which is hoped to provide better insights to interpret cultural changes during any implementation process.

As of last but not least, Theme 6 (IT Culture) is the one who gets the least attention until now and deserves to critically think and deeply investigating (Leidner & Kayworth, 2006, Jackson, 2012). Thus, this thesis is dedicated to the Theme 6 and related articles are discussed in "Section 1.3.4. IS and Occupational Culture" in detail.

1.3. Occupational Culture

An occupational culture arises from similar backgrounds, personal and work experiences of people who engage in the same profession and share similar values and norms (Guzman & Stanton, 2009). According to (Hofstede, 1998) occupational culture may appear in three different forms within the organization: administrative, professional, and customer interface. A similar but more comprehensive approach belongs to Schein (1996a) who claims that occupational culture comprises of three main groups: operators, engineers, and executives. Operators refer to the people who make and deliver services/products which help organizations to accomplish their goals. Engineers are mostly called technical people and the core designers of organizations like accountants, software programmers etc.). Executives are the senior managers of the organizations. According to Nord and Nord (2007), understanding and managing occupational sub-culture or occupational culture[4] are critically important for three reasons. First, as well as understanding the organizational culture itself, it is also necessary to understand the sub-cultures and interactions between them to interpret organizational issues (Schein, 1996). Second, understanding sub-cultures may help to resolve organizational conflicts to prevent cultural clash (Robey & Zmud, 1992), since different occupational sub-cultures are expected to interact and conflict (Von Meier, 1999). Third, studying occupational sub-cultures is a way of understanding the features of different groups and the degree of differentiation between them (Van Maanen & Barley, 1985). Since culture, sometimes, can be exposed from only its own members (Dubinskas, 1992), and the others are generally insensible for other sub-cultures (Van Maanen & Barley, 1985), it is critical to reveal the characteristics of any specific

[4] In the literature, the terms occupational sub-culture and occupational culture are generally used interchengeably. The truth is, the former refers to the group of people working in the same organization, however the latter one refers all the people belonging to and working in the related group but different organizations.

profession to make its members aware of their own identities, values, norms, and behaviors (Nord & Nord, 2007). Bloor and Dawson (1994, p.289) also point out the effects of occupational cultures on organizations by saying "if one sub-culture has gained dominance within the organizational culture then its interests will be perceived as legitimate and closely identified with the organization." Although the importance of understanding of occupational cultures is emphasized in the literature, there is a lack of studies about this issue. Thus, Hofstede (2011) calls attention to the culture of occupations since it is a relatively unexplored field when compared to national and organizational cultures. Schein (2015) also points out the importance of studying about occupational culture since it this culture considered as the more important drivers of behaviors when compared national and organizational culture.

In the following sections, occupation is addressed as a critical concept and the differences between occupation and profession are trying to be understood. Second, occupational communities are discussed. In the second subsection, Information Technology Occupational Communities (ITOC) and their characteristics are presented to catch the main idea of this study. Third, different occupational cultural models are discussed. Finally, researches related to revealing ITOC's cultural values are reviewed.

1.3.1. Occupation as a Concept

The concepts of occupation and profession, which are often used interchangeably in the literature, serve at cross purposes. A profession is a concept that usually includes the occupation and is more difficult to define. According to Turkish Language Association, occupation means labor that creates value as a result of several exertions. However, the profession has a wider scope and an older history. If we get to the bottom of the 'profession' as a word, it seems it derives from the word 'profes'. Even if the profes means "to swear in the name of a religious order" earlier times, the word has moved away from this meaning in time and has been used to mean "being qualified enough" (Hughes, 1963). Many different authors try to explain the aspects in which the occupation and profession differentiate from each other. Flexner (1910), who is the pioneer with his works in this field, describes six criteria that any occupation can be regarded as a profession. These are: (1) Requires a high level of responsibility, (2) Uses in both theoretical and practical, (3) Bases on cumulative knowledge, (4) Strong communication and group awareness exists among its members, (5) The social identity of the members is high and the members aim to be beneficial to the society, (6) The

requirements can be transferred through the education. Expanding the Flexner 's (1910) study, Povalko (1971) determines eight main criteria for an occupation to be considered as a profession. These are: motivation, duration of education, unity consciousness, ethics, social values, knowledge, autonomy, and professional loyalty. In a more recent study, Chitty (1997) makes a more clear distinction between occupation and profession, as shown in Table 9.

Table 9: Main Differences Between Occupation and Profession

Occupation	Profession
Practically learned	Theoretical education is necessary
Duration of the education may change	Duration of the education is long
Values and ethics are not important	Values and ethics are the part of education
The sense of commitment to job depends on the person	The sense of commitment to job is strong
Employees must be observed	Employees are independent
It is easy to leave the job	It is hard to leave the job
Responsibility belongs to the employer	Responsibility belongs to the employee

Source: Chitty, K. (1997). *Professional Nursing*. Saunders Company. Karadağ, A. (2002). Meslek Olarak Hemşirelik. *Ataürk Üniversitesi Hemşirelik Yüksekokulu Dergisi*, *5*(2).

While Flexner (1910), Povalko (1971), and Chitty (1997) examine the differentiation of the concepts of occupation and profession, they take into consideration the service providers in medicine. The main reason for this is that the field of medicine started to develop much earlier than other professions and found a lot of responses in daily practices (Cirhinlioğlu, 1996).

According to Trice and Beyer (1993), occupational communities are generally not represented as a homogenous group; however, they become more composite due to their internal dynamics in the progress of time. Likewise, Guzman et al. (2005) agree with this view and describe four basic features of professions. These are:

- Profession comes up with the accomplishment of certain tasks in terms of seeking, processing, and accumulating the knowledge,
- Professional members establish partnerships to gain control over their professions,

- Professional members are subject to certain educational processes and learning programs,
- There are certificates given to professions, exams applied and members of the profession have ethical codes.

When the aforementioned studies and their approaches to the occupation-profession concept are carefully examined, it is noteworthy that the concept of the profession includes not only job-related tasks but also other value judgments and norms. Besides including individual responsibilities, the profession is closely related to the personal values and the social norms which are required by society. In addition to that, the profession is regarded as a lifestyle and it is very difficult to leave, thus people generally prefer to stick to their professions rather than being connected to an organization throughout their lives (Guzman et al., 2005). Sarıkaya and Khorsid (2009) also highlight that chosen the right profession directly impacts individuals' life satisfaction, and therefore people should carefully determine their profession which well matches their characteristics and their interests. Trice and Beyer (1993) suggest a model and explained entry processes into the profession consisted of five intertwined stages namely attraction, access, adjustment, identification, and commitment. They call these processes 'occupational socialization' (Figure 5). Detailed information about each process is given below.

1. Attraction: The first process of occupational socialization is called attraction or sometimes known as involvement which covers the critical decision that why people determine to have a career in a specific profession. It generally depends on three criteria: The first one is the *hero effect* means admiring other people live in the inner cycle. For example, someone whose parents are both teachers may interested in being a teacher in the later stages of his/her education. Of course, the hero effect is not limited to the parents' career choices, it also captures anyone's close friends, supervisor, or even a celebrity's choice. The second one is interests which are related to someone's abilities, skills, and knowledge. For example, people who are interested in computers starting from childhood, he/she is probably willing to make a career in technology-related fields. The third one is rewards which are also called expected outcomes. This factor is much more related to external factors such as money, prestige, and status. If someone is ambitious to earn a lot of money, she/he will probably choose a profession that has more potential to make money rather than addressing his/her interests.

2. Access: Due to some reasons, it is not always possible to start the desired profession after decided. Trice and Beyer (1993) underline that society can have a voice at this point. According to them, some segments of society are not be considered proper for some specific professions, while the rest are encouraged to choose these professions. Shuttleworth (1992), for example, argues that women do not find IT-related jobs attractive and they generally feel technically inadequate in this field. The reason underlying this prejudice comes from the social expectations of society, which have been proven in previous studies (Didio, 1996; Fetler, 1985). According to these expectations, men are more encouraged to have a computer-related profession, while women are generally canalized to literature and artistic fields such as history, music etc. As a result, women prefer to stay away from technical fields, and their anxiety about using technological devices increases (Magid Igbaria & Chakrabarti, 1990), and they have serious concerns about choosing IT as their profession (Ahuja, 2002). Shapiro and Crowley (1982) examine the topic at the level of family income and proved that total household income has an important place in the choice of profession. According to their results, children of high-income families ponder in several professions and feel more excited about turning to different professions than children of low-income families.

3. Adjustment: After the person decides and starts to work on the required profession, he/she is considered to be a member of the occupational group of that profession. The concept of occupational groups will be discussed in more detail in the next section. Although it is ideal for people to choose professions according to their own wishes and personal characteristics, this is not always possible. Some of the people who think they have chosen a suitable profession to realize that they have chosen the wrong profession when they cannot adapt to the culture of the profession group.

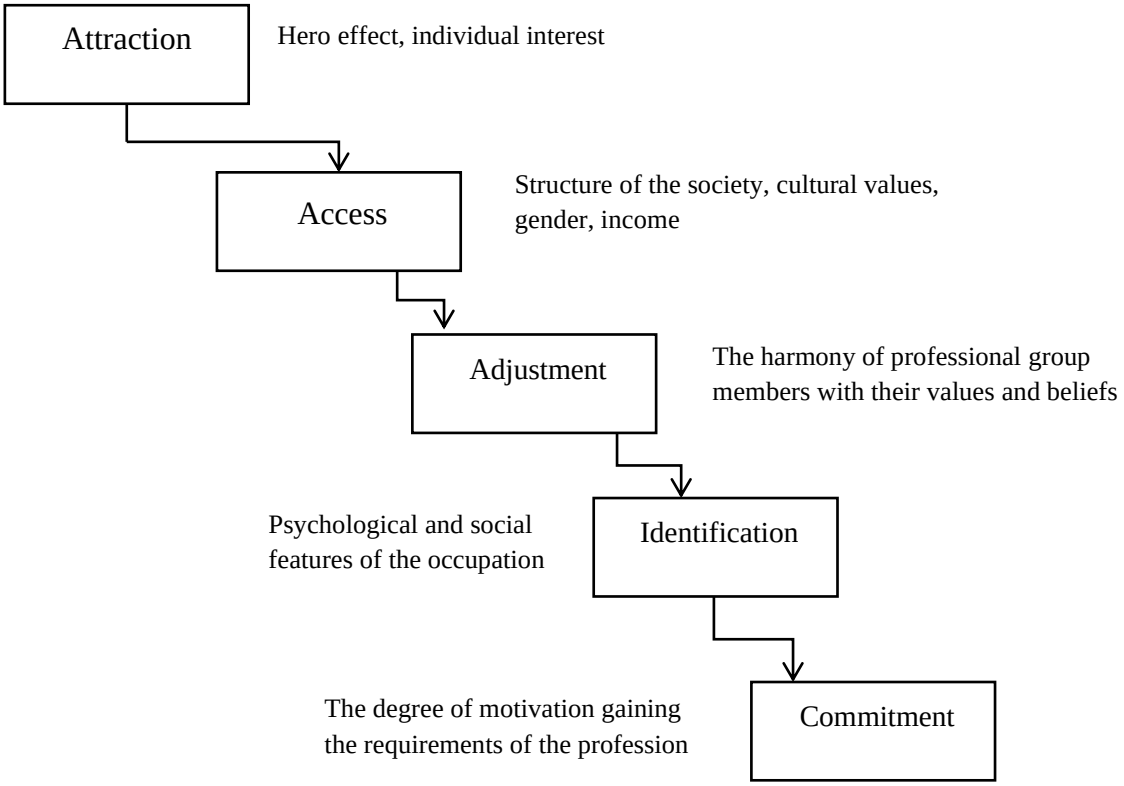


Figure 5: Occupational Socialization Process

Source: Trice, H. M., & Beyer, J. M. (1993). *The Cultures of Work Organizations*. Prentice-Hall; Guzman, Indira R, Ellis, G. S., Blanchard, T. J., & Stanton, J. M. (2005). *What attracts women to the IT field ? The first process of Occupational Socialization*. *2000*, 719–727.

4. Identification: As people continue to work in the same profession, they begin to integrate with their profession both sociologically and psychologically. According to Guzman (2006), people prefer to work in the same sector rather than working in the same organization throughout their lives. In other words, it is easier to give up an organisation when compared to the profession. Guzman et al. (2005) emphasize the importance of professional organizations such as associations and foundations at this stage. Such communities may help people to increase their awareness of their profession by means of providing opportunities like attending conferences and several activities. People become more familiar with their reference group eventually and also have a chance to meet their colleagues.

5. Commitment: The concept of occupational commitment is the last step of occupational socialization which is associated with the strength of the motivation required for a sense of belonging towards owned profession (Gary Blau, 2003; Lee et al., 2000; Meyer et al., 1993; Wetzel et al., 1990). The details of the occupational commitment will be examined in Section 2.

1.3.2. Occupational Community

As William Goode (1957) states, the first and the most special purpose of every profession are to have an occupational community. The first theoretical study about occupational communities and the possible factors affected by these groups are introduced by Lipset, Trow and Coleman (1956). According to this study, status, common interests, social relations and irregular working hours are the prerequisites for professional members to become an occupational community. Goode's (1957) approach slightly differs from Lipset et al.'s (1956) study by offering six common characteristics of occupational groups. He admitted that; (1) role definitions are clear and identical for each group member, (2) the community has a say in its members within reason, (3) thanks to the control and orientation process held by the community, the recruitment processes take place socially, (4) members are connected with a sense of belonging, (5) the chosen profession refers to the achieved goal, (6) it is very difficult to leave the community after becoming a member. In a later study, Blauner (1960) compiles three previous studies (Blum, 1953; Friedmann & Havighurst, 1954; Lipset et al., 1956) and summarizes the basic features required to be in the occupational group. These are; spending free time mostly with members of his/her profession, willing to talk shop, and being aware of the reference group. Afterward, Gerstl (1961) tries to determine the extent to which three high-status professional groups (dentist, professor, advertiser), fit into their occupational communities. To do this, he pays regard to five factors namely mutual interaction at work, participation in professional groups, interaction outside the job, the sense of prestige provided by the job, and professional commitment.

According to Van Maanen and Barley (1982), the concept of the occupational group consists of four factors (boundaries, social identity, reference group, social relations) that correspond to different concepts but serve the same purpose in essence. Analyzing these factors in more detail will be more useful for understanding the concept of an occupational group.

- **Boundaries:** This dimension assumes that people residing close to each other and having similar backgrounds are more likely to be members of the same occupational community. However, this idea is criticized by Gusfield (1975) who argues that the concept of occupational community is more than a physical belonging but also involved social belonging. Thus, there are needed more valid parameters to explain the perceived belonging phenomenon to the community.

Based on this idea, Van Maanen and Barley (1982) put forward the concept of "*consciousness of kind*" and claimed that rules and limits of an occupational community can only be determined by the members of it. For this reason, the occupational community is made up of people who perceived themselves as the members of that profession rather than people who are currently a member of it.

- **Social Identity:** Social identities of individuals are created by the roles they should fulfill while doing their jobs. This means, group members affect each other and after a while, people start to learn to evaluate themselves from the perspective of other group members. Since social identity is directly related to the social life of the people, this phenomenon becomes more evident and indispensable when professional identity is acquired. Occupational regulations, formal clothes, or jargon of the profession are the proofs that define the social identity of a specific profession. These signs are necessary to act as a cognitive and social bridge between the person and their profession so that they can communicate more specifically with their group members and also make logical inferences about people, events and, objects frequently encountered in their profession.
- **Reference Group:** To protect social identity, individuals should receive support and approval from other group members (Goffman, 1959). For this reason, group members must see each other as reference groups and unite around common beliefs, values, and norms (Van Maanen & Barley, 1982). In fact, what is desired here is that individuals' attitudes, beliefs, and behaviors should be formed by people who are already members of the same occupational community.
- **Social relations:** Salaman's (1974) study about societies and professions is a good example of understanding the interaction between the professions and social relations. He showed the machinists as an example of this socialization process who make train models during their recreation hours an show them to each other and share ideas between them. The important point in this example is that machinists prefer to busy with job-related activities even in their leisure time. This concept is also called as *"pervasiveness"* which refers to the convergence of work and social life activities. As a result of this activity, the distance between their professional and social life will reduce, resulting from

more integrated for individuals with their profession. The pervasiveness is especially important for the professions which require excessive travel plans, long working hours, and irregular working hours since it is not easy to become sociable people who work in non-routine professions. Whether close friends are in the same sector, are willing to talk shop, are willing to attend job-related scientific activities, or to read job-related books are also be considered in this context (Duliba & Baroudi, 1991).

Consequently, an occupational community can be described as "a group of people who consider themselves to be engaged in the same sort of work" by Van Maanen & Barley (1982). Members of the same occupation create strength communication ties with one another but not with other communities' members and have cultural forms (Trice, 1993). The members set the boundaries and rules, and any foreign interventions are not allowed (Marschall, 2002). Weak OC misses out on a high sense of group identity and fails to have shared values (Jacks, 2012). These values include invisible rules, ideologies, beliefs, norms, and also an observable set of "practices" or "forms" (Hofstede, 1994; Trice, 1993) which are a part of their occupational culture. In other words, if there is no occupational community, there can be no occupational culture (Hofstede, 1991). Become a member of an occupational community is also critical because, it is considered one of the crucial steps for occupational professionalism (Forsyth & Danisiewicz, 1985). Briefly, in order to be named IT employees as professionals, the existence of the ITOC must be legitimated.

1.3.2.1. Occupational Community Models

Because being a member of an occupational community may have some consequences that affect people's behavior and attitudes, it is emphasized the need to uncover potential factors influencing the formation of occupational community. Although these factors are generally regarded as the antecedents of having an occupational community, they may be considered as the consequences of becoming a member of an occupational community. Actually, as Duliba and Baroudi (1991) argue, this issue is interwoven and has not reached a common understanding. Nevertheless, as generally accepted, models developed for this purpose in the literature are divided into three groups among themselves. These are intrinsic models, extrinsic models, and hybrid models. Each of the models is discussed in detail below.

1.3.2.1.1. Intrinsic Models

The early occupational cultural models are only mentioned about intrinsic factors. As an intrinsic model proposed by Salaman (1971), the factors that have a voice in shaping the occupational groups are closely related to the characteristics of the people's inner worlds. The first factor is about the *interest and involvement* of the members in their tasks. The second is related to the status of the job. *Marginal status* of the job is important for group members who want to belong to a higher status group; however, generally denied their desire. Thus, there appear some lower-status groups. The last factor is about the *inclusiveness of work* which is divided which is formed by three sub-dimensions namely pervasiveness, embrace, and restrictive factors. *Pervasiveness* refers to the extent to which people are willing to deal with work-related activities even when they out of work and *embrace* captures the aspects of members' lives which can be directly controlled. Finally, *restrictive factors* are about the rules which have potential effects on members' social life.

1.3.2.1.2. Extrinsic Models

Contrary to the researchers who argue that occupational communities are formed by intrinsic factors, other researchers claim external factors are the dominant factors while shaping the occupational groups. According to Bulmer's (1975) model, three unavoidable factors are critically important which lead to the formation of the occupational community. These are spatial ordering of the work, temporal ordering of the work, and domination of a single industry. *Spatial ordering of the work* also known as geographic isolation refers to the people who have to work in unusual or extraordinary places. Bulmer (1975) indicated that people work in geographically isolated places (fishermen) are more easily grouped with their colleagues and get used to their occupational community. *The temporal ordering of the work* is called temporal isolation and usually appears in the conditions in which people have a non-routine work order. If the jobs require excessive travel or irregular working hours then the members of it have fewer chances to communicate with other people outside their groups which results from evolving their occupational community. The last criterion calls the domination of a single industry which is closely related to physical isolation and causes a lack of interactions with the rest of the society. Essentially, the main idea falls behind

the Bulmer's suggestion comes from the isolation idea which is claimed the less social you are the easier to adapt to your occupational community.

1.3.2.1.3 Hybrid Models

Duliba and Baroudi (1991) compile different occupational community models and propose a new one by gathering intrinsic and extrinsic factors together. They receive from Salaman's (1971) two intrinsic factors (involvement in and identity with work) and Bulmer's (1975) extrinsic factor (isolation), to explain the formation of occupational community in more detail. Their research called "IS Personnel: Do They Form an Occupational Community?" based on their proposed model is a pioneering study in the field of IS since there has been no evidence about the existence of ITOC until then. Although Gerstl's (1961) study also goes beyond describing the occupational community and aims to measure the existence/absence of it, Duliba and Baroudi's (1991) is the first empirical one in the field of IS and gives evidence to prove the existence of ITOC. Besides proving the availability of IT occupational community, Duliba and Baroudi (1991) also investigate the strength of this community by evaluating the degree of pervasiveness. Their results show that only involvement can be regarded as an antecedent, whereas isolation and inclusivity of work have not any major impact on occupational community formation. Consequently, it is not possible to talk about the existence of any IT professional group, and the represented power of this community was also very weak. However this study fails to prove the existence of ITOC, this situation has changed with the widespread use of IT. The next section will represent the studies which aim to examine the formation of occupational communities specific to IT employees.

1.3.2.2. Occupational Community for Information Technology Professionals

Orlikowski and Baroudi (1989) claim that it is crucial to conduct researches Information System (IS) or Information Technology (IT) occupation for various reasons. First, IT employees generally performance in the sector with rapid developments which exponentially grows year by year. Second, IS workers have a significant influence on other organizational practices which shapes the way that other employees do their businesses. Third, IT profession can be considered as more technical and the department itself cannot locate under the main business functions; however, all the critical processes undeniably depend on information technology (Lamb & Kling, 2003). Indeed,

Kwantes and Boglarsky (2004) report that IT department distinctly different from others within the context of expected skills, knowledge, and expertise. In a similar line, Day (2007) associates with IT and the business employees as passengers who are traveling the same train but never know each other. As a result of the troubled relationship between IT and the business, misaligned organizations which do not aware of the full value of IS occur (Chen, 2010). Kaarst-Brown and Robey (1999) conduct an ethnographic study to show how cultural interpretations about IT are performed in IT management and propose five archetypal patterns: revered, controlled, fearful, integrated, and demystified. Following this inspiring study, other researchers (Hatzakis, Lycett, Macredie, & Martin, 2005; Van Den Hooff & De Winter, 2011) point out social dynamics between the IT and Business departments and to what extent they share their knowledge, insights, and requirements mutually and how the strategic alignment is shaped. Van Den Hooff and De Winter (2011) emphasize the necessity of collaboration between IT and other departments to endanger common goals.

An early meta-analysis study has revealed that IT personnel contribute to other departments as well as the business itself, but the IT occupation has distinct characteristics which worth to be investigated (Niederman et al., 2002). The first study on the issue (Orlikowski & Baroudi, 1989) denies the existence of occupational community for IT employees in terms of Freidson's (1970) four criteria: technical autonomy, control over education, freedom from the competition with other occupations, and control over other occupations. They also state that it is hard to describe IT, workers, as professionals since IT occupation contains different tasks as a mixture of several sectors. After their theoretical approach, the first empirical study carried out for this purpose is conducted by Duliba and Baroudi (1991) which stated that IT personnel form a weak occupational community. They call researchers to make design more rigorous research, especially in the areas where the isolation of IS personnel may occur and lead to create more strength occupational community for IT employees. In their ethnographic study, Kaarst-Brown and Robey (1999) provide a useful IT cultural archetypes framework for managers for more effective use of IT. As preliminary evidence, Marschall's (2002) study proved that Internet technologists form as an occupational community, since they feel close to each other, use a distinctive language which is indecipherable from others, share a common understanding of business.

The critical point has to be mentioned here that, majority of the cultural studies in the IS literature have accepted that IT employees are professional and already the member of an occupational community (Baroudi & Ginzberg, 1986; Baroudi, 1985). Even though the first attempts on the subject has proposed that IT employees cannot be considered as "professionals" (Orlikowski & Baroudi, 1989; Duliba & Baroudi, 1991), the recent researchers have clearly admitted that IT creates its own world and occupational community (Gallivan & Srite, 2005; Guzman et al., 2004). However, it is stated that the title of "professional" to IT employees must be carefully scrutinized since IT tasks cover a broad range of responsibilities (Orlikowski & Baroudi, 1989).

Therefore, the first part of the qualitative part of this thesis is devoted to finding out the existence of IT occupational community in Turkey and if so, measuring the strength of it. To do this, we have adopted Duliba and Baroudi's (1991) hybrid model in order to handle both intrinsic and extrinsic factors.

1.3.3. Trice's Occupational Culture Framework

According to Trice (1993), organizations are not homogenous structures, but instead, they contain several occupational sub-groups. These sub-groups create their own cultures by means of history, language, values, and context which are shared by the other members of the occupational community and more importantly expands beyond the organization (Guzman et al., 2008). Of course, members of the different occupations can share the same attitudes for the good of the organization; however, they generally manifest their own values which distinguish them from the other occupational communities. It is a known truth that people from the same occupation are assumed to behave the same way and to think similarly. But is it possible to identify and make visible the ideologies related to the specific occupation? According to Ramachandran and Rao (2006), classifying the set of values belong to the occupations is not an easy task and should be a step-wise process. Nevertheless, Harrison Miller Trice, develop a framework in 1993 based on Douglas' (1978, 1982) group-grid analysis. This theoretical framework is used for many researchers (Guzman et al., 2008; Ramachandran & Rao, 2006; Guzman et al., 2004) to show that professions have their own characteristics which shape their occupational culture.

Table 10: Common Cultural Dimensions for Occupations

	Dimensions	Brief descriptions
GROUP DIMENSIONS	Esoteric knowledge	Unique tasks and skills
	Extreme and unusual demands	Challenges presented by the occupation
	Consciousness of kind	Definition of people belongs to your occupational community
	Pervasiveness	Convergence of work and social life
	Image of profession	Identity that the profession offers
	Reference groups	Reliance the people from the same profession
GRID DIMENSIONS	Abundance of cultural forms	Variety of myths, stories, sagas
	Hierarchical authority, division of labor, required education degree and certifications, formal rules etc.	Tangible dimensions which have possible effects on inter and intra-relationships among the occupations.

Source: Trice, H. M. (1993). *Occupational Subcultures in the Workplace*. ILR Press. Douglas, M. (1978). *Cultural Bias*. Royal Anthropological Institute of Great Britain and Ireland.; Douglas, M. (1982). Introduction to grid/group analysis. In *Essays in the Sociology of Perception*. Routledge.

The group dimensions are much related to the degree of cohesiveness between the members of the occupational groups and establishing boundaries between insiders and outsiders. Group dimensions generally consist of an intangible set of values and attitudes which difficult to adopt for a non-member of the community. In contrast, grid dimensions comprise tangible and apparent formal rules which are defined by the occupation itself. According to Guzman and her colleagues (2004), occupations with more grid dimensions, like lawyers and doctors, have a membership and more rigid behavioral rules.

1.3.4. IS and Occupational Culture

Studies on IT professionals generally focus on three topics (Niederman, 1993). These are: individual and behavioral differences of IT professionals from other departments' members, positioning of IT employees in several different tasks, and coping strategies upon high turnover rates of IT employees. Among these three, especially the first factor is closely related to the IT occupational group characteristics which distinguish IT employees from others. An early study about this factor was carried out by Couger et al. (1979). Although the researchers pay no special attention to the concept of OC, they find that IT managers differ from other departments' managers in terms of their sociability. IT managers are found to be more willing to follow current developments in the field of IS; however, to be failed to integrate with other people outside their groups.

The more unusual finding is that the degree of uniqueness of IT managers when they compared to others within the frame of five core job dimensions namely; skill variety (the degree to which a job involves different skills and activities), task identity (the degree to which a job has a set of standardized processes), task significance (the degree to which a job has an important effect on the daily life and work of other people), autonomy (the degree to which a job provides independence), and feedback (the degree to which a job obtains direct evaluation about his/her performance). Results show that IT managers get the highest satisfaction scores from each of the five dimensions which plausibly proved their high motivation towards their job. Actually, this result can be regarded as evidence that IT people have a sense of belonging towards their groups more than the others. Similar to Couger et al.'s (1979) study, Kwantes and Boglarsky (2004) also investigate the differences among employees from six different occupations (marketing, accounting, management information systems, production, sales, secretarial/clerical). Results show that people working in management information systems departments are expected to have more extreme preferences in terms of their talents, expertise, and knowledge. This finding is in line with the previous literature claimed that careers of the people working in the IS field are generally shaped by rather than a single organizational culture but also their norms and values (Hall, 1987).

Indeed, beyond being an occupational community and share a common sense, more recent studies have agreed that IT has its own culture, so its characteristics and impacts should be investigated (Guzman, Sharif, Kwiatkowska, & Li, 2006; Ramachandran & Rao, 2006; Guzman, Stam, & Stanton, 2008; Jacks, 2012; Jacks, Palvia, Iyer, Sarala, & Daynes, 2018). Although Trice's Occupational Culture Framework (1993) has been the earliest and great attempt to investigate cultural values for occupations, this topic is still in its fancy in the IS field. Anyhow, some studies have revealed cultural norms and values for IT employees in some manner. For example, in his ethnographic study, Gerulat (2002) observes twenty IT workers who are experienced in the IS field for more than fifteen years. At the end of the study, possible characteristics of IT people are summarized: (1) IT culture is elite and prioritizing technical knowledge and skills, (2) IT culture is ostracized the people who are not competent enough to use ICT, (3) Technical knowledge and skills are accepted essential to achieve its informal mission of high-quality and sustainable computing systems, (4) Obtaining technical knowledge and

skills to develop necessary, consistent and quality information systems is accepted as a rule by this group members.

Following this study, Guzman et al. (2004) conduct an empirical study with thirty-two IT professionals, eighty-two end-users, and seven executive managers. They used Douglas' (1978, 1982) group-grid cultural theory as a foundation which is claimed as a useful framework for clustering sub-cultures and examining sub-cultural relationships by Trice (1993). After their semi-structured interviews, eight main themes emerge as the characteristics of IT professionals. These are: (1) having a group identity and excluding other group members due to frequent use of technical knowledge and jargons, (2) aggressive end-users and their unusual demands, long working hours and need for constant self re-education, (3) complaints about end-users' technology usage skills and their behavior as well as a misunderstanding by executive managers, (4) recognizing the importance of their profession and satisfied with helping other people, (5) feeling of superiority to other groups and group members in terms of professional ethnocentrism, (6) physical settings involving electronic equipment and disorder as signals of group membership, (7) shared stories, values, and norms about IT history, (8) existence of lack of formal rules and unclear requirements for getting accepted by IT group. In 2006, Guzman summarizes the possessing features of IT occupational culture within the scope of Douglas' (1978, 1982) group-and grid dimension and Trice's (1993) model shown in Table 11.

Table 11: Characteristics of IT Occupational Culture

	Features	Behaviors of the IT Occupational Culture
GROUP DIMENSIONS	*Esoteric knowledge*	Having control over the information technologies within the organization and expertise accepted by others in the field of IS.
	Extreme and unusual demands	Long working hours, aggressive and unsatisfied end-users, need for self re-education, constantly changing technologies.
	Consciousness of kind	Members see themselves in terms of their occupational role, complain to other IT people about end-users.
	Pervasiveness	Business and social life are intertwined.
	Image of profession	Advantages of belonging to the IT profession, personal status, and enjoying helping others.
	Reference groups	Solving problems by relying on each other in the face of common problems. Identified with IT profession.
	Abundance of cultural forms	Generally called as intelligent but asocial. Shared stories. Technical jargon. Informal clothes and typical physical work conditions: hubs, cables, servers etc.
GRID	*Hierarchy*	Although they do not like their superiors, they accept the need for a hierarchical order.

DIMENSIONS	*Division of labor*	Most IT professionals want to actively contribute to projects.

Source: Guzman, I.R. (2006). *"As You Like I.T." Occupational Culture and Commitment of New Information Technologists*.

To confirm Guzman et al.'s (2004) and Guzman's (2006) findings, Ramachandran and Rao (2006) conduct a study with ten IT professionals and eleven management professionals. Majority of characteristics seen in Table 10 show consistency with previous research findings. Although, pervasiveness seems not a common feature among IS professionals, some other beliefs related to group dimension such as relationship to peers (cohesiveness), belief about IS managers (they do not have sufficient IT knowledge) and belief about non-IS managers (they have extreme and unusual demands from IT professionals) are explored within the scope of this study. In addition, to compare their findings with two previous research, Ramachandran and Rao (2006) also make a comparison of the beliefs of IS professionals and managers. The divergence between these two groups in terms of their own occupation is summarized in Table 12.

Table 12: Comparison of Beliefs of IT Professionals and Managers

Group Dimensions	**Beliefs of IS Professionals**	**Beliefs of Managers**
Esoteric knowledge	Basic knowledge like mathematic, algorithm are required but IT job could be done by anyone who has the logical mind set.	Functional skills and interpersonal relation are need
Extreme and unusual demands	Arises from IT-related tasks and it is welcomed.	Arises from managerial issues
Consciousness of kind	Identified with IT tasks they undertake	Identity from the belief that they are the face of business
Image of profession	Derived from the positive contributions to the society	Derived from the positive contributions to the profitability
Reference groups	Only IS peers	Peers and supervisors
Abundance of cultural forms	Technical jargon is necessary and enjoyable	Technical jargon is confusing. Need managerial jargon.
Grid Dimensions		
Division of labor	Should be flexible but necessary	Should be rigid
Hierarchy	Should be, but preferably be flattened	Want to have clearly identified supervisors

Source: Ramachandra, S., & Rao, S. V. (2006). An effort towards identifying occupational culture among information systems professionals. *SIGMIS-CPR*, 198–204.

As a different approach, Nord and Nord (2007) discuss the seven most commonly used organizational cultural models and adapt one of them to explore the cultural values of IT groups. To do this, they interview with twenty-one senior business managers and eleven

IT managers from five large Australian firms. According to their results, six themes emerge, appear more than one case, as the representative characteristics of IT culture. These are: (1) organization structure: there are no consensus about "what actually IT is?" between business and IT, (2) symbols: IT groups consist poorly skilled IT professionals, (3) rituals and routines: IT is regarded as a help desk function of the firm, (4) IT departments have poor funding, (5) control systems: executive managers have strategic control over IT, (6) power structures: IT expenditure is controlled by executive managers. Because some of the six themes appear for the first time in the literature, authors argue IT culture has not been adequately addressed or this culture continues to evolve.

Following this argument, Walsh and Kefi (2008a; 2008b; 2008c) publish three proceedings about individual IT culture consecutively, which they posit individuals' attitudes and behaviors in organizations are shaped by multiple layers of culture (national/organizational/occupational) which interact with each other. Thus, including occupational culture, all the layers are dynamic and continuously evolving. Their first study (Walsh & Kefi, 2008b) has an ethnographic approach, and researchers aim to develop a typology of IT users based on their individual IT culture. They follow up Social Identity Theory by means of taking into account users' assumptions, values, and practices about IT. Finally, they develop eight archetypal types of IT users: the disappointed and fatalistic user, the dangerous user, the studious user, the passionate user, the disciplined user, the natural user, and the dodger. After describing each archetypes and their characteristics, researchers come up with the "Spinning Top Metaphor" idea in their second study (Walsh & Kefi, 2008a). To describe and predict the individuals' attitudes and behaviors with regards to IT field, they extended Virtual Onion Model (Straub et al., 2002) by adding a one specific layer called IT Culture. Suggested Spinning Top Model can be seen in Figure 6.

The model includes individual IT-culture (core assumptions, beliefs, and attitudes towards IT) and innate parts of the individuals (genetic and biological characteristics) additively to other cultural layers. All these layers are permeable and dynamic which means the location of them may change during the socialization process except for the innate part. For example Figure 4 shows the representation of ordinary people with no specific cultural salience. leader can be shown with a more thick religious layer which

However, a computer geek can be characterized with a more thick technological layer which locates closest to the innate part. Similarly, a religious has a greater volume, locates closest to the innate part, and dominates an individual's global culture.

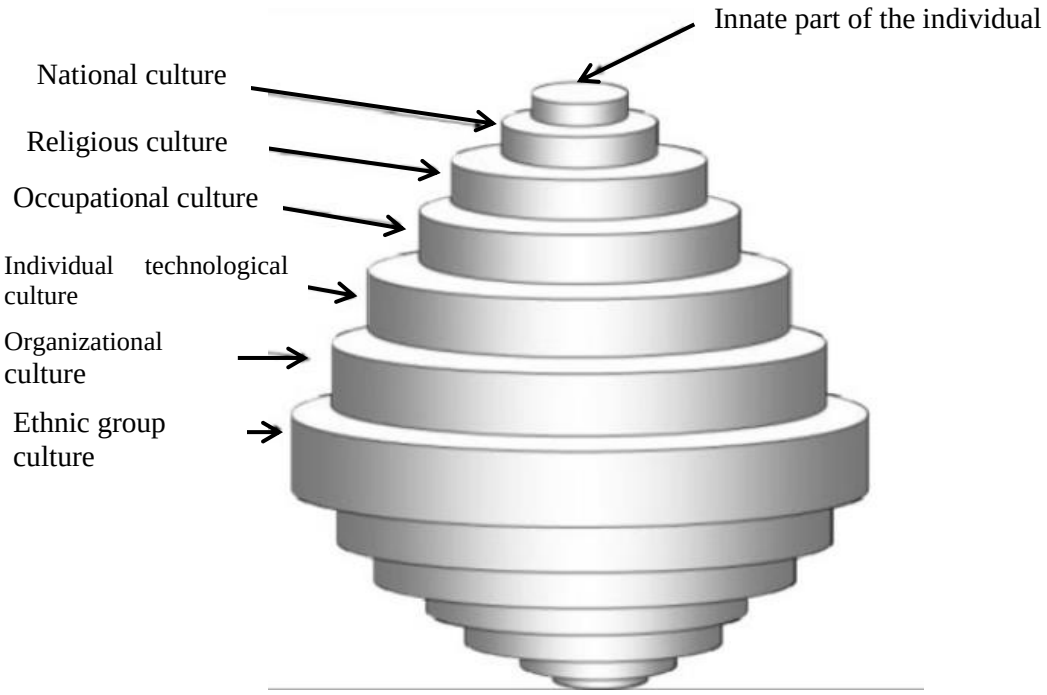


Figure 6: The Spinning Top Model

Source: Walsh, I., & Kefi, H. (2008a). Developing the concept of individual IT-culture : the spinning top metaphor. *AMCIS 2008 Proceedings*, 1–12.

In their third study, Walsh and Kefi (2008b) present the Level 2 of the Spinning Top Model since they believe concentrating on and investigating IT occupational culture is the first task before determining the global culture of individuals. Therefore, they propose an analytical framework (Figure 7) which integrates individuals values detected by Rokeach (1973) into IT occupational culture. This framework is useful for understanding individuals' IT value system and is showed IT-specific values along the 2 axes by the indications O^+ and O^- (O means "oughtness"). According to proposed framework, the moral IT values are the ones which "must be required" whereas personal IT values are the ones which "better to have" to feel belong to the IT group.

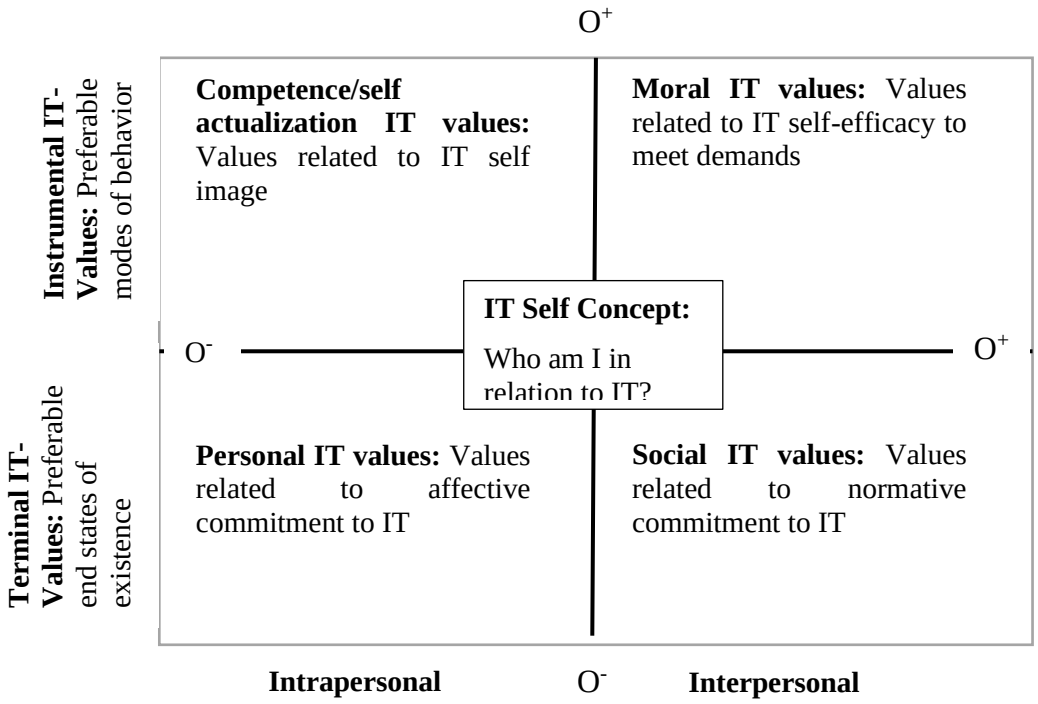


Figure 7: The Individual's IT Value System

Source: Walsh, I., & Kefi, H. (2008b). The role of IT culture in IT management: Searching for individual archetypal IT cultural profiles. *14th Americas Conference on Information Systems, AMCIS 2008*, *5*, 2952 2967.

