CELAL BAYAR UNIVERSITY
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KNOWLEDGE AS AN OBJECT OF PSYCHOLOGICAL OWNERSHIP AND KNOWLEDGE HIDING VIA TERRITORIALITY AMONG KNOWLEDGE WORKERS

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ABSTRACT

Karl Marx's assertive statement that *"the history of all hitherto existing society is the history of class struggles"* went down in history as a precarious crimination uttered by an ideologically partial mind. With a slightly twisted adaptation to this political maxim, we could argue that the history of the 21st century is/will be the history of accession to and application of knowledge. Knowledge has probably never before in human history been such a widely marketable and tradable commodity, nor so expensive. Knowledge has gone through various phases in the history of humankind. It was the wisdom of Athena in Greek mythology and the light of Jesus in Christian theology. It has been the curse and challenge for the power of the church in middle ages when applied by great scientists like Galileo and Newton, and the driving force behind great leaps of the human race from agricultural revolution, enlightenment and industrial revolution to the invention of the light bulb, and the engine of the ground breaking human attempts as Human Genome Project and Moon landing. However, the pace at which it has changed the course of history has never been as accelerated as in the last three decades following the advent of the www revolution. The technology circles speculate that within a few years there will be computers that surpass the brain power of a mouse and about 8 years after that, those that surpass the brainpower of all humans will be pervading the planet. By 2045, they will be at a power that equals to the brain power of all brains combined[1].

With this pace of development on the one hand and the inescapable need for polyphonic and multi-layered responses from all walks of life compatible with the urgency of the situation on the other, the ultimate question for contemporary organizations and management is this; "*How can an organization avoid a situation whereby a single person holds all the knowledge about a key subjec*t?" (Pasher & Ronen, 2011, p.4) In other words, how can an organization avoid a situation whereby members of one of its key stakeholders, namely the employees hide knowledge that might otherwise contribute to the well-being of the organization? This was the big question that needed to be parted and partitioned into smaller bits for further analysis, a small portion of

[1] From the online course titled "Developing Innovative Ideas for New Companies: The First Step in Entrepreneurship" taught by Dr. James V. Green. University of Maryland. Lecture notes from www.coursera.org. Accessed on 20.01.2014.

which has become the central theme of this current research attempt. Knowledge could only be evaded by individuals who own it and who is aware and has the insight to know that it is valuable and it is worth to hide that knowledge. But, who owns such knowledge? Most probably the knowledge workers who have something to hide, who spend time and effort to acquire, analyse and synthesize raw data to produce knowledge, who use, manipulate and disseminate knowledge to undertake inventions and perpetuate innovation, who recognize the otherwise unintelligible ciphers and work out difficult formulas to come up with final solutions, who could save lives with knowledge, who could write new software, who could construct intelligent and environment-friendly eco-buildings, who could delve deep into the writings of decades old researchers to shed light on the history of civilizations. In practice, mostly those people who work in the competitive sectors of IT development and software engineering and innovation-based pharmaceuticals and arms industry, and finance in addition to other professional knowledge workers such as doctors, lawyers, researchers, engineers, architects, and tutors.

In this thesis study, the hypothesized relationship between psychological ownership (organization-based and knowledge-based) and knowledge hiding, and the effects of psychological ownership subscales, which dissociate into two opposing axes- promotion versus prevention-on knowledge hiding behaviour of the select knowledge workers are investigated. Psychological ownership is studied as an exogenous variable to unravel some of the mysteries of organizational life that takes the form of knowledge hiding in our study.

Psychological ownership is defined as an overall feeling of possession and attachment targeted at various objects within the organization. The core of the concept being possessive feelings, it is believed to have sociobiological roots involving both an innate condition and socialization practices, which covers the nature and nurture side of the argument ((Pierce & Jussila, 2011; Pierce, O'Driscoll, & Coghlan, 2004; Pierce, Kostova & Dirks, 2001; Pierce, Kostova & Dirks, 2003;Van Dyne & Pierce, 2004). Knowledge hiding is the conscious act of withholding knowledge from someone who asks to learn about it. Knowledge hiding could be in the form of not saying the whole truth, saying that the information is confidential and still not revealing it or distorting

the reality of the knowledge by deception (Connelly, Zweig, Webster, & Trougakos, 2011).

The data were collected via a structured questionnaire form and the measurement instruments were translated into Turkish, pilot-tested for lingual compatibility, adapted with appropriate modifications, and validated for the distinct lingua-cultural context of Turkey. The data were analysed via a variety of statistical tests including one-way analysis of variance to explore the significant differences in terms of the investigated phenomena based on demographics, correlation analysis to explore the relationships among the research variables, and regression analysis to explore effect and influence.

In order to validate the two measurement tools that were originally developed outside of the Turkish organizational context, exploratory and confirmatory factor analyses-first and second order- were conducted and the goodness of fit statistics of the suggested measurement models were acknowledged. Qualitative data were evaluated after being subjected to categorization based on occupation attribute to increase the understanding of the phenomenon at hand. Correlations between research variables and causality among them were investigated within the scope of the research hypotheses.

The results demonstrated that the uniquely different business-culture of the Turkish organizations led its primary stakeholders not to surrender to or interpret the same phenomena in a totally different light. According to the findings, territoriality as perceived by the respondents of our study is not an antecedent to defensive or offensive action or a potentially hazardous practice jeopardizing the personal integrity of the territorial employee. Organization-based psychological ownership is a proximal factor in explaining the absence of knowledge hiding behaviour, and knowledge hiding is more probably an underreported fact of organizational life rather than a non-existent counterproductive work behaviour that is impeded by the collectivistic and altruistic atmosphere of Turkish organizational settings.

ÖZET

Bu çalışmanın amacı Türkiye'de çalışmakta olan bilgi işçileri açısından psikolojik sahiplenme (bilgi-örgüt temelli) ile bilgi saklama davranışı ölçeklerinin alt boyutları arasında var olduğu düşünülen ilişkilerin ortaya konulmasıdır. Tercüme edilen ve açıklayıcı-doğrulayıcı faktör analizleri ile geçerliği kanıtlanan soru formuyla 305 bilgi işçisine ait eksiksiz veri toplanmış ve hipoteze konu olan ilişkiler bağımsız t testi, tek yönlü varyans analizi, korelasyon analizi ve regresyon modelleri üzerinden istatistiksel olarak sınanmıştır.

Bilgi saklama, kasıtlı ve bilinçli olarak belli bir bilgiyi talep eden bir kimseye bilgi vermekten imtina etme durumudur (Connelly vd., 2011). Bilgi aktarımının değerini ve örgütsel performansa katkısını dikkate aldığımızda, bilgi saklama üretim karşıtı bir davranış türü olarak ortaya çıkmaktadır. Bu anlamda bu çalışmanın ilk varsayımı bilgi saklama davranışının bilgi işçileri arasında gözlenebileceği ve bilgi işçilerinin örtük veya açık bilgilerini, şahsi değer ve statülerini devam ettirme gibi kaygılarla saklamayı tercih edebilecekleridir. Davenport (2005)'a göre bilgi işçileri "yüksek seviyede uzmanlık, eğitim ve tecrübe" ile donanmış kimseler olup, işlerinin en önemli bölümünü bilginin yaratılması, dağıtımı veya uygulaması kapsar (El-Farr, 2009). Bilgi işçisi denince ilk akla gelen grup bilgi teknolojileri alanında çalışanlardır. Ware & Degoey (1998) bilgi işçileri ile beyaz yakalılar arasındaki temel farklılıklara dikkat çekmek için bilgi işçilerinin bilgiyi manipüle etme ve yorumlama