After examining "the individual IT culture" deeply but theoretically, Walsh (2009) decides to develop an instrument to assess the features of it. She creates a pool of items obtained from previous study (Walsh & Kefi, 2008b). Survey consists of three main sections namely fundamental needs satisfied through IT (primary/power, affiliation, and self-accomplishment needs), IT-motivation (intrinsic and extrinsic motivation), and IT needs (situational/contextual, and global IT needs). After validity and reliability analysis, all the fundamental needs, intrinsic motivation to know, and extrinsic motivation to identified regulation/extroverted regulation have been found significantly important for individuals. Finally, Walsh and her colleagues (2010) develop a strategic model to help managers about their possible effects on the migration of IT culture.

Although previous studies made good progress about qualitatively identifying the features of IT occupational culture (Ramachandran and Rao, 2006; Guzman et al., 2004; Guzman, 2006) and measurable dimensions of individual IT culture, there is still a lack of studies aimed to make IT occupational culture dimensions measurable not only for individuals but also for IT occupational community as general. To close this gap, Jacks and his supervisor Palvia (2011) propose a research model that aimed to reveal the core

values of IT occupational culture within the scope of shared history, shared language, shared values, and shared context proposed by Trice (1993). They conduct seven initial interview with IT professionals experienced in the sector more than seven years. They get six preliminary themes abbreviated by SCORRE (Structure of power, Control, Open communication, Risk, Reverence for knowledge, Enjoyment), however the authors emphasize that there is a need for additional data and analysis to be sure about the reliability of the patterns. After Jacks's (2012) Ph.D. thesis (*"An Examination of IT Occupational Culture: Interpretation, Measurement, and Impact"*) defense, he and Palvia publish another article (2014) which present the instrument reliability and validity results developed based on SCORRE values. More recent and the final study (Jacks et al., 2018) extends and updates Trice's (1993) model in order to concentrate on values layers instead of artifacts. As a result of twenty-five semi-structured interviews, six themes emerge some show similarity with SCORRE values (shown with *) but the others are totally different. These six core values are: (1) Autonomy in decision-making: to what extent the members of the occupation are included in the decision making process, (2) Structure in the environment: how clear the role definitions, processes, and orderliness are, (3) Precision in communication: necessity for accurancy for communication about work tasks, (4) Innovation in technology: to waht extent the members of the occupation believe the value of technological developments, (5) Reverence for technical knowledge*: need more respect to show who has the more technical knowledge, (6) Enjoyment at the workplace*: the degree of pleasure while doing occupational tasks. Authors abbreviate these six themes as ASPIRE to be easily remembered. To measure and validate the suggested ASPIRE values, authors develop a survey instrument and apply it to two different groups. Group 1 represents the IT employees and Group 2 represents the business side. Structure in the environment and precision in communication combine into one dimension namely Structure/Precision because of the high correlation between them. As a result, all the five dimensions are rated by higher scores by Group 1 rather than Group 2 which is the evidence of the existence IT occupational culture. Authors summarize their IT professional ideology as follows: *"IT is an occupation that expects a high level of personal autonomy, is intolerant of any ambiguity in both communication and work structure, craves the opportunity to create and innovate, respects intelligence over authority, and strongly desires enjoyable elements of play in the work environment."*

CHAPTER 2: JOB SATISFACTION AND OCCUPATIONAL COMMITMENT IN INFORMATION SYSTEMS

"However powerful our technology and complex our corporations, the most remarkable feature of the modern working world may, in the end, be internal, consisting in an aspect of our mentalities: in the widely held belief that our work should make us happy."

de Botton, 2009:106

Job satisfaction and occupational commitment are interrelated but different concepts. These are the dependent variables of this thesis study and Chapter 2 is dedicated to explaining them respectively. First, the meaning, theories, and measurement of each concept will be discussed. Then, a literature review about how these two concepts are related to each cultural level (national/organizational/occupational) and each other will be presented. Finally, IS-related studies are discussed and four research hypotheses will be presented.

2.1. Job Satisfaction

Job satisfaction also known as work satisfaction or employee satisfaction is one of the most central concept in industrial/organizational psychology, organizational behavior, human resource management, and its roots goes back to 1960s (Judge et al., 2001). It is estimated that there have been more than 3300 related articles published even in the first years (Locke, 1976a) and this number has reached almost 5,000 with the year 2003 (Fritzsche & Parrish, 2004). Today, there are more than 3 million researches listed in the Google database related to the job satisfaction concept.

One of the main reason for its unending popularity may raise from its positive effects on job performance (Ziegler et al., 2012), job engagement (Radosevich et al., 2008), retention (Torres, 2014), and finally firm performance (Chi & Gursoy, 2009; Bakotić, 2016). In parallel with its popularity, several definitions have been made by different authors over the years. For example, Locke (1976:1304) defines job satisfaction as "the pleasurable or positive emotional state resulting from the appraisal of one's job experience". According to Cranny, Smith, and Stone (1992, p. 1) job satisfaction is "an affective reaction to the job, that results from the incumbent's comparison of actual

outcomes with those that are desired" or more simply "the extent to which people like their jobs" (Spector, 2000, p. 197). Hoppock and Spiegler (1938, p. 638) address the concept from an integrated perspective and believe "job satisfaction consists of physiological and environmental conditions that encourage employees to admit that they are satisfied or happy with their jobs."

According to a more recent definition, job satisfaction is characterized as "the distinction between the measure of prizes workers get and the sum they trust they ought to get" (Robins & Judge, 2003). Although differently expressed in each definition, it would not be wrong to say that job satisfaction is based on two intertwined factors: cognition (appraisal) and affect (emotional state). Judge et al. (2001) believe thinking and feeling are an integral part of each other and people never give up feeling when they are thinking about their job and also vice versa. Besides these two basic factors, scholars recognize that job satisfaction also comprises some other sub-factors such as pay, supervision, work, promotions, co-workers (Smith, Kendall, & Hulin, 1969), recognitions, working conditions, management, and the company (Locke, 1976) and develop their theories based on suggested facets. Although newly developed frameworks are available (Hagedorn, 2000; Sell & Cleal, 2011; Ncube & Samuel, 2014), extant research heavily relies on old models with minimum modification. Thus, instead of providing an exhaustive list, the most popular theoretical approaches towards job satisfaction and measurement models will be discussed in the following sections.

2.1.1. Theoretical Approaches on Job Satisfaction

Many theories are proposed concerning job satisfaction in the literature. While there are several different theoretical positions on job satisfaction (Weiss & Cropanzano, 1996), Judge et al.'s (2001) classification is followed during the section which separates three main categories: situational (content), dispositional, and interactive theories. These categories may overlap in some ways but basically, focus on different features of job satisfaction. As Grobler et al. (2011) claim no single theory can assess all aspects of job satisfaction, but different perspectives can be gained from each theory. Three different approaches and their most influential examples are described below.

2.1.1.1. Situational (Content) Theories

Theories in this category aim to uncover the needs and motives that push people to behave in certain ways within the organizations. Situational (content) theories are also

known as individual theories since they generally neglect external factors and concentrate on the individual in order to investigate variables that influence their fulfillment (Ćulibrk et al., 2018). To focus on individual differences, situational theories place emphasis on general needs and motives. Although several situational theories are proposed such as Job Characteristics Model (Hackman & Oldham, 1980), theory X and theory Y (McGregor, 1960), achievement motivation theory (McClelland, 1962), Existence, Relatedness and Growth (ERG) Theory (Alderfer, 1972), the most well-known and leading of them are described below.

2.1.1.1.1. Maslow's Hierarchy of Needs

Maslow's (1943) motivational approach is regarded as the foundation for all work motivation theories (Denhardt et al., 2012). The hierarchy of needs theory integrates wholeness of individuals based on five-tier needs which are depicted as hierarchical levels within a pyramid. These needs are categorized under three main headings namely basic needs, psychological needs, and self-fulfillment needs from bottom to upwards, respectively. Basic needs are necessary for physical survival and comprise physical needs (food, water etc.) and safety needs. However psychological and self-fulfillment needs are necessary to become mentally healthy. Psychological needs consist of esteem needs (prestige and feeling of accomplishment) and belongingness (relationships), and self-fulfillment needs are related to achieving purposes in life like career advancement. This theory posits lower-level needs should be satisfied before progressing to the next level, but this hierarchical structure might be flexible based on individual differences or environmental factors (Maslow, 1987). It is strongly stated that “any behavior tends to be determined by several or all of the basic needs simultaneously rather than by only one of them” since behaviors are multi-faceted (Maslow, 1987:71) and today scholars also believe these three levels are continuously overlapping each other (Deckers, 2018).

Based on this theory, job satisfaction is closely related to the fulfillment of needs and total quality of life. A person who managed to reach the top level of the hierarchy is also expected to has high job satisfaction. Although no evidence was discovered in theoretical support for this theory (Clay, 1977; Wahba & Bridwell, 1976), recent studies’ (Nwagwu, 2015; Rahimi, Divsalar, Rezvani, Aramoon, & Pourranjbar, 2016) results reveal a significant and positive relationship between job satisfaction and need accommodation especially regarding with lower levels of the hierarchy.

2.1.1.1.2. Herzberg's Two Factor (Motivation-Hygiene) Theory

According to Herzberg (1966), the main antecedent of job satisfaction is the work itself. (job content and job context). He believes that each job consists of motivators which are related to job content and such as recognition, advancement, promotion, prestige, and achievement and hygienes (maintenance factors) which are related to job contexts such as supervision, salary, and working conditions. The presence of motivators is the triggers of job satisfaction whereas the absence of hygienes is associated with job dissatisfaction.

The abundance of motivational factors helps to make individuals feel valued, increase subjective well-being, and finally feel satisfied with the job. Hygiene factors generally increase external happiness but have not enough power to convert dissatisfaction to satisfaction; however, their presence is still important to understand reasons fall behind job dissatisfaction (Dartey-Baah & Amoako, 2011). Herzberg (2003) believes that the opposite of job satisfaction is not dissatisfaction but, rather, no satisfaction and also vice versa. Thus, motivational factors can not be regarded as the antecedents of job dissatisfaction and hygiene factors can not be representative of job satisfaction (Plate & Stone, 1974). In other words, the absence of motivational factors does not guarantee job dissatisfaction yet the presence of them offers a strong clue about job satisfaction. However, this argument is criticized by Locke et al. (1983) who confirm that hygienes can be associated with job satisfaction as well as motivators with job dissatisfaction. Recent studies also show that hygiene factors affect job satisfaction (Sell & Cleal, 2011; Raziq & Maulabakhsh, 2015). Another shortcoming of Herzberg's two-dimensional paradigm is the lack of empirical evidence (King, 1970), neglecting the individual differences (Hackman & Oldham, 1975), and using respondents only the industrial sector (Bellott & Tutor, 1990; Gawel, 1997). Despite such criticisms, this theory is still considered as a bedrock with its two separate dimensions rather than using a single scale and continuing relevance especially for employees working in an industrial organization (Dartey-Baah & Amoako, 2011).

2.1.1.1.3. Social Information Processing

Herzberg (1966) and Maslow (1943) claim that people have different situational choices which determine their job characteristics and increase their job satisfaction. Salancik and Pfeffer (1978) agree with this idea up to a point but also criticize not to take notice

of neither social influences nor past actions. So, they develop an alternative theory called Social Information Processing (SIP) to explain how people develop job attitudes. The prime axiom of this theory falls behind the fact that individuals are adaptive organisms and needs are the outcomes produced by individuals, themselves. Unlike previously discussed need satisfaction theories, SIP posits that employees can construct their own job satisfaction by means of interpreting their past choices and the social environment because of their dynamic nature (Pollock et al., 2000). SIP focus on social context features as situational cues such as job experience, social expectations, external priming, and information saliency to predict job satisfaction rather than individual predispositions, since people waste much more time thinking about the consequences of their past actions than they plan these actions (Spector, 1992). SIP theory has been started to use immediately after its introduction (Zalensy & Ford, 1990; Thomas & Griffin, 1983) and still popular (Gutworth et al., 2018; Lu et al., 2019) even though suffering from inconsistent results (Pollock et al., 2000).

2.1.1.2. Dispositional (Process) Theories

Unlike situational theories, dispositional theories concentrate on individual behaviors in specific settings. In another saying, situational theorists explain job satisfaction focusing on general needs whereas dispositional researchers emphasize the cognitive process and importance of perceptions, expectations, and values (Ćulibrk et al., 2018). Individual differences such as self-esteem, self-efficacy, locus of control, and neuroticism are considered as core self-evaluations to determine dispositions towards job satisfaction (Judge, Jackson, Shaw, Scott, & Rich, 2007). Three popular dispositional theories are described below.

2.1.1.2.1. Adam's Equity Theory

Equity theory postulates that people are inclined to compare consciously or unconsciously themselves to others who are perceived as similar to oneself and generally perform in the same place (Adams, 1963). Adams (1965) later called another person as "referent" and state that job dissatisfaction arises when there is perceived fairness in comparing effort vs. consequence (Ajzen et al., 2000). To reduce equity, people can act four different ways: (1) distort own or referent's inputs or outcomes, (2) try to change referent's inputs or outcomes, (3) try to change own inputs or outcomes,

and (4) leave the field. It is noted leaving is the last option when equity is very high and unavailable to reduce (Pritchard, 1969).

Equity is a multidimensional construct and depends on the output/input ratio. Inputs consist of education, effort, skills, flexibility, tolerance, certificates, and anything else that puts into the job and contributes to the organization; whereas outcomes include payment, career opportunities, training, job security which are expected to receive from. However, some researchers put the idea that outputs may be more determinant than inputs. Dugguh and Dennis (2014) state, payment is the major concern of inequity in most cases. Ball (2014) also agrees with this idea and believes fairly rewarded inputs result in motivation in work. Besides a general consensus about fair treatment creates motivation, there is a lack of research that examines overpayment effects on job satisfaction compare to underpayment (Sauer & Valet, 2013; Sloane & Williams, 1996).

2.1.1.2.2. Vroom's Expectancy Theory of Motivation

Revising Peak's (1955) motivational approach, Vroom (1964) develops Expectancy Theory which tries to reveal the cognitive process of choosing generally in organisational setting. It deals with the question that why people make a specific choice over other alternative options. Vroom lists three perceptions and distinguishes them to explain this behavioral process: expectancy, instrumentality, and valence. Expectancy is the degree of effort puts in and achieved performance. Self-efficacy, perceived control, and difficulty are the factors that affect the expectancy of individuals toward a particular goal. Instrumentality refers to the belief that a person will get a reward if the performance expectation is met. Trust, control, and policies are the determinants of instrumentality. Valence refers to the value a person places on received rewards. To put it simple, expectancy deals with the effort/performance relationship, whereas instrumentality is about performance/outcome, and finally valence is connected to outcome/reward association (Chiang & SooCheong, 2008).

Expectancy theory is multiplicative (Fitzsimmons & Douglas, 2011) which means all three perceptions must have high positive values in order to get high motivation. Thus, although they have a separate effect on motivation, a combination of these perceptions has a more strong effect and even can cause radical changes in someone's life (Estes & Polnick, 2012). Many recent studies test expectancy theory in the domain of job

satisfaction and find significant results (Chou & Pearson, 2012) as well as investigating its theoretical implications and drawbacks (Lloyd & Mertens, 2018; Lunenburg, 2011a).

2.1.1.2.3. Locke and Latham's Goal Setting Theory

Among seventy-three management theories, goal-setting theory (Locke & Latham, 1990, 2002) has become the first in importance (Miner, 2003). This theory is developed inductively within twenty-five year period by incorporating nearly 400 related studies (Locke & Latham, 2006). Results from goal setting depend on task complexity, team goals, feedback, goal framing, and goal complexity (Heslin, Carson, & VandeWalle, 2009; Lunenburg, 2011b) and challenging, achievable, and specific goals cause higher motivation in work (Fried & Slowik, 2004). Apart from the features of goals, there are possible mediator/moderator variables such as self-efficacy, social influences, past performance, organizational vision, passion, tenacity, self-confidence (Baum & Locke, 2004; Donovon & Williams, 2003; Lee, Sheldon, & Turban, 2003), yet the main idea is built on the positive relationship between goal difficulty and performance. From this point of view, DuBrin (2012) compiles eight different recommendations for managers to enhance work motivation when attempt to use goal-setting theory. These are: (1) goals must be specific, (2) goals need to be difficult but attainable, (3) goals should be accepted, (4) feedback must be provided, (5) goals should be used for evaluating the performance, (6) deadline is necessary, (7) learning goal-orientation is more valuable than performance goal-orientation, (8) collaboration is important.

Even though its high external and internal validity, there are few limitations. First, monetary rewards are generally considered as more motivators than difficult goals. Second, this theory ignores the measurement of job performance and focus on a narrow set of performance indicators. Third, setting goals for a new and complex job may not be an effective (Lunenburg, 2011b).

2.1.1.3. Interactive (Person-Environment Fit) Theories

Interactive theories are appeared due to the limitations of situational and dispositional theories and encompass all work motivation features previously suggested. Since these theories aim is to redress the balance between intrinsic and extrinsic factors, they also known as person-environment fit theories. Although situational and dispositional

theories do not contradict each other, their focus are different, so interactive theories aim to close this gap by creating an integrative perspective (Ćulibrk et al., 2018).

2.1.1.3.1. Smith, Kendall and Hulin's Cornell Model

Based on Hulin's (1966) informative findings, Cornell Model is developed to explain different job attitudes in different communities (Hulin, 1991; Hulin, Roznowski, & Hachiya, 1985; Smith et al., 1969). This model makes a comparison of frames of reference (job outcomes) with utilities (job incomes). Frames of reference include working conditions, pay, benefits, and status; whereas utilities are skills, training, time, effort. Unlike its similarity with Adam's (1963) equity theory, Cornell Model focuses on individuals' opportunity costs as well as environmental and economic factors such as local/occupation specific unemployment rate and the number and nature of available job opportunities (Crede et al., 2007; Dalal, 2012). Besides Cornell Model's novel contribution to the theory, it also led to the development of two indexes called Job Descriptive Index and Retirement Descriptive Index to measure job satisfaction and life satisfaction respectively (Judge, Hulin, & Dalal, 2009).

2.1.1.3.2. Locke's Range of Affect Theory

According to Range of Affect Theory (or value-percept model) (Locke, 1976), individual values consist of two attributes: content, which is wanted, and intensity, how much is wanted. The major premise of the theory is that the emotional discrepancy between content and intensity is reflected responses like job satisfaction since this dual value judgment is the result of a cognitive comparison process about have-and-what (McFarlin et al., 1995). The theory further states that the level of satisfaction can not be determined not only by discrepancies but also by the interaction between them and their importance (Wu & Yao, 2006). Importance can be determined by several job-related factors such as remuneration, working conditions, and responsibility (Brandl & Matzler, 2016), or personal factors such as mental effort required, conversation with the boss, and decision-making amount (McFarlin & Rice, 1992). Indeed, many studies support the moderating effect of item importance on job satisfaction when a cognitive comparison between have-and-want is made (McFarlin et al., 1995; McFarlin & Rice, 1992; Rice et al., 1991). Thus, it can be hypothesized that discrepancies predict job satisfaction and the degree of importance of the facet moderates the relationship between them (Wallin, 2002).

2.1.2. Measurement of Job Satisfaction

Defining and understanding the job satisfaction concept within a theoretical perspective is a great effort, but revealing the specific measurement factors to investigate the degree of it is also necessary. Like different theoretical approaches have been developed over the years to understand the nature of job satisfaction, several instruments have been also created to measure it. Basically, these instruments are categorized into two main groups: The first category is represented by one factor (unidimensional/global/affective instruments) and the second category is characterized by more than one factor (multidimensional/facet/cognitive instruments). The former group is generally more parsimonic and aims to measure affective job satisfaction whereas the latter is expected to explain more variance and aim to measure cognitive job satisfaction (Sinval & Marôco, 2020). However, the relationship between affective and cognitive job satisfaction concept has long been debated and there is a lack of consensus regarding specific categorization (Thompson & Phua, 2012). In addition to these two groups, some researchers find it useful to measure job satisfaction with a single item in a specific situation due to its cost-effectiveness. This approach is strongly criticized since using a single-item can cause a fatal error (Wanous & Reichers, 1996). Indeed, there is no gold instrument to assess the degree of job satisfaction (Ironson et al., 1989) due to its time, job, and location sensitiveness (van Saane et al., 2003), and current instruments are generally criticized for two main reasons: (1) noncomparable measures: conceptualizing the concept effectively but measuring it cognitively, (2) ad hoc measures: lacking systematic development and unvalidated measures (Thompson & Phua, 2012). Despite general shortcomings, some job satisfaction instruments are more preferred to use because of their popularity. These are: Job Descriptive Index (Smith et al., 1969), Job Satisfaction Survey (Spector, 1985), Job in General Scale (Ironson et al., 1989), Abridged Job in General Scale (Russell et al., 2004), Index of Job Satisfaction (Brayfield & Rothe, 1951), Job Diagnostic Survey (Hackman & Oldham, 1975), Minnesota Satisfaction Questionnaire (Weiss et al., 1967).

The oldest of these popular instruments is Brayfield and Rothe's (1951) Index of Job Satisfaction (IJS). The original version of it consists of eighteen items represented by a 5-point Likert type and considered as a global job satisfaction measure (Moorman, 1993). Several authors have used the original version of IJS as well as five or six-item abridgment adaptations of it (Ho & Au, 2006; Iverson, 1999; Judge et al., 2000) called

Short Index of Job Satisfaction (SIJS). The cross-national suitability of this instrument is not a stated aim; but recent study results show that SIJS has good validity considering its dimensionality, reliability, and measurement invariance across countries (Sinval & Marôco, 2020). The instrument is also applicable to a wide range of professions (Brayfield & Rothe, 1951). Several studies prove SIJS shows good validity (Jawahar & Liu, 2016, 2017) and reliability (Jabeen et al., 2018; Viljevac et al., 2012) with its parsimonic structure. Last but not least thing about this instrument is its growing popularity. Nearly half of the total 3549 citations received as of June 2020 (based on Google Scholar's results) belong to the after 2013, which plausibly proves its increasing trend.

Despite IJS' global measurement, Weiss et al. (1967) develop a multidimensional Minnesota Satisfaction Questionnaire (MSQ)- a 5-point Likert type scale- to emphasize the different aspects of job satisfaction. The original version of MSQ consists of twenty subscales with a hundred questions whereas its short form consists of twenty questions which of them represent each related dimension in the best manner. MSQ "long-form" contributes a deeper understanding of the phenomena; however MSQ "short form" can be also beneficial for measuring intrinsic and extrinsic job satisfaction factors, separately and distinctly (Hirschfeld, 2000). Even though previous researches find different MSQ factors such as working conditions, responsibility, leadership, and rewards (Mathieu, 1991) or recognition, and social utility (Igalens & Roussel, 1999), the general consensus is that MSQ includes intrinsic and extrinsic factors with its proven validity (Martins & Proença, 2012).

Smith, Kendall, and Hulin's (1969) Job Descriptive Index (JDI) is another multidimensional popular measurement to assess job satisfaction levels. It is developed based on Cornell Model proposed by the same researchers. JDI consists of seventy-two items and focuses on five different facets of job satisfaction namely: work itself, coworkers, pay, promotional opportunities, and satisfaction with supervision. Each facet includes a checklist (agree, disagree, cannot decide) instead of using a Likert type scale. There are number of studies that have been conducted to reveal its validation and reliability (Jung et al., 1986; Yeager, 1981). As a general conclusion, five traditional features of job satisfaction are stable and show reliability and validity (Kinicki et al., 2002). Since now, JDI has been revised three times (Castanheira, 2014) and one of the abridged versions with twenty-five items is proposed (Stanton et al., 2002). In addition

to its revised and abridged versions, two subsequent instruments have been also derived based on original JDI: (1) Ironson et al.'s (1989) Job in General Scale (JIG), (2) Russell et al.'s (2004) Abridged Job in General Scale (AJIG). JIG is a one-factor (global) instrument with its 18 items. Ironson et al. (1989) collect data from more than 10,000 respondents to increase JDI's internal consistency and to demonstrate its validity. Finally, their JIG scale has reached .90 internal consistency with its high external validity. In the following years, Russell et al. (2004) develop another instrument to assess summary feelings about a job with eight-items AJIG scale which is the abridged version of JIG. Although the authors have reported the consistent reliability and validity for AJIG, further examination is needed for its temporal stability (Thompson & Phua, 2012).

Similar to JDI, Job Diagnostic Survey (JDS) is another instrument developed based on a theoretical model called Job Characteristic Model (Hackman & Oldham, 1975, 1980). This instrument measures internal job motivation by means of revealing five intrinsic factors: skills variety, autonomy, task meaningfulness, task identification, and feedback. These five factors influence three critical psychological states: knowledge of outcomes, experiences meaningfulness of the work, and experiences responsibility for outcomes which possibly lead to a job satisfaction degree. The original version of JDS consists of 83 items presented in the form of statements or questions and it takes nearly 20 minutes to complete. The revised JDS -a 7-point Likert type scale- includes fifteen items and much more easy to answer. Although, there is no general consensus about JDS' factor structure (Boonzaaier et al., 2001; Vorster et al., 2005) and its validity (Idaszak et al., 1988); early (Wall et al., 1978) and more recent (Buys et al., 2007; Charalambous et al., 2013) studies manage to prove the validity of the questionnaire.

Job Satisfaction Survey (JSS) (Spector, 1985) is another multidimensional instrument- a 6-point Likert type scale- which includes nine sub-scales: promotion, contingent, co-workers, work itself, rewards, supervision, salary, fringe benefits, and workload with 36-item. Although JSS has been developed for the social service sector, the author argues that it can be also used for other sectors (Spector, 1985). JSS has been insistently used and confirmed by many researches (Astrauskaite et al., 2011; Shahzad & Begum, 2011) and found one of the most reliable instruments among twenty-nine related tools according to their internal consistency, construct validity, and responsiveness (van Saane et al., 2003).

Finally, using a global instrument is useful for this research since the main aim is to get an overall evaluation of satisfaction with the work itself instead of concentrating on the different facets of it. Among the popular global instruments discussed above, the six-item abridgment version of Brayfield and Rothe's (1951) SIJS is used for four main reasons: (1) it provides a simple global indication and parsimony, (2) it is applicable for a wide range of jobs, (3) it is suitable for both managers and employees positions, and (4) its growing popularity in recent years.

2.1.3. National Culture and Job Satisfaction

Employees' job performance (Hampden-Turner & Trompenaars, 1997; Redding, 1990) and job satisfaction (Spector & Wimalasiri, 1986) are affected by national culture. There are many national factors such as economic growth, national wealth, or education level that may affect employees' work performances; however, cross-cultural differences are considered as more powerful determinants than any other factors (Diener & Diener, 1995). For example, it is found that Western country workers are generally motivated by intrinsic factors such as achievement, status, or work itself, whereas their Eastern counterparts are motivated by extrinsic job factors such as salary, fringe benefits, and working environment (Adigun & Stephenson, 1992). Another study's result also shows that mentally challenging jobs increase job satisfaction in individualistic countries, however, the situation is exactly the opposite in collectivistic countries (Nevis, 1983). In addition, to have a desire for challenging tasks, workers in individualistic cultures tend to develop higher-order needs for self-motivated and self-concerned, whereas workers in collectivistic cultures want to feel secure economically and socially and not demand any higher-order needs to satisfied with their jobs (Maslow, 1943; Chiu, 1993). Hence, it is more likely that unusual and challenging tasks lead to job dissatisfaction among collectivistic cultures as it does not in individualistic cultures. Indeed, West European countries (individualistic) are found to have higher job satisfaction level than East European countries (collectivistic) due to the coefficient responses of employees for the formers (Borooah, 2009). Similarly, Huang and Van De Vliert (2004) survey with 129,087 respondents from thirty-nine countries and find job level is positively associated with job satisfaction in individualistic countries but not in collectivist ones. Another study reveals that cultural backgrounds such as paternalism, collectivism, and power distance influence job satisfaction positively and significantly (Yetim & Yetim, 2006).

More recent studies also prove the effect of national culture on job satisfaction. For example, Okpara (2007) investigates the cultural effects on job satisfaction in Nigeria. Data are gathered from IS professionals and results show that national culture and extended family systems significantly and positively affect job satisfaction. Another study is conducted with more than 25,000 respondents from twenty-two nations (Eskildsen et al., 2010). They use European Employee Index as their data source and include national culture as a mediating variable. Their results are interesting because only individualism can not be found any relationship between job satisfaction which is contrary to previous researches. In a similar line, Hauff et al. (2015) examine the certain job characteristics' effects on job satisfaction by conceptualizing national culture as a mediating variable. Taken together, living in a certain culture can direct people working life and affect the perceived importance of different job characteristics on job satisfaction (Warr, 2007). Empirical researches are still inconclusive about the relationship between job satisfaction level and national culture, but there is an obvious association between them. Thus, it is hypothesized that:

H_1: There is an association between national culture and job satisfaction.

2.1.4. Occupational Culture and Job Satisfaction

Being a member of an occupational community and professionalism are the foremost conditions to have an occupational culture. Although, professions may have shared attributes such as a high level of expertise, a set of behavioral norms, formal education etc. (mentioned in Section 1.3.1. in detail), each profession is also required its distinct qualifications. Thus, it is suggested to concentrate on a single occupational group if the aim of the research is related to professional commitment or/and job satisfaction (Kerr, Von Glinow, & Schriesheim, 1977). One of the early studies (Norris & Niebuhr, 1984) is conducted with accounting professionals in U.S., and Kerr et al.'s (1977) occupational culture framework is used. The framework consists of five sub-dimensions namely autonomy, collegial maintenance of standards, ethics, professional commitment, and professional identification. Results indicate a positive relationship between occupational culture and job satisfaction. Another study (Boyt et al., 2001) is sought to examine the role of rewarding professionalism and occupational culture in the U.S. public sector in order to further understanding of job satisfaction. They use Hall's (1968) professionalism framework which includes five constructs namely: autonomy, referent, public, calling, and regulate. In the end, only the autonomy construct is found

to be positively and significantly related to job satisfaction. Their result is consistent with Taylor's (1999) findings which state professional attitude of autonomy strongly affects job satisfaction. Following Boyd et al.'s (2001) job satisfaction model, a similar model is tested in the healthcare field (Hampton & Hampton, 2004) and found a positive relationship between professionalism and job satisfaction. Based on Social Identity theory, Loi, Hang-yue, and Foley (2004), the relationship between professional identity and job satisfaction is tested with salaried lawyers living in Hong-Kong. According to their results, professional identification offers significant contributions to job satisfaction which is weaker for women than for men. Recent studies' results are also parallel with the earlier findings. For example, a regional Indonesian study (Dali & Mas'ud, 2014) examines the effect of professionalism and locus of control on job satisfaction of auditors. It is clearly indicated that professionalism increases job satisfaction.

Taken together, professionalism or more specifically having an occupational culture is considered as a socialization process and has a considerable effect on task dedication which is strongly associated with job satisfaction (Kalbers & Forgarty, 1995; Hampton & Hampton, 2004). Although there are some exceptions (McCue & Gianakis, 1997), several researches conducted in a different setting and different countries show a significant relationship between professionalism and job satisfaction. Therefore, it is hypothesized that;

H_2: There is an association between occupational culture (professionalism) and job satisfaction.

2.1.5. Organizational Culture and Job Satisfaction

As discussed in the previous section, many of the job satisfaction components such as promotion, supervision, salary etc. are closely related to organizational culture. Thus, job satisfaction can be considered as an evaluation of organizational culture and there is a clear relation between them (Kerego & Mthupha, 1997). Early results show that job satisfaction increases in productive organizations (Schneider & Snyder, 1975) and higher job levels (Corbin, 1977). It is also stated that productive small group works causes higher job satisfaction since working in a small group offers to create more efficient outcomes (Deal & Kennedy, 1982). According to a general consensus (Koustelios, 1991), there is an inverse relationship between organizational size and job

satisfaction because it is hard to develop intimate relationships in large workgroups. Indeed, Worthy (1950) believes organizational size is the single most important factor responsible for dissatisfaction. A more recent study's results also show that people generally want to work in adhocratic organizations rather than hierarchic ones where mutual trust, friendly working environment, and informal relationships are welcomed (Dimitrios Belias et al., 2015). The same study also reveals the relationship between organizational culture and job satisfaction. Surprisingly, employees feel more dissatisfied in adhocratic type culture organizations even though the general perception is positive. This contradictory causes by the high salary reduction in adhocratic type organizations throughout a devastating crisis in the country when compared to hierarchic counterparts.

Although there are some exceptions (Arifin, 2015; Lukić et al., 2014; Mufanebadza, 2017) and some contradictory results (Bellou, 2010; Belias et al., 2015), it is largely accepted in the literature that specific types of organizational culture can lead to higher job satisfaction or vice versa. For instance, clan organizational culture has a positive impact on job satisfaction whereas market culture creates dissatisfied employees (El Din & El Ghetany, 2016). Another study also shows a strong positive relation between clan culture and job satisfaction especially regarding with supervision dimension of job satisfaction (Al-Shammari & Al-Am, 2018). As well as clan culture, adhocracy culture is also found as a significant and positive contributor to job satisfaction in another study (Zavyalova & Kucherov, 2010). Interestingly, Shurbagi and Zahari (2012) report a significant positive relationship between job satisfaction and all (clan, market, adhocracy, and hierarchy) types of organizational cultures. In their comparative study, Badawy et al. (2016) find clan culture has the highest correlation with job satisfaction in both Egyptian and Mexican respondents. Abbaspour and Noghreh (2015) also report a relationship between job satisfaction and six organizational culture components namely, leadership, integrity, protection, management, control, identity, reward system.

Taken together, "which culture profile is the best" is a varying situation depends on several factors and there is no single right answer, however a clear relationship between organizational culture and job satisfaction. Thus, it is hypothesized that:

H_3: There is an association between organizational culture and job satisfaction.

2.2. Occupational Commitment

Employee commitment is an umbrella term which includes five types of commitment; (1) work commitment, (2) organizational commitment, (3) job commitment, (4) occupational commitment, and (5) union commitment (Morrow, 1983). Among them, occupational commitment is the one which is mostly investigated but somehow confusing (Randall & Cote, 1991) because it is used interchangeably with professional and career commitment (Mueller, Wallace, & Price, 1992; Lee et al., 2000). However, there are distinct differences between occupational, career, and occupational commitment. First of all, career commitment is very different than the other two since it is an attitude towards to owned career and represented by the degree of career salience rather than a reaction. Professional commitment, however, involves a longer attachment and loyalty to the profession itself. Professional commitment is found overly restrictive because people can develop a sense of identification even if they do not perform a specific job professionally. Although Blau (1985) prefer to use career commitment, the term "occupational commitment" is opted to use throughout this study due to its more global and general extent following with Lee et al. (2000). Some researchers approach the phenomena by investigating different variables, others prefer to focus on the occupation itself (Sears, 2010). Whether taking the former or latter approach, occupational commitment can be described as the "psychological link between an individual and his/her occupation that is based on an affective reaction to that occupation" (Lee et al., p.800). According to a more detailed description, occupational commitment is "the relative strength of identification with and involvement in a particular profession as well as the willingness to exert effort on behalf of the profession and desire to maintain membership in it" (Aranya & Ferris, 1984: p.3). Occupational commitment is closely related with four main assumptions (Nogueras, 2006): (1) holding an important place in a person's life, (2) increasing in parallel with the level of education, (3) having a causal retention in the profession, and (4) organizational change increses occupational commitment.

In order to adapt to the highly dynamic job market, employees focus on their own abilities and their own sake instead of having an emotional attachment to an organization (Chen, Lee, Wu, & Lin, 2010) and not easily give up their occupations. According to Ivtzan, Sorensen, and Halonen (2013), person-occupation relationship (occupational commitment) and person-organization relationship (organizational

commitment) are two distinct terms where the former one represents the job role demands and has more significant importance. Indeed, studies prove that occupational commitment is higher than an organizational commitment for professional employees (May, Korczynski, & Frenkel, 2002; Wang & Armstrong, 2004; Laschinger, Leiter, Day, & Gilin, 2009). Actually, these empirical findings are consistent with Kalleberg and Berg's (1987) "zero-sum" game who admit that increase in one form of commitment results in a decline in another. In other words, professionals are more likely to commit their profession which causes a decrease in the level of their organizational commitment. Thus, understanding the meaning, determinants, and consequences of occupational commitment is important for both academics and human resource practitioners to sustain mutual employee-organization expectations (Cohen & Freund, 2005; Blau, 2006).

Studies generally concentrate on the relationship between occupational commitment and other work commitment constructs where the occupational commitment is represented as an independent variable (Ciftcioglu, 2011; Snape & Redman, 2003; Wang, Tao, Ellenbecker, & Liu, 2012). For example, one of the early studies finds a moderate relationship between occupational commitment and intent to leave from the profession (Meyer et al., 1993). Another study also reports a direct, significant, and positive relationship between occupational commitment and intent to say in the hospitality industry (Caldarola, 2010). An interesting meta-analytical review's results show that low occupational commitment leads to low subjective career success (Ng & Feldman, 2014). Besides work-related outcomes, occupational commitment has also influenced individual contributory factors. For instance, occupational meaningfulness is found significantly correlated with occupational commitment (Dik, Duffy, & Eldridge, 2009; Ivtzan et al., 2013) which plausibly confirms the relationship between work-specific factors and life-related experiences of meaning. Another study reports a significant negative relationship between perceived stress and occupational commitment which means one of the strongest determinants of work-related stress is the level of occupational commitment (Jepson & Forrest, 2006).

Within the scope of the IS field, Mathieu and Zajac (1990) conduct a meta-analysis to reveal the constructs which have a possible effect on occupational commitment and categorize them into two groups. The first group includes general job satisfaction, organizational tenure, job involvement, satisfaction with work itself, satisfaction with

coworkers, and satisfaction with pay which positively affect occupational commitment. The second group consists of three constructs namely job stress, role ambiguity, and role conflict which have a negative impact on occupational commitment. They also discuss age and gender effect, separately. Following this research, Major, Morganson, and Bolen (2013) take attention to the unique features of IT employees. In addition to Mathieu and Zajac's (1990) findings, growth opportunities, job security, job stress, and work-family culture are found related to occupational commitment constructs for IT workers (Major et al., 2013). In-group collectivism and performance orientation are reported as the major contributors to employee commitment for IT people among other organizational culture dimensions (Messner, 2013).

2.2.1. Theoretical Approaches and Measurement of Occupational Commitment

Even though originally developed for organizational commitment measurement (Meyer & Allen, 1991), Meyer, Allen, and Smith (1993) prove the reliability of the Three-Component Model to assess the occupational community. They note three distinguishable commitment types: (1) affective, (2) normative, (3) continuance. They develop an instrument in which each dimension is operationalized as a 6-item scale. The affective commitment represents the coherence between the individual values and required values by the occupation. This type of commitment involves identification and enthusiasm (Snape et al., 2008). In contrast, continuance commitment is based on the cost of things in case he/she leaves the occupation and normative commitment reflects the feeling of obligations. To put it another way, people with strong affective commitment/continuance commitment/normative commitment continue to perform the same occupation since they want to, they need to, and they feel obliged to, respectively (Cetin, 2006).

Although the following researches find empirical support for the three-component model's reliability and generalizability (Irving et al., 1997; Snape, Lo, & Redman, 2008), Blau (2001) state it is still in the early construct measurement stage and researchers should be careful during the adaptation process. In addition, Blau (2001) has a concern about the unidimensional structure of continuance commitment and the discriminant validity of the occupational commitment constructs. Therefore, Blau (2003) proposes a new four-dimensional occupational commitment structure model in which continuance commitment is separated into two distinct constructs; accumulated costs, and limited alternatives. Accumulated costs represent the long-term investments

and emotional costs of leaving the occupation such as continuing education and co-worker friendship, whereas limited alternatives represent the lack of available options for starting a new occupation. Similar with Meyer et al.'s (1993) findings, Blau (2003) also finds consistent correlation between affective and normative occupational commitment. One interesting result is that the strong correlation between normative and accumulated costs is found. It plausibly proves the fact that as people invest to their education, training, or networks, a sense of obligation towards occupation increases. Blau and Holladay (2006) test the discriminant validity of the four-dimensional model and reveal that affective commitment is a stand-alone dimension whereas the other three depend on each other.

At this point, a question that must be answered is that "which aspect of occupational commitment affects which outputs?". Although there is no single right answer to this question, all commitment types should be taken into consideration for a better understanding of the studied phenomena however each of the dimensions represents the distinct side of the commitment. For example, affective commitment is related to positive work involvement factors such as job satisfaction; continuance commitment is related to extrinsic rewards such as status; and normative commitment is related to perceived responsibility for other group members (Meyer, Allen, & Smith, 1993). However, the literature shows inconclusive results. For example, some studies report affective occupational commitment has the highest, significance, and negative relationship on withdrawal intentions when compared to other commitment types (Chen et al., 2010; Meyer et al., 1993; Blau & Holladay, 2006; Yousaf et al., 2015), where the other study finds that only continuance occupational commitment has a significant effect on actual retention (Chang et al., 2015). Cetin (2006) observes that job satisfaction is strongly and positively associated with affective and normative commitment but not for continuance dimension. Even though occupational commitment is generally considered as a booster for work involvement factors, a very interesting result shows that occupational commitment has a positive effect on turnover intentions due to the negative aspects of career development programs (Kim & Chang, 2014).

In this thesis, a general and unidimensional occupational commitment scale developed by Blau (1989) is used since the main aim is not to reveal separate effects of the dimensions or focus on the link between them but rather to evaluate the concept as a whole.

2.2.2. Occupational Commitment and Job Satisfaction

Work commitment constructs such as job involvement, organizational commitment, career salience, workgroup attachment positively affect occupational commitment which results in a lower level of turnover intention and higher performance (Numminen et al., 2016; Snape et al., 2008). However, the relationship between job satisfaction and occupational commitment is more complex since they may affect each other reciprocatively. In other words, there is an ambiguity about the direction of the relationship and causal links in both directions are possible (Cetin, 2006; Satoh et al., 2015; Brooks et al., 2019).

For example, some early studies report job satisfaction has a significant and positive effect on commitment (Bluedorn, 1982; Eby et al., 1999; Johnston et al., 1990), while the others prove that commitment has a strong effect on satisfaction (Bateman & Strasser, 1984; Vandenberg & Lance, 1992). Recent studies also show contradictory results. Several studies admit that job satisfaction is the key factor for occupational commitment (Bakan et al., 2014; Brooks et al., 2015; Satoh et al., 2017), however, there a few studies admit that vice versa is also possible (Saha & Kumar, 2018; Wang et al., 2012).

Even though literature shows inconclusive results on the relationship between job satisfaction and occupational commitment, following the Social Exchange Theory (SET) (Blau, 1964), we assume that job satisfaction effects occupational commitment significantly. This theory is useful to understand reciprocal belifs which can be occurred in different setting such as knowledge sharing activities (Yan et al., 2016), employees-employer relationship (Birtch et al., 2016) as well as employees' work attitudes (Ko & Hur, 2014). SET postulates that reciprocity occurs when individuals fulfill their expectations and correspond to their needs (Birtch, et al., 2016). From this perspective, it is assumed that IT professionals who are satisfied with their jobs are strongly to prone to remain in the same occupation. Thus, it is hypothesized that;

H_4: There is an association between overall job satisfaction and occupational commitment.

2.3. Job Satisfaction According to Different Cultural Layers and Relationship between Occupational Commitment in IS Sector

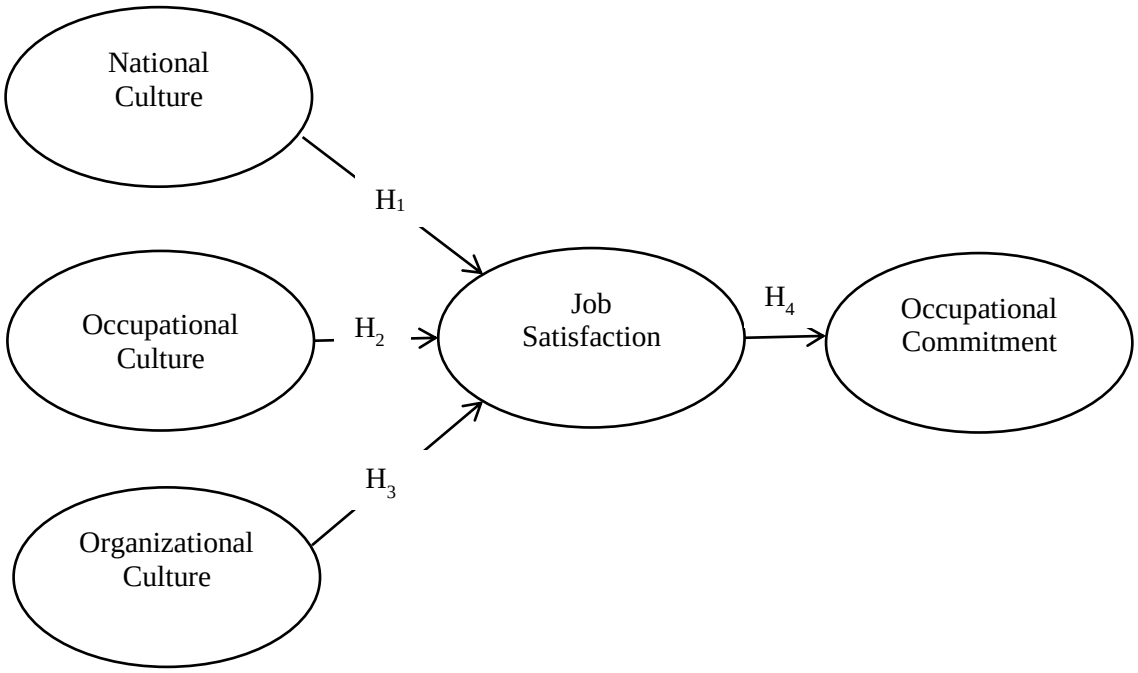
Understanding the job satisfaction concept in the IS field is a salient issue since it has many different impacts on both individual and work-life (Hu et al., 2004). Indeed, job satisfaction is a multi-dimensional phenomenon (Belias & Koustelios, 2014) and much researches have been conducted to describe its dimensions. Both individual aspects (Grant et al., 2007) such as responsibility, sense of achievement, physical and mental health, etc. and work-related aspects (Lange, 2009) such as pay, security, opportunities, etc. may explain the degree of satisfaction with the job. In IS literature, researches generally investigate job satisfaction on an individual level and ignore its broader context like national, organizational, and occupational culture (Lounsbury et al., 2007; Okpara, 2004).

In IS organizational culture literature, early job satisfaction studies have investigated the relationship between task and its impacts on feelings (Hu et al., 2004). For example, high job satisfaction and organizational commitment of IT workers are dependent on suitable career orientations which is more aligned with their job setting (Igbaria & Greenhaus, 1991). Another study conducted with IT managers reports that organizational stress has a negative influence on job satisfaction (Li & Shani, 1991). Similarly, Moore (2000) finds a set of factors related to organizational exhaustion such as role ambiguity, role conflict, lack of rewards, and lack of autonomy decrease job satisfaction. The organizational strategy which is more aligned with performing the job and offers decision power is found significant contributors to IT employees' job satisfaction (Hu et al., 2004). Similarly, supporting organizational cultural factors like perceived organizational support, leader-member exchange (Reid et al., 2008), learning organizational culture (Egan et al., 2004), management support (Galup et al., 2008) are also found significant determinants of job satisfaction. In the same line, Kim (2009) reports a participatory management approach with organizational support are also significant variables affecting the job satisfaction of IT professionals. A more recent study's result show that organizational culture components such as reputation, job enthusiasm, growth opportunities, and fairness have a positive effect on job satisfaction, whereas organizational traits such as aggressiveness have a negative influence on job satisfaction among IT professionals (Sharma, 2017).

National culture and IT job satisfaction are also examined in the literature; however, the majority of studies have been conducted in Western Europe and North America and less is known about Central/Eastern Europe, and Asia (Eyupoglu & Saner, 2009; Lange, 2009). One study reports that IT-Business integration, organization responsibility, organization unit, and organization overview are related to job satisfaction of IT employees in transition economies (Kowal & Roztocki, 2015) and the other notes that organizational culture has an effect on job satisfaction in contrasting economies (Nair et al., 2019). A very recent study called "World IT Project" describes and analyzes organizational, technological, and individual issues of IT employees in the thirty-seven countries (Palvia et al., 2020). It is found that antecedents of job satisfaction differ from country to country. Predictors of job satisfaction are different for countries even though they have some close relations. For example, Yeo et al. (2018) investigate the drivers of job satisfaction among IT workers in the Asian context, particularly in China, Taiwan, and Japan. It is reported that uncertainty avoidance has a significant and positive relationship with job satisfaction whereby higher job satisfaction is determined by higher uncertainty avoidance. In addition, job demographics (job role, job position, experience, industry) are more important determinants than employee demographics (age, gender, education) in Taiwan and China. The effect of organizational culture on job satisfaction also varies across different countries. Nair et al. (2019) conclude that there is a positive relationship between organizational culture and job satisfaction in the Indian IT sector; however, there is no evidence for the U.K. context.

Besides national and organizational culture, IT occupational culture also has a potential impact on job satisfaction which is a relatively new field and a few studies pertaining to this aim. Indeed, IT culture entails unique characteristics such as irregular and longer working hours, unexpected user demands, constantly changing technology which create greater occupational stress than other professional culture and may affect job satisfaction (Moore, 2000; Fu, 2010). Chen (2008) observes professional work activities increase IT employees' job satisfaction as opposed to administrative work. This plausibly explains that IT people have been involved in IT-related tasks but not managerial works and identified themselves with their occupation. An example investigates the role of professionalism upon different job attitudes (intrinsic motivation, job satisfaction, and organizational commitment) as well as job performance and turnover in the IS field (Dinger et al., 2015). Results show a positive

relationship between two dimensions of professionalism namely autonomy and referent (Hall, 1968) and job satisfaction. Another study conducting with IT professionals use a relatively new occupational framework called ASPIRE (Jacks et al., 2018) to test their hypotheses (Sato et al., 2018). In the end, each dimension of ASPIRE (Autonomy in decision-making, Structure in the environment, Precision in communication, Innovation in technology, Reverence for technical knowledge, Enjoyment at the workplace) alone does not have an effect on job satisfaction; however, ASPIRE as a whole has a significant and positive effect on it.



H_1: There is an association between national culture and job satisfaction.
H_2: There is an association between occupational culture and job satisfaction.
H_3: There is an association between organizational culture and job satisfaction.
H_4: There is an association between overall job satisfaction and occupational commitment.

Figure 8: Research Model with Hypotheses

In line with the literature, IS-related studies have reached no consensus about the causal relationship between job satisfaction and occupational commitment (Vandenberg & Lance, 1992; Poon, 2004). An early study proposes that occupational commitment positively affects job satisfaction (Fu, 2010), however, the majority of the researches are found job satisfaction is the primary determinant of occupational commitment (Gupta et al., 1992; Brooks et al., 2015; Fu & Chen, 2015). We have also followed SET

assumptions which offers some clue that job satisfaction is one of the antecedents of occupational commitment. Taken together, based on the theoretical discussions throughout Section 2, the theoretical research model with related hypotheses is shown in Figure 8.

CHAPTER 3: RESEARCH DESIGN

Different authors place different meanings on research design. Some of them believe that research design is all about selecting the appropriate method- qualitative, quantitative, or mixed-, some of them consider that it deals with following the right steps throughout the study (Saunders et al., 2012). According to Creswell (2014), a research design is a framework that is created to find the right answers to the research question and its sub-questions. Research design should capture methods and procedures which are specific to the research problem.

In this section, after the main research question and its sub hypotheses are presented, paradigmatic assumptions of IS literature will be investigated. Then, the appropriate research paradigm for this thesis and its reasons will be discussed. Finally, a research design framework will be presented so as to get a helicopter view for the paths of this thesis.

3.1. Defining Research Problems in IS Field

Garcia and Quek (1997, p. 450) notice the trouble in defining the main research problem of any IS research by stating “Is the object of research in information systems of a technological or social nature? Is it the organization, an information system, or a social system?" Since researches are generally struggling to decide their main research object and research purposes, Galliers and Land (1987) offer a two-dimensional taxonomy (Table 13) to select the right approaches for determining research object and purpose.

Altough Galliers and Land (1987) not clearly states, this framework is created with an interpretative approach (Dobson, 2002) which is one of the two main paradigmatic assumptions. The datil information about other paradigmatic assumptions of the IS field is mentioned in the following sections.

Table 13: A Taxonomy for IS Researches for Different Research Objects and Purposes

	Modes for traditional empirical approaches							**Modes for newer approaches**		
Research Object	**Theorem Proof**	**Laboratory Experiment**	**Field Experiment**	**Case Study**	**Survey**	**Forecasting**	**Simulation**	**Subjective /argumentative**	**Descriptive /interpretative**	**Action Research**
Society	***X***	***X***	***?***	***?***	✓	✓	***?***	✓	✓	***?***
Organization / group	***X***	***?***	✓	✓	✓	✓	✓	✓	✓	✓
Individual	***X***	✓	✓	***?***	***?***	***?***	✓	✓	✓	***?***
Technology	✓	✓	✓	***X***	***?***	✓	✓	***?***	***?***	
Methodology	✓	***X***	✓	✓	✓	***X***	✓	✓	✓	✓
				Research Purpose						
Theory Building	***X***	***X***	***X***	✓	✓	✓	✓	✓	✓	✓
Theory Testing	✓	✓	✓	✓	***?***	***X***	***?***	***X***	***?***	✓
Theory Extension	***?***	***?***	***?***	***?***	***?***	***X***	***X***	***X***	***?***	***?***

Source: Galliers, R. D., & Land, F. F. (1987). Choosing Appropriate Information Systems Research Methodologies. *Communications of the ACM*, *30*(11), 901–902.

3.1.1. Research Problem of Current Study

This study focuses on the impact of culture on job satisfaction among IT employees. Within this scope, the main research question is: "which of the three cultural levels – national, organizational, and occupational- has the most impact on IT employees' job satisfaction?" To answer the main research question, six sub-questions should be investigated:

1-) Does an occupational community for IT employees (ITOC) exist in Turkey? (Chapter 4-Part I)

2-) What are the core cultural values of ITOC? (Chapter 4-Part II)

3-) What are the measurable items of ITOC's cultural values? (Chapter 5-Part I)

4-) Is there an association between national culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 1)

5-) Is there an association between organizational culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 2)

6-) Is there an association between occupational culture and IT employees' overall job satisfaction? (Chapter 5-Part II, Hypothesis 3)

In addition to these six sub-questions, the relationship between overall job satisfaction and occupational commitment (Hypothesis 4) is also investigated since there is no consensus about the causal relationship between job satisfaction and occupational commitment in IS literature.

Consequently, regarding the main research question and its sub-questions, the main aim of this thesis is to develop a reliable and valid research model in order to reveal the impact of different cultural layers on IT employees' job satisfaction. To achieve this goal; (1) dimensions of IT occupational culture are identified because unlike national and organizational culture, there is no valid instrument for IT occupational culture, (2) identified dimensions are associated with the previously suggested occupational cultural models, (3) each dimension is represented with measurable items, (4) a research model is proposed, (5) proposed research model is analyzed with obtained data and results are interpreted.

3.2. Paradigmatic Assumptions of IS Literature

There have always been debates about the IS field itself since it is interpreted quite differently by different schools (Vessey et al., 2002). According to the FRISCO report (Falkenberg, Hesse, & Lindgreen, 1998), IS can be referred to as a technical system a social system, or a conceptual system. IS' interdisciplinary nature, variety of topics, and methodological pluralism cause some doubts about its scientific merit and its future (Avgerou, 2000) and researchers have made calls for making stable and universally-accepted paradigm foundation (Adam & Fitzgerald, 1996; Falkenberg, Hesse, & Olive, 1995).

The paradigm consists of "assumptions about knowledge and how to acquire it, and about the physical and social world" (Kuhn, 1970 p.46-47). The term paradigm and its frameworks have been a controversial concept regarding where the study's assumptions basically stand for: natural (traditional) sciences (Kuhn, 1970) or social sciences (Burrell & Morgan, 1979). It is stated that IS researches typically focus on society, individuals, and organizations which are closer to the theories in social science rather than national science (Iivari et al., 1998). Nevertheless, IS literature suffers from the inadequacy of a monistic view of paradigms (Banville & Landry, 1989). For over years, there have been several attempts to develop a framework for paradigmatic assumptions of IS (Fitzgerald & Howcroft, 1998b; Hirschheim, Klein, & Lyytinen, 1995; Iivari, 1991; Iivari, Hirschheim, & Klein, 2000; Weber, 1997) which includes different but somehow not incompatible dichotomies (Table 14). For example, Fitzgerald and Howcroft (1998b) discuss the ethical position of studies by means of their relevance vs rigor, however, Iivari (1991) considers the role of IS science and values of IS research via means-end, interpretive, and critical approaches. Likewise, the former researchers distinguish research methodologies into five different types with two-tier dichotomies which can be seen in Table 14, whereas Iivari (1991) takes a more abstract approach and categorizes the methodologies into three groups: (1) constructive methods (conceptual vs. technical development), (2) nomothetic methods (mathematical analysis, experiments, vs. field studies/surveys), and (3) idiographic methods (case studies vs. action research).

Table 14: Different Frameworks for IS Paradigmatic Assumptions

Author	Criteria	IS Research Paradigms
Burrel & Morgan (1979)	Ontology, Epistemology, and Methodology	Functionalism, interpretivism, radical humanism, and radical structuralism
Lee (1991)	Ontology, Epistemology	Positivism, interpretivism
Iivari (1991)	Ontology, Epistemology, Methodology, and Ethic	Realism, nominalism
Fitzgerald & Howcroft (1998)	Ontology, Epistemology, Methodology, and Ethic	Positivism, interpretivism
Monod (2003)	Epistemology (a) object of knowledge, Epistemology (b) origin of knowledge	Diverse IS research paradigms and philosophical trends, e.g. functionalism, constructivism, critical realism
(Weber, 2004)	Diverse. Including e.g. ontology, epistemology, research object, method, the theory of truth, etc.	Positivism, interpretivism

Source: Becker, J., & Niehaves, B. (2007). Epistemological perspectives on IS research: A framework for analyzing and systematizing epistemological assumptions. *Information Systems Journal*, *17*(2), 197–214.

These discrepancies are caused by the different worldviews of seven IS schools' (Iivari, 1991). These are (1) software engineering, (2) database management, (3) management information systems, (4) decision support systems, (5) implementation research, (6) sociotechnical approach, and (7) infological approach. Even though different frameworks emphasize different dichotomies, their theoretical underpinnings are very similar and can be divided into 4 levels: (1) ontological level ("what is assumed to exist?"), (2) epistemological level ("what is knowledge and how it is acquired?"), (3) methodological level ("what are the preferred research methods to investigate research problem?"), and (4) axiological level or ethics ("what are the values that ought to guide?"). These four worldviews are sequential and determine the theoretical position of the researcher which shapes the rest of the study (Crotty, 1998). Indeed, it is stated that ontology and epistemology have interacted. Archer (1995:28) believes "an ontology without a methodology is deaf and dumb; a methodology without an ontology is blind." Table 15 summarizes the paradigmatic dichotomies for each level following with Fitzgerald and Howcroft's (1998) framework. Among several suggested frameworks (Table 14), Fitzgerald and Howcroft's is the one which is more useful to understand the paradigmatic assumptions of IS researches since interpretivism is considered as the only real alternative paradigm in the IS field where positivism dominates the related literature (Trauth & Jessup, 2000).

Table 15: Summary of IS paradigmatic assumptions

INTERPRETIVIST (SOFT) PARADIGM'S ASSUMPTIONS	POSITIVIST (HARD) PARADIGM'S ASSUMPTIONS
Main aim: Generalizability	Main aim: In-depth understanding
ONTOLOGICAL LEVEL	
Relativist: Belief that multiple realities exist as subjective constructions of the mind. Socially-transmitted terms direct how reality is perceived and this will vary across different languages and cultures.	**Realist:** Belief that the external world consists of pre-existing hard, tangible structures, which exists independently of an individual's cognition.
EPISTOMOLOGICAL LEVEL	
Interpretivist: No universal truth. Understand and interpret from research's own frame of reference. Uncommitted neutrality is impossible. The realism of context important.	**Positivist:** Belief that the world conforms to fixed laws of causation Complexity can be tackled by reductionism. Emphasis on objectivity, measurement, and repeatability.
Subjectivist: Distinction between the researcher and the research situation is collapsed. Research findings emerge from the interaction between researcher and research situation, and the values and beliefs of the researcher are central mediators.	**Objectivist:** Both possible and essential that the researcher remain detached from the research situation. Neutral observation of reality must take place in the absence of any contaminating values or biases on the part of the researcher.
Emic/Insider/Subjective: Origins in anthropology. Research orientation centers on native/insider's view, with the latter viewed as an appropriate judge of the adequacy of research	**Etic/Outsider/Objective:** Origins in anthropology. Research orientation of outside researcher who is seen as objective and the appropriate analyst of research.
METHODOLOGICAL LEVEL	
Qualitative: Determining what things exist rather than how many there. Thick description. Less structured and more responsive to the needs and nature of the research situation.	**Quantitative:** Use of mathematical and statistical techniques to identify facts and causal relationships. Samples can be larger and more representative. Results can be generalized to larger populations within known limits of error.
Exploratory: Concerned with discovering patterns in research data and to explain/understand them. Lays a basic descriptive foundation.	**Confirmatory:** Concerned with hypothesis testing and theory verification. Tends to follow positivist, quantitative modes of research.
Induction: Begins with specific instances that are used to arrive at overall generalizations which can be expected on the balance of probability. New evidence may cause conclusions to be revised. Criticized by many philosophers of science but plays an important role in theory/hypothesis conception.	**Deduction:** Uses general results to ascribe properties to specific instances. An argument is valid if it is impossible for the conclusions to be false if the premises are true. Associated with theory verification/falsification and hypothesis testing.
Field: Emphasis on the realism of context in a natural situation, but precision in the control of variables and behavior measurement cannot be achieved.	**Laboratory:** Precise measurement and control of variables, but at expense of naturalness of situation, since real-world intensity and variation may not be achievable.
Idiographic: Individual-centred perspective which uses naturalistic contexts and qualitative methods to recognize unique experience of the subject.	**Nomothetic:** Group-centred perspective using controlled environments and quantitative methods to establish general laws.
AXIOLOGICAL LEVEL	
Relevance: External validity of actual research question and its relevance to practice is emphasized, rather than constraining the focus to that researchable by 'rigorous' method	**Rigour:** Research characterized by hypothetico-deductive testing according to the positivist paradigm, with emphasis on internal validity through tight experimental control and quantitative techniques

Source: Fitzgerald, B., & Howcroft, D. (1998b). Towards dissolution of the IS research debate: From polarization to polarity. *Journal of Information Technology*, *13*(4), 313–326.

The majority of IS studies have been characterized by the dominance of the positivist philosophical position (Goles & Hirschheim, 2000; Mingers, 2004; Orlikowski & Baroudi, 1991) and the emergence of the interpretivist approach remains weaker (Walsham, 1995). Researchers are reluctant to adopt the interpretivist approach since it is more time consuming and the reward of the publication is less. However, the hegemony of the positivist paradigm has been criticized by several IS researchers who claim that interpretivism can be served as superior when it takes a role before the statistical analysis is conducted (Chen & Hirschheim, 2004; Trauth & O'Connor, 1991).

Certainly, each paradigm has its own strengths and weaknesses and there is no universal truth. Unlike Burrell and Morgan's (1979) "mutually-exclusive opposites" approach, some researchers defend a more ecumenical position and argue that these paradigms should not be accepted as mutually exclusive (Kaplan & Duchon, 1988). To the resolution of this ongoing debate, four different strategies are proposed by (Fitzgerald & Howcroft, 1998a): (1) Isolationist, (2) Supremacy, (3) Integration, (4) Pluralist. The following section will address the philosophical position of this thesis guidance with this framework.

3.2.1. Paradigmatic Assumptions of Current Study

In line with Orlikowski and Baroudi's (1991) claim, it is believed that using a single research perspective in the field of IS is unnecessarily restrictive. The main philosophical foundation of this thesis lies behind the idea that (Fitzgerald & Howcroft, 1998a, p.13) "World is best characterized by an interpretivist view, however when it comes to the stage of communicating, cultural, and behavioral issues, the research process becomes inherently positivist." Thus, this thesis follows a pluralist strategy-also called multiple paradigms- by combining two different worldviews- interpretivism (qualitative research methods in Section 4) and positivism (quantitative research methods in Section 5)- in one research setting. Even though some researchers (Zachariadis et al., 2010) call this hybrid approach as "critical realism paradigm", it is not yet legitimately accepted in IS literature (Hirschheim & Klein, 2003).

With the lens of pluralism, this study combines qualitative and quantitative methods which are considered as a mixed-method approach. Thus, the rest of this section is dedicated to discussing the mixed method specifically for IS literature.

3.3. Mixed Method Approach in IS

Although the mixed method is interchangeably used with multiple methods, there are significant differences between them (Tashakkori & Teddlie, 1998). The mixed-method refers to the strategy where the researchers combine qualitative and quantitative procedures whereas multi-method combines qualitative or quantitative procedures. In other words, mixed-method utilizes more than one worldview or paradigm and logically combines them. However, multimethod refers to the strategy where the researchers employ more than one research method (qualitative or quantitative) but can be restricted by a single worldview.

Typically, a mixed methods research is defined as (Tashakkori & Creswell, 2007, p.4) "research in which the investigator collects and analyzes data, integrates the findings, and draw inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry." Creswell and Plano Clark (2011) identify the core characteristics of mixed methods researches. In mixed methods, the researcher:

- collects and analyzes persuasively and rigorously both qualitative and quantitative data;
- mixes (or integrates or links) the two forms of data concurrently by combining them (or merging them), sequentially by having one build on the other hand, or embedding one within the other;
- gives priority to one or to both forms of data;
- uses these procedures in a single study or in multiple phases of a program of study;
- frames these procedures within philosophical worldviews and theoretical lenses; and,
- combines the procedures into specific research designs that direct the plan for conducting the study.

In IS literature, using mixed methods has been long recommended as an appropriate strategy (Landry & Banville, 1992); however, there have been some doubts about combining qualitative and quantitative methods properly and productively (Benbasat et al., 1987). Due to these concerns, it is reported a lack of mixed-method researches in the IS field (Mingers, 2003). The main reasons for this scarcity can be grouped into four

main categories (Mingers, 2001): (1) cultural barriers[5], (2) psychological feasibility, (3) practical problems, and (4) philosophical issues. Nonetheless, there has been an ongoing call for mixed methods research design in which its value is strongly emphasized (Venkatesh et al., 2013). Both early and recent studies encourage IS researchers to the thoughtful use of mixed methods. For example, Caplan and Duchon (1988, p.582) state: "mixed methods can lead to new insights and modes of analysis that are unlikely to occur if one method is used alone." Similarly, Venkatesh et al. (2013, p.24) claim that: "proponents of mixed methods research appreciate the value of both quantitative and qualitative worldviews to develop a deep understanding of a phenomenon interest." Johnson and Turner (2003, p.300) agree with their counterparts and report: "mixed method research can leverage the complementary strengths…, and offer great insights on a phenomenon that each of these methods individually cannot offer." According to Teddlie and Tashakkori (2009), the main strength of the mixed methods design comes from its ability to address confirmatory and exploratory research questions simultaneously and to provide more holistic inferences.

Although a proper design in mixed methods allows many advantages, there are three main challenges (Creswell & Plano Clark, 2011). First, the researcher should be familiar with a combination of qualitative and quantitative techniques before conducted a mixed approach study. Thus, the researcher should be aware of at least the essentials issues of both qualitative and quantitative methods. Second, the researcher should plan their schedule in detail because mixed-method studies require extensive time, resources, and effort. Third, as discussed earlier, mixed methods researches are based on a 'pluralism' which is relatively new and not easily accepted as a rigorous approach by the others who are so ensconced in their traditional approaches.

3.3.1. Appropriateness of Mixed Method Approach

Mixed methods design strategies provide a powerful mechanism for IS researchers, but it is not the answer for every researcher or research problem. Unlike disagreements regarding the properties of mixed methods research (discussed in the following section), there is a consistency about how and why researchers should choose a mixed-method approach (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2003, 2009;

[5] Interpretative (qualitative) researches are usually dominated by European IS researchers; whereas positivism (quantitative) approach is more likely to be preferred by American employees (Petter & Gallivan, 2004).

Venkatesh et al., 2013). A general view is that the suitability of the mixed methods approach is based on the research questions, purposes, and context.

Creswell and Plano Clark (2011) summarize the reasons when it is proper to choose a mixed-method approach. These are: “a need exists because one data source may be insufficient”, “a need exists to explain initial results”, “a need exists to generalize exploratory findings”, “a need exists to enhance a study with a second method”, a need exists to best employ a theoretical stance”, “a need exists to understand a research objective through multiple research phases”. Besides these arguments, Venkatesh et al. (2013) call the IS researchers to employ a mixed-method approach if only they intend to get a holistic view of a phenomenon for which related researches are fragmented and equivocal.

3.3.2. Properties of Mixed Methods Research

The way of combining qualitative and quantitative research methods may differ from study to study. Basically, there are three types of typology: researchers can use different methods (1) concurrently (qualitative and quantitative methods are independent), (2) sequentially (qualitative and quantitative methods are dependent and inform each other), or (3) in parallel (Petter & Gallivan, 2004) for seven different purposes: (1) triangulation, (2) complementarity, (3) developmental, (4) completeness, (5) expansion, (6) compensation, and (7) diversity (Greene et al., 1989; Venkatesh et al., 2013).

Triangulation or corroboration refers to collecting and analyzing different data simultaneously and independently for the same phenomenon and wants to be sure about the convergence of the results. Complementarity or elaboration aims to gain complimentary views about the same phenomena. Complementarity researches can be conducted in either sequential or parallel. Compensation uses the strengths of one method to enhance the efficacy of the other method in order to gain new perspectives. Developmental aims to shape the primary study with the help of other supportive studies and generally conducted sequentially. Creating a questionnaire via interviews’ results is a good example of development researches. Diversity focuses on uncovering contradictions for a new phenomenon and reframing the original research problem. The expansion aims to extend the scope of the study in order to have a more comprehensive solution or insight into the problem. Completeness is used to make a complete picture of a studied phenomenon. At this point, it should be stated that these purposes are not

mutually exclusive (Petter & Gallivan, 2004; Venkatesh et al., 2013). A study may fit two different purposes; however, one category is expected to be dominant according to the research problem. In addition to these seven purposes (Venkatesh et al., 2003), there are some other purposes of mixed methods researches such as adding to the knowledge base, predicting, measuring change, having a personal social, institutional, and/or organizational impact, understanding complex phenomena, generating and testing new ideas, examining the past and informing constituencies (Newman et al., 2003).

Based on different typologies and purposes discussed above, Creswell and Plano Clark (2011) suggest six different research designs for mixed methods research. These are (1) convergent parallel design, (2) explanatory sequential design, (3) exploratory sequential design, (4) embedded design, (5) transformative design, and (6) multiple design.

1-) Convergent parallel design: This research design is preferred when the research uses qualitative and quantitative methods concurrently during the same phase of the study. In this design, there is no priority between methods, and results are combined as an overall interpretation.

2-) Explanatory sequential design: This research design starts with the collection and analysis of quantitative data which is considered as the priority method. This first phase is followed by subsequent collection and analysis of qualitative data. The researcher aims to explain the quantitative study's results via qualitative findings.

3-) Exploratory sequential design: In contrast to explanatory design, this design prioritizes the qualitative methods and begins with the collection and analysis of the qualitative data. The researcher aims to test or generalize the qualitative findings with the help of quantitative methods.

4-) Embedded design: In this design, the researcher adds a qualitative strand within a quantitative design or vice versa. The main aim is enhancing the overall design and it occurs either sequential or concurrent way.

5-) Transformative design: Decisions about research design (time, priority, interaction, etc.) is based on the researcher's theoretical framework. The researcher uses a theoretical lens as an overarching perspective.

6-) Multiphase design: This design is preferred when the qualitative and quantitative studies are parts of a research program and combines both sequential and concurrent timing.

In order to put together, different approaches regarding the utility, design strategy and inference decisions in mixed methods research, Venkatesh et al. (2016) propose a guideline. Table 16 provides the lists of properties and their possible dimensions which helps researchers to identify their studies through the lens of mixed methods designs.

Table 16: Properties of Mixed Methods Research

Property of mixed-methods research	Design question addressed by the property	Possible dimensions
Foundations of design decisions		
Research questions	How will the researcher write the research questions?	• Rhetorical style-format: questions, aims, and/or hypotheses* • Rhetorical style-level of integration • The relationship of questions to other questions: independent* or dependent • The relationship of questions to the research process: predetermined* or emergent
Purposes of mixed-methods research	Which of the following purposes does the research design serve?	• Complementarity/elaboration • Completeness • Developmental* • Expansion • Triangulation/corroboration • Compensation • Diversity
Epistemological perspectives	Does the study involve paradigm or multiple paradigm stances?	• Single paradigm stance • Multiple paradigm stance*
Paradigmatic assumptions	What paradigmatic perspective will guide the research design?	• Pragmatism • Critical realism • Positivism* • Interpretivism* • Other major paradigmatic perspectives
Primary design strategies		
Design-investigation strategies	Does the study develop or test a theory?	• Exploratory investigation* • Confirmatory investigation*
Strands/phases of research	Does the study involve one or multiple phases?	• Single-phase or monostrand design* • Multiple phases or multistrand design
Mixing strategies	Does the design involve using both qualitative and quantitative research across all components of a study?	• Fully mixed methods • Partially mixed-methods*
	Do the quantitative and	

Time orientation	qualitative data collection occur sequentially or concurrently?	• Sequential design* • Concurrent design
Priority of methodological approach	Does the qualitative or quantitative component have priority or are they equally important?	• Equivalent status design • Dominant-less dominant design*
Sampling design strategies	Which of the following sampling designs does the researcher use in the data collection stage?	• Basic mixed-methods sampling strategies • Sequential mixed-methods sampling* • Concurrent mixed-methods sampling • Multiple mixed-methods sampling strategies
Data collection strategies	What are the best strategies to collect quantitative and qualitative data?	• Multiple modes of data collection*
Data analysis strategies	How does the researcher analyze qualitative and quantitative data?	• Concurrent mixed analysis • Sequential qualitative-quantitative analysis* • Sequential quantitative-qualitative analysis
Inference decisions		
Types of reasoning	Will a particular theoretical perspective drive the design?	• Inductive theoretical reasoning • Deductive theoretical reasoning • Inductive and deductive theoretical reasoning* • Abductive theoretical reasoning
Inference quality	Which quality issues does the researcher address in the study?	• Design and explanatory quality* • Sample integration* • Inside-outside • Weakness minimization • Conversion • Paradigmatic mixing* • Commensurability • Multiple validities • Political

* represents the properties which belong to the current study's stance
Source: Venkatesh, Viswanath, Brown, S. A., & Sullivan, Y. W. (2016). Guidelines for conducting mixed-methods research: An extension and illustration. *Journal of the Association for Information Systems*, *17*(7), 435–495.

3.3.3. Properties of the Current Study

Considering the foundations of designs; the current study has one main *research question* however sub-research questions are structured as independent and predetermined hypotheses which are theoretically discussed in Chapter 2 and briefly stated at the beginning of Chapter 3. The *main purpose* of the current study is developmental since the researcher has proposed research questions and tested them in the next stage. This study involves *multiple paradigm stance*: *positivism* is represented by the quantitative phase and *interpretivism* is represented by the qualitative phase.

Considering primary design strategies; the current study has a *monostrand* design since it involves only a single phase and not a part of a broader research program. The main aim is to test suggested hypotheses and *confirmatory* in nature; however, the qualitative phase of the study is shaped by CGT which is considered as an *exploratory* approach. This study is based on a *partially mixed design* since the qualitative and quantitative methods are mixed at specific stages. As discusses by Creswell and Plano Clark (2011), this study is located under the category of "*exploratory sequential design*" which means are qualitative method dominates and shapes the next quantitative level and they are chronologically conducted.

Considering inference decisions; the current study consists of both *inductive and deductive theoretical reasoning*. In the first part, the qualitative phase lies in the Constructivist Grounded Theory approach which is considered as inductive reasoning; however, the second part, the quantitative phase aims to test hypotheses and generalize the findings which are considered as deductive theoretical reasoning. Finally, this study addresses three inference qualities: (1) *design and explanatory quality* by means of proposing and testing a research model, (2) *sample integration* by generalizing findings with the participation of a considerable amount of IT professionals, and (3) *paradigmatic mixing* by combining positivist and interpretivist approaches into a usable package.

3.3.4. Research Design of the Current Study

As previously discussed, this study is located under the category of exploratory sequential design. Creswell and Plano Clark (2011) suggest six conditions to use exploratory sequential design and four of them match up with the aim of the current study. These are:

- "The exploratory design is useful when the researcher wants to generalize, assess, or test qualitative exploratory results." Considering this study, after investigated the dimensions of ITOC via qualitative methods, the researcher wants to test if ITOC values have an impact on job satisfaction or not via quantitative methods.
- "The research problem is more qualitatively oriented." Considering this study, the main is to determine which cultural level has the most impact on the job

satisfaction of IT professionals. To answer this question, the first thing to do is revealing the ITOC values which are required to conduct qualitative methods.

- "The researcher has the time to conduct the research in two phases." Considering this study, the researcher has enough time to conduct this study.
- "The researcher does not know what constructs are important to study, and relevant quantitative instruments not available." Considering this study, there is no generally accepted instrument for ITOC, so the researcher has developed one in the light of qualitative findings and an expert panel.

The other suggested but not relevant considerations are below:

- "The researcher has limited resources and needs a design where only one type of data is being collected and analyzed at a time." It is not a relevant condition since there is no lack of resources.
- "The researcher identifies new emergent research questions based on qualitative results that cannot be answered with qualitative data." This condition is not relevant because the current study has predetermined research questions.

This design type starts with the collection and analysis of quantitative data (Phase 1) and followed by quantitative data collection and analysis (Phase 2) which builds on Phase 1. This sequential flow well fits the current study's research design shown in Figure 9.

3.3.4.1. Data Collection and Analysis Methods of the Current Study

Exploratory sequential design starts with the quantitative data collection. To prove the existence of ITOC and to investigate its core values, semi-structured interviews were selected as the most appropriate method. Indeed, Schein (1999) recommends conducting interviews to collect data about values, and Albrechtsen (2007) remarks that interviews are useful methods for unveiling the experience of people During 3 months, 11 interviews were employed with IT professionals who are experienced at least 10 years. Interviews took 34-72 minutes each.

Throughout the qualitative phase, Charmaz's (2006) Constructivist Grounded Theory approach (initial open coding, focused coding, theoretical coding) was utilized via the QDA Miner software program. Recorded interview data were transcribed into text

format and analyzed with the help of the program in order to categorize ITOC values. At this point, it should be noted that the chosen program serves as a tool for a proper design of the grounded theory approach. QDA Miner qualitative data analysis software package is used for the coding process. Although there are other computer-assisted qualitative data analysis (CAQDAS) programs such as NVivo, Dedoose, or MAXQDA, there are three main reasons to choose QDAMiner (LaPan, 2013). First, in addition to content analysis, it offers to calculate the frequencies of text contents which is critical to reveal the "hot topics" in the interviews. Second, it is easy to use and faster. Third, it offers a unique feature with its report-generating process which is served as a navigative tool for researchers. It should be also stated that QDA Miner is suitable to conduct both qualitative and quantitive analysis, even though the quantitative part of this thesis is dedicated to another approach.

After revealing twelve ITOC values, two of them (egoism and elaborateness) were excluded from the study because they refer to the type of personal character rather than the dimension of an OcC (occupational culture). For the rest of the ten values, seventy-four measurable items (Table 26) were compiled from the literature and interviews. To select the best representative items for each category, an expert panel with six participants was conducted. In the end, OcC was represented with ten measurable ITOC items (each category consists of two best representative items). However, OcC has a formative structure which means there has to be only one question for each category. Thus, after the pilot test, ten ITOC items were selected based on the expert panel results (Appendix A2) and literature suggested quality criteria (Table 29). Finally, a survey instrument was developed which consists of one formative (OcC) with ten questions and four reflective (JS, OC, NC, and OrC) constructs with sixty-three questions and nine demographic questions (Appendix A3). The survey instrument was approved by the Sakarya University ethics committee (Appendix C). All the ethical committee members have reached a consensus on the ethical suitability of the related survey. All participants have been informed about the study and the procedures have been carried out according to the Helsinki Declaration.

After getting ethical approval, a pilot test was conducted with 89 IT professionals. To calculate descriptive statistics for demographic questions, SPSS v.25 was used. To test

the research model, Partial Least Squares Structural Equation Modeling (PLS-SEM)[6] approach was chosen rather than CB-SEM since the suggested research model is complex and consists of one formatively measured construct (Rigdon et al., 2017). PLS-SEM techniques have many advantages like simultaneous equations, tolerance of badly-behaved distributions, exploratory capabilities in the absence of theory reduced computational power demand, robustness to small sample sizes (Mcintosh et al., 2014). To perform the PLS-SEM algorithm, the SmartPLS software program was used because its calculation approach relies on factors scores, not covariance matrices which well fits with PLS-SEM. The bootstrapping technique was also utilized to reveal the reject or accept the decision of the hypotheses.

[6] There is also another approach called Covariance-based structural equation modeling (CB-SEM) which is suggested to used when the research model has circular relationships and error terms require additional specification.

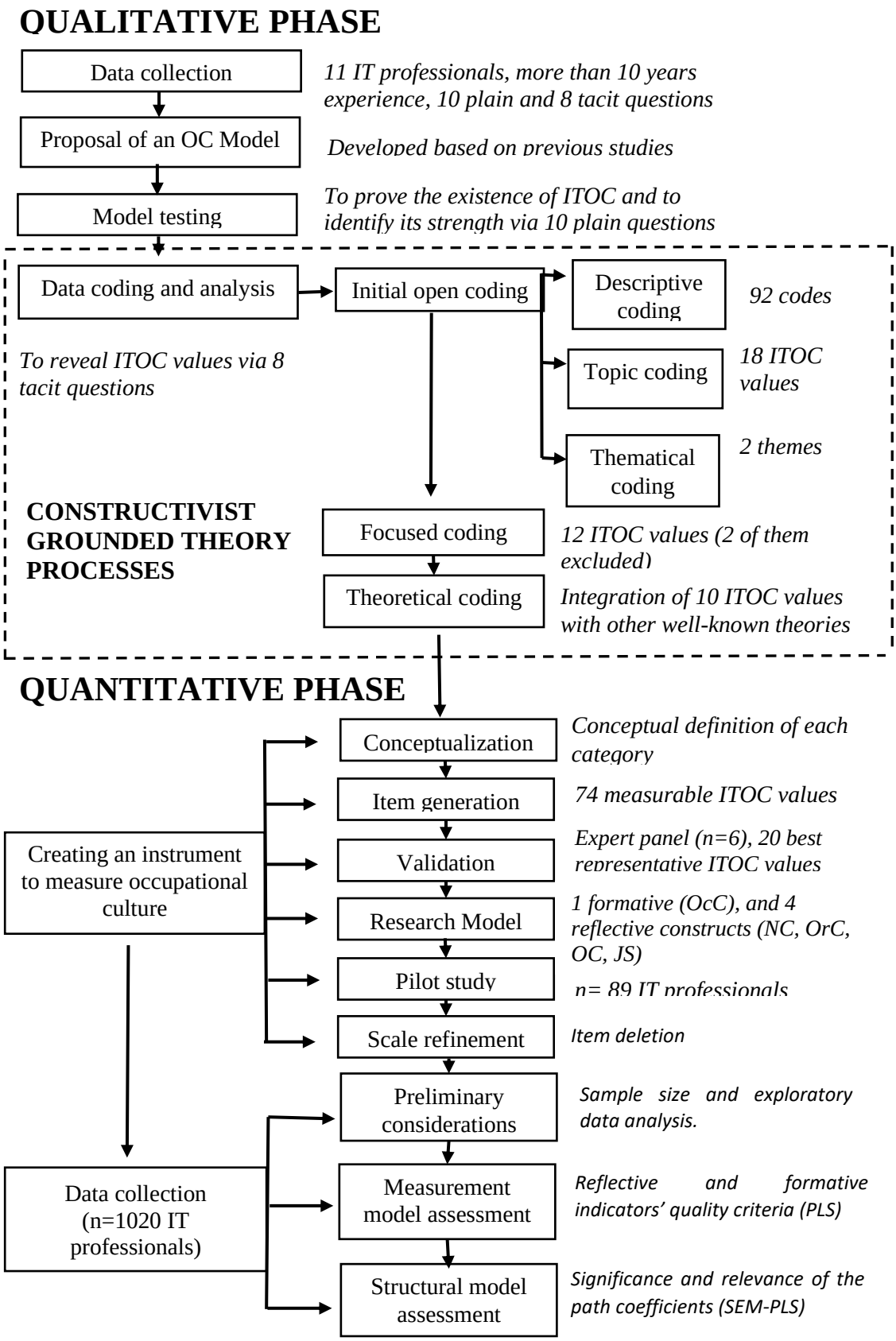


Figure 9: Research Design

Source: Developed based on Creswell & Plano Clark, 2011; Mackenzie et al. 2011; Hair et al., 2019.

CHAPTER 4: QUALITATIVE PHASE

"All research is interpretive; it is guided by the researcher's set of beliefs and feelings about the world and how it should be understood and studied."

Denzin & Lincoln, 2005:22

Literature generally emphasized the importance of conducting qualitative studies if the aim of the study is to understand the social and cultural context of individuals (Guzman et al., 2008). Creswell (2007) encourages researchers to make interviews for the topics which seek to reveal the shared values, beliefs, and characteristics of a cultural group. In a similar line, Schein (1999) also recommends conducting interviews to collect data about values, and Albrechtsen (2007) remarks that interviews are useful methods for unveiling the experience of people. Since the idea of investigating the presence of Information Technology Occupational Community (ITOC) as well as their cultural values is a fairly new research field and pertained to a unique group and based on their norms, we chose to carry on qualitative and exploratory study design to get our first sight.

Indeed, our qualitative phase consists of two parts which are intertwined and should be analyzed in sequence. The first part deals with the existence and the strength of ITOC whereas the second part dedicates to revealing cultural values of it.

4.1. Data Collection and Population Sample

After the suitability of conducting, an interview as a data collection method is decided, another question appears "what will be the data accessing method?" Although people generally adopt the general structure of the profession in three months, participants who participate in the interview should be carefully selected in order to get more robust outputs. So, 'having at least ten-year experience in the IS field' is decided as a prior requirement. It is not an easy task to find IT people fulfill this condition, but the more difficult than that is interviewing with these people since they are always busy and not willing to allocate time. To overcome this challenge, snowball sampling is chosen as a data accessing method. This method cumulatively keeps going with the information provided by previous interviewees. Snowball sampling design use social knowledge and social relations in order to reach the right informants who will be likely to give more usable answers. Indeed, Noy (2008) believes there is a strong interrelation between in-

depth interview and the snowball technique since interviewees feel responsible themselves to the researcher. As a result, interviewees speak openly, be honest, and friendly which turns into more confidential results. At this point, we should state that, when we follow a snowball sampling design in the initial stage, we stick the rules of the theoretical sampling method when we are getting closer to the end. Because the qualitative part of this thesis is based on grounded theory (detailed information is given in Section 4.3.1), theoretical sampling is hoped to be beneficial for bridging the gap in the emerging theory. A combination of interview and snowball technique also well match with the Myers and Newman's (2007) guideline which asserts interviewees behave like an actor, move away from social dissonance and bias, use mirroring question-answer techniques, be flexible and confidential. The data were collected within about 3 months (from March 2019 – June 2019). Totally eleven semi-structured interviews with IT professionals who have at least ten-year experience in the IS field are conducted. Interviews took 34-72 minutes each. As literature suggested that six interviews are enough to reach meta-themes and saturation can be provided within twelve (Guest et al., 2006), the number of participants of this study seems sufficient. Detailed information about our respondents can be seen in Table 17.

Table 17: Interviews' Information

Participant Number	Gender	Age	Experience (year)	Sector	Current Position	Duration of Interview (min.)
P1	Male	58	32	Automotive	IT Manager	70
P2	Male	43	13	Manufacturing	IT Manager	78
P3	Male	52	28	Consultancy	IT consultant	71
P4	Male	46	24	Multi-sectoral	IT Manager	40
P5	Female	39	21	R&D	Project Manager	71
P6	Male	37	11	Automotive	IT Manager	45
P7	Male	35	14	IT	General Manager	76
P8	Male	37	23	IT	General Manager	45
P9	Female	33	12	IT	General Manager	63
P10	Male	36	14	IT	General Manager	57
P11	Male	44	23	Transportation	IT Manager	34

4.2. Existence and Strength of ITOC

Based on the literature we have discussed in "Section 1.3.2.1 Occupational Community Models", we develop a theoretical model to examine the existence of ITOC and if so, the strength of it. Following this aim, an Occupational Community Model is proposed based on Duliba and Baroudi's (1991) model as a theoretical framework. According to the proposed model (Figure 8)[7], the existence of ITOC depends on both intrinsic and extrinsic factors, whereas the strength of ITOC is related to the degree of work/leisure convergence. Our first intrinsic criterion for the existence of ITOC is involvement in and identity with work. Job involvement can be defined as 'the degree to which one is cognitively preoccupied with, engaged in, and concerned with one's present job' (Diefendorff et al., 2002); whereas job identity is created as a result of experiences in business life (Cohen-Scali, 2003). First, it is asked our respondents about the reasons for their attraction to the IT occupation to decide their involvement degree. According to the literature (Trice, 1993; Guzman et al., 2005), the involvement process is the first step of occupational socialization (also can be seen in Figure 5), and someone can choose an occupation because of three reasons: (1) parents/teachers/friends suggestions (hero), (2) has the ability, knowledge or skills (interests), and (3) hope to gain expected outcomes (rewards). Second, it is also wanted to know the respondents' desire to work in another sector to measure their professional identity degree. We also ask their undergraduate degree since the education period is also significant for professional identity (Tomer & Mishra, 2016). Our second intrinsic criterion for the existence of ITOC is the inclusiveness of work. It is asked to respondents if they have to follow a code of conduct, which refers to existing invisible rules and daily routines that IT employees should act on. The third criterion is an extrinsic one and called isolation. Geographic (physically separated from others) and/or temporal (socially separated from others) isolation may be proper pieces of evidence for creating an ITOC since people more tend to engage in their tasks if they have no chance to socialize (Duliba & Baroudi,1991).

Finally, the strength of ITOC is measured by 5 different sub-questions which aim to reveal the convergence of work and leisure activities. It can be plausibly asserted that there is a strong tie between the person and owned occupation in case of the following

[7] Even though proposed theoretical model is developed and applied on IT employees, it is also tested with other occupations to see if there is a proved community or not.

conditions: someone willing to talk about his/her job, continue to go in for work-related activities even when out of work, have more friends in his/her own ITOC. Additionally, it also emphasizes how the respondents introduce themselves since the first sentence that people start to speak is where they feel comfortable and intimate with (Duliba & Baroudi, 1991).

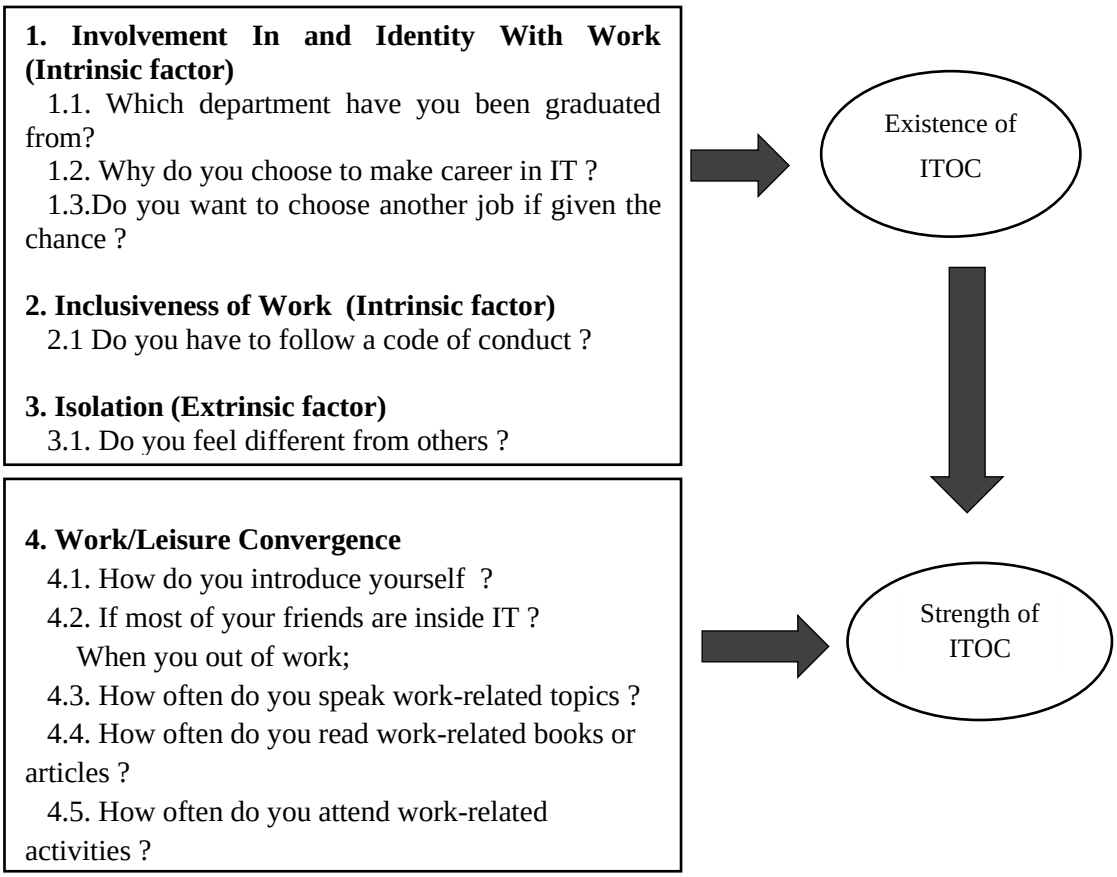


Figure 10: Occupational Community Model

Source: Developed based Duliba, K. A., & Baroudi, J. (1991). IS Personnel: Do They Form An Occupational Community. *ACM CPR*, 111–118.

Based on the experienced IT managers' feedbacks, a summary of the results is presented in two parts. Table 17 represents the first phase of our research that examines the existence of ITOC, whereas Table 18 shows the strength of it. Responding to question 1.1. it is claimed that the majority of our participants have been graduated from IT-related departments. These departments include computer engineering, mathematic, and statistic. The other two (P3 and P6) study business and textile engineering, respectively. When the answers for question 1.2 are examined, it is clearly shown that none of our respondents have a tendency to IT because of intrinsic or extrinsic outcomes

which show their strong involvement in their job. Six of them choose the IT sector as a career because of their personal interest. Some related sentences can be seen below:

> *My personal interest… since my high school years I have always wanted to do something about computers and I have interested in almost every field of it. It is like a passion for me (P4).*
>
> *I was very interested in computers even when I was a child (P10).*
>
> *If you have a desire for helping people and understanding their needs, you will either be a doctor or you will definitely deal with IT. Because I don't want to be a doctor and I want to help people to solve their problems, I have decided to become an IT man. This choice matches well with my life mission (P11).*

Besides, five of them have decided to move their career to IT thanks to a hero, mostly their parents and friends:

> *I love mathematics, programming, and computers. Actually, it was my mother who introduced me to computers. She said it will be the profession of the future and so it is (P5).*
>
> *Dealing with computers was very popular and all of my friends studying in the upper class were computer engineers (P7).*

Table 18: Answers for the ITOC Existence/Absence

Participant	**QUESTIONS***				
Number	**1.1**	**1.2**	**1.3**	**2.1**	**3.1**
P1	IT-related	Interest	Partially no	Yes	Yes
P2	IT-related	Hero	Partially no	Yes	Yes
P3	Non-IT-related	Hero	No	Yes	Yes
P4	IT-related	Interest	No	Yes	Yes
P5	IT-related	Interest	No	Yes	Yes
P6	Non-IT-related	Interest	No	Yes	Yes
P7	IT-related	Hero	No	Yes	Yes
P8	IT-related	Hero	No	Yes	Yes
P9	IT-related	Interest	No	Yes	Yes
P10	IT-related	Interest	Partially no	Yes	Yes
P11	IT-related	Hero	No	Yes	Yes

** Questions and their detailed information can be seen in our research model (Figure 10)*

No participant said 'yes' to our question 1.3 which is aimed to measure our participants' identity level or their commitment to their job. Since most of them did not prefer to perform another sector if they had a chance, it plausibly shows that our participants have a high level of commitment to their work:

I've never been able to find a more suitable job for me (P4).

IT will be always a part of my life even if I turn my face to different fields. I haven't been able to write 1 line of code for 1 year, and I can't tell you how much I miss it (P5).

I believe I'm one of the chosen people who can create valuable things for the whole world. If I don't choose this profession again, I really feel guilty (P7).

If I have another chance, I would choose IT without thinking (P11).

I would choose another branch of IT (P10).

I would be a system analyst, not a system and network engineer. I'm a really system analyst, sometimes I find solutions for customers' needs even in my dream (P2).

According to our results, it seems IT people have 2 code of conducts namely non-routine working order and technical jargon:

I can't say my job is its routine. I think routine things are what IT should not do (P2).

Frankly speaking, non-routine working order is our daily routine (P5).

We usually speak our own language (P10).

IT professionals have a different language and sometimes there is no way to tell their troubles without these words (P9).

For the question 1.4., it seems there is no geographical isolation for IT workers, however, there exists strong temporal isolation between other departments' and IT employees due to irregular working hours:

The most troublesome part of our business is intense work pressure (P2).

IT people race against time. Thus, they can't be social even if they want to (P1).

In the IT sector, there are always 'deadline jobs' and precipitancy (P9).

IT is a unique world and IT people always have to work hard (P5).

According to Duliba and Baroudi (1991) the degree of willingness to make "talk shop" (question 4.3.), the majority of friends working in the same sector (question 4.2.), the way introducing yourself (question 4.1.) and other leisure time activities (question 4.4.

and 4.5.) give a clue about how strong your community tie is. It can be simply advocated if someone starts to describe himself/herself with his/her job, expertise or career plan, tend to talk about his/her job, and do work-related activities in his/her spare time than he/she has strong-ties with his/her profession. Table 19 proves that respondents have strong bonds with the IT profession since the majority of them started their speech by talking about their works, more friends in the IT sector, willing to talk about work-related topics, and do some academic activities in their spare time. As expected, our respondents generally started to continue themselves with their job and job experiences because they feel themselves comfortable and intimate to their profession.

Table 19: Answers for the Strength of ITOC

Participant number	QUESTIONS*				
	4.1.**	**4.2.**	**4.3.**	**4.4.**	**4.5.**
P1	1,3	No	Always	Rarely	Often
P2	2,4	Yes	Always	Never	Rarely
P3	1,3	No	Always	Always	Always
P4	1,3	Partially yes	Always	Always	Always
P5	1,3	No	Always	Always	Always
P6	3	No	Always	Always	Always
P7	1,3,4	Yes	Always	Always	Often
P8	1	Partially yes	Always	Rarely	Rarely
P9	1	Partially yes	Always	Often	Often
P10	1,2	Yes	Always	Often	Often
P11	1	Yes	Always	Often	Always

** Questions and their detailed information can be seen in our research model (Figure 10).*

*** Numbers represent the way of describing the participants' themselves: 1= describe his job and job experience, 2= take attention to currently working organization, 3= emphasize educational background, 4= speak about the private life*

We failed to get positive answers to our last two questions (4.4. and 4.5.) which are related to scientific activities. It seems IT professionals neither willing to make scientific research nor attending scientific activities. The probable cause of this situation is the gap between the universities and industries. Industry professionals prefer to stay away because of the lack of collaboration between two parties. Surprisingly, we also failed to get a strong yes answer when we ask them if most of their friends in the IT sector. They generally stated that their friends are from their childhood or their school years. The reason for this may cause by Turkish people's collectivist national culture. Since collectivist culture members show a stable relationship with their groups, they tend to make their friends early in their life and never give up (Triandis et al., 1988).

According to our results, we can clearly claim that there are strong pieces of evidence for the existence of ITOC. As Law and Arthur (2003) suggest that early-career activities such as internship or mentoring and early choices like undergraduate departments affect individuals' career plans. Our results have corroborated to their findings since all of our respondents choose IT the reason why their graduated departments are close to IT or their mentors recommended to do so. These results also prove that IT employees show a high degree of involvement and identity because none of our respondents choose IT because of any rewards like money, reputation and most of them willing to continue to perform in the same sector. Similar to Marschall's (2002) study, our participants have also stated that they feel themselves different from others and have some code of conduct which also proves the existence of ITOC in Turkey. To assess the strength of ITOC, we have asked our participants about their work/leisure convergence. All of them stated that they love to "talk shop", watch job-related television programs, and even do job-related activities in their spare time; however, they have suffered from attending a scientific congress or do an academic reading. As expected, most of them started to describe themselves with their jobs and job experiences as a result of a strong identity for their jobs. To put it briefly, we have strong pieces of evidence for the existence of ITOC whereas the strength of this community seems relatively low because of cultural reasons. The following section presents the second part of the qualitative phase which aims to reveal the cultural values of proven ITOC.

4.3. Occupational Culture of Information Technology Professionals

The second phase of the qualitative part of the thesis is dedicated to investigating the cultural values of ITOC that is already proved existence. To do this, we follow a Constructivist Grounded Theory (CGT) approach and the following sections are discussed with the lens of it.

4.3.1. Grounded Theory

Based on a systematic exploration of a phenomenon, GT is aimed to create a theory (substantive or formal) rather than testing or verifying suggested ones. This approach is announced by Barney Glaser and Anselm Strauss (1967) in response to the dominance of quantitative researches and general doubts towards qualitative studies in social sciences (Charmaz, 2006). In the beginning, both two researchers meet on a common ground even though Glaser comes from quantitative fields and represents the positivist

philosophy whereas Strauss has interpretivist beliefs and most studies in qualitative fields. They share a common understanding of the fundamental GT tenets; however, as the number of studies using GT increased, some points of divergence have emerged. The uniting and differentiating principles of GT are shown in Figure 9. According to Kenny and Fourie (2015), there are three types of GT namely Classic, Straussian, and Constructivist. All three agree upon using theoretical sampling, memos, constant comparison, and saturation[8] during a GT process, but there occurs three main incongruities in terms of coding procedures, philosophical positions, and the way of using literature.

Glaser and Holton (2004) are the defender of Classical GT (Glaser & Strauss, 1967) which has a strict theoretical approach compared to the other two. The coding procedure in Classical GT emphasizes the natural emergence of a theory. Researchers avoid influencing the coding process with personal ideas and try to make data objective as soon as possible. To do this, researchers use constant comparison and abstain from the literature. Glaser and Holton (2004) strongly believe that even a quick glance at literature may possibly affect personal input, it is forbidden until the end of the data analysis. This approach is criticized by many scholars since claiming to have objective data. Madill et al. (2000) and Urquhart (2002) highlight the subjective structure of the coding phase by stating: "two researchers code the same interviews in different ways". In addition to that, Glaser and Holton (2004) stress that their approach represents soft positivism, whereas many scholar defend Classical GT is closely related to traditional positivism (Bryant, 2002; Jones & Alony, 2011). Whatever it is soft or traditional positivism, using an interpretivist coding procedure fits not well with their approach (Jones & Alony, 2011).

As the second co-founder of GT, Strauss co-authored with Corbin and they refine Classical GT in order to Straussian GT (Strauss & Corbin, 1990). They reconfigure the coding process into a more linear which aims to unearth as opposed to create. Although their newly proposed procedure is found complicated by Charmaz (2000), they defend themselves in terms of emphasizing the immediate chaos in real life. Strauss and Corbin (1990) believe their approach can be easily adapted to different situations and be a guide for young researchers who are willing to conduct qualitative projects. As well as differentiation in coding procedure, Straussian GT advocates the proper use of

[8] These four inevitable features of GT were discussed in related sub-sections throughout the Section 4.

literature, unlike Classical GT. Although they do not recommend a full review of literature, they suggest getting an abstract idea which results in having an open mind towards a study's phenomena (Strauss & Corbin, 1990). This is consistent with their philosophical approach which corresponds to post-positivism and symbolic interactionism.

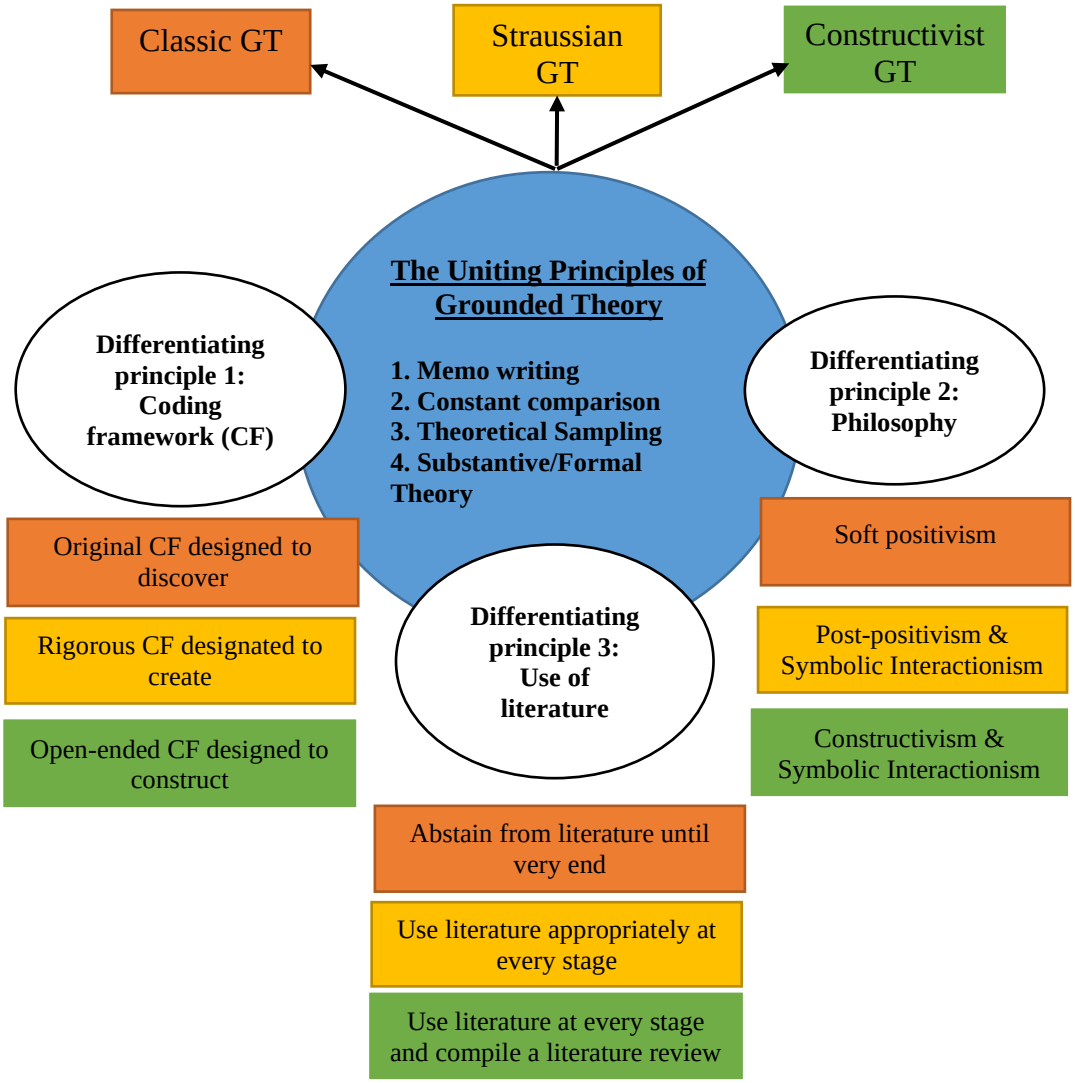


Figure 11: The Uniting and Differentiating Principles of GT

Source: Kenny, M., & Fourie, R. (2015). Contrasting classic, straussian, and constructivist grounded theory: Methodological and philosophical conflicts. *Qualitative Report*, *20*(8), 1270–1289.

After Strauss died in 1996, Corbin published the second version of their book "Basics of Qualitative Research" which guides the creation of Constructivist GT. The constructivist approach is more like an evolutionary development of GT, from Classical GT in the 1960s, to Straussian in the 1990's and finally Constructivist GT in the 2000s, located in positivism and post-modernism (Hallberg, 2006). Believing in this

philosophy, Kathy Charmaz (2008), a former student of Strauss and Glaser, criticizes the prescriptive coding procedure used by Classical and Straussian GT. According to Charmaz (2008), such a rule-bound coding procedure may suppress creativity and ignore the human perception which results in missing out on the potential categories (Evans, 2013). Thus, she proposes a fluid framework beginning with "initial and open coding", continues with "refocused coding", and finally "theoretical coding." Kenny and Fourie (2015) averre the similarity between Constructivist GT and Classical GT by means of a two-tier structure, however, the former one is much more flexible. Of course, this flexibility has its own boundaries. Charmaz (2006) believes the strength of conducting in-depth interviews which must be followed memo writing, theoretical sampling, constant comparison, and saturation rules. To carry on a qualified and data-rich interview, researchers are encouraged to make a literature review like Straussian GT. The main difference is advocating the full literature review rather than a quick glance at it. In order not to be compromised researcher's creativity, Charmaz (2006) suggests postponing writing about literature when data analysis is completely finished. According to her, being aware of state-of-art increases the researcher's authority towards the pertaining field and empower the defended argument.

Fendt and Sachs (2008) warn researchers about the differences between different types of GT and call them to select one that best fits their research scope. Accordingly, it is critical to reasoning which approach well matches with the aim of the study. This thesis is positioned in Constructivist Grounded Theory because of several reasons: First, during the lessons in Ph.D., the researcher made lots of reading about "IT Occupational Culture" and its related literature. Thus, the researcher already had a specific question on a particular substantive field at the very beginning of the thesis, in contrast with Classical GT. Second, an interpretative approach should be considered more suitable (related to the first reason) which is also emphasized by Constructivist GT by means of constructing concepts rather than discovering or creating them. Third, Constructivist GT's intuitive coding process offers to become more flexible and self-confident.

4.3.2. Data Collection

After the existence of ITOC is proved, shared values among the members of ITOC should be investigated. To do this, in addition to ten questions that are related to the existence of the community, eight questions were asked during the interviews. The distinctive aspect of these eight questions was their tacitness. Since we use snowball

sampling with theoretical sampling together, our participants were willing to speak about their occupational culture and our questions should only serve to "wind them up". The seven questions are:

1. How is your daily routine and what are your responsibilities?
2. How do you manage relationships with other departments?
3. What is the most challenging part of your profession?
4. What is the easiest part of your profession?
5. What is the worst part (that makes you feel unmotivated) of your profession?
6. What is the best part (that makes you feel unmotivated) of your profession?
7. What skills do a competent IT professional has?
8. What skills are expected to have from a newly graduated IT student?

According to Thai et al. (2012), researchers should develop strategies for conducting qualified interviews to overcome four weaknesses (Yin, 2003). The first one is stemming from bias due to poorly constructed questions. In order to overcome this, an interview protocol is designed after a literature review and carefully applied during the interviews. The second weakness may be response bias, however, it did not occur this study thanks to the power of snowball and theoretical sampling techniques. The third one may causes inaccuracies due to poor recall. To cope with this problem, all interviews were carefully recorded, stored, and studied rigorously. Finally, reflexivity or communication problems were prevented thanks to the friendly speaking and let the interviewees talk freely. During the interviews, the memo writing technique is used in order to capture the feelings, reflections, and mimics of the respondents. Using memo writing is critical in GT since it serves as an illustration of an idea (Glaser & Strauss, 1967), which is sometimes more than just words. For example, P5 stated that "IT is a unique world and IT people always have to work hard." Someone reading this sentence perceives as P5 has complained about the compelling working condition of IT; however, thanks to the memo writing, it was clearly seen that P5 enjoys her profession even though it requires hard work.

4.3.3. Data Coding and Analysis

Data coding in qualitative researches is usually seen as arduous as interpreting qualitative data needs energy and plenty of time (Delamont, 1992). Similarly, Miles (1979) argues that understanding and coding data are the most struggling and still least

examined aspects of the qualitative research processes. Basit (2003) points out the dilemma that is data coding should be considered as a mechanical or technical exercise? This question can be answered by emphasizing the researcher's role in qualitative researchers. According to Stuckey (2015), contrary to common belief, no software program code the data but help to organize them. The researcher categorizes them and creates themes. LaPan (2013) also warns about using software programs carefully in order not to supplant the researcher's role.

The process of creating codes can be pre-determined or not. If the researcher decides potential categories before the interviews start, then it is called pre-determined coding. Otherwise, categories are shaped during the interviews. Later one is generally preferred when the researcher relies on an inductive approach such as GT. As the main purpose of inductive approaches is adding new information on a relatively less investigated field, there is no sense to follow a pre-determined code set. Thus, we avoid to use a pre-determined code set and let it be shaped by our respondents since our GT approach is also inductive. At this point, it should be stated that in order to fulfill the requirements of GT, data collecting, coding, and analyzing phases are conducted simultaneously. This means, after an interview was completed, recorded data was immediately put in writing and classified the possible related categories. This process is called the constant comparison method and it continues until saturation which means no new category emerges from a new interview.

In their book, Birks and Mills (2015) discuss three different types of GT according to their philosophy and coding process. As a result, they summarize and combine the coding procedure under three main headings: initial coding, intermediate coding, and advanced coding with theoretical integration. As previously discussed, this thesis follows the Constructivist Grounded Theory approach and its coding/analyzing procedure also well meshes together Birks and Mills' (2015) approach. The process begins with *initial open coding* which aims to answer the chief concerns of the participants in terms of breaking the data into segments, interpreting their meanings, grouping them into categories. It continues with *focused coding* in which the related categories are merged. Lastly, *theoretical coding* is done by building/refining the theories.

4.3.3.1. Initial Open Coding

The coding of the data is the first step of each qualitative analysis and is described as "arranging things in a systematic order (Saldana, 2009)." During initial coding, four main questions should be asked (Charmaz, 2006):

1. "What is this data a study of?"
2. "What does the data suggest? Pronounce?"
3. "From whose point of view?"
4. What theoretical category does this specific datum indicate?"

To find answers to these four questions, three different coding types can be used (Richards, 2005). The first one is *descriptive coding* which includes information about interviewees. The second one is *topic or category coding* which means labeling the text according to their meanings. The last one is *thematic or analytical coding* which groups similar codes under useful categories.

All three coding techniques are used in this thesis. *Descriptive coding* results are previously mentioned in Table 17 in the first phase of the qualitative study. For *topic coding*, there are several ways to conduct such as line-by-line, paragraph-by-paragraph, or section-by-section based on the research requirement (Khandkar, 2012). In order not to miss even the smallest detail, the line-by-line coding technique is used in this thesis. Data broke down into ideas, events, acts in terms of analyzing the documents line-by-line to perform an entire-document analysis. During the coding process, transcribed texts (55 Word pages) were read and coded by the researcher herself in terms of manual coding by using QDA Miner. Even though this is time-consuming work, it helps to build related themes and their features. In addition to that, memos can be only used effectively by manual coding in terms of stating where the interviewees' body language changes. As a result of this process, ninety-two codes were identified.

Table 20: Codes Occured During Initial Open Coding

money	routine	project-based
support	IT	collaboration
appreciation	technical jargon	team-work
executive managers	antisocial	customer
value	satisfaction	real problem
invisible	intern	communication
soft	unusual demands	empathy
give benefit	making a difference	technology
9-5	ego	constant change
analytical	self-taught	capricious
detailed	enjoy	system analyst
IT people	doctors	computer engineer
social image	benefit	motivation
problem	help people	open-code
transparency	never give up	follower
stress	problem-solving	struggle
education	pervasiveness	involvement in
creativity	sets heart on	specialization
translation	uncertainty	hero
planning	challenge	hard
work-life balance	curious	customer orientation
smiling	commitment	lay scholar
dynamic	control	core
easy	identity with	critical thinking
discipline	coding	money
empowerment	authorization	mathematic
statistics	same problems	in-house
different solutions	speed	division of labor
cloud	consciousness of kind	pair coding
government	anonymous	irregular working hours
outsourcing	security	

After initial topic coding is finished, labeling them can occur in two different ways: conceptual or in-vivo (verbatim coding). During conceptual labeling, the researcher gives name to his/her codes with the help of the relevant literature since the category is already well studied in the literature. However, during in-vivo labeling, codes names are coming directly from the interviewee's own words. For example, “technical jargon” was occurred as a common in-vivo code that used to describe the unique language of IT. The most important issue to be considered here is the dynamic nature of the coding process. The constant comparison technique serves well at this point by means of updating code structure after each interview was transcribed until the saturation. As the researcher is the sole coder for the thesis, verification of coding is continuously and carefully tested until no new code emerges. The final step is grouping codes into categories and conducting some extra analysis such as thematic/analytical coding, code frequency analysis, and code co-occurrence analysis.

As a result of this process, eighteen categories were identified and classified under two themes. The first theme represents the characteristic of IT people whereas the second one is related to their occupational cultural values. Characteristics of IT people represent three codes namely; egoism, elaborateness, and unsociability. Compared to this theme's simplicity, the occupational culture of IT people is represented seems more complicated. Fifteen codes emerged belong to the second theme. The more detailed explanations of each category follow below:

Table 21: Overview of Categories After Initial Open Coding

Themes	Category name	Category definition	Example sentence from interviewers
CHARACTERISTICS OF IT EMPLOYEES	Egoism	It expresses the 'high ego' arising from the fact that IT people are interested in a technical job and many people do not know about it.	"Our IT people are generally capricious They say that they know everything well and the error is not occurred because of me." (P10) "IT people generally have an insolent attitude and arrogance. As if they do impossible things that nobody really understands… " (P2)
	Elaborateness	It refers to the fact that IT people care about even the smallest details in business life.	"We can only produce our projects if we are detailed." (P10) "I'm a detailer focusing on results." (P7)
	Anti-sociability	It expresses that IT people are not willing to spend time with people outside of their IT group.	"I think we are unsocial and that's why we chose computer engineering. We do not want to deal with people instead we order the computer and it does without questioning." (P10)
CHARACTERISTICS OF IT PROFESSION	Constantly changing technology	It expresses the ever-changing structure of the IT sector and the necessity of employees to adapt to this change.	"Everything changes very fast in the IT sector." (P6) "If the IT people cannot keep up with the change, they can't meet what they are expected." (P7)
	Precision in communication	It expresses the vital importance of clear and effective communication between IT people and customers.	"Yes, we are working in IS-related field, but 95% of our work is with people. So our communication must be strong." (P8) "Generally, we, IT people, try to understand what the other wants to say. We always keep saying: Did you mean this? or "Is that what you mean?" (P11)
	'3U' demands of customers	It refers to the uncertain/unexpected/unlimited needs of the customers.	"Customers don't really know what they want." (P1) "The main problem of the customer is not being aware of the real problem and explaining it correctly." (P3)
	Non-routine work order	It expresses the suddenly changing work-order structure of the IT sector and its irregular working hours.	"I can say that my work and my house live together." (P5) "I don't think routine is good for IT people. I

			cannot work with people who are overly dependent on working hours. Our job is not a 9-5 job." (P2) "If you work in IS field, you can not enjoy your day easily." (P9)
	Division of labor	It expresses the importance of coordination and collaboration.	"It is very important to be able to work together. Because you usually divide your work into small pieces and expect them to work in coordination with each other, just like the limbs of a body." (P6) "Almost all the works are project-based. So, I don't believe that anyone success it with alone" (P10)
	Management support	It expresses the neglectedness of IT employees and the need for support from executive managers	"Even though there are some exceptions, IT people are generally not moved to the top positions." (P4) "…and worst of all, they behave like they will give you the necessary support, but when it gets serious, everyone is moving away from you." (P8) "They say technical works are our task and not give any value nor appreciation." (P5)
	Technical jargon	It expresses the technical terms used by IT people.	"IT has a different language. For example we usually use 'debug' and everyone knows what it means." (P1) "Unfortunately, the jargon we use does not have much Turkish equivalent." (P2)
	Benefit to society	It expresses the desire of IT people to be beneficial to society rather than to benefit themselves.	"…after all, you served your country. Projects that have been successfully implemented are a very important source of motivation." (P5) "If you have goals such as helping people and meeting their needs, you will either be a doctor or you will definitely be dealing with IT because we do not do any work we do for ourselves. We always do it for someone else." (P11)

	Information transparency	It expresses the importance of open-code.	"We are talking about a sector in which knowledge is so obvious, so easy to reach, and educated people can be found relevant information at least in a basic level. " (P2) "It is a field where people share their information so much more than any other industry. The only field that can discuss the concept of open-source philosophically is the IT sector. " (P7)
	Pleasure	It expresses the pleasure of having fun while dealing with technical challenges and continuing it without getting bored.	"We enjoy problem-solving." (P5) "We can solve the problems that arise on the technical side with pleasure. Actually, technical tasks are easier than it is thought" (P4)
	Commitment to IT	It expresses being satisfied with working in the IS field and love his/her job.	"If I go back again, I would choose my same job."(P8) "Even though I have to work in different fields, IT is always a part of my life. Especially the software is gives meaning to my life. Even if I do a different job, I would go to the IT-related part." (P5)
	Uncertainty of tasks limits	It expresses that IT department employees are expected to have also control over the functioning of other departments.	"I am interested in even the most basic jobs in the projects. Because in order to do this job well, we have to teach first." (P9) "The most important feature of IT people is their control over all the processes. They should know how all the other things are done in different departments at least a basic level" (P3)
	Involvement in IT	It refers to the difficulties in expressing themselves to other people because of the pervasiveness of IT.	"IT is a close World and IT people are struggling to express themselves." (P5) "I would like to talk shop in any case and I would not be disturbed by this." (P4)
	Customer orientation	It expresses that the primary aim is to satisfy customers and understand what they want.	"If there are no customers, your labor has no value." (P9) "We need to keep customers close to ourselves."(P4)
	Same	It expresses that the problems encountered in	"What makes our job difficult is that the

	problems/different solutions	the IS field are generally standard but different ways based on different technologies can be followed for the solution.	abundance of alternative paths to the solution and deciding which one should be used." (P3) "Whether it is with the newest or old technology, it is important to go to the solution in the shortest way." (P8)

To determine the most popular categories, code frequencies are given in Table 22. In addition to that, it also shows the number of cases mentioned about the related category and their percentages.

Table 22: Frequency of Determined Categories

Category	Frequency	Repeated case	Repeated case (%)
Elaborateness	22	8	%72,7
Anti-sociability	10	8	%72,7
Constantly changing technology	6	4	%36,4
Precision in communication	63	11	%100
3U' demands of customers	49	11	%100
Non-routine work order	43	10	%90,9
Division of labor	40	8	%72,7
Management support	31	9	%81,8
Technical jargon	29	11	%100
Social image	24	10	%90,9
Information transparency	21	9	%81,8
Enjoyment	16	8	%72,7
Commitment to IT	18	9	%81,8
Uncertainty of tasks limits	13	7	%90,9
Involvement in IT	12	7	%63,6
Customer orientation	11	6	%54,5
Same problems/different solutions	11	6	%54,5
Egoism	4	2	%18,2

After initial coding and data categorization, it is necessary to ensure that determined categories do not overlap with any others. To do this, focused coding (second coding process of CGT) is conducted which aims to detects similarities between two or more categories and merges them.

4.3.3.2. Focused Coding

At this stage, comparative analysis between categories is required. This comparison is more directive, conceptual, and selective than initial coding (Charmaz, 2006). Focused coding requires a decision about the most inclusive categories. This process generally ends in merging two or more categories based on the researcher's theoretical position. Thus, memos and the semantic meaning of the sentences should be carefully analyzed. As a result of comparisons by making logical inferences, five new categories emerge which can be seen in Table 23.

The first new category "group consciousness" creates due to the semantic meaning similarities between "commitment to IT", "involvement in IT" and "antisocialism". After reading related sentences, it is clearly seen that the main idea behind these three

categories is the same: “love IT, commitment to IT, never wants to give up from IT and willing to spare time only with IT people which causes anti-socialism.”

Table 23: New Categories After Focused Coding

New Category	Old Categories	Example Sentences
GROUP CONSCIOUSNESS	Anti-socialism	We do not want to deal with people instead we order the computer and it does without questioning.” (P10)
	Involvement in IT	“I would like to talk shop in any case and I would not be disturbed by this.” (P4)
	Commitment to IT	“If I go back again, I would choose my same job.”(P8)
SOCIAL IMAGE	Customer orientation	“If there are no customers, your labor has no value.” (P9)
	Benefit to society	“…because we do not do any work we do for ourselves. We always do it for someone else.” (P11)
ADAPTATION	Constantly changing technology	“Everything changes very fast in the IT sector.” (P6)
	Same problems/different solutions	“What makes our job difficult is that the abundance of alternative paths to the solution and deciding which one should be used.” (P3)
ENJOYMENT	Pleasure	“We enjoy problem-solving.” (P5)
	Non-routine work order	“I don't think routine is good for IT people. I cannot work with people who are overly dependent on working hours. Our job is not a 9-5 job.” (P2)
TEAMWORK	Division of labor	“Almost all the works are project-based. So, I don’t believe that anyone success it with alone” (P10)
	Information transperancy	“It is a field where people share their information so much more than any other industry. The only field that can discuss the concept of open-source philosophically is the IT sector. ” (P7)

IT professionals care a lot about finding solutions to other people's technical problems. When it comes to professional settings, their first concern becomes customer satisfaction. These two visions perfectly match with each other. Thus, the second new category is named as “social image” by means of merging “customer orientation” and “benefit to society” categories.

IT professionals complain about a variety of different solutions can be brought to the same problems. Indeed, because of the dynamic nature of the IT world, constantly changing technology offers many different approaches to its users which should be adapted by IT professionals. Thus, the third category is named as “adaptation” by

combining “constantly changing technology” and “same problems/different solutions” categories.

The “non-routine work order” category identifies with difficulties that IT professionals have to face in doing their jobs. However, if memos and semantic meanings of the sentences are analyzed carefully, it is obviously understood that none of the respondents complained about having a non-routine work order, instead, they feel satisfied with it. For example, participant 10 said: “Actually I don't go home very much :) I enjoy taking work home. In the software field, the work is not finished .. it is a trick to say that my work is done.” with a smiling face as if he was talking about his hobby. Thus, “non-routine work order” and “pleasure” categories are merged into “enjoyment.”

According to Information Processing Theory, knowledge sharing gains favor for team members and increase their performances by means of improved coordination. Because the information is so prevalent in the IS field, professionals should tend to collaborate in order to increase their efficiency. Based on this argument, “division of labor” and “information transparency” are harmonized into a new category called “teamwork”.

As a result of focused coding, the final version of categories can be seen in Table 24.

Table 24: Overview of Categories After Focused Coding

Themes	Category name	Category definition	Example sentence from interviews
CHARACTERISTICS OF IT EMPLOYEES	Egoism	It expresses the 'high ego' arising from the fact that IT people are interested in a technical job and many people do not know about it.	"Our IT people are generally capricious They say that they know everything well and the error is not occurred because of me." (P10) "IT people generally have an insolent attitude and arrogance. As if they do impossible things that nobody really understands… " (P2)
	Elaborateness	It refers to the fact that IT people care about even the smallest details in business life.	"We can only produce our projects if we are detailed." (P10) "I'm a detailer focusing on results." (P7)
CHARACTERISTICS OF IT PROFESSION	Adaptation*	It expresses the ever-changing structure of the IT sector and the necessity of employees to adapt to this change.	"Everything changes very fast in the IT sector and I have to be a follower to stay up to date in my business." (P6) "What makes our job difficult is that the abundance of alternative paths to the solution and deciding which one should be used." (P3)
	Precision in communication	It expresses the vital importance of clear and effective communication between IT people and customers.	"Yes, we are working in IS-related field, but 95% of our work is with people. So our communication must be strong." (P8) "Generally, we, IT people, try to understand what the other wants to say. (P11)
	Enjoyment*	It expresses the enjoyment of getting from hard working conditions and challenging technical tasks.	"We enjoy problem-solving." (P5) "Actually, I don't go home very much :) I like to take work home." (P11)
	Teamwork*	It expresses the importance of the ability to work together as well as consistent collaboration.	"It is critical to work together." (P6) "We are talking about a sector where the information is so obvious, so easily accessible." (P2)
	'3U' demands of customers	It refers to the uncertain/unexpected/unending needs of the customers.	"Customers don't really know what they want." (P1) "The main problem of the customer is not being aware of the real problem and explaining it correctly." (P3)

	Management support	It expresses the neglectedness of IT employees and the need for support from executive managers.	"Even though there are some exceptions, IT people are generally not moved to the top positions." (P4) "…and worst of all, they behave like they will give you the necessary support, but when it gets serious, everyone is moving away from you." (P8)
	Social image*	It expresses the desire of IT people to be beneficial for society, especially to the customers, rather than to benefit themselves.	"We need to keep customers close to ourselves."(P4) "…after all, you served your country. Projects that have been successfully implemented are a very important source of motivation." (P5)
	Group consciousness*	It expresses a sense of belonging in the IT profession and difficulties in explaining themselves to those outside their groups.	"If I go back again, I would choose my same job."(P8) "I would like to talk shop in any case and I would not be disturbed by this." (P4) "…I really don't know what to talk with my wife's colleagues." (M10)
	Technical jargon	It expresses the technical terms used by IT people.	"IT has a different language. For example we usually use 'debug' and everyone knows what it means." (P1) "Unfortunately, the jargon we use does not have much Turkish equivalent." (P2)
	Uncertainty of tasks limits	It expresses that IT department employees are expected to have also control over the functioning of other departments.	"I am interested in even the most basic jobs in the projects. Because in order to do this job well, we have to teach first." (P9) "The most important feature of IT people is their control over all the processes. They should know how all the other things are done in different departments at least a basic level" (P3)

* It represents the new focused category resulting from the merge of two or more initial ones.

According to the obtained categories, seven of them show similarity with other ITOC related studies, 3U demands of the customers, management support, and uncertainty of task limits emerged as unique for this study. Table 25 summarizes the frequencies of redesigned categories. At this point, it should be stated that egoism and elaborateness are the representativeness of IT professional's characteristics. However, this thesis focuses only on the values of the occupation itself. Thus, before theoretical coding, these two categories are excluded since they serve as a different purpose and may mislead to the scope of this thesis.

Table 25: Frequency of Redesigned Categories

Category	Frequency	Repeated case	Repeated case (%)
Egoism	22	8	%72,7
Elaborateness	10	8	%72,7
Adaptation*	67	11	%100
Precision in communication	49	11	%100
Enjoyment*	49	11	%100
Teamwork*	45	11	%100
'3U' demands of customers	43	10	%90,9
Management support	40	8	%72,7
Social image*	32	11	%100
Group consciousness*	34	11	%100
Technical jargon	21	10	%90,9
Uncertainty of tasks limits	12	7	%63,6

* It represents the new focused category resulting from the merge of two or more initial ones.

4.3.3.3. Theoretical Coding

Theoretical coding deals with conceptualizing the categories which are previously organized (in initial open coding) and described (in focused coding). With the lens of CGT, the conceptualizing process is forged to reconstruction rather than discovery (as Classic GT defends) or creation (as Straussian GT defends). CGT emphasizes to construct a "conceptual interpretation" rather than exact apprehension for a latent pattern of an issue or a concern (Kenny & Fourie, 2015). Similarly, Hernandez and Andrews (2012) state that CGT's final aim is to create a descriptive theory, not an explanatory one as Classical GT does. To make this conceptualization, ten emergent categories are tried to integrate with Trice's Occupational Culture Framework (1993) as well as considering Douglas' (1978, 1982) group-grid dimension approach. Since the IT occupational cultural phenomena have not been adequately described in the literature and lack of theories that explain it, theoretical coding seems critical at this stage. At the end of coding, it is expected to find relevance between the constructed category and the grounded theory (Mills et al., 2008). Figure 10 attempts to show this relevance by

means of indicating strong or weak correlations between the categories, however, this matching needs to be modifiable as a necessity of CGT.

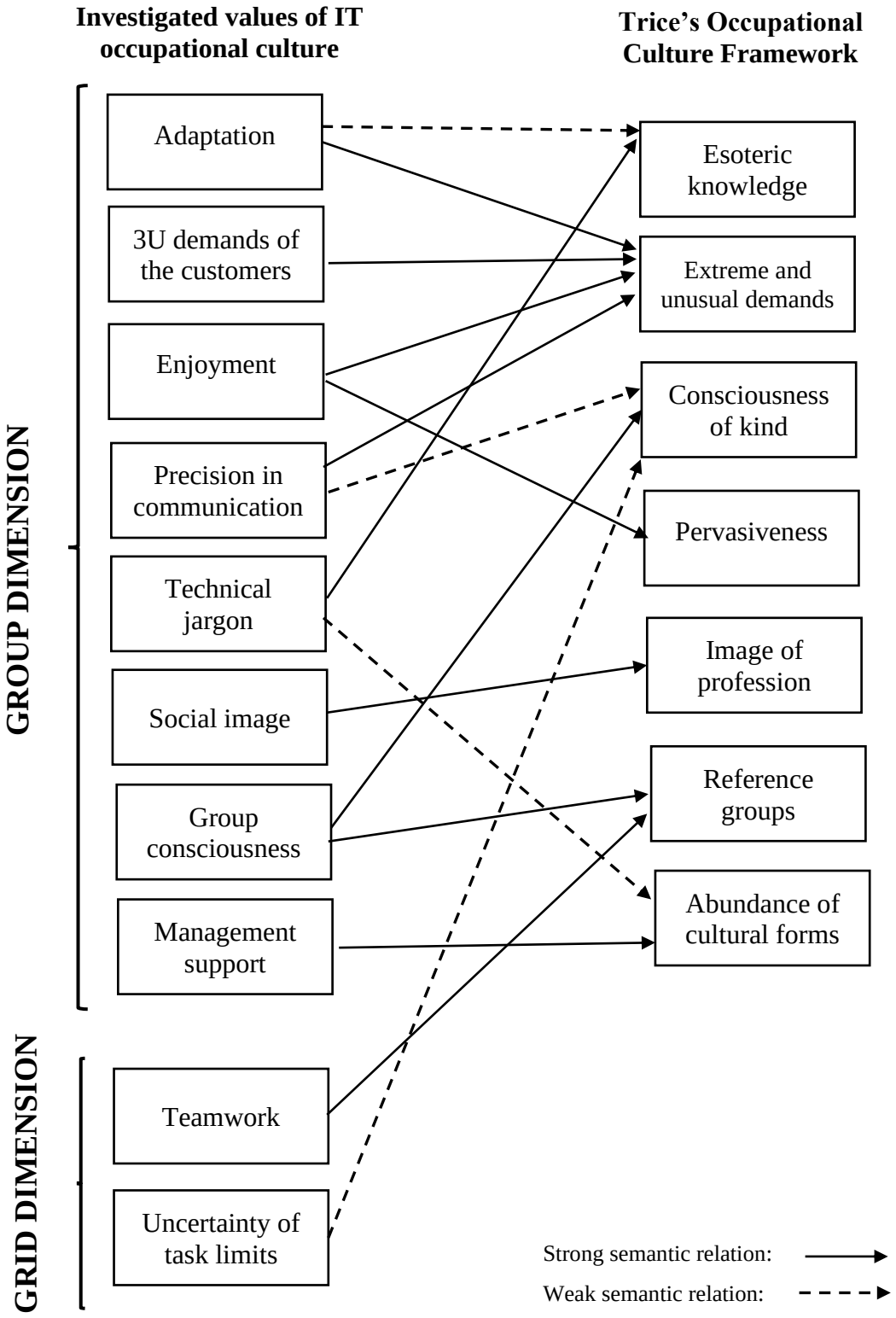


Figure 12. Reconstructed theory based on Trice's Occupational Culture Framework

Generally, the elements that belong to the group dimension are useful to understand the cohesiveness among group members whereas the grid dimension values help to interpret the relationships among them. According to Figure 10, there are only two constructed categories belong to the grid dimension which plausibly proves the fact that the IT profession comprises a lack of formal values. Instead, the IT profession captures mostly soft occupational cultural values which are harder to be observed and measured. Since the final aim of this thesis is uncovering the measurable values of IT occupational culture, Section 5 is dedicated to item creation for each of the suggested categories and testing them in the proposed model. However, as a complete understanding of theoretical integration, all the semantic relations among categories should be described in the rest of the section.

Adaptation has a strong semantic relation with extreme and unusual demands and a weak semantic relation with esoteric knowledge: IT sector has rapid changing business environment, thus IT professional has to keep up with the latest technology in order not to fall behind. P6 summarized this challenge: “Think about it. One day when you wake up, the new version of one of the most used security applications is available and you are expected to adapt immediately.” Obviously, constantly changing technology requires staying up to date which can be directly considered as an extreme demand. As a result of following all the current news in the IS field, professionals have control over IT which can be considered as a part of esoteric knowledge.

Precision in communication has a weak semantic relation with the consciousness of kind and strong semantic relation with extreme and unusual demands: Among IT professionals, there is a common understanding that precision in communication is critical. Both intra and external-group communications have to be accurate, exact, and detailed. Since each completed task has unique and customized features, there isn’t any standard “cook recipe”. Each task comes with its challenges and things become inexorable when customers' lack of information is added. Thus, precision in communication is strongly correlated with extreme and unusual demands. In addition, because outsiders from IT groups generally struggle to understand what IT people actually say and also vice versa, this category is considered to have a weak relationship with consciousness of kind.

Enjoyment has a strong semantic relation with extreme and unusual demands and pervasiveness: IT profession requires lots of extreme and unusual demands such as long and irregular working hours, unexpected demands of the customers, rapidly changing technology, etc. Although these conditions compel to IT professionals in some manner, the majority of them contend that they love to. Struggling with challenging tasks in the IT profession is generally done with enjoyment and thus these two categories are strongly related. In addition to that, IT people stick to their tasks and willing to improve themselves continuously even when they are out of work. This situation may cause a pervasiveness in their life.

3U demand of the customers has a strong semantic relation with extreme and unusual demands: From either customers' or IT professionals' perspective, there is a reciprocal misunderstanding about their needs. This dilemma is stemming from uncertain, unexpected, and unlimited requirements which are called 3U demands of the customers. As a result, aggressive and unsatisfied end-users appear. Though, IT professionals assume this behavior as an extreme and unusual demand.

Management support has a strong semantic relation with an abundance of cultural forms: IT people generally reproach a lack of appreciation from executive managers. This is simply because the senior managers often come from another field such as finance or marketing who rarely rave about IT value and often show an unequal approach. Although this situation is disheartening for IT professionals, it may be not a specific attitude to IT people and be more likely to a or a myth among them. Thus, perceived belief about the lack of value for IT has a strong correlation with the abundance of cultural forms.

The social image has a strong semantic relation with the image of the profession: IT professionals are impulsive about technical issues and being satisfied with helping other people while solving their technical problems. They are willing to come up with an immediate solution to customers' demands not only for customer satisfaction but also for a sake of their job identity.

Group consciousness has a strong semantic relation with the consciousness of kind and reference groups: IT professionals are living in a close world due to their high job involvement and commitment. This issue leads to a strong tie between group members and incomprehensibility by non-group members. Thus, IT members' group

consciousness is strongly related to consciousness of kind. Similarly, IT professionals share their experiences and ideas with confidence to their colleagues which proves also a strong relationship between reference groups and group consciousness.

Technical jargon has a strong semantic relation with esoteric knowledge and a weak semantic relation with an abundance of cultural forms: IT has its own language which is hard to understand for outsiders. Some terms such as debug, UIX, HTML are special to the IS field. Thus, technical jargon is strongly correlated with esoteric knowledge. In a typical meeting, IT professionals may use these unique languages in order not to be understood by other people or to gain superiority. They sometimes tell stories or talk about their experiences especially with using these technical words. Thus, there is a weak correlation between technical jargon and the abundance of cultural forms.

Teamwork has a strong semantic relation with reference groups: Due to the nature of the IS field, tasks are generally are part of a particular project. To complete the project successfully, collaboration, information sharing, and reliance between group members have vital importance. Thus, teamwork has a strong correlation with reference groups.

Uncertainty of task limits have a weak semantic relation with the consciousness of kind and abundance of cultural forms: IT professionals agree that their department is intertwined with other departments; however, they have their own job description and every technical problem may not be a concern of them. Unlike, IT departments are held accountable for every technical problem even for power cut or toner out. This situation causes mutual disagreement between IT departments and others. Thus, uncertainty of task limits have a possible weak relation with the consciousness of kind.

CHAPTER 5: QUANTITATIVE PHASE

The quantitative part of the thesis consists of two parts. Stage 1 is dedicated to creating an instrument to measure ITOC values which were uncovered during Chapter 4. Stage 2 aims to propose, and test the research model based on the developed hypotheses throughout Chapter 2.

5.1. Instrument Creation for ITOC Values

Many scholars defend to proper use of a survey in cultural studies (Hoftsede, 1980; House et al., 2004; Iivari & Huisman, 2007). Unlike national and organizational cultural studies, occupational culture is a relatively new research area in the IS field and there are only a few attempts to create measurable dimensions of it (Jacks et al., 2018; Jacks & Palvia, 2014; Jacks, 2012). Thus, this thesis puts a great effort by investigating ITOC cultural dimensions and turning them into measurable values.

For the scale development process, there are many popular approaches (Churcill, 1979; Pervan et al., 2009) in literature; however, the majority of them neglect the structure of the survey depending on consisting formative or/and reflective items. Diamantopoulos and Winklhofer (2001) put emphasize on this issue and state that authors should follow "what they need" rather than "what is popular." Rossiter (2002) criticizes Churcill's (1979) traditional approach with its strict emphasis on internal consistency and factor analysis which sometimes result in deleting conceptually necessary items or adding unnecessary items. Rossiter (2002) also points out that the traditional approach may not be useful when there are formative structures as well as reflective ones. In a similar line, Mackenzie et al. (2011) complain about scale development shortcomings and offer an integrated survey development procedure for IS and behavioral science researchers. Their integrated approach focuses on reflective and formative factors separately and suggests several recommendations for each of them. Since ITOC values represent as a formative structure and national and organizational culture items are reflective, Mackenzie et al.'s (2011) approach is adapted and followed during this section which is summarized in Table 26.

Table 26: Scale Development Process in Quantitative Phase

STAGE 1	Step 1. Conceptualization (Section 5.1.1.)	Sub-Step 1	Develop a conceptual definition of the constructs
	Step 2. Development of measures (Section 5.1.2.)	Sub-Step 2	Generate items to represent the constructs
		Sub-Step 3	Assess the validity of the items
	Step 3. Model specification (Section 5.1.3.)	Sub-Step 4	Formally specify the measurement model
	Step 4. Scale Evaluation and Refinement (Section 5.1.4.)	Sub-Step 5	Collect data to conduct pretest (Pilot study)
		Sub-Step 6	Scale purification and refinement
STAGE 2	Step 5. Preliminary considerations (Section 5.2.)	Sub-Step 7	Determine sample size and conduct exploratory data analysis
	Step 6. Measurement model assessment (Section 5.3.)	Sub-Step 8	Reflective indicators' assessment
		Sub-Step 9	Formative indicators' assessment
	Step7. Structural Model Assessment (Section 5.4.)	Sub-Step 10	Significance and relevance of the path coefficients

Source: Adapted from Mackenzie, S. B., Podsakoff, P. M., Podsakoff, N. P., & Mackenzie, S. B. (2011). Construct Measurement and Validation Procedures in MIS and Behavioral Research : Integrating New and Existing Techniques. *MIS Quarterly*, *35*(2), 293–334; Hair, Joseph F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.

5.1.1. Conceptualization

The first stage of scale development is developing conceptual definitions for each construct. It is stated that researchers must be clear in their definitions as possible (Hinkin, 1995). Since all the ten ITOC categories identified were discussed in detail in Section 4 during initial and focused coding processes, the same definitions are not included in this section.

5.1.2. Development of Measures

The second step of scale development is called the development of measures which includes two sub-steps namely item generation and assessment of content validity.

5.1.2.1. Generate Items

Once the focal construct (occupational culture) and its categories have been defined, the next step is creating an item pool that fully represents the conceptual domain. Related items can be obtained from several sources such as literature review, previous researches on the same focal construct, interviews, focus groups, expert suggestions, etc. As it is stated, the item list is not to be exhaustive but representative (Smith et al.,

1996). To do this, related literature was searched and interviews were read again during a nearly one-month period. In the end total of seventy-four statements were compiled. During English to Turkish translation, three Ph.D. students who have language proficiency were asked to help. Table 27 represents the list of items with their references and their related ITOC category.

Table 27: Items Derived From Literature and Interviews

ITOC Values	Original Items	References
Adaptation	A1. I enjoy learning how to solve IT-related problems. A2. I enjoy obtaining hands-on experience with IT. A3. Keeping up with the latest knowledge in my field is important for me.* A4. I like learning about the newest technologies in the IT field.* A5. I enjoy keeping myself updated with the latest developments in IT A6. I enjoy spending extra hours learning about more about IT.	Guzman et al., 2006
Precise in communication	PIC1.Good communication between IT and end user community is vital.* PIC2. Communication with non-IT groups should be open.* PIC3. The IT group should translate technical ideas in terms that non IT-people can understand PIC4. Communication with non IT groups should exhibit full disclosure about problems and opportunities	Jacks, 2012
Group consciousness	GC1. I strongly identified with the IT profession. GC2. When someone criticises the IT field, it feels like a personal insult GC3. I care a lot about what others think of the IT field. GC4. When i talk about IT field, I usually say 'we' rather than 'they'. GC5. When someone praises the IT field it feels like a personal compliment GC6. When the media criticises the IT field, I feel embarrassed. GC7. The IT field's successes are my successes.	Guzman, 2006
Social Image	SI1. I enjoy working with people who share and understand IT related issues. SI2. I enjoy feeling of being needed to provide computing help. SI3. I enjoy knowing that other people depend on my services. SI4. I enjoy being asked for computing help. SI5. I like being a member of the IT experts 'club' SI6. When people recognize my IT expertise, I get a good feeling. SI7. Many of the people who I look up to are big names in the IT field. SI8. I dislike being asked repeatedly about the same IT issues. SI9. In my work I like to feel I am making some effort, not just for myself but for the organization as well. SI10. To know that my work had made a contribution to the good of the organization would please me.	Guzman, 2006; Barhayim & Berman, 1992
Technical jargon	TJ1. I like IT jargon/technical language.* TJ2. When I start a new IT project, I don't mind learning all of the new names of products and technologies TJ3. I enjoy using technical terms to communicate with other members of the IT profession. TJ4. In my IT profession, we like to use acronyms/abbreviations.	Guzman et al., 2006
Enjoyment	E1. It is tough to do well in the IT field, but I like it that way. E2. I enjoy dealing with difficult tasks in the IT field. E3. Continuous changes in the IT field do not bother me.	Guzman et al., 2006

	E4. For me the fast pace of the IT field makes it enjoyable.* E5. I would not mind an IT job that required an unusual work schedule	
3U demands of the customers	UDC1.I am sure of how much authority I have. UDC2. It is clear what the objectives of my job are. UDC3. I know that I divide my time adequately in order to carry out different tasks UDC4. I know exactly what is expected of me UDC5. I know what my responsibilities are UDC6. The explanation of what needs to be done is clear. UDC7. In IT projects, the endless needs of customers tire me.** UDC8. I do not mind the difficulties that customers experience while expressing their needs.**	Rizzo et al., 1970
Uncertainty of task limits	UTL1. I have to do things that should be done in a different way. UTL2. I receive tasks without having the human resources necessary for completing them. UTL3. I have to ignore and even break a rule or policy in order to carry out a task. UTL4. I work with two or more groups of people that act in quite different ways. UTL5. I receive incompatible requests from two or more people at the same time. UTL6. I do things that are acceptable to one person and unacceptable to others. UTL7. I receive a task without adequate materials to carry it out. UTL8. I work on unnecessary things.	Rizzo et al., 1970
Management support	MS1.When I have problems at work, I can seek support from my immediate superiors. MS2. I can count on my supervisor when things are getting complicated. MS3. My supervisor is concerned about the welfare of those under him.* MS4. My supervisor pays attention to what I am saying.** MS5. My supervisor is helpful in getting the job done.** MS6. It is important that IT people have a say in strategic decisions.** MS7. IT is a critical position for companies.** MS8. Managers have high respect and fair treatment towards IT people. MS9. Managers support IT people and guide them.	Cheng et al., 2003; Gallegos & Peeters, 2011; Gerich & Weber, 2019; Hackman & Oldham, 1975; Karasek, 1985
Teamwork	T1. I like to participate in groups. T2. I have had positive experiences thus far working in groups.* T3. As an IT professional, I would rather work in teams rather than on my own.* T4. It is important for everyone to show initiative and share ideas.* T5. I like to work with other people. T6. Teamwork is important in IS field.** T7. I have found being part of a team improves my performance.* T8. I have found that teams help me learn more than if I just worked alone.* T9. Members share information with each other.** T10. Members help each other members** T11. Members are aware of what other members are doing. T12. Members synchronize actions with other members. T13. Members fully cooperate with other members.	Eby et al., 1999; Ford et al., 2013; Gallegos & Peeters, 2011; Napier & Johnson, 2007; Pfaff & Huddleston, 2003; Thomas & Corney, 1993

* represents items slightly modified at the end of the expert panel
** represents items derived from the qualitative study's results

Seven categories show similarity with other ITOC related studies; however, three of them, 3U demands of the customers, management support, and uncertainty of task limits emerged as unique for this study. During the literature review, it was found that the categories of uncertainty tasks limits and 3U demands of the customer (theoretically mentioned but not measurable in Guzman's (2006) study do not correspond to the IS field directly, rather they may coincide with the role conflict and role ambiguity concepts of Rizzo et al. (1970). However, role conflict items have fulfilled the meaning of the uncertainty of task limits category, role ambiguity items were considered as not efficient enough to represent the 3U demands of the customer category. Thus, two items (UDC7, UDC8) derived from the semi-structured interviews were decided to add into 3U demands of the customer category. Management support which refers to the lack of appreciation and not being included in strategic decisions surprisingly turned out not to be mentioned in any ITOC related studies. Researchers generally mention about IT/Business alignment issue, but the items were not found representative for the proposed category. Thus, most of the items management support were selected from job content related studies and four (MS4, MS5, MS6, MS7) were added later. Three items (T6, T9, T10) were also added teamwork category in order to be express briefly and emphasize the information sharing and division of labor among team members.

5.1.2.2 Assessment of Validity

There are two types of validity types during the survey instrument process: content and face validity. Although these two validity types are generally interchangeably used, Hardesty and Bearden (2004:99) explain the main difference by giving a dartboard example: *"In order for the criterion of content validity to be established, darts must land randomly all over the board to obtain a proper representation of the construct. Therefore, if darts were located on only the left-hand side of the board, the measure would not be content valid… Using the dartboard analogy, an item has face validity if it hits the dartboard otherwise, the item does not represent the intended construct."* To put it briefly, content validity is about the representativeness of the items whereas the face validity deals with the understandability of them.

For assessing the content and face validity of 74 items represented above, an expert panel was conducted. When creating the template, Obermiller and Spangenber's (1998) four criteria ("very good," "good," "fair," or "poor" were adapted into "The item is not

representative", "The item needs major revisions to be representative", "The item needs minor revisions to be representative" "The item is representative" in order to get more feedback. Judges were informed about the definition of each category and were exposed to individual items assessment (Appendix A1). Totally, seven experts were included and the panel has lasted in ten days. Four of them are academicians who have experiences in the survey development process and the other three are IT professionals who are experienced in the IS field for more than 10 years. It should be pointed out that chosen IT professionals were not the same people who participated in interviews.

After their comments, some items were slightly modified (indicated with * in Table 28) in order to increase their semantic meanings. After their ratings (Appendix A2), two of the most representative items (highest mean value for content and face validity assessment) for each category were selected (Table 28).

Table 28: Selected Items for ITOC Values Based on Expert Panel Results

Category	Selected Items
Adaptation	A1. I enjoy learning how to solve IT-related problems. A3. Keeping up with the latest knowledge in my field is important for me.
Precision in communication	PIC1.Good communication between IT and end user community is vital. * PIC2. Communication with non-IT groups should be open.*
Group consciousness	GC1. I strongly identified with the IT profession. GC4. When i talk about IT field, I usually say 'we' rather than 'they'.
Social image	SI2. I enjoy feeling of being needed to provide computing help. SI10. To know that my work had made a contribution to the good of the organization would please me
Technical jargon	TJ1. I like IT jargon/technical language.* TJ3. I enjoy using technical terms to communicate with other members of the IT profession.
Enjoyment	E2. I enjoy dealing with difficult tasks in the IT field. E4. For me the fast pace of the IT field makes it enjoyable.*
3U demands of the customers	UDC7. In IT projects, the endless needs of customers tire me.** UDC8. I do not mind the difficulties that customers experience while expressing their needs.**
Uncertainty tasks limits	UTL1. I have to do things that should be done in a different way. UTL4. I work with two or more groups of people that act in quite different ways.
Management support	MS4. My supervisor pays attention to what I am saying.** MS8. Managers have high respect and fair treatment towards IT people.
Teamwork	T6. Teamwork is important in the IS field.** T9. Members share information with each other.**

* represents items slightly modified at the end of the expert panel

** represents items derived from the qualitative study's results

Since the final survey instrument (Appendix A3) consists of seventy-two items except for ITOC categories, occupational culture is decided to be structured as a formative construct to make the survey reasonable to fulfill. Thus, seventy-four items were scaled down into the most representative twenty items which will be dropped down into ten best representatives after the final evaluation.

5.1.3. Specifying the Measurement Model

In this step, the expected relationship between constructs, sub-dimensions, and indicators are represented. Although there is no common understanding for developing hierarchical models in the IS field (Wetzels et al., 2009), four different types of models are suggested (Jarvis et al., 2003) and commonly used on the basis of second-order latent variable models (Figure 13).

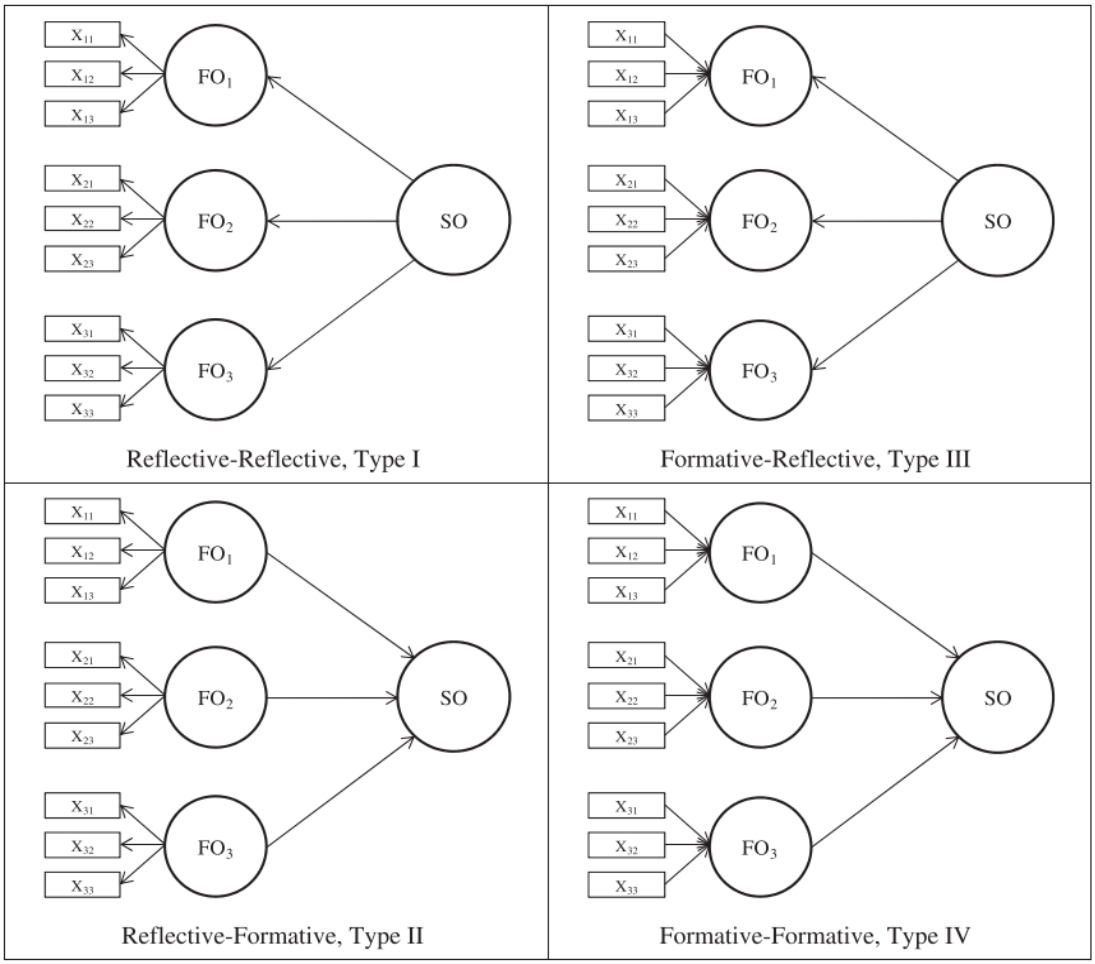


Figure 13: Different Types of Hierarchical Latent Variable Models

Source: Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. *Journal of Consumer Research*, *30*(2), 199–218.

Figure 14 demonstrates the hierarchical model specification which was evolved from the hypotheses developed in Section 2. According to the research model, organizational and national cultures were modeled as second-order latent variables which were constructed by repeating the indicators of their first-order latent variables using the reflective method. To specify higher-order constructs, a two-stage approach can be also used but the aim is minimizing the parameter bias in the higher-order constructs' measurement model relationship. Thus, the repeated indicator approach is preferred to use. The occupational culture was the first-order construct and linked to its items with the formative method. Although formative structures are generally discouraged by some scholars due to their weakened external consistency (Jarvis et al., 2003; Kim et al., 2010; MacKenzie et al., 2005; Petter et al., 2007), recent studies prove the usefulness of formative structures if used properly (Jarvis et al., 2012; Ringle et al., 2012; Mackenzie et al., 2011; Petter et al., 2012). Petter et al. (2012) especially stress the importance of formative structures in the IS field when grounded theory is constructed properly. Finally, job satisfaction and occupational commitment were first-order constructs and connected their items with reflective methods.

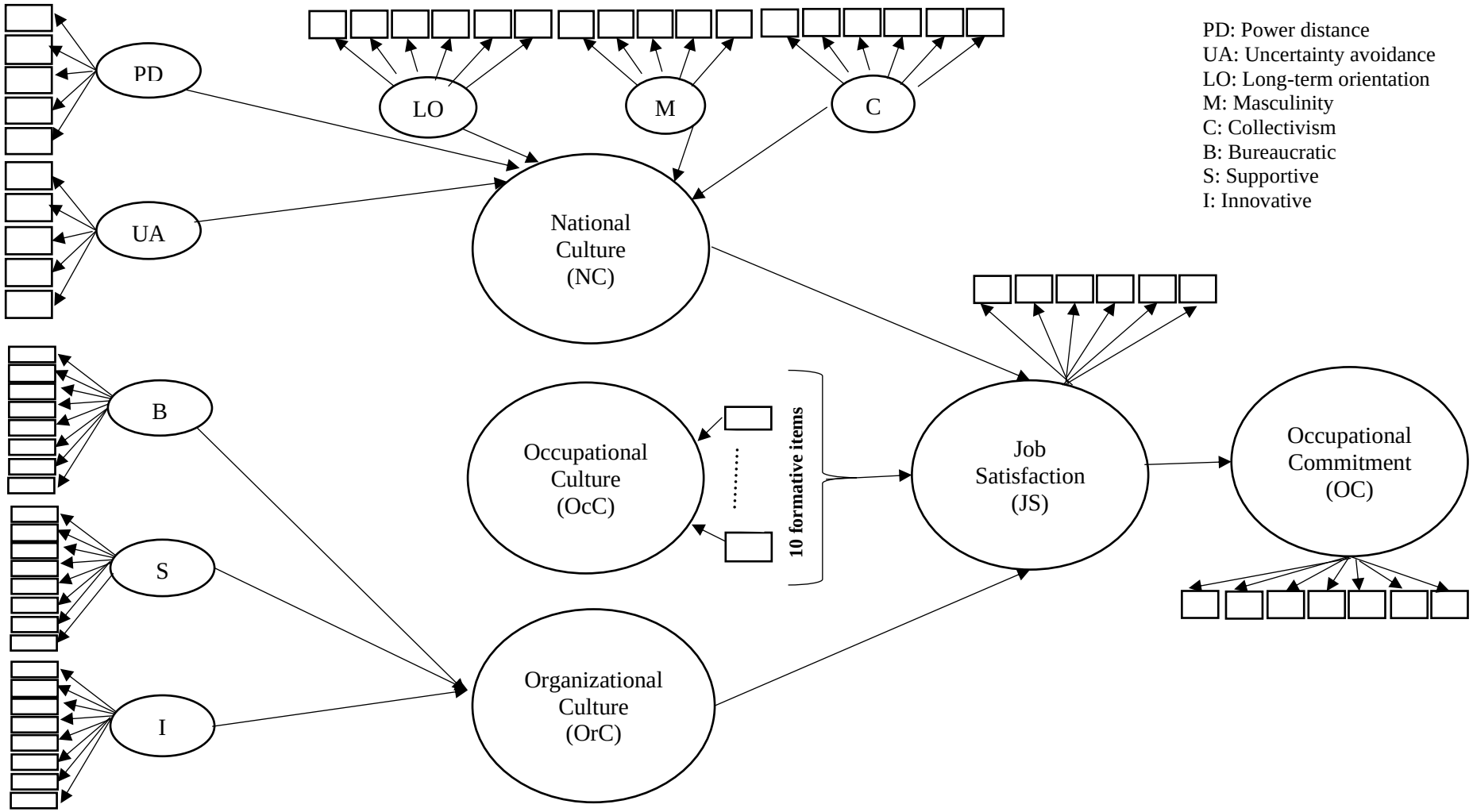


Figure 14: Hierarchical Research Model

At this stage, MacKenzie et al. (2011) also suggest fixing the paths or fixing the variance of the constructs. Either of two solutions is applicable for first-order construct using covariance-based techniques. Since the proposed research model consists of two multi-dimensional constructs (national and organizational culture) and follows partial least square modeling (will be discussed in the following sections), their recommendations can not be applied within the context of this thesis.

5.1.4. Scale Evaluation and Refinement

The fourth step of scale development is called scale evaluation and refinement which includes pilot study and refinement of it.

5.1.4.1. Pilot Study

According to (Cooper & Schindler, 2003), pilot studies can be conducted between 25 to 100 respondents. For testing the research model, the first data were collected from IT professionals via an online survey. Totally 89 IT professionals participated in the survey during a month (February 25th to March 26th, 2020). Respondents were asked how long they completed the survey and nearly 10 minutes was enough to answer all questions. Respondents represented twelve different industries (e.g., financial services, education, manufacturing) except the IS field, and their job titles included several positions such as junior software developer, job analyst, growth and digital transformation manager, network manager, business intelligence consultant, SAP consultant, vice president of technology. The sample characteristics of individuals for the pilot study is summarized in Appendix B1.1.

5.1.4.2. Scale Purification and Refinement

Obtained data were analyzed via Smart-PLS package program due to recommendations to use for IS-related models formed with a formative structure (Cenfetelli & Bassellier, 2009; Gaskin et al., 2018; Lowry & Gaskin, 2014). Since the assessment criteria (convergent and composite validity, collinearity, Cronbach alpha, etc.) are different for formative and reflective constructs (MacKenzie et al., 2011; Sarstedt et al., 2019), scale evaluation for reflective and formative items was reported, separately.

5.1.4.2.1. Scale evaluation for reflective constructs

There are five quality criteria for constructs with reflective items. These are: outer loading validation, convergent validity, Cronbach alpha, composite reliability, and discriminant validity.

Validity: Based on the validity of reflective indicators, as Hair et al. (2016) state that the outer loadings should be perfect if it is higher than 0.7, however outer loadings between 0.4 and 0.7 should be retained in the model if Cronbach Alpha and Average Variance (AVE) can't change in case of deletence of the related item. Reflective items with lower than 0.4 outer loadings should be eliminated from the model. As a result of analysis as can be seen in Appendix B1.2.1., all the outer loadings were higher than 0.4 except PD1, PD2, and PD3 which belong to the power distance, one of the sub-dimensions of national culture.

After deleting three items with low loadings, the next step is evaluating the *convergent validity* which tests the correlation between related constructs. The research model consists of two second-order (national/organizational culture) and two first-order (job satisfaction and occupational commitment) latent constructs with reflective indicators. In order to assess their convergent validity, the Average Variance (AVE) value for each construct should be considered. AVE is typically calculated by averaging the squared completely standardized factor loadings for the indicators, or by averaging the squared multiple correlations for the indicators (Fornell and Larcker, 1981). For a desirable model, AVE values must be greater than 0.50. According to our model, all reflective constructs (first and second orders) exceeded 0.50 as seen in Appendix B1.2.2.

Reliability: Cronbach Alpha is another important criterion for reflective constructs' internal consistency assessment. According to (Nunnally, 1978), a Cronbach Alpha value with greater than 0.70 indicates that the measurement model is reliable. Except for power distance, all values are greater than 0.70. Similar to Cronbach Alpha, *composite (construct) reliability* can be also regarded as an indicator of internal consistency in scale items. The threshold between 0.60 to 0.70 arch for composite reliability is acceptable in exploratory researches (Nunnally & Bernstein, 1994). Consequently, all the constructs in Appendix B1.2.2. reached the proposed composite reliability level.

The last quality criterion for reflective constructs is *discriminant validity* which tests whether any undesirable correlations between unrelated constructs exist. To assess

discriminant validity, three different methods can be used namely Fornell-Larcker's (1981) criterion, Heterotrait-Monotrait Ratio (HTMT) approach (Henseler et al., 2014), and Cross Loading Criterion (Chin, 1998). Whatever technique is preferred, discriminant validity can be only used to assess first-order constructs item correlation (Gupta & George, 2016). According to Fornell and Larcker (1981), "the square root of the AVEs of each latent variable must be greater than its correlations with any other constructs." This means construct must have the largest values among the row and column to which they belong.

According to Appendix B1.2.3.1, all the indicators have the highest loading which they are located except for undesirable correlations between Innovative (I) and Supportive (S) types of organizational cultures. Recently, Fornell and Larcker's (1981) approach is criticized by Henseler et al. (2014) suggest a new criteria assessment technique called HTMT. This new approach is based on "the average of the correlations of indicators across constructs measuring different phenomena relative to the average of the correlations of indicators within the same construct." HTMT ratio below 0.90 is acceptable for discriminant validity. In order to attain more sufficient validity, the ratio must below 0.85. Appendix B1.2.3.2. shows the result of the HTMT approach.

According to Appendix B1.2.3.2., all the ratio values are lower than 0.85 except the Innovative (I) and Supportive (S) types of organizational cultures (HTMT ratio is 0.998). Cross-Loading Criterion is the last technique that crosschecks the loadings of indicators. Based on this criterion, a latent variable should be explained by its indicators rather than other constructs' items. According to Appendix B1.2.3.3., each indicator has the highest load in its own column.

As a result of the evaluation, it was decided not to delete any of the first-constructs. Although Power Distance got a low Cronbach Alpha value (0.482) and its three items were deleted during pilot test analysis, its composite reliability and AVE exceeded the thresholds with the value of 0.781 and 0.646, respectively. Indeed, MacKenzie et al. (2011) recommend retaining all the constructs in the model and should not be eliminated unless all of the aspects of the latent variable are captured by the rest of the first-order dimensions. Another noticeable issue was the undesirable correlation between Innovative and Supportive sub-cultures. They were also retained in the model

since all the cross-loadings of related constructs met discriminant validity criteria according to Chin's (1998) approach.

5.1.4.2.2. Scale evaluation for formative constructs

There is only one formative construct in the research model called Occupational Culture. Occupational culture consists of ten categories (e.g., adaptation, precision in communication, etc.) and two delegate items were assigned to each category after conducting an expert panel. During the pilot study, it is aimed to select one best representative item for each category for the suitability of formative measurement models. So, twenty items were categorized into two groups based on expert panel results regarding items' mean values (Appendix A2). The first group represents items with the highest mean value whereas the second group represents items with a lower average. Then, PLS algorithm was run for each group separately to select one item from each group which meets the formative measurement models' quality criteria mentioned below. The results are summarized in Table 29.

Hair et al. (2016) suggest to assess the convergent validity of formative constructs via redundancy analysis (Chin, 1998); however, some popular researchers in the IS field (MacKenzie et al., 2011; Lowry & Gaskin, 2014) defend neither convergent nor discriminant validity has no meaning for formative indicators because items do not have to be correlated to each other. Additionally, internal consistency examinations such as Cronbach alpha do not apply since formative indicators may be positively, negatively correlated, or uncorrelated with each other (Bollen & Lennox, 1991). Instead, the external validity of formative constructs should be tested (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003) in two different ways: collinearity statistics and outer weights validation.

Unlike reflective measurement models, formative indicators are not interchangeable. Each of them tries to explain the different aspects of the latent variable. Thus, a high correlation between the two formative items causes collinearity problems. If more than two items are correlated then it is called a multicollinearity problem. The variance inflation factors (VIF) value is calculated in order to test collinearity. Less than 2 VIF values strongly indicate the absence of collinearity; however, most researchers claim up to 10 VIF values also acceptable (Bagozzi, 1994; Bruhn et al., 2008).

Once the collinearity issue is fixed, the next step is the validation of outer weights. Unlike outer loading values are expected to find at least 0.4 for reflective measurement models, there is no such standard value for formatives. The threshold for maximum outer weight is determined by the number of formative items (Hair et al., 2016). Where *n* represents the number of formative items, the maximum outer weight is calculated by the formula: $1/\sqrt{10}$. Occupational culture consists of 10 formative indicators, thus the maximum outer weight must be $1/\sqrt{10} = 0.316227766016838 \sim 0.32$. Table 29 shows VIF, outer weights, and outer loadings values for two groups.

Table 29: Comparison of Two Groups with Formative Items Based on Their Quality Criteria

First group items	VIF	Weights	p-values	Loadings	Second group items	VIF	Weights	p-values	Loadings
Adaptation: *A3. Keeping up with the latest knowledge in my field is important for me.*	1.460	0.324	0.000*	0.615	**Adaptation:** A1. I enjoy learning how to solve IT-related problems.	1.308	0.275	0.002*	0.554
Precision in communication: *PIC1. Good communication between IT and end-user community is vital.*	1.397	0.540	0.042*	0.475	**Precision in communication:** PIC2. Communication with non-IT groups should be open.	1.243	0.123	0.369	0.329
Group consciousness: GC4. When i talk about IT field, I usually say 'we' rather than 'they'.	1.864	0.221	0.017*	0.509	***Group consciousness:*** *GC1. I strongly identified with the IT profession.*	*2.148*	*0.194*	*0.050**	*0.710*
Social image: *SI10. To know that my work had made a contribution to the good of the organization would please me.*	1.333	0.251	0.000*	0.561	**Social image:** SI2. I enjoy feeling of being needed to provide computing help.	1.819	0.199	0.020*	0.739
Technical jargon: TJ3. I enjoy using technical terms to communicate with other members of the IT profession.	1.579	-0.084	0.029*	0.354	***Technical jargon:*** *TJ1. I like IT jargon/technical language.*	1.409	0.190	0.015*	0.582
Enjoyment: E2. I enjoy dealing with difficult tasks in the IT field.	1.871	0.182	0.134	0.437	***Enjoyment:*** *E4. For me the fast pace of the IT field makes it enjoyable.*	2.059	0.208	0.144	0.660
3U demands of the customers: UDC8. I do not mind the difficulties that customers experience while expressing their needs.	1.337	0.053	0.507	0.130	***3U demands of the customers:*** *UDC7. In IT projects, the endless needs of customers tire me.*	1.166	-0.177	0.111	-0.243
Uncertainty of task limits: *UTL4. I work with two or more groups of people that act in quite different ways.*	1.265	0.176	0.759	-0.055	**Uncertainty of task limits:** UTL1. I have to do things that should be done in a different way.	1.117	0.033	0.8	0.004
Management support: *MS4. My supervisor pays attention to what I am saying.*	1.449	0.517	0.001*	0.618	**Management support:** MS8. Managers have high respect and fair treatment towards IT people.	1.276	0.237	0.023*	0.597
Teamwork: *T6. Teamwork is important in IS field.*	1.508	-0.084	0.025*	0.417	**Teamwork:** T9. Members share information with each other.	1.436	0.175	0.198	0.509

*Significant outer weight at 0.05 level.

It is important to note that outer weights values are influenced by relative measurement models' relations which is known as 'interpretational confounding'. As a result, formative measurement models with a relatively large number of items may typically have lower outer weights than the maximum possible average standardized indicator -which was calculated as 0.32 for this study-. Thus, Hair et al. (2016) suggest to also check outer loadings of non-significant outer weights values. If the outer loading is higher than 0.5, then the indicator is considered as relatively important. Even if the outer loading is lower than 0.5, it does not completely mean that the item is unimportant. Similarly, Cenfetelli and Bassellier (2009) call researchers to become more flexible and kept formative indicators in the model as long as the theoretical contribution of them is justified. They also suggest to include negative weighted formative items in order not to have any collinearity problem. Consequently, ten items identified with italic fonts in Table 29 were chosen as the indicators of occupational culture based on the literature suggested criteria.

5.2. Preliminary Considerations for Final Validation

In this phase, new data were collected (n=1020 IT professionals) and the measurement model was reestimated based on the improvements made in the previous scale purification process. Very recently, Hair et al. (2019) propose a guideline (Figure 15) about statistics to consider in a PLS-SEM analysis. According to this framework, authors should be sure about the preliminary considerations -including exploratory data analysis- of PLS-SEM approach before moving further. Then, measurement model assessment criteria should be met, and finally, structural model assessment is reached.

As previously discussed in Section 3.3.4.1., there are many reasons to choose PLS-SEM rather than CB-SEM which are summarized below:

- Suggested research model is complex and includes many constructs with many indicators,
- There is a formative construct (occupational culture-OcC) in the path model,
- The research model has linear relationships,
- The flexibility of PLS-SEM since it works well with small sample sizes (the pilot study of this thesis consists of 89 IT employees) and large sample sizes (the number of final participants is 1020)

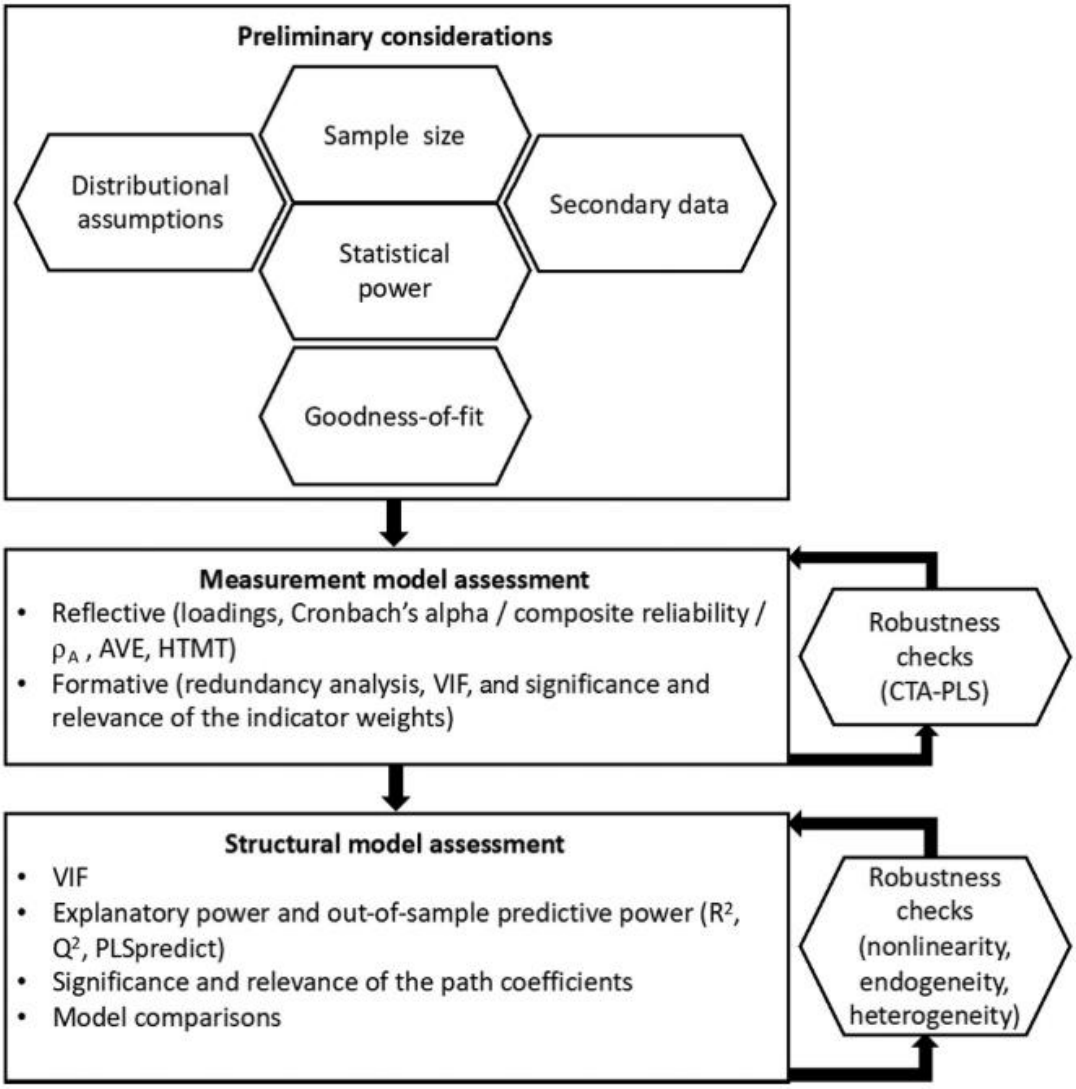


Figure 15: Aspects to Consider in a PLS-SEM Analysis

Source: Adapted from Hair, Joseph F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.

According to Figure 15, the sample size is one of the preliminary considerations for PLS-SEM analysis. Although PLS estimation method -ordinary least square- has power and is stable even at low sample sizes, this advantage is falsely used by certain scholars which damages the reputation of the approach (Hair et al., 2013; Marcoulides et al., 2009). Like any other multivariate method, PLS-SEM has not the ability to offer valid estimations as a result of the analysis of a poor sample, and researchers are expected to reach large populations if it is possible (Hair et al., 2019). Thus, the researcher should be aware of the power of their sample size before starting the analysis.

There are some general rules to determine the required sample size. For example, Gefen et al. (2000) suggest reaching a minimum sample size as ten times the largest number of predictors for any latent variable in the research model. Tabachnick and Fidell (2007) categorize the sample sizes according to their qualities: up to 50 sample is 'very poor', 51-200 sample size is 'poor', 201-300 sample size is 'fair', 301-400 sample size is 'good', 401-1000 sample size is 'very good', and more than1000 sample size is 'excellent'. Other admits that 200 and above sample sizes are enough to conduct SEM analysis (Hoe, 2008). However, these options give rise to a rule of thumb, most of them are no longer recommended to use (Kock & Hadaya, 2018). Instead, using heuristic rules such as Cohen's (1998) power table is considered as more structured plan to determine the optimal sample size and has been still utilized as an effective approach in the IS field (Benitez et al., 2020).

To apply Cohen's power table, four indicators must be evaluated: significance/statistical level (probability of rejecting the true null hypothesis incorrectly-Type 1 error), statistical power (probability of rejecting the false null hypothesis correctly-Type 2 error), effect size (the extent to which the path coefficient exists in the population), and the number of independent variables. The significance level, effect size, and the statistical power are the standardized values presented in Cohen's (1988) power table; whereas the number of independent variables is specific to the research model. Most studies in social sciences are often fixed significance level at alpha= .05, however more rigorous researchers tend to use alpha= .01. Effect size can be measured standardized values called f^2 for small, medium, and large effect sizes with the number of .02, .15, and .35 respectively, and the statistical power is usually set to 0.8. Consequently, the minimum number of samples required to perform a reliable analysis is calculated as 841 using the following criteria: .01 significance level, small effect size, .80 statistical power, and four independent variables (NC, OrC, OcC, and JS).

5.2.1. Exploratory Data Analysis

After deciding the required minimum sample size (for this study n=841), the researcher should conduct an exploratory data analysis (EDA) to check the normality, multicollinearity, outliers, and missing values. These examinations were utilized via SPSS software program v.25.

To examine the *normality of data*, the Kolmogorov-Smirnov test (where the sample size is higher than 30) and histogram can be used. At this point, it should be noticed that normality is tested only on the dependent variables (occupational commitment fort his study). As seen in 16, data are not normally distributed but rather to be left-skewed due to the strong agreement of the participants' opinions towards occupational commitment. Although data are nonnormal, it is not the main concern because PLS-SEM is not robust against the violations of normality like CB-SEM (Sarstedt et al., 2017).

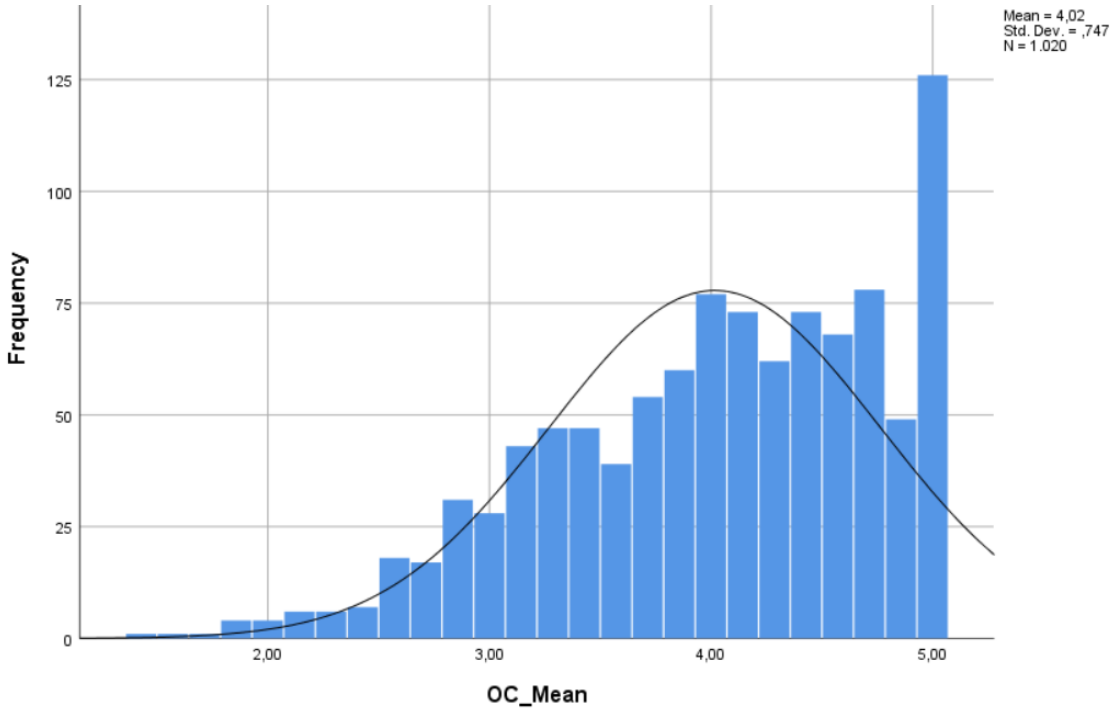


Figure 16: Histogram

There are no *missing values* except for the salary information question. Seven participants were unwilling to give a response about their salary (It is a demographic question and has no effect on SEM analysis, so these cases were not removed). The rest of the questions were fully fulfilled by the respondents; however, in which all the values were answered as "3" or "Neither agree nor disagree" should be removed from the data set since this situation clearly represents the disinterest of the respondents. Surprisingly, no respondent gave neutral answers to all questions which plausibly proves the willingness of IT professionals to participate in such a kind of study. The data were also checked for *outliers* using box-plot analysis. According to Tabachnick and Fidell (2007), there are few reasons for outliers such as human errors in data entry, misspecification of missing value code, and/or unrepresentative sample within the

population. Since the survey was fulfilled via an online questionnaire and no missing value was detected, there are no errors occurred during the data entry process and no outliers were detected within continuous variables. Last but not least, multicollinearity was also checked using Variance Inflation Factor (VIF) as recommended by Tabachnick and Fidell (2007).

Table 30: VIF Values

	Job satisfaction	Occupational commitment
National Culture	1.077	1.077
Organizational Culture	1.079	1.232
Occupational Culture	1.123	1.211
Job satisfaction		1.303

Less than 2 VIF values strongly indicate the absence of collinearity; however, most researchers claim up to 10 VIF values also acceptable (Bagozzi, 1994; Bruhn et al., 2008). According to Table 30, all the variables in this study have VIF values below 2 which strongly claims the absence of collinearity among them.

5.2.2. Final Data and Descriptive Statistics

The data was collected from IT professionals who have a profile on LinkedIn by the author herself. Totally 1020 IT professionals participated in the survey during three months period (April 18th to July 10th, 2020). There are no missing, unreliable values, and outliers were detected, so the final data includes 1020 IT professionals' participation. The following tables present the descriptive statistics of respondents according to nine demographic questions.

Table 31: Sample Distribution by Gender

	Frequency	Percent
Female	239	23.4
Male	781	76.6

According to Table 31, most of the participants were male which was an expected result due to the dominance of manpower in the IS field.

Table 32: Sample Distribution by Age

	Frequency	Percent
18-24	232	22.7
25-31	525	51.5
32-38	180	17.6
39-45	66	6.5
46-52	13	1.3
53 and over	4	0.4

Participants ages were also asked to understand the age distribution of IT professionals. According to Table 32, most of them -nearly 75%- were young between the ages 18-31, which is proof of their early career has started in the IS field.

Table 33: Sample Distribution by Marital Status

	Frequency	Percent
Single	717	70.3
Married	303	29.7

Marital status was also investigated. As seen in Table 33, the vast majority of the participants were single. This situation may arise from the participants' young ages or/and stressful environment of the IS sector.

Table 34: Sample Distribution by Education

	Frequency	Percent
Primary education	0	0
High school education	57	5.6
Associate degree	68	6.7
Bachelor degree	744	72.9
Master degree	139	13.6
PhD	12	1.2

As expected none of the respondents had primary education because working in IS field requires some basic skills like statistics, algorithms, mathematics, etc. As seen in Table 34, most of the respondents had a bachelor's degree with 73%. Besides, nearly 15% of participants had a master's degree or a Ph.D. It was an interesting result because working in the IS field was challenging in nature and spared time to other IT-related activities required extra effort. Actually, this finding clearly proves the pervasiveness of IT culture.

Table 35: Sample Distribution by Salary/Month

	Frequency	Percent
Less than 2500 TL	44	4.3
2500-4000 TL	175	17.2
4001-5500 TL	162	15.9
5501-7000 TL	156	15.3
7001-8500 TL	113	11.1
More than 8500 TL	363	35.6

IT professionals' monthly salaries were also asked. This question was optional since some people may not feel comfortable when sharing their income information to other

people. Nonetheless, only seven missing answers were detected to this question. As seen in Table 35, most of the respondents earned more than 8500 TL. Considering most of the participants were young, this income represented a quite high standard for IT professionals.

Table 36: Sample Distribution by Experience

	Freq. for total experience	Percent for total experience	Freq. for current job experience	Percent for current job experience
Less than 1 year	136	13.3	400	39.2
1-3 years	329	32.3	387	37.9
4-6 years	235	23.0	149	14.6
7-10 years	135	13.2	36	3.5
11-20 years	149	14.6	43	4.2
More than 20 years	36	3.5	5	0.5

To examine the experience of the participants, two different questions were asked. First, their total experience in the IS field was asked. As seen in Table 36, nearly 70% of them had six or fewer years of experience in the sector due to their ages. Second, their experience in their current job was also asked. It was a remarkable result that the vast majority of them (%92) performed in their current job for less than seven years. In addition to that, there were 36 professionals performed in the IS field for more than 20 years; however, only 5 of them employed in the same company during their career. These findings are clear evidence for the high turnover rate of the IS field.

Table 37: Sample Distribution by Sector

	Frequency	Percent
Yes	831	81.5
No	189	18.5

As expected and summarized in Table 37, most of the respondents (82%) performed in the IS industry since most of the companies were tend to be outsourced of their IT-related activities. Anyway, there were other sectors such as finance, education, energy, textile, automotive, health, tourism that IT professionals were recruited in.

Table 38: Sample Distribution by Current Job Position

	Frequency	Percent
Software developer	215	22.0
Database administrator	116	11.9
System/job/data analyst	110	11.2
Consultant	95	9.8
Business intelligence analyst	80	8.2
Other	362	36.9

For the last demographic question, the current job position of the participants was asked. According to Table 38, the most prominent IT job positions are software developer, database administrator, and analyst. However, most of the job positions put under the category of 'other' which consists of different job titles such as business developers, cyber-security expert, network and security engineer, project manager, penetration tester, help-desk, etc. This situation proves the availability of a wide range of working areas for IT professionals.

5.3. Measurement Model Assessment

Before moving the measurement model analysis, some preliminary analysis was carried out for the main variables. For second-order constructs (national culture and organizational culture), the whole analysis was carried out separately for each sub-constructs. The mean, standard deviation, skewness, and kurtosis values were calculated and presented in Table 39. The descriptive statistics of each item are also shown in Appendix B2.1.

Table 39: Descriptive Statistics of Constructs

	NC (Second order)					**OrC (Second order)**			**OcC**	**JS**	**OC**
	PD	**M**	**UA**	**C**	**LO**	**B**	**S**	**I**	**(First order)**		
Mean	2.19	2.45	3.97	3.39	4.11	2.32	2.5	2.30	4.14	3.94	4.01
Std. Dev.	.69	1.08	.83	.82	.75	1.03	1.11	.90	.51	.75	.75
Skewness	.461	.322	-1.32	-.48	-1.78	-.32	-.54	-.47	-1.8	-.97	-.60
Std. Err. of skew.	.077	.077	.077	.077	.077	.077	.077	.077	.077	.077	.077
Kurtosis	.644	4.23	2.204	0.23	4.32	-.81	-.72	-.65	6.96	1.17	-.27
Std. Err. of kurt.	.153	.153	.153	.153	.153	.153	.153	.153	.153	.153	.153

5.3.1. Measurement Model Assessment for Reflective Constructs

As theoretically discussed in Section 5.1.4.2.1. there are five quality criteria for constructs with reflective items. These are outer loadings, convergent validity (AVE), Cronbach alpha, composite reliability, and discriminant validity. There are two second-order (national culture and organizational culture) and two first-order (job satisfaction and occupational commitment) latent constructs in the model and Table 39 summarizes their items' outer loadings. As suggested by Hair et al. (2016), reflective items with lower than 0.4 outer loadings should be eliminated from the model. Thus, PD1 and I4 were excluded from the data set for further analysis. Additionally, outer loadings between 0.4 and 0.7 can be also excluded if the AVE value of related construct increase in case of deletence. Thus, PD2, LO5, LO6, C1, B1, B8, S2, I1, I2, JS3, and OC6 were also eliminated since the AVE and Cronbach Alpha value of related constructs increase in case of deletence.

Table 40: Reflective Constructs' Outer Loadings

	National culture					**Organizational culture**			**Job satis.**	**Occup. commit.**
	PD	**UA**	**LO**	**M**	**C**	**B**	**S**	**I**		
PD1	0.36*									
PD2	0.54*									
PD3	0.79									
PD4	0.74									
PD5	0.55									
UA1		0.75								
UA2		0.83								
UA3		0.88								
UA4		0.79								
UA5		0.86								
LO1			0.83							
LO2			0.86							
LO3			0.81							
LO4			0.89							
LO5			0.62*							
LO6			0.65*							
M1				0.79						

M2	0.85				
M3	0.84				
M4	0.82				
C1		0.64*			
C2		0.74			
C3		0.85			
C4		0.82			
C5		0.80			
C6		0.73			
B1			0.57*		
B2			0.73		
B3			0.78		
B4			0.76		
B5			0.76		
B6			0.81		
B7			0.79		
B8			0.50*		
S1				0.79	
S2				0.56*	
S3				0.82	
S4				0.74	
S5				0.72	
S6				0.83	
S7				0.83	
S8				0.83	
I1					0.54*
I2					0.64*
I3					0.81
I4					- 0.48*
I5					0.82
I6					0.83
I7					0.84

I8		0.81		
JS1			0.79	
JS2			0.79	
JS3			0.57*	
JS4			0.84	
JS5			0.73	
JS6			0.86	
OC1				0.77
OC2				0.68
OC3				0.72
OC4				0.81
OC5				0.6
OC6				0.59*
OC7				0.62

*represents the eliminated items

After the assessment of outer loadings, the next thing to do is evaluating the convergent validity of the constructs. To do this, AVE values should be considered. For a desirable model, AVE values must be greater than 0.50 (Fornell and Larcker, 1981). According to Table 41, all reflective constructs (first and second orders) exceeded 0.50.

Another important issue is reliability. To assess the reliability of constructs, Cronbach Alpha, and composite reliability can be used. Cronbach alpha is an indicator of internal consistency whereas composite reliability represents construct reliability. According to Nunnally (1978), Cronbach Alpha value with greater than 0.70 indicates that the measurement model is reliable. Similarly, a threshold between 0.60 to 0.70 arch for composite reliability is acceptable in exploratory researches (Nunnally & Bernstein, 1994). According to Table 41, all constructs' Cronbach Alpha values are greater than 0.70 except for power distance. Anyway, the composite reliability of power distance is 0.743 which is acceptable for social sciences.

Table 41: Reliability and Convergent Validity Measurements for Reflective Constructs

Constructs	AVE	Cronbach Alpha	Composite reliability
Power distance (PD)	0.503	0.566	0.743
Uncertainty avoidance (UA)	0.685	0.884	0.916
Long-term orientation (LO)	0.772	0.901	0.931
Masculinity (M)	0.685	0.848	0.897
Collectivism (C)	0.646	0.862	0.901
National culture (NC)	0.320	0.873	0.889
Bureaucratic (B)	0.614	0.875	0.905
Supportive (S)	0.648	0.909	0.928
Innovative (I)	0.708	0.897	0.924
Organizational culture (OrC)	0.541	0.949	0.954
Job satisfaction (JS)	0.663	0.872	0.908
Occupational commitment (OC)	0.522	0.816	0.866

The last quality criteria for reflective items is discriminant validity. Three different methods can be used to assess discriminant validity. The first method is Fornell-Larcker's (1981) criterion which claims that each construct must have the largest value among the row and column to which they belong. According to Table 42, this rule is provided for all of the constructs except for the junction point of Innovative (I) and Supportive (S) types of organizational culture.

Table 42: Fornell-Larcker Criterion's Results

	B	C	I	JS	LO	M	OC	PD	S	UA
B	**0.784**									
C	0.162	**0.804**								
I	0.616	0.167	**0.842**							
JS	0.298	0.191	0.418	**0.814**						
LO	0.103	0.493	0.143	0.19	**0.879**					
M	0.091	0.153	0.025	0.021	0.097	**0.828**				
OC	0.127	0.1	0.202	0.515	0.199	-0.026	**0.722**			
PD	0.01	0.219	-0.031	-0.027	0.095	0.322	-0.043	**0.709**		
S	0.696	0.152	0.862	0.436	0.12	0.036	0.209	-0.016	**0.805**	

UA	0.084	0.432	0.087	0.087	0.631	0.088	0.081	0.126	0.062	**0.828**

The second method is called HTMT which is a relatively new method and suggested by Henseler et al. (2014). According to this approach, the HTMT ratio must be lower than 0.85 for each construct. According to Table 43, all the values for each construct are lower than 0.85 except for Innovative and Supportive types of organizational culture.

Table 43: HTMT Approach's Results

	B	C	I	JS	LO	M	OC	PD	S	UA
B										
C	0.187									
I	0.651	0.182								
JS	0.314	0.214	0.467							
LO	0.131	0.551	0.166	0.218						
M	0.118	0.186	0.034	0.082	0.125					
OC	0.151	0.141	0.227	0.605	0.231	0.102				
PD	0.099	0.308	0.087	0.098	0.201	0.489	0.145			
S	0.731	0.168	0.953	0.491	0.136	0.049	0.235	0.111		
UA	0.116	0.484	0.114	0.103	0.707	0.101	0.099	0.15	0.09	

Third and the last approach is Chin's (1998) cross-loading criteria which crosscheck the loading of items. According to this approach, a latent variable should be explained by its indicators rather than other constructs' items.

Table 44: Cross-Loading Criterion's Results

	B	C	I	JS	LO	M	OC	S	UA	PD
B2	**0.717**	0.173	0.304	0.162	0.068	0.091	0.1	0.028	0.365	0.115
B3	**0.798**	0.14	0.575	0.294	0.094	0.046	0.128	-0.037	0.643	0.08
B4	**0.785**	0.119	0.524	0.253	0.025	0.083	0.073	-0.002	0.574	0.032
B5	**0.757**	0.123	0.358	0.183	0.053	0.106	0.097	0.039	0.409	0.091
B6	**0.828**	0.117	0.535	0.283	0.052	0.05	0.113	-0.009	0.647	0.005
B7	**0.813**	0.118	0.574	0.293	0.072	0.033	0.143	-0.006	0.656	0.043
C2	0.128	**0.74**	0.136	0.125	0.392	0.114	0.079	0.213	0.12	0.367
C3	0.154	**0.867**	0.176	0.205	0.457	0.097	0.135	0.15	0.162	0.383
C4	0.127	**0.847**	0.133	0.183	0.477	0.106	0.111	0.123	0.119	0.389

C5	0.116	**0.818**	0.138	0.133	0.375	0.109	0.083	0.162	0.129	0.342
C6	0.137	**0.736**	0.1	0.152	0.248	0.13	0.077	0.201	0.091	0.248
I3	0.484	0.148	**0.831**	0.38	0.086	0.008	0.186	-0.038	0.696	0.033
I5	0.532	0.125	**0.855**	0.398	0.067	0.031	0.198	-0.049	0.74	0.043
I6	0.54	0.16	**0.844**	0.337	0.155	0.021	0.146	-0.034	0.728	0.066
I7	0.426	0.12	**0.848**	0.312	0.122	0.001	0.144	-0.01	0.684	0.076
I8	0.641	0.167	**0.830**	0.37	0.097	0.038	0.18	-0.021	0.77	0.067
JS1	0.323	0.143	0.419	**0.811**	0.086	0.021	0.307	-0.025	0.446	0.036
JS2	0.339	0.137	0.407	**0.806**	0.099	0.041	0.293	0.012	0.45	0.053
JS4	0.244	0.207	0.346	**0.842**	0.189	-0.013	0.447	-0.052	0.336	0.097
JS5	0.177	0.141	0.242	**0.748**	0.179	0.092	0.456	0.031	0.231	0.087
JS6	0.228	0.18	0.331	**0.861**	0.167	0.03	0.509	-0.018	0.347	0.084
LO1	0.052	0.44	0.082	0.122	**0.864**	0.033	0.131	0.06	0.084	0.558
LO2	0.086	0.469	0.134	0.187	**0.899**	0.03	0.157	-0.007	0.115	0.548
LO3	0.064	0.363	0.114	0.129	**0.833**	0.07	0.149	0.075	0.097	0.507
LO4	0.071	0.459	0.109	0.185	**0.916**	0.032	0.178	0.045	0.104	0.593
M1	0.07	0.1	0.02	0.017	0.005	**0.789**	-0.026	0.263	0.02	0.062
M2	0.076	0.137	0.019	0.018	0.02	**0.848**	-0.027	0.287	0.023	0.048
M3	0.059	0.099	0.021	0.063	0.034	**0.839**	0.048	0.243	0.023	0.081
M4	0.067	0.114	0.021	0.034	0.083	**0.834**	0.005	0.256	0.048	0.097
OC1	0.098	0.12	0.145	0.417	0.116	0.043	**0.813**	0.01	0.146	0.046
OC2	0.009	0.009	0.086	0.24	0.093	-0.091	**0.651**	-0.071	0.083	0.014
OC3	0.043	-0.016	0.085	0.286	0.077	-0.057	**0.662**	-0.102	0.105	0.005
OC4	0.152	0.135	0.199	0.417	0.192	0.027	**0.835**	0.018	0.214	0.118
OC5	0.098	0.124	0.171	0.37	0.107	-0.004	**0.701**	0.017	0.162	0.046
OC7	0.161	0.1	0.162	0.372	0.153	0.034	**0.648**	0.019	0.162	0.104
PD3	-0.036	0.151	-0.057	-0.008	0.097	0.23	-0.012	**0.856**	-0.051	0.154
PD4	0.055	0.197	0.02	0.001	-0.012	0.257	-0.006	**0.731**	0.055	0.059
PD5	-0.025	0.076	-0.049	-0.064	-0.083	0.255	-0.021	**0.49**	-0.063	-0.005
S1	0.574	0.109	0.679	0.302	0.12	0.025	0.125	-0.013	**0.794**	0.068
S3	0.558	0.123	0.782	0.406	0.076	0.02	0.175	-0.038	**0.83**	0.031
S4	0.495	0.11	0.657	0.345	0.085	-0.018	0.202	-0.049	**0.746**	0.051
S5	0.417	0.113	0.646	0.373	0.078	0.036	0.155	0.014	**0.733**	0.035
S6	0.569	0.131	0.707	0.379	0.06	0.034	0.184	0.025	**0.842**	0.042

S7	0.682	0.15	0.686	0.347	0.102	0.051	0.157	-0.013	**0.841**	0.054
S8	0.725	0.142	0.699	0.352	0.12	0.048	0.183	-0.024	**0.841**	0.056
UA1	-0.019	0.288	-0.032	-0.008	0.423	0.074	0.016	0.073	-0.054	**0.752**
UA2	0.106	0.392	0.098	0.113	0.505	0.102	0.085	0.147	0.094	**0.834**
UA3	0.076	0.406	0.087	0.103	0.578	0.079	0.063	0.131	0.084	**0.884**
UA4	0.046	0.315	0.033	0.066	0.495	0.075	0.083	0.098	0.041	**0.795**
UA5	0.074	0.386	0.075	0.078	0.583	0.041	0.094	0.09	0.063	**0.866**

According to Table 44, all latent variables are explained by their own indicators rather than the other items. Although supportive and innovative organizational culture types exceed the threshold with a slight difference based on Fornell-Larcker's criteria and HTMT approach, there is no problem according to the cross-loading criterion.

Taken together, thirteen items (PD1, PD2, LO5, LO6, C1, B1, B8, S2, I1, I2, I4, JS3, and OC6) were eliminated from the model due to their low outer loadings. Except for power distance, all the constructs met the convergent validity and reliability criteria. Since MacKenzie et al. (2011) suggest keeping all the constructs in the model unless all the aspects of the latent variable are captured by the rest of first-order dimensions, power distance was retained in the model. Indeed, its AVE value and composite reliability have also met the quality criteria. Except for innovative (I) and supportive (S) organizational types, all the constructs show sufficient discriminant validity according to three different approaches. As I and S met discriminant validity criteria according to Chin's (1998) approach, they were also retained in the model.

5.3.2. Measurement Model Assessment for Formative Construct

Unlike reflective construct, there is no strict rules for formative construct assessment. However, Hair et al. (2016) suggest performing redundancy analysis for the convergent validity of formative constructs, some popular IS researchers admit there is no need to assess neither convergent nor discriminant validity since they have not to be correlated to each other (MacKenzie et al., 2011; Lowry & Gaskin, 2014). Additionally, internal consistency examinations such as Cronbach alpha do not apply since formative indicators may be positively, negatively correlated, or uncorrelated with each other (Bollen & Lennox, 1991). Instead, the external validity of formative constructs should be tested (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003) in two different ways: collinearity statistics and outer weights validation.

As theoretically discussed in Section 5.1.4.2.2., less than 2 VIF values strongly indicate the absence of collinearity. Nonetheless, up to 5 (Hair et al., 2011), even 10 VIF (Bruhn et al., 2008) values are also acceptable for social sciences. Thus, there is no problematic collinearity issue according to Table 45 among the formative items.

Table 45: Outer VIF Values of Formative Items

Items	VIF Values
A3	2.219
E4	1.654
GC1	1.582
MS4	1.185
PIC1	1.536
SI10	2.002
T6	1.700
TJ1	1.403
UDC7	1.068
UTL4	1.121

Once the collinearity is solved, authors should check the significance and relevance of formative items. To do this, t-statistics, outer weights, and outer loadings should be carefully investigated. Significance t-statistics mean that related item makes a statistically significant contribution to the nature of the construct and must be retained in the model even if its outer weight is lower than the calculated[9] threshold. Cenfetelli and Bassellier (2009) call researchers to become more flexible and kept formative indicators in the model as long as the theoretical contribution of them is justified. They also suggest to include negative weighted formative items in order not to have any collinearity problem.

It should be noted here that, Hair et al. (2016) suggest to also check outer loadings of non-significant outer weights values. If the outer loading is higher than 0.5, then the indicator is considered as relatively important. Even if the outer loading is lower than 0.5, it does not completely mean that the item is unimportant. Thus, authors should be careful about deleting delete a formative indicator since it may be more consequential

[9] Unlike the standard theresholds and rules for reflective indicators such as "if the outer loading is lower than 0.4, then the related indicator must be eliminated", there is no such a rule for formatives. Instead, the thereshold for maximum outer weight is determined based on the number of formative indicators (which was calculated as 0.32 in section 5.1.4.2.2.).

and may change the nature of the construct. However, if the p-value is far outside like 0.9, then deleting the item would probably not have a major effect on the construct.

Table 46: Significance and Relevance of Formative Items

Items	t-statistics	Outer weights	Outer loadings
A3	0.902	0.055	0.505
E4	3.952*	0.231	0.573
GC1	3.033*	0.185	0.573
MS4	10.857*	0.647	0.821
PIC1	1.233	0.066	0.447
SI10	2.972*	0.182	0.571
T6	2.319*	0.141	0.533
TJ1	1.019	-0.052	0.326
UDC7	3.192*	-0.154	-0.197
UTL4	4.042*	-0.178	0.099

*= significant at $p < 0.05$

Table 46 summarizes the significance and relevance of formative items. Except for three indicators namely Adaptation (A3), Precision in communication (PIC1), and Technical jargon (TJ1), the other seven items p-value were statistically significant. This proves that enjoyment (E4), group consciousness (GC1), management support (MS4), social image (SI10), teamwork (T6), 3U demands of the customers (UDC7), and uncertainty tasks limits (UTL4) made a strong contribution to the IT professionals occupational culture. Even though some researchers posit that non-significant formative indicators should be eliminated (Diamantopoulos & Winklhofer, 2001), it is decided to not to drop them based on the discussions above (Hair et al., 2016; Gaskin et al., 2018; Petter et al., 2007; Dinger et al., 2015).

5.4. Structural Model Assessment

After the satisfaction of the measurement model assessment is reached, the next step is evaluating the results via analyzing the structural model. Standard quality criteria for structural model assessment are[10]: *coefficient of determination (R^2), predictive relevance (Q^2), and statistical significance of the path coefficients.*

Before assessing the quality criteria, collinearity must be checked in order not to face any bias during analysis. According to Hair et al. (2019), this process is very similar to examining formative indicators (outer VIF), but the latent variable scores of dependent

[10] Researchers can also assess the f^2 effect size to see how the removal of a certain construct affects an independent variable's R^2 value. However, Hair et al. (2019) suggest to report this metric if a specific demand is requested. Assessment of f^2 effect size can be seen in Appendix B2.2.

variables are used to calculate inner VIF values. Ideal VIF values should be close to 3 and lower.

Table 47: Inner VIF Values

	Job satisfaction	Occupational commitment
National culture	2.879	
Organizational culture	2.624	
Occupational culture	1.376	
Job satisfaction		1.000

According to Table 47, collinearity is not an issue for the inner model. The next step is examining the R^2 of the predictive construct (s). R^2 indicates the variance of the dependent construct (s) explained by the independent variables and measures the research model's explanatory power (Shmueli & Koppius, 2011). The standard value of R^2 ranges from 0 to 1, with closer to 1 indicating a strong predictive power. There is no general rule for acceptable R^2, and it strongly depends on the context of the study. Nonetheless, as a guideline, Hair et al. (2011) propose that R^2 values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak; whereas Cohen (1988) suggests that R^2 values of 0.26, 0.13, and 0.02 can be considered substantial, moderate, and weak. It is important to state that R^2 is a function of independent variables- the greater number of predictors, the higher R^2 (Hair et al., 2019).

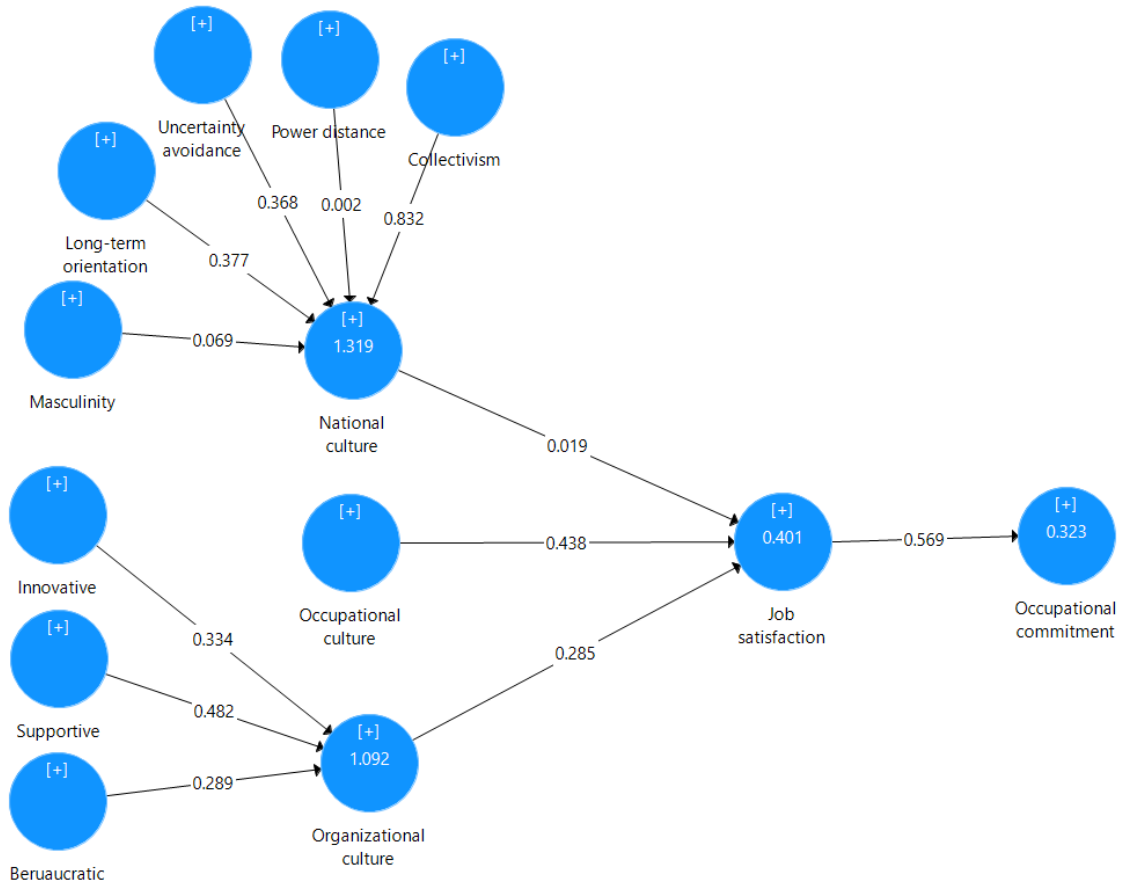


Figure 17: Structural Model Assessment

Figure 17 shows the R^2 values of two independent variables 0.401 and 0.323, respectively. This means that three latent variables (national culture, occupational culture, and organizational culture) together explain the 40.1% of the variance of job satisfaction, whereas job satisfaction explains the 32.3% of the variance of occupational commitment.

After assessing the R^2 values, the next step is calculating the PLS path model's predictive accuracy which is known as Q^2 value (Geisser, 1974; Stone, 1974). This estimate is based on the blindfolding procedure and applicable only for constructs with reflective items. Using this metric, the procedure predicts the "data points" that were removed for all constructs. As a rule of thumb, Q^2 values of 0.02, 0.15, and 0.35 can be considered small, medium, and large predictive relevance of the path model. As seen in Table 48, all the constructs have large Q^2 values which means the model has predictive relevance for endogenous variables.

Table 48: Predictive Relevance (Q^2) Values

Constructs with Reflective Items	Q^2 value
National culture	0.255
Organizational culture	0.537
Job satisfaction	0.249
Occupational commitment	0.126

The final step is assessing the significance and relevance of the path coefficients. To do so, the bootstrapping procedure was runned. During this process, a large number of subsamples (for this model subsample were determined as 5000) were taken from the original sample with replacement to give bootstrap standard errors. As a result, path coefficients, t-statistics, and their p-value were obtained which were shown in Table 49.

Table 49: Final Causal Model Coefficients

Relationship	Std.reg.weights	t-statistics	P value	Conclusion
H1: NC → JS	0.019	0.612	0.541	Rejected
H2: OcC → JS	0.438	13.663*	0.000*	Accepted
H3: OrC → JS	0.285	8.632*	0.000*	Accepted
H4: JS → OC	0.569	16.178*	0.000*	Accepted

*= p<0.00, t>1.96

As a result, it was found support for three of four hypotheses. The organizational and occupational culture had a significant (p<0.00) and positive (0.258 and 0.438) impact on job satisfaction whereas national culture did not. Indeed, occupational culture's impact was stronger than the organizational culture's, due to the higher standardized regression weight (path coefficient). Finally, job satisfaction had a positive and significant effect on occupational commitment

As a final note, the authors can report the model fit in PLS-SEM. Reporting the model fit is a critical step because some fit measures' estimation strictly based on the assumptions of residual covariance or covariance matrix which is not used in PLS-SEM (Lohmöller, 1989). However, SmartPLS offers the following fit measures: SRMR, RMS_theta, NFI d_ULS, d_G, and Chi^2. Among them, the first three are the most commonly used and their thresholds are determined as < 0.10, <0.12, >0.90 respectively. Table 50 summarizes the related fit indices' results.

Table 50: Model Fit Results

Fit Indices	**Value**
SRMR	0.139
NFI	n/a

Although SmartPLS offered value for RMS_theta (0.131 for this model), it is useful for purely reflective models. Since the research model consists of one formative construct (occupational culture) it is not appropriate to include it in Table 49. Additionally, for NFI, there was no calculated value but instead, a label appears ‘not applicable (n/a)’ due to the second-order structured constructs (national culture and organizational culture). In the end, SRMR was the only fit index that suitable for interpretation. According to Table 50, the SRMR dor our final structural model was 0.139 which is very close to borderline and thus indicates sufficient model fit.

DISCUSSION AND CONCLUSION

In this section, a general evaluation will be presented and the main findings of the study will be discussed.

Overview of the study: In their inspiring systematic review study, Leidner and Kayworth (2006) categorize IS/culture studies into six categories: 1) culture and information systems development, (2) culture, IT adoption, and diffusion, (3) culture, IT use, and outcomes, (4) culture, IT management, and strategy, (5) IT's influence on culture, (6) IT culture. Among these six themes, "IT Culture" is the one who gets the least attention especially in terms of empirical researches. Indeed, there is an ongoing and consistent call to deeply investigating the occupational culture of IT (Nord & Nord, 2007; Hofstede, 2011; Guzman, 2006; Walsh et al., 2010; Jacks, 2012, Jacks & Palvia, 2014; Schein, 2015). Although previous studies made good progress about qualitatively identifying the features of IT occupational culture (Ramachandran and Rao, 2006; Guzman et al., 2004; Guzman, 2006) and measurable dimensions of individual IT culture, there is still lack of studies aimed to make IT occupational culture dimensions measurable not only for individuals but also for IT occupational community as general. To close this gap, one of the objectives of this thesis is to reveal the cultural values of ITOC and turn them into measurable items. Moreover, a reliable and valid multicultural research model is proposed to test which of the cultural level (national-organizational-occupational) has the most significant effect on IT professionals' job satisfaction.

Research Questions: This study focuses on the impact of culture on job satisfaction among IT employees. Within this scope, the main research question is: "which of the three cultural levels –national, organizational, and occupational- has the most impact on IT employees' job satisfaction?"

To answer the main research question, six sub-questions should be investigated:

1-) Does an occupational community for IT employees (ITOC) exist in Turkey? (Section 4-Part I)

2-) What are the core cultural values of ITOC? (Section 4-Part II)

3-) What are the measurable cultural dimensions of ITOC? (Section 5-Part I)

4-) Is there an association between national culture and IT employees' job satisfaction? (Chapter 5-Part II, Hypothesis 1)

5-) Is there an association between occupational culture and IT employees' job satisfaction? (Chapter 5-Part II, Hypothesis 2)

6-) Is there an association between organizational culture and IT employees' job satisfaction? (Chapter 5-Part II, Hypothesis 3)

In addition to these six sub-questions, the relationship between job satisfaction and occupational commitment (Hypothesis 4) is also investigated since there is no consensus about the causal relationship between job satisfaction and occupational commitment in IS literature.

Research Methodology: This study follows a mixed-methods approach under the category of "exploratory sequential design" which means the qualitative method dominates and shapes the quantitative level and they are chronologically conducted. In the qualitative phase, semi-structured interviews were conducted to legitimate the existence of ITOC and to reveal the core cultural values of this community. At the end of this process, identified ITOC values were integrated with Trice's (1993) Occupational Culture Framework and Douglas' (1978, 1982) group-grid dimension approach. Throughout the qualitative phase, steps of the Constructivist Grounded Theory approach were followed. In the quantitative phase, ITOC values were turned into measurable items and the proposed research model was analyzed via PLS-SEM by using the SmartPLS software package.

Findings: Each sub-research question and finally the main research question will be separately discussed in order to be an easy follow-up.

Sub-question 1*: *Does an occupational community for IT employees (ITOC) exist in Turkey? (Chapter 4-Part I)

To test the existence of ITOC, a theoretical model (Figure 10) was developed based on Duliba and Baroudi's (1991) research. According to this model, an occupational community consists of both intrinsic and extrinsic factors which are represented with the following questions:

- Which department have you been graduated?
- Why do you choose to make a career in IT?

- Do you want to choose another job if given the chance?
- Do you have to follow a code of conduct?
- Do you feel different from others?

The first four questions belong to the intrinsic side while the last one is about "isolation" which refers to an extrinsic factor. Moreover, there are some "work/leisure convergence" questions were asked to determine the strength of ITOC. According to the answers given (Table 18), it can be clearly claimed that there is strong evidence for the existence of ITOC in Turkey; however, the strength of it is relatively weak (Table 19). IT professionals from Turkey show a high degree of involvement and identity because none of our respondents choose IT because of any rewards like money, reputation and most of them willing to continue to perform in the same sector. Similar to Marschall's (2002) study, our participants have also stated that they feel different from others and have some code of conduct which also proves the existence of ITOC in Turkey. The reason why the community has a weak power is caused by the unwillingness to participate in scientific work-related activities and suffered from academic reading.

Sub-question 2: What are the core cultural values of ITOC? (Chapter 4-Part II)

To reveal the core cultural value of ITOC, interviewees were asked with the following eight questions:

- How is your daily routine and what are your responsibilities?
- How do you manage relationships with other departments?
- What is the most challenging part of your profession?
- What is the easiest part of your profession?
- What is the worst part (that makes you feel unmotivated) of your profession?
- What is the best part (that makes you feel unmotivated) of your profession?
- What skills do a competent IT professional has?
- What skills are expected to have from a newly graduated IT student?

The distinctive aspects of these eight questions were their tacitness. Since we use snowball sampling with theoretical sampling together, our participants were willing to speak about their occupational culture and our questions should only serve to "wind them up". Obtained data were coded and analyzed via QDA Miner software following the three steps of CGT: initial open coding, focused coding, and theoretical coding.

Finally, ten ITOC values were identified and integrated with Trice's (1993) Occupational Culture Framework and Douglas' (1978, 1982) group-grid dimension approach. These ten core cultural values are briefly described below:

1. ***Adaptation:*** It expresses the ever-changing structure of the IT sector and the necessity of employees to adapt to this change.
2. ***Precision in communication:*** It expresses the vital importance of clear and effective communication between IT people and customers.
3. ***Enjoyment:*** It expresses the enjoyment of getting from hard working conditions and challenging technical tasks.
4. ***Teamwork:*** It expresses the importance of the ability to work together as well as consistent collaboration.
5. ***3U demands of the customers:*** It refers to the uncertain/unexpected/unending needs of the customers.
6. ***Management support:*** It expresses the neglectedness of IT employees and the need for continuous support from executive managers.
7. ***Social image:*** It expresses the desire of IT people to be beneficial for society, especially to the customers, rather than to benefit themselves.
8. ***Group consciousness****:* It expresses a sense of belonging in IT profession and difficulties in explaining themselves to those outside their groups.
9. ***Technical jargon****:* It expresses the technical terms used by IT people.
10. ***Uncertainty of task limits:*** It expresses that IT department employees are expected to have also control over the functioning of other departments.

Seven of the identified categories show similarity with previous research (Guzman et al., 2004; Guzman, 2006; Ramachandran & Rao, 2006; Jacks & Palvia, 2011; Jacks, 2012; Jacks et al., 2018); however, 3U demands of the customers, management support, and uncertainty tasks limits emerged as unique for this study.

Among ten categories, only teamwork and uncertainty of task limits belong to the grid dimension whereas the other eight categories well fit into the group dimension. This situation plausibly proves the fact that IT profession comprises a lack of formal values and captures mostly soft occupational cultural values which are harder to be observed and measured. Indeed, IS literature suffers from the measurable occupational cultural dimension of the profession which is the driver behind the next sub-research question.

Sub-question 3: What are the measurable items of ITOC's cultural values? (Chapter 5-Part I)

After theoretically described, ten ITOC values must be turned into measurable items in order to test their generalizability. To do this, related literature was reviewed and interviews were read again during a nearly one-month period. In the end, a total of seventy-four statements was compiled (Table 27). Since the final survey instrument already consists of too many questions regarding with national culture (twenty-six items) and organizational culture (twenty-four items), occupational culture is decided to be structured as a formative construct which has been strongly emphasized by IS scholars (Jarvis et al., 2012; Ringle et al., 2012; Mackenzie et al., 2011; Petter et al., 2012). Indeed, literature has reached a consensus for the usage of formative constructs especially when the grounded theory is constructed properly (Petter et al., 2012). Thus, seventy-four statements were scaled down into the ten statements representing each ITOC category with one best representative statement via expert panel and pilot study. The final item list is aimed to be representative not to be exhaustive which is represented below:

1. ***Adaptation:*** *"Keeping up with the latest knowledge in my field is important for me."*
2. ***Precision in communication:*** *"Good communication between IT and end-user community is vital"*
3. ***Group consciousness:*** *"I strongly identified with the IT profession."*
4. ***Social image:*** *"To know that my work had made a contribution to the good of the organization would please me."*
5. ***Technical jargon:*** *"I like IT jargon/technical language."*
6. ***Enjoyment:*** *"For me the fast pace of the IT field makes it enjoyable."*
7. ***3U demands of the customers****: "In IT projects, the endless needs of customers tire me."*
8. ***Uncertainty of task limits:*** *"I work with two or more groups of people that act in quite different ways."*
9. ***Management support:*** *"My supervisor pays attention to what I am saying."*
10. ***Teamwork:*** *"Teamwork is important in the IS field."*

Sub-question 4: Is there an association between national culture and IT professionals'overall job satisfaction? (Chapter 5-Part II, Hypothesis 1)

McHenry et al., (1990) emphasize four drawbacks in IS/national culture field. These are: (1) struggle to find related literature, (2) cultural mismatch problems, (3) getting access to the right people, and (4) biases. Among them, the last three are closely related to personal factors and can be only overcome by living the culture and integrate with it. However, the first one is related to the maturity of the literature. Following these criticisms, Ford et al. (2003) and Myers and Tan (2002) call for researches which are expected to make contributions in the national culture/IS field with findings and suggestions.

This study contributes by examining the relationship between national culture and IT professionals' job satisfaction. Although it is expected to find out a significant relationship between these two constructs, results are failed to prove this assumption at the level of 0.05 (p=0.541). This result is inconsistent with previous studies which claim that certain national culture can direct IT professionals' personal life and affect their job satisfaction (Okpara, 2007; Warr, 2007; Eskildsen et al., 2010; Hauff et al., 2015). One possible reason for this unexpected insignificant relationship could be the globalization. In light of the fact of the global world, there are no distinct borders between nations which makes it possible to create fast communication, enhanced collaboration, and outsourcing. Especially the field of IS where the vast information is anonymous and can be reached from anywhere, the living country is not an important antecedent for job satisfaction.

Sub-question 5: Is there an association between occupational culture and IT professionals' overall job satisfaction? (Chapter 5-Part II, Hypothesis 2)

Professionalism or more specifically having an occupational culture is considered as a socialization process and has a considerable effect on task dedication which is strongly associated with job satisfaction (Kalbers & Forgarty, 1995; Hampton & Hampton, 2004). Although there are some exceptions (McCue & Gianakis, 1997), several researches have been conducted in a different setting and in a different country showed a significant relationship between professionalism and job satisfaction.

It is assumed that IT occupational culture also has a potential impact on job satisfaction which is a relatively new field and a few studies pertaining to this aim. According to the

results, this assumption is proved at the level of 0.05 (p=0.000) which means IT occupational culture has a real effect on IT professionals' job satisfaction. This finding is consistent with previous research which clearly admits that ASPIRE as a whole has a significant and positive effect on job satisfaction (Sato et al., 2018). Even though IT culture entails unique characteristics such as irregular and longer working hours, unexpected user demands, constantly changing technology which may create greater occupational stress, it is valuable to see that occupational culture positively affects job satisfaction which should be critically examined for further studies.

Sub-question 6: Is there an association between organizational culture and IT professionals' overall job satisfaction? (Chapter 5-Part II, Hypothesis 3)

Although which culture profile is the best" is a varying situation depends on several factors and there is no single right answer, several studies show that organizational culture has an impact on employees' job satisfaction. Even though some IS studies have found that organizational exhaustion factors have a negative influence on job satisfaction, majority of the studies have revealed a positive significant association between them. For example, a strong positive relation between clan culture and job satisfaction especially regarding with supervision dimension of job satisfaction is found (Al-Shammari & Al-Am, 2018). Shurbagi and Zahari (2012) report significant positive relationship between job satisfaction and all (clan, market, adhocracy, and hierarchy) types of organizational cultures. Similar to these findings, this study is determined that organizational culture has a significant effect on IT employees' job satisfaction at the level of 0.05 (p=0.000).

Sub-question 7: Is there an association between IT professionals' overall job satisfaction and occupational commitment? (Chapter 5-Part II, Hypothesis 4)

The relationship between job satisfaction and occupational commitment is complex since they may affect each other reciprocatively. While the majority of the studies report that job satisfaction has a significant and positive effect on occupational commitment (Bakan et al., 2014; Brooks et al., 2015; Satoh et al., 2017); whereas there are some others which admit that vice versa is also possible (Saha & Kumar, 2018; Wang et al., 2012). In line with general literature, IS specific studies also have reached no consensus about this causal relationship. As it is assumpted and proved at the level of 0.05 =p=0.000), job satisfaction has a positive influence on IT professionals' occupational

commitment. This means that the more satisfied with the job the higher involvement towards occupation has regarding IT professionals which is an expected result and consistent with previous studies (Gupta et al., 1992; Brooks et al., 2015; Fu & Chen, 2015).

Main Research Question: Which of the three cultural levels –national, organizational, and occupational- has the most impact on IT professionals' overall job satisfaction?"

Among three cultural levels, organizational and occupational culture has a significant ($p<0.00$) and positive (0.258 and 0.438) impact on job satisfaction whereas national culture did not. Indeed, occupational culture's impact is stronger than the organizational culture's, due to the higher standardized regression weight (path coefficient). This finding proves the fact that IT employees who are more adapted to their occupational cultural values rather than their organizational culture are inclined to feel more satisfied with their jobs. Thus, it can be simply stated that, among other cultural levels, occupational culture has the most critical role in IT professionals' job satisfaction which also causes higher occupational commitment.

Implications

There are several important contributions to this study. First of all, there has been no empirical measurement attempted to create for ITOC cultural values within the scope of developing countries. Nor has an integrated multilevel cultural model proposed and tested. This study is such a precious effort that has answered the call that "research on IT values is still at a nascent stage and much remains to be done in understanding IT-related values and the impact of these values." (Leidner & Kayworth, 2006, p.371)

Another important theoretical more specifically methodological contribution is the usage of mixed methods. In IS literature, using mixed methods has been long recommended as an appropriate strategy (Landry & Banville, 1992); however, there have been some doubts about combining qualitative and quantitative methods properly and productively (Benbasat et al., 1987). Due to these concerns, it is reported a lack of mixed-method researches in the IS field (Mingers, 2003). In response to the persistent call for using mixed-method approach in IS researches (Caplan & Duchon, 1988; Venkatesh et al., 2013; Johnson and Turner, 2003), the current study follows a mixed methods research design.

Another important methodological contribution of this thesis is the usage of the formative construct in the research model. Using the formative construct and assessing its results correctly are generally neglected in IS research (Petter et al., 2007). Although formative structures are generally discouraged by some scholars due to their weakened external consistency (Jarvis et al., 2003; Kim et al., 2010; MacKenzie et al., 2005; Petter et al., 2007), recent studies prove the usefulness of formative structures if used properly (Jarvis et al., 2012; Ringle et al., 2012; Mackenzie et al., 2011; Petter et al., 2012). Petter et al. (2012) especially stress the importance of formative structures in the IS field when grounded theory is constructed properly.

Finally, the study's results also offer practical implications. Understanding ITOC cultural values facilitate the interactions between IT, other employees, and business. Another contribution to practice is evidence that occupational culture plays an important role in IT professionals' job satisfaction. This means IT people who are more attuned to their professional values are expected to be more satisfied and finally have higher occupational commitment. Thus, before making a possible career choice or hiring someone in IT department, people must be sure about their adaptation towards ITOC cultural values. In other words, people who are aware of and understand the ITOC's core values perform more effectively and make good progress through their careers.

Assumptions

The key assumption of this thesis is that ITOC cultural values can be measured, however in the tradition of sociology, culture should be deeply meaningful rather than being simply numeric (Schein, 1985). This main objection may be mitigated since the first part of this thesis is dedicated to qualitative methods in order to understand the nature of occupational culture. Furthermore, some popular sociologists have already demonstrated the proper use of a survey in cultural studies (Hoftsede, 1980; House et al., 2004; Iivari & Huisman, 2007).

Another assumption is the honesty of the participants who are conducted semi-structured interviews with and fulfilled the survey. It is assumed that both interviewers and survey participants are honest and willingly take part in the data collection process.

Limitations and Future Studies

Like any other research, this study is not without limitations. First, it should be emphasized that the research model proposed in this study can not be considered a

universal model. Although the research model includes multilevel cultural constructs, understanding the ITOC cultural values is still in the early stages. The current situation in Turkey is similar to the 1990s when IS researchers were struggling to prove the existence of it. Proposed ITOC cultural values will continue to evolve, and may change since it cannot forecast every aspect of the profession at this time. Thus, it is recommended to conduct more studies, in particular longitudinal ones, in order to follow the cultural changes in the IS field.

Second, the final data set were collected from IT professionals on LinkedIn. Although it is a popular way to collect data via social media platforms for IS scholars (Schmiedel et al., 2014; Gupta & George, 2016), there may be a need for collecting data from face to face interactions in order to further validate to the research model.

Third, the first phase is qualitative which means interpretation of data depends on the researcher's experience and worldview. Even though a software package program-QDA Miner- were used to discover, analyze, and interpret the data, it cannot supplant the role of the researcher (LaPan, 2013). This means that obtained results were mediated through the author of this thesis and may vary in terms of coding with different researchers.

Fourth, this study focused on IT professionals from Turkey. Since IS is a global sector, this study can be expanded by including IT professionals from other countries. Indeed, it will be interesting to test research hypotheses with different cultures. In addition to that, most of the respondents were young male IT professionals. In case of a more homogenous distribution of the sample, results may differ.

Finally, national and organizational cultures are taken into consideration as whole constructs rather than separate dimensions. Results may differ if each factor is considered separately. Additionally, occupational culture is structured as a formative construct however there is another way to construct it as a reflective one with its ten categories. Thus, it is aimed to create an instrument that is specific to IT occupational culture with reflective indicators for further researches.

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APPENDICIES

Appendix A: Qualitative Phase

Appendix A1: Expert Panel

BİLİŞİM MESLEĞİ KÜLTÜR BOYUTLARININ ÖLÇÜLEBİLİRLİĞİ VE UZMAN PANELİ

Değerli alan uzmanı,

Bu uzman paneli, bilişim mesleği kültür boyutlarının ölçülebilirliği üzerine gerçekleştirilen doktora tez çalışması kapsamında nitel aşama sonrası elde edilen ifade havuzunun bir ölçme aracına dönüştürülmesi amacıyla gerçekleştirilmektedir. Bu amaçla sizlerden belirtilen tanım ve örnek cümleler doğrultusunda, sunulan ifadelere yönelik kapsam (temsil kabiliyeti) ve görünüm (anlaşılırlık) geçerliğine yönelik katkılarınız beklenmektedir.

Katkılarınız ve emekleriniz için teşekkürler.

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Araştırma Hakkında Temel Bilgiler

Kişiler, yaşamlarını genellikle seçtikleri mesleğe göre şekillendirmekte ve yaşamları boyunca bir organizasyona bağlı kalmaktan daha çok mesleklerine bağlı kalmayı tercih etmektedirler. Bu sebeple içinde bulunulan mesleğin kültürel değerlerinin bireyin kendi değer yargıları ile uyuşması kariyer planlaması açısından oldukça önemlidir. Bir işin meslek sayılabilmesi için üst düzey sorumluluk gerektirmesi, hem teoride hem pratikte karşılık bulabilmesi, kümülatif bilgi birikimine dayanması, üyeleri arasında güçlü bir iletişim ve grup bilincinin olması, üyelerin sosyal kimlik algısının gelişmiş olması ve topluma faydalı olmayı amaçlamaları gerekmektedir. Bu perspektiften bakıldığında bilişim mesleğinin profesyonel bir alan olarak kabul edilmesinin daha genel geçer meslek gruplarına (öğretmenlik, doktorluk, polislik vb.) kıyasla daha yeni olduğunu söylemek yanlış olmayacaktır. Günümüzde gelinen noktada bilişim teknolojilerinin ve bu sektörde çalışan kişilerin önemi inkar edilemeyecek kadar önemli olsa da, bilişim mesleğinin sahip olduğu kültürel değerleri ve normları araştırmaya yönelik gerçekleştirilen çalışması sayısı oldukça azdır. Konu ile ilgili Türkiye'de yapılmış herhangi bir çalışmaya ise rastlanmamıştır.

Bu fikirden ilham alınarak başlanan doktora tez çalışmamızın ilk kısmında (keşifsel kısım) konunun derinlemesine araştırılması adına 11 bilişim uzmanı ile 2 ay süren yarı-yapılandırılmış mülakatlar gerçekleştirilmiştir. Mülakatların amacı, bilişim profesyonellerinin ortak değer, inanç, norm ve tutumlarının ortaya çıkartılmasıdır. Mülakatlarda sıklıkla bahsedilen konular kendi arasında gruplandırılmış ve bunlara BOYUT ismi verilmiştir. Bir sonraki sayfada mülakatlardan elde edilen BOYUTlar, açıklamaları ve örnek cümleleri ile birlikte yer almaktadır. Sizlerden beklenen tanımı ve örnek cümleleri ile birlikte verilen boyutların aşağısında yer alan ifadelerle temsil edilme derecesine ve ifadelerin anlaşılabilirliğine karar vermenizdir.

Uzman Paneli Değerlendirme Yöntemi

Her bir ifadenin yanında ifadenin anlaşılırlığı ve boyutu temsil gücüne ilişkin 1'den 4'e kadar puan vermeniz beklenmektedir. Puanlamayı hangi kritere göre yapacağınızın detayları aşağıda yer almaktadır.

Anlaşılırlık	**Temsil Etme**
1: İfade de anlam karmaşası vardır	1: Bu ifade ilgili boyutu temsil etmemektedir
2: İfadenin anlaşılabilmesi için majör değişikliğe ihtiyaç vardır*	2: İfadenin ilgili boyutu temsil edebilmesi için majör değişikliğe ihtiyaç vardır *
3: İfadenin anlaşılabilmesi için minör değişikliğe ihtiyaç vardır*	3: İfadenin ilgili boyutu temsil edebilmesi için minör değişikliğe ihtiyaç vardır*
4: İfade açık ve net olarak anlaşılmaktadır	4: Bu ifade ilgili boyutu temsil etmektedir

*****'Öneriler' kısmında; (1) Düzeltilmesini istediğiniz herhangi bir ifadeye ait yorumlarınızı ve yeni ifadenin nasıl olması gerektiğini, (2) Eklemek istediğiniz ve boyutu daha iyi temsil edeceğine inandığınız yeni ifadeleri (yeni bir ifade yazmak), (3) İfadenin başka bir boyut altında olması gerekiyorsa açıklamasını ve sebebini (Örneğin xxx boyutundaki İfade 4 aslında yyy boyutunu daha iyi temsil eder) belirtebilirsiniz.

BOYUT ADI	**BOYUT TANIMI VE *BOYUTU TEMSİL EDEN ÖRNEK CÜMLELER***								
Sürekli değişen teknoloji	Tanım: Bilişim sektörün her an değişen yapısını ve çalışanların bu değişime uyum sağlamaları gerekliliğini ifade eder. Örnek cümle: "*Bilişim sektöründe her şey çok hızlı değişiyor ve işimde güncel kalabilmek için takipçi olmak zorundayım."*								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Bilişim ile ilgili problemlerin nasıl çözüleceğini öğrenmekten keyif alırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Bilişim ile ilgili pratik deneyim (tecrübe) tecrübe kazanmaktan keyif alırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Bilişim alanındaki en yeni teknolojiler hakkında bilgi sahibi olmayı severim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Alanımdaki en güncel bilgilere ayak uydurmak benim için önemlidir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Bilişim alanındaki en yeni gelişmelerle kendimi güncellemekten hoşlanırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Bilişim teknolojileri hakkında daha fazla şey öğrenebilmek için ekstra vakit harcamaktan hoşlanırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
ÖNERİLER									

İletişim ve empati	Tanım: Bilişimcilerin, departmanlar/iç ve dış müşteriler ile iletişimlerinin iyi olması ve empati yapabilme gerekliliklerini ifade eder. *Örnek cümle: "Genelde biz bilişimciler olarak diğerlerini anlamaya çalışırız. Şunu mu demek istedin? Aslında böyle demek istediğin değil mi?..."*								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Bilişimciler ve son kullanıcı arasındaki iletişimin iyi olması son derece önemlidir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Bilişimci olmayan gruplar ile iletişim açık ve anlaşılır olmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Bilişimciler, teknik terimleri ve fikirleri bilişimci olmayanların anlayabileceği bir şekilde aktarmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

4	Bilişimci olmayan gruplar ile iletişim kurulurken problemler ve fırsatlar açık ve net bir şekilde ortaya konmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

Grup aidiyeti

Tanım: Bilişimcilerin mesleklerine duydukları sevgiyi ve mesleğe duyulan sahiplenme duygusunu, meslek dışından olanlara kendilerini anlatmakta yaşadıkları zorlukları ifade eder.

Örnek cümleler: "Bir daha geçmişe dönsem yine aynı işimi seçerim."
"...eşimin iş arkadaşları ile ne konuşacağımı gerçekten bilemiyorum."

İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Kendimi bilişim mesleği ile fazlasıyla özdeşleştiriyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Birisi bilişim alanını eleştirdiğinde, bunu kişisel bir hakaret gibi hissederim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Başkalarının bilişim alanı hakkındaki düşüncelerine çok önem veririm	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Bilişim alanından bahsederken genellikle, 'onlar' demek yerine 'biz' demeyi tercih ederim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Birisi bilişim alanını övdüğünde, bunu kişisel bir iltifat olarak algılarım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Medya bilişim alanını eleştirdiğinde utanç duyarım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
7	Bilişim alanındaki başarılar benim de başarım sayılır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

Sosyal fayda

Tanım: Bilişimcilerin kendilerine fayda sağlamaktan ziyade topluma özellikle de müşterilere faydalı olma isteklerini ve müşteri memnuniyeti önceliğini ifade eder.

Örnek cümle: "...memleketine hizmet ettin sonuçta. Başarılı bir şekilde canlıya geçen projeler en büyük motivasyon kaynağı."

İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Bilişim ile ilgili konuları anlayan ve fikirlerini paylaşan insanlarla çalışmaktan zevk alırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Teknik konularda yardımıma ihtiyaç duyulması hoşuma gider	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Diğer insanların benim sağladığım hizmetlere bağlı olduğunu bilmek hoşuma gider	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Teknik konularda benden yardım istenmesinden hoşlanırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Bilişim profesyonelleri 'kulübünün'	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

	bir parçası olmayı severim								
6	İnsanlar bilişim konusundaki uzmanlığımın farkında olduğunda iyi hissederim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
7	Saygı duyduğum insanların pek çoğu bilişim alanında isim yapmış kişilerdir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
8	Aynı bilişim teknolojisi ile ilgili sürekli soru sorulmasını sevmem	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
9	Sadece kendim için değil başkaları için de çaba sarf ederim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
10	Çalışmalarımın firmama katkı sağladığını bilmek beni memnun eder	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
ÖNERİLER									

Teknik jargon	Tanım: Bilişimcilerin kullandıkları teknik terimleri ve buna duyulan bağlılığı ifade eder. *Örnek cümle: "IT'nin farklı bir dili vardır. Bu sektörde çalışan hemen herkes bu dili anlar."*								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Bilişim jargonunu severim (örneğin debug etmek gibi)	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Yeni bir bilişim projesine başladığımda, bütün yeni ürün ve teknoloji isimlerini öğrenmeyi sorun etmem.	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Bilişim mesleğindeki insanlarla iletişim kurarken teknik terimler kullanmak hoşuma gider	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Bilişim mesleğinde çalışanlar olarak kısaltma kullanmayı severiz (örneğin IP, HTML gibi)	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
ÖNERİLER									

Haz	Tanım: Bilişimcilerin zorlu çalışma şartlarından (düzensiz mesai, çözülemeyen sorunlar gibi) haz duymalarını ifade eder. *Örnek cümleler: "Problem çözmekten keyif alırız biz." "Aslında eve pek gitmiyorum. Eve iş götürmekten keyif alıyorum."*								
İfadeler		**Anlaşılırlık**				**Temsil Kabiliyeti**			
1	Bilişim alanında işleri becerebilmenin zor olduğu düşünülse de ben (bilişimi) bu haliyle (zorluğuyla) seviyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Bilişim alanındaki zorlu görevlerle uğraşmaktan keyif alırım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Bilişim alanındaki sürekli değişim beni rahatsız etmez	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Bilişim alanının hızlı temposunun onu eğlenceli hale getirdiğini düşünüyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

5	Alışılmadık ve rutin olmayan çalışma programı (uzun ve detaylı çalışma gibi) gerektiren bir bilişim işini sorun etmem	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

3B İhtiyaçlar	Tanım: İç ve dış müşterilerin belirsiz/beklenmedik/bitmeyen ihtiyaçlarını ifade eder. Ayrıca müşteriler ile yaşanan arz/talep uyuşmazlıkları da bu boyutun kapsamındadır.								
	Örnek cümleler: "Müşteriler aslında ne istediklerini pek bilmez." *"Müşteri çoğu zaman var olanı bile doğru aktaramıyor çünkü bunu algılamıyor."*								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Ne kadar yetkiye sahip olduğumu biliyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	İşimde açık, planlanmış amaçlar ve hedefler bulunmaktadır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Zamanımı uygun bir şekilde planlandığımı düşünüyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Benden tam olarak ne beklendiğini biliyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Sorumluluklarımın ne olduğunu biliyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Görevimle ilgili olarak ne yapılması gerektiğine ilişkin açıklamalar nettir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

Rol çatışması	Tanım: Bilişim departmanı çalışanlarından, diğer departmanların işleyişine de hakim olmalarının beklenmesi durumunu ifade eder.								
	Örnek cümle: "Bilişimcilerin en önemli özelliği fabrika içi işleyişe hakim olmaları gerekliliğidir. Diğer tüm departmanların nasıl işlediğini çok iyi bilmeliler."								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Farklı şekillerde yapılması gereken işleri yerine getirmek zorunda kalıyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Görevlerimin bir kısmı, başkalarından yardım almaksızın yapmak zorunda olduğum işlerdir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Görevimi yapmak için bazı kural ya da politikalara karşı gelmek zorunda kalıyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Birbirinden farklı işlevleri olan birden fazla grupla birlikte çalışıyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Birden fazla kişiden birbiriyle uyuşmayan talepler alıyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Biri tarafından kabul edilirken, diğerlerinin onaylamadığı görevler yapıyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
7	Yerine getirmek için yeterli kaynak ve malzemenin olmadığı görevlerim olur	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
8	İşimde çalışırken önemli olmayan işler yaptığım olur	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

Sosyal destek tatmini	Tanım: Bilişim çalışanlarının üst yönetim tarafından takdir görmemesi, yapılan işin değerinin anlaşılamaması, üst yönetimin bilişim çalışanlarını stratejik süreçlere dahil etmemesi, kısaca bilişim çalışanlarının sosyal destek anlamında tatmin olmamasını ifade eder.								
	Örnek cümle: "Zaten işleri bu mantığıyla hareket eden üst yönetim bizi takdir etmez."								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	İş yerimde problem yaşadığımda, üst yönetimden destek alabilirim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	İşler karmaşık bir hal aldığında üst yönetime güvenebilirim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Üst yönetim, altında çalışanların huzuru ve refahıyla ilgilenir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Bilişim departmanının fikirleri ve önerileri üst yönetim tarafından dikkate alınır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	İşlerin yerine getirilmesinde üst yönetim yardımcı olur	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Bilişimcilerin stratejik kararlarda söz sahibi olması önemlidir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
7	Bilişimciler firmalar için kritik bir öneme sahiptir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
8	Üst yönetim, bilişim çalışanlarına (diğer departmanlara kıyasla) adil bir yaklaşım sergiler ve onların işine saygı duyar	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
9	Üst yönetim, bilişim çalışanlarına gerekli desteği sağlar ve yol gösterir.	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

ÖNERİLER

Takım çalışması	Tanım: Bilişim alanınındaki bilginin anonim olmasından dolayı, grup üyeleri arasındaki bilgi paylaşımının ve buna bağlı olarak işbölümünün gerekliliğini ifade eder.								
	Örnek cümle: "Genelde proje bazlı işler aldığımızdan birlikte çalışabilmek çok önemli."								
İfadeler		Anlaşılırlık				Temsil Kabiliyeti			
1	Grup çalışmalarına katılmayı severim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
2	Şimdiye kadar katıldığım grup çalışmalarından olumlu tecrübeler kazandım	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
3	Bir bilişimci olarak, takım çalışmasını bireysel çalışmaya tercih ederim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
4	Bilişimcilerden oluşan bir takımda, üyeler arasında bilgi paylaşımını önemserim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
5	Başka insanlarla çalışmayı severim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
6	Bilişim alanında takım çalışması oldukça önemlidir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
7	Bir takımın parçası olmanın işteki performansımı arttırdığını düşünüyorum	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
8	Takım çalışması, kendi başıma	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐

	öğrenebileceğimden daha fazla şey öğrenmem konusunda bana yardım edeceğini düşünüyorum								
9	Takımdaki üyeler arasında bilgi paylaşımını önemserim	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
10	Takım üyeleri birbirine yardım etmelidir	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
11	Takımdaki her bir üye diğerlerinin ne yaptığının farkında olmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
12	Takımdaki üyeler arasında senkronizasyon olmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
13	Takımdaki üyeler işbirliği içinde olmalıdır	1☐	2☐	3☐	4☐	1☐	2☐	3☐	4☐
ÖNERİLER									

Appendix A2: Expert panel's results

		E1		E2		E3		E4		E5		E6		E7		Mean	
Category	Items	F	C	F	C	F	C	F	C	F	C	F	C	F	C	F_{MEAN}	C_{MEAN}
C1	**1**	**4**	**4**	**4**	**1**	**4**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.286**
	2	3	3	3	1	4	3	3	3	4	2	3	4	4	4	3.429	2.857
	3	**4**	**4**	**4**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.714**
	4	2	2		2	4	4	2	2	4	4	4	4	4	4	3.286	3.143
	5	1	2	4	1	4	4	1	2	4	4	4	4	4	4	3.143	3.000
	6	4	4	4	1	4	4	4	4	4	3	4	4	4	4	4.000	3.286
C2	**1**	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.714**
	2	**3**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.857**	**3.857**
	3	4	4	3	2	4	3	3	2	4	4	4	4	4	4	3.714	3.286
	4	2	3	4	2	4	4	4	2	4	4	4	4	4	4	3.714	3.286
C3	**1**	**4**	**4**	**3**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**3.714**	**3.857**
	2	3	4	4	1	4	4	3	1	4	4	3	3	4	2	3.571	2.714
	3	4	4	3	1	2	2	3	1	4	4	4	4	4	3	3.429	2.714
	4	**4**	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.857**	**4.000**
	5	4	4	4	2	4	4	4	2	4	3	4	4	3	3	3.857	3.143
	6	2	2	3	1	4	4	3	1	4	3	1	1	3	2	2.857	2.000
	7	4	4	3	1	4	4	3	1	4	3	4	4	4	1	3.714	2.571
C4	1	4	1	3	1	4	1	4	1	4	4	4	4	4	2	3.857	2.000
	2	**4**	**4**	**3**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**2**	**3.857**	**3.429**
	3	3	4	3	2	2	3	2	3	4	4	3	3	3	2	2.857	3.000
	5	3	4	3	2	4	4	4	4	4	4	4	4	4	3	3.714	3.571
	5	3	4	2	1	4	1	4	1	4	4	4	3	4	4	3.571	2.571
	6	2	3	3	1	4	3	4	3	4	4	4	4	4	4	3.571	3.143
	7	4	4	2	1	4	1	4	1	4	4	1	1	4	4	3.286	2.286
	8	3	2	2	1	1	1	1	1	4	2	2	2	3	1	2.286	1.429
	9	4	2	3	3	4	4	3	2	4	4	4	4	4	4	3.714	3.286
	10	**4**	**4**	**3**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.857**	**3.714**
C5	**1**	**4**	**4**	**3**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.857**	**3.714**
	2	4	4	2	2	4	4	3	2	4	4	4	4	4	4	3.571	3.429
	3	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.714**
	4	4	3	3	3	4	4	3	2	4	4	3	3	4	4	3.571	3.286
C6	1	4	4	3	3	4	4	3	3	4	4	2	2	4	4	3.429	3.429

	2	**4**	**4**	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.857**
	3	4	4	2	1	4	3	3	3	4	4	4	4	3	2	3.429	3.000
	4	**4**	**4**	**2**	**1**	**4**	**4**	**3**	**3**	**4**	**4**	**4**	**4**	**4**	**2**	**3.714**	**3.286**
	5	3	3	2	3	4	4	4	4	4	4	4	4	4	4	3.429	3.571
C7	1	4	2	2	1	4	4	3	3	4	4	4	4	2	1	3.286	2.714
	2	4	2	2	1	4	4	2	3	4	4	4	4	4	4	3.429	3.143
	3	4	2	2	1	1	1	3	1	4	4	4	4	4	1	3.143	2.000
	4	4	1	3	1	4	4	2	3	4	4	4	4	4	4	3.571	3.000
	5	4	1	3	1	4	3	3	2	4	4	4	4	4	4	3.714	2.714
	6	4	1	2	1	4	4	2	1	4	4	4	4	4	4	3.429	2.714
	7	**4**	**4**	**4**	**3**	**3**	**4**	**3**	**3**	**4**	**2**	**4**	**3**	**4**	**2**	**3.714**	**3.000**
	8	**4**	**4**	**4**	**4**	**3**	**4**	**4**	**3**	**3**	**4**	**3**	**3**	**3**	**4**	**3.429**	**3.714**
C8	**1**	**3**	**4**	**2**	**2**	**4**	**4**	**4**	**3**	**4**	**4**	**3**	**3**	**2**	**2**	**3.143**	**3.143**
	2	4	1	3	2	1	1	3	1	4	4	4	4	4	3	3.286	2.286
	3	4	1	2	1	4	4	1	1	4	4	4	4	4	1	3.286	2.286
	4	**4**	**4**	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.857**
	5	4	4	2	2	1	1	4	2	4	4	4	4	4	3	3.286	2.857
	6	4	2	1	1	1	1	4	2	4	4	4	4	4	1	3.143	2.143
	7	4	2	2	1	4	4	3	1	4	4	4	4	4	3	3.571	2.714
	8	4	1	2	1	4	4	3	3	4	2	3	3	4	2	3.429	2.286
C9	1	4	4	2	1	4	4	3	2	4	4	4	4	4	4	3.571	3.286
	2	4	4	1	1	4	4	3	2	4	4	4	4	4	4	3.429	3.286
	3	4	3	1	1	4	4	2	3	4	4	4	4	4	3	3.286	3.143
	4	**4**	**4**	**3**	**1**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.857**	**3.571**
	5	4	4	3	3	4	4	1	4	4	4	4	4	4	4	3.429	3.857
	6	3	2	3	1	4	4	3	3	4	4	4	4	4	4	3.571	3.143
	7	4	4	3	1	1	1	2	3	4	4	4	4	4	2	3.143	2.714
	8	**2**	**4**	**3**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3.571**	**3.714**
	9	4	4	4	4	4	4	1	2	4	4	4	4	4	4	3.571	3.714
C10	1	4	4	2	1	4	4	4	4	4	4	4	4	4	4	3.714	3.571
	2	4	4	2	1	4	4	4	4	4	4	4	4	4	4	3.714	3.571
	3	3	3	3	3	4	4	3	3	4	4	4	4	4	4	3.571	3.571
	4	4	2	3	2	4	4	4	2	4	4	4	4	4	4	3.857	3.143
	5	4	3	3	1	4	4	4	3	4	4	4	4	4	3	3.857	3.143
	6	**4**	**4**	**4**	**1**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4.000**	**3.571**

	7	4	4	2	1	4	4	4	4	4	4	4	4	4	4	3.714	3.571
	8	4	4	2	1	4	4	4	4	4	4	4	4	4	4	3.714	3.571
	9	**3**	**2**	**3**	**3**	**4**	**4**	**3**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**3.571**	**3.429**
	10	3	2	3	3	4	4	4	2	4	4	4	4	4	4	3.714	3.286
	11	3	2	2	1	4	4	4	3	4	4	4	4	4	4	3.571	3.143
	12	3	2	4	1	4	4	4	4	4	4	4	4	4	4	3.571	3.286
	13	4	4	3	1	1	1	3	3	4	4	4	4	4	4	3.286	3.000

Bold rows indicate the selected items with highest mean for each category.
Abbreviations:
C1: Adaptation, C2: Precision in communication, C3: Group consciousness, C4: Social image, C5: Technical jargon, C6: Enjoyment, C7: 3U demands of the customers, C8: Uncertainty tasks limits, C9: Management support, C10: Teamwork, F: Face validitiy, C: Content validity, E: Expert.

Appendix A3: Survey Instrument

Değerli bilişim uzmanı;
Bilişim çalışanlarının iş tatmini ve mesleki bağlılıklarını etkileyen kültürel değerlerin ortaya çıkartılması amacıyla yürütülen doktora tez çalışmama sağladığınız gönüllü katkı için çok teşekkür ederim. Anket 3 kısımdan oluşmakta olup tamamlanma süresi yaklaşık 10 dakikadır. Toplanan veriler sadece bilimsel amaçlar ile kullanılacaktır. Konu ile ilgili daha detaylı bilgi almak isteyen katılımcılar araştırmacılara mail yolu ile ulaşabilirler.

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1. KISIM DEMOGRAFİK SORULAR

1.Cinsiyetiniz?
Kadın ☐ Erkek ☐

2.Yaşınız?
18-24 ☐ 25-31 ☐ 32-38 ☐ 39-45 ☐ 46-52 ☐ 53 ve üzeri ☐

3.Medeni durumunuz?
Evli ☐ Bekar ☐

4.Eğitim durumunuz?
İlköğretim ☐ Lise ☐ Önlisans ☐ Lisans ☐ Yüksek lisans ☐ Doktora ☐

5.Aylık geliriniz?
2500 TL'den az ☐ 2500-4000 TL ☐ 4001-5500 TL ☐
5501-7000 TL ☐ 7001-8500 TL ☐ 8500 TL'den fazla ☐

6.Bilişim sektöründeki toplam tecrübeniz?
1 yıldan az ☐ 1-3 yıl ☐ 4-6 yıl ☐ 7-10 yıl ☐ 11-20 yıl ☐ 20 yıldan fazla ☐

7.Şu anki iş yerinizde çalıştığınız toplam süre?
1 yıldan az ☐ 1-3 yıl ☐ 4-6 yıl ☐ 7-10 yıl ☐ 11-20 yıl ☐ 20 yıldan fazla ☐

8. Şu an çalışmakta olduğunuz firma bilişim sektöründe mi faaliyet gösteriyor?
Evet ☐ Hayır ☐
Hayır ise, hangi sektörde faaliyet göstermekte olduğunu yazar mısınız?
……

9. Kurumsal olarak yürütmekte olduğunuz iş pozisyonunuzu belirtiniz (örnek: bilgi işlem müdürü)

2. KISIM KÜLTÜREL DEĞERLER

ULUSAL KÜLTÜR

(Bu gruptaki soruları **1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Ne katılıyorum ne katılmıyorum, 4: Katılıyorum, 5: Kesinlikle katılıyorum** derecelendirmesini dikkate alarak cevaplayınız.)

Güç Mesafesi	Üst makamlarda çalışanlar, kararları astlara danışmadan almalıdır.	1	2	3	4	5
	Üstlerin, alt makamlarda çalışanların fikirlerine çok sık başvurmalarına gerek yoktur.	1	2	3	4	5
	Üst makamlarda çalışanlar, alt makamlarda çalışanlarla yüz göz olmaktan kaçınmalıdır.	1	2	3	4	5
	Alt makamlarda çalışanlar, üst makamların kararlarına karşı gelmemelidir.	1	2	3	4	5
	Üst makamlarda çalışanların, alt makamlara yetki aktarımı yalnızca önemsiz konularla sınırlı olmalıdır.	1	2	3	4	5
Belirsizlikten Kaçınma	Benden tam olarak ne istendiğini bilebilmem için açık biçimde belirtilen talimatlar gereklidir.	1	2	3	4	5
	Talimatları ve prosedürleri sıkı sıkıya takip etmek önemlidir.	1	2	3	4	5
	Kurallar ve düzenlemeler benden ne beklendiğini anlamamı sağladığı için önemlidir.	1	2	3	4	5
	İşimde kullanmam gereken prosedürlerin standartlaştırılmasını yararlı buluyorum.	1	2	3	4	5
	Yapılacak uygulamaların talimatlarla açıklanması önemlidir.	1	2	3	4	5
Kolektivizm	Bireyler kişisel çıkarlarını ait oldukları grup için feda etmelidir.	1	2	3	4	5
	Zorluklara rağmen bireyler içinde olduğu gruba bağlı kalmayı sürdürmelidirler.	1	2	3	4	5
	Grubun iyiliği kişisel ödüllerden daha önemlidir.	1	2	3	4	5
	Grubun başarısı bireysel başarıdan daha önemlidir.	1	2	3	4	5
	Bireyler, ancak grubun iyiliği sağlandıktan sonra kişisel hedeflerinin peşinden gitmelidir.	1	2	3	4	5
	Bireysel hedeflerin gerçekleşmemesi pahasına, birey grubuna sadık kalmalıdır.	1	2	3	4	5
Uzun Erimlilik	İnsan sahip olduğu parayı iyi yönetmeli ve dikkatli harcamalıdır.	1	2	3	4	5
	Bütün engellere rağmen amaçlar doğrultusunda kararlılıkla yola devam edilmelidir.	1	2	3	4	5
	Uzun vadeli planlama yapmak önemlidir.	1	2	3	4	5
	Bireylerin kararlı ve istikrarlı olmaları önemlidir.	1	2	3	4	5
	Gelecekte başarılı olmak için, gününü gün etmekten kaçınılmalıdır.	1	2	3	4	5
	İleride başarılı olmanın anahtarı çok çalışmaktır.	1	2	3	4	5
Erillik	Erkekler için profesyonel bir kariyere sahip olmak kadınlara kıyasla daha önemlidir.	1	2	3	4	5
	Erkekler problemi mantıkla, kadınlar ise sezgiyle çözerler.	1	2	3	4	5
	Zor problemleri çözebilmek, erkeklerin yaptığı gibi aktif ve zorlayıcı olmayı gerektirir.	1	2	3	4	5
	Erkeklerin kadınlara göre her zaman daha iyi yaptıkları bazı işler bulunmaktadır.	1	2	3	4	5

ORGANİZASYONEL KÜLTÜR

(Bu gruptaki soruları **0:Benim örgütümü tanımlamıyor, 1:Benim örgütümü biraz tanımlıyor, 2:Benim örgütümü makul ölçüde tanımlıyor, 3:Çoğunlukla benim örgütümü tanımlıyor** derecelendirmesini dikkate alarak cevaplayınız.)

Risk alan (risk taking)	0	1	2	3
İşbirlikçi (collaborative)	0	1	2	3
Hiyerarşik (hierarchical)	0	1	2	3
Prosedürsel (procedural)	0	1	2	3
İlişki odaklı (relationship-oriented)	0	1	2	3
Sonuç odaklı (results-oriented)	0	1	2	3
Yaratıcı (creative)	0	1	2	3
Teşvik edici (encouraging)	0	1	2	3
Sosyal (sociable)	0	1	2	3
Yapılandırılmış (structured)	0	1	2	3
Baskıcı (pressurized)	0	1	2	3
Derli toplu (ordered)	0	1	2	3
Ufuk açıcı (stimulating)	0	1	2	3
Kurallarla düzenlenmiş (regulated)	0	1	2	3
Kişisel özgürlükçü (personal freedom)	0	1	2	3
Adaletli (equitable)	0	1	2	3
Güvenli (safe)	0	1	2	3
Mücadeleci (challenging)	0	1	2	3
Girişimci (enterprising)	0	1	2	3
Oturmuş, sağlam (established, solid)	0	1	2	3
İhtiyatlı (cautious)	0	1	2	3
Güvenilir (trusting)	0	1	2	3
Yönlendirici (driving)	0	1	2	3
Güç odaklı (power oriented)	0	1	2	3

BİLİŞİM MESLEK KÜLTÜRÜ

(Bu gruptaki soruları **1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Ne katılıyorum ne katılmıyorum, 4: Katılıyorum, 5: Kesinlikle katılıyorum** derecelendirmesini dikkate alarak cevaplayınız.)

Adaptasyon	Bilişim alanındaki en yeni gelişmelerle kendimi güncellemem gerekir.	1	2	3	4	5
İletişim	Bilişimciler ve son kullanıcı arasındaki iletişimin iyi olması çok önemlidir.	1	2	3	4	5
Grup aidiyeti	Bilişim alanından bahsederken genellikle ‘onlar’ demek yerine ‘biz’ demeyi tercih ederim.	1	2	3	4	5
Sosyal rol	Çalışmalarımın firmama katkı sağladığını bilmek hoşuma gider.	1	2	3	4	5
Teknik jargon	Bilişim jargonunu (debug etmek gibi) kullanmayı severim.	1	2	3	4	5
Haz	Bilişim alanının zorluklarının onu eğlenceli hale getirdiğini düşünüyorum.	1	2	3	4	5
Bitmeyen İhtiyaçlar	Bilişim projelerinde, müşterilerin bitmek bilmeyen ihtiyaçları beni yorar.	1	2	3	4	5
Rol	İş yerimde, farklı alanlardan uzmanlarla çalışmak	1	2	3	4	5

Belirsizliği	zorunda kalıyorum.					
Takdir Görmeme	Bilişim departmanının fikirleri ve önerileri üst yönetim tarafından dikkate alınır.	1	2	3	4	5
Takım çalışması	Bilişim alanında takım çalışması oldukça önemlidir.	1	2	3	4	5

3. KISIM: MESLEK MEMNUNİYETİ

İŞ TATMİNİ

(Bu gruptaki soruları **1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Ne katılıyorum ne katılmıyorum, 4: Katılıyorum, 5: Kesinlikle katılıyorum** derecelendirmesini dikkate alarak cevaplayınız.)

Şu anki işimden makul ölçüde tatmin olduğumu hissediyorum.	1	2	3	4	5
Şu anki işimden şimdilik memnunum.	1	2	3	4	5
İşimden çoğunlukla sıkılırım.	1	2	3	4	5
Çoğu zaman işim hakkında hevesli hissederim.	1	2	3	4	5
Diğer insanlara kıyasla, ben işimi daha çok seviyorum.	1	2	3	4	5
Yaptığım işten zevk alıyorum.	1	2	3	4	5

MESLEKİ BAĞLILIK

(Bu gruptaki soruları **1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Ne katılıyorum ne katılmıyorum, 4: Katılıyorum, 5: Kesinlikle katılıyorum** derecelendirmesini dikkate alarak cevaplayınız.)

Bilişim mesleğini ondan vazgeçemeyecek kadar çok seviyorum.	1	2	3	4	5
Aynı ücreti alabileceğim başka bir meslek olursa (bilişim alanı dışında) muhtemelen o meslekte bulunmayı tercih ederim.	1	2	3	4	5
Başa dönme şansım olsa bu meslekte çalışmayı tercih etmezdim.	1	2	3	4	5
Kendim için kesinlikte bu meslekte olan bir kariyer istiyorum.	1	2	3	4	5
Çalışmadan para kazanma imkanım olsa bile, büyük ihtimalle bu meslekte çalışmaya devam ederim.	1	2	3	4	5
Bilişim mesleğinde olduğum için hayal kırıklığı yaşıyorum.	1	2	3	4	5
Bilişim mesleğinin çalışma hayatı için ideal bir meslek olduğunu düşünüyorum.	1	2	3	4	5

Appendicies B: Qualitative Phase

Appendix B1: Pilot Study's Results

Appendix B1.1. Respondents Demographic Information

		Frequency	Percentage
Gender	Male	55	61.8
	Female	34	38.2
Age	18-24	25	28.1
	25-31	34	38.2
	32-38	14	15.7
	39-45	11	12.4
	46-52	3	3.4
	53 +	2	2.2
Marital status	Married	33	37.1
	Single	56	62.9
Education level	Primary education	0	0
	Secondary education	6	6.74
	Associate degree	9	10.1
	Bachelor degree	57	64.0
	Master degree	15	16.9
	PhD	2	2.26
Income (monthly)	Less than 2500 TL	8	9
	2500-4000 TL	27	30.3
	4001-5500 TL	17	19.1
	5501-7000 TL	12	13.5
	7001-8500 TL	9	10.1
	More than 8500 TL	16	18.0
Total experience in IS sector	Less than 1 year	14	15.7
	1-2 years	31	34.8
	3-4 years	15	16.9
	5-10 years	3	3.4
	10-20 years	18	20.2
	More than 20 years	8	9.0
Total time in your current workplace	Less than 1 year	29	32.6
	1-2 years	32	36.0
	3-4 years	5	5.6
	5-10 years	7	7.9
	10-20 years	14	15.7
	More than 20 years	2	2.2
Is the company you are currently working/worked for in the IS sector? If not, which sector?	Yes	60	67.4
	No*	29	32.6
What is your current/last position?	*		

* Details are available in Section 5.1.4.1.

Appendix B1.2. Quality Criteria for Reflective Indicators

Appendix B1.2.1. Outer Loadings

	National culture					Organizational culture			Job satisfaction	Occup. commit.
	PD	**UA**	**LO**	**M**	**C**	**B**	**S**	**I**		
PD1	0.295*									
PD2	0.167*									
PD3	0.009*									
PD4	0.885									
PD5	0.518									
UA1		0.623								
UA2		0.777								
UA3		0.880								
UA4		0.667								
UA5		0.806								
LO1			0.782							
LO2			0.812							
LO3			0.771							
LO4			0.884							
LO5			0.553							
LO6			0.708							
M1				0.760						
M2				0.746						
M3				0.869						
M4				0.842						
C1					0.578					
C2					0.766					
C3					0.708					
C4					0.787					
C5					0.722					
C6					0.716					
B1						0.804				
B2						0.812				
B3						0.814				
B4						0.807				

B5						0.845				
B6						0.805				
B7						0.640				
B8						0.689				
S1							0.782			
S2							0.810			
S3							0.846			
S4							0.769			
S5							0.819			
S6							0.589			
S7							0.882			
S8							0.829			
I1								0.678		
I2								0.853		
I3								0.828		
I4								0.821		
I5								0.832		
I6								0.703		
I7								0.854		
I8								0.711		
JS1									0.893	
JS2									0.870	
JS3									0.722	
JS4									0.810	
JS5									0.687	
JS6									0.845	
OC1										0.841
OC2										0.784
OC3										0.722
OC4										0.776
OC5										0.761
OC6										0.709
OC7										0.740

* indicates the “must be eliminated items” due to low outer loadings.

Appendix B1.2.2.Reliability and validity measurements

Constructs	**AVE**	**Cronbach Alpha**	**Composite reliability**
Power distance	0.646	0.482	0.781
Uncertainty avoidance	0.572	0.809	0.868
Long-term orientation	0.575	0.848	0.889
Masculinity	0.65	0.825	0.881
Collectivism	0.513	0.809	0.862
National culture	0.279	0.874	0.893
Bureaucratic	0.608	0.907	0.925
Supportive	0.632	0.915	0.931
Innovative	0.638	0.904	0.924
Organizational culture	0.523	0.957	0.961
Job satisfaction	0.653	0.892	0.918
Occupational commitment	0.582	0.881	0.907

Appendix B1.2.3: Discriminant Analysis Results According to Different Approaches

Appendix B1.2.3.1: Fornell – Larcker Criterion's Results

	B	C	I	JS	LO	M	OC	S	UA	PD
B	**0.78**									
C	0.136	**0.716**								
I	0.65	0.031	**0.798**							
JS	0.493	0.07	0.479	**0.808**						
LO	0.25	0.392	0.193	0.116	**0.758**					
M	0.484	0.272	0.341	0.283	0.248	**0.805**				
OC	0.139	0.344	0.096	0.392	-0.044	0.006	**0.763**			
S	0.713	0.078	0.914	0.509	0.236	0.425	0.101	**0.795**		
UA	0.287	0.445	0.168	0.054	0.644	0.295	-0.003	0.246	**0.757**	
PD	0.385	0.259	0.368	0.112	0.269	0.412	0.368	0.122	0.221	**0.804**

Appendix B1.2.3.2: HTMT Approach's Results

	B	C	I	JS	PD	LO	M	OC	S
B									
C	0.227								
I	0.689	0.162							
JS	0.531	0.164	0.527						
PD	0.401	0.221	0.205	0.184					
LO	0.292	0.463	0.258	0.16	0.244				
M	0.555	0.292	0.411	0.316	0.591	0.283			
OC	0.191	0.407	0.152	0.433	0.203	0.18	0.148		
S	0.761	0.188	0.998	0.554	0.267	0.298	0.49	0.17	

Appendix B1.2.3.3: Cross-Loading Criterion's Results

	B	C	I	JS	LO	M	OC	S	UA	PD
B1	**0.804**	0.112	0.4	0.391	0.345	0.448	0.127	0.481	0.366	0.292
B2	**0.812**	0.091	0.627	0.297	0.247	0.352	0.051	0.716	0.23	0.472
B3	**0.814**	0.149	0.537	0.397	0.098	0.373	0.172	0.544	0.168	0.486
B4	**0.807**	0.109	0.488	0.413	0.189	0.409	0.009	0.565	0.184	0.125
B5	**0.845**	0.074	0.642	0.522	0.155	0.334	0.255	0.654	0.195	-0.01
B6	**0.805**	0.059	0.6	0.449	0.162	0.316	0.154	0.622	0.179	0.035
B7	**0.64**	0.122	0.403	0.27	0.146	0.426	0.025	0.432	0.206	0.585
B8	**0.689**	0.179	0.203	0.292	0.26	0.447	0.013	0.298	0.345	0.491
C1	-0.081	**0.581**	-0.061	-0.036	0.234	0.118	0.132	-0.053	0.198	-0.06
C2	0.006	**0.767**	0.056	0.126	0.312	0.201	0.358	0.044	0.301	0.208
C3	-0.013	**0.71**	0.032	-0.065	0.248	0.14	0.222	0.066	0.319	0.082
C4	0.262	**0.786**	0.139	0.111	0.438	0.274	0.24	0.24	0.416	0.193
C5	0.127	**0.722**	-0.075	-0.029	0.197	0.136	0.245	-0.025	0.359	0.19
C6	0.204	**0.712**	-0.02	0.149	0.2	0.267	0.265	-0.019	0.28	-0.06
I1	0.366	0.063	**0.678**	0.302	0.215	0.258	-0.103	0.565	0.182	0.354
I2	0.537	-0.07	**0.853**	0.36	0.178	0.27	0.032	0.805	0.088	0.393
I3	0.547	0.097	**0.828**	0.354	0.098	0.304	0.17	0.755	0.117	0.116
I4	0.373	-0.009	**0.821**	0.314	0.104	0.082	0.056	0.696	0.029	0.031

I5	0.587	-0.047	**0.832**	0.372	0.028	0.196	0.123	0.76	0.041	0.528
I6	0.574	0.103	**0.703**	0.472	0.306	0.461	0.132	0.686	0.381	0.449
I7	0.605	0.051	**0.854**	0.486	0.173	0.33	0.084	0.807	0.125	0.492
I8	0.514	0.047	**0.701**	0.143	0.424	0.199	0.215	0.258	0.17	0.139
JS1	0.491	0.068	0.451	**0.892**	0.112	0.193	0.264	0.482	0.095	0.393
JS2	0.538	0.172	0.458	**0.867**	0.13	0.276	0.291	0.521	0.116	0.193
JS3	0.304	0.002	0.277	**0.725**	0.042	0.17	0.36	0.275	0.031	0.276
JS4	0.341	-0.009	0.41	**0.81**	0.026	0.093	0.451	0.37	-0.02	0.17
JS5	0.275	0.011	0.328	**0.689**	0.09	0.285	0.277	0.365	-0.01	0.102
JS6	0.386	0.057	0.369	**0.845**	0.147	0.354	0.277	0.413	0.035	0.253
LO1	0.32	0.27	0.215	0.138	**0.781**	0.287	-0.127	0.243	0.516	0.056
LO2	0.225	0.364	0.22	0.137	**0.813**	0.18	0.058	0.224	0.543	0.032
LO3	0.102	0.301	0.017	-0.027	**0.77**	0.178	-0.083	0.047	0.514	0.139
LO4	0.182	0.301	0.164	0.062	**0.884**	0.161	-0.133	0.187	0.587	-0.08
LO5	0.151	0.183	0.22	0.102	**0.553**	0.187	0.092	0.25	0.212	-0.02
LO6	0.15	0.341	0.064	0.127	**0.707**	0.149	0.046	0.153	0.476	0.215
M1	0.324	0.09	0.207	0.181	0.12	**0.757**	0.001	0.25	0.109	0.449
M2	0.356	0.143	0.424	0.199	0.145	**0.743**	-0.001	0.438	0.117	0.492
M3	0.318	0.241	0.172	0.182	0.156	**0.868**	-0.034	0.262	0.28	0.372
M4	0.514	0.319	0.316	0.312	0.315	**0.846**	0.041	0.412	0.348	0.27
OC1	0.143	0.264	0.076	0.342	0.042	0.082	**0.841**	0.056	-0.01	0.31
OC2	-0.02	0.221	-0.017	0.242	0.024	-0.125	**0.784**	0.014	-0.04	0.288
OC3	0.054	0.299	0.019	0.188	0.012	-0.176	**0.722**	0.045	0.03	0.304
OC4	0.064	0.298	0.086	0.323	-0.126	0.119	**0.776**	0.039	-0.11	0.082
OC5	0.149	0.341	-0.006	0.279	0.012	0.066	**0.761**	0.031	0.071	0.415
OC6	0.053	0.185	0.159	0.351	-0.179	-0.071	**0.708**	0.165	-0.09	0.251
OC7	0.266	0.255	0.136	0.298	0.03	0.043	**0.74**	0.157	0.18	0.282
S1	0.336	0.004	0.694	0.296	0.102	0.225	-0.047	**0.782**	0.084	0.162
S2	0.559	0.013	0.733	0.332	0.253	0.31	0.026	**0.81**	0.181	0.212
S3	0.629	0.118	0.788	0.535	0.097	0.288	0.204	**0.846**	0.212	0.095
S4	0.583	0.174	0.648	0.454	0.272	0.415	0.246	**0.769**	0.293	-0.03
S5	0.709	0.076	0.775	0.492	0.179	0.325	0.187	**0.819**	0.184	0.605
S6	0.577	-0.001	0.511	0.354	0.271	0.426	-0.12	**0.589**	0.242	0.538
S7	0.528	0.075	0.839	0.393	0.165	0.342	0.072	**0.882**	0.162	0.372
S8	0.585	0.021	0.778	0.353	0.185	0.393	0.015	**0.829**	0.212	0.27

UA1	-0.016	0.251	-0.061	-0.123	0.298	0.244	-0.08	-0.017	**0.619**	0.358
UA2	0.271	0.282	0.208	0.147	0.525	0.156	0.067	0.262	**0.775**	0.222
UA3	0.212	0.415	0.082	-0.026	0.676	0.194	0.017	0.131	**0.881**	0.24
UA4	0.195	0.307	0.193	0.062	0.284	0.272	-0.055	0.249	**0.671**	0.245
UA5	0.364	0.399	0.19	0.12	0.554	0.28	0.006	0.281	**0.807**	0.064
PD4	0.151	0.183	0.22	0.102	0.553	0.187	0.092	0.25	0.212	**0.913**
PD5	0.15	0.341	0.064	0.127	0.707	0.149	0.046	0.153	0.476	**0.677**

Appendix B2. Final Study's Results

Appendix B2.1. Descriptive Statistics of Items

	Mean	Standart Deviation	
PD1	1.881	0.957	NATIONAL CULTURE
PD2	2.341	1.062	
PD3	2.571	1.273	
PD4	2.313	1.047	
PD5	1.857	0.943	
UA1	3.909	1.157	
UA2	3.910	0.989	
UA3	4.034	0.953	
UA4	3.946	1.005	
UA5	4.061	0.955	
C1	3.023	1.105	
C2	3.490	1.035	
C3	3.620	1.033	
C4	3.789	1.030	
C5	3.448	1.092	
C6	3.019	1.132	
LO1	4.357	0.920	
LO2	4.335	0.916	
LO3	4.179	0.961	
LO4	4.391	0.879	
LO5	3.591	1.103	
LO6	3.835	1.064	
M1	2.469	1.381	
M2	2.315	1.175	
M3	2.359	1.262	
M4	2.686	1.416	
I1	2.094	1.472	ORGANIZATIONAL CULTURE
I2	2.995	1.297	
I3	2.350	1.516	
I4	1.174	1.446	
I5	2.208	1.444	
I6	2.575	1.397	
I7	2.603	1.455	
I8	2.466	1.426	
S1	2.761	1.380	
S2	2.615	1.396	
S3	2.365	1.525	
S4	2.392	1.536	
S5	2.249	1.468	
S6	2.345	1.447	
S7	2.667	1.411	
S8	2.741	1.388	
B1	2.275	1.515	

B2	2.286	1.459	
B3	2.384	1.420	
B4	2.176	1.376	
B5	2.227	1.415	
B6	2.501	1.445	
B7	2.437	1.401	
B8	2.257	1.453	
OcC1	4.462	0.693	**OCCUPATIONAL CULTURE**
OcC2	4.399	0.876	
OcC3	4.295	0.899	
OcC4	3.879	1.107	
OcC5	4.673	0.689	
OcC6	4.184	0.923	
OcC7	3.342	1.164	
OcC8	3.570	1.144	
OcC9	3.903	1.036	
OcC10	4.566	0.783	
JS1	3.768	1.061	**JOB SATISFACTION**
JS2	3.882	1.037	
JS3*	3.854	1.028	
JS4	4.094	0.877	
JS5	3.857	1.003	
JS6	4.239	0.925	
OC1	3.810	1.100	**OCCUPATIONAL COMMITMENT**
OC2*	3.938	1.118	
OC3*	4.174	1.084	
OC4	4.173	0.957	
OC5	3.523	1.321	
OC6*	4.413	0.944	
OC7	4.085	0.977	

* = reverse coded items

Appendix B2.2. Assessment of f^2 Values*

	Job satisfaction	**Occupational commitment**
National culture	0.000	
Organizational culture	0.052	
Occupational culture	0.233	
Job satisfaction		0.478

***The guidelines for measuring f^2 are that values of 0,02, 0,25 and 0,35 are small, medium and large effect

Appendix C. Ethical Approval

T.C.
SAKARYA ÜNİVERSİTESİ REKTÖRLÜĞÜ
Etik Kurulu

Sayı :61923333/050.99/
Konu :21/41 Arş.Gör. Tuğba KOÇ

Sayın Tuğba KOÇ

İlgi : Tuğba KOÇ 03/03/2020 tarihli ve 0 sayılı yazı

Üniversitemiz Sosyal ve Beşeri Bilimler Etik Kurulu Başkanlığının 11.03.2020 tarihli ve 21 sayılı toplantısında alınan "41" nolu karar örneği ekte sunulmuştur.
Bilgilerinizi rica ederim.

Prof. Dr. Arif BİLGİN
Sosyal ve Beşeri Bilimler Etik Kurulu Başkanı

41. Arş. Gör. Tuğba KOÇ'un " Bilişim İşgücü Piyasasında Meslek Kültürü: İş Bağlılığına Etki Eden Kültürel Değişkenlerin Belirlenmesine Yönelik Bir Çalışma (Occupational Culture of Information Technology Employees: A Study on Identfiying Cultural Variables Affecting Work Commitment) " başlıklı çalışması görüşmeye açıldı.
Yapılan görüşmeler sonunda Arş. Gör. Tuğba KOÇ'un " Bilişim İşgücü Piyasasında Meslek Kültürü: İş Bağlılığına Etki Eden Kültürel Değişkenlerin Belirlenmesine Yönelik Bir Çalışma (Occupational Culture of Information Technology Employees: A Study on Identfiying Cultural Variables Affecting Work Commitment) " başlıklı çalışmasının Etik açıdan **uygun** olduğuna oy birliği ile karar verildi.

RESUME

Tuğba Koç was born in Eskişehir in 1990. She graduated from Eskişehir Anatolian High School (EAL) in 2008 and Industrial Engineering Department of Selçuk University in 2012. She received another bachelor's degree from Business Department of Anadolu University in 2014. After starting as a research assistant in Sakarya University Management Information Systems Department in 2012, she had her master's degree in the same department in 2015 with a thesis entitled "Measuring information technology development in firms: Sakarya case". One year after, she started MIS Doctoral Program in Sakarya University and still a research assistant at the same department. She had 2 SSCI and 2 ESCI articles, and 1 AMCIS proceeding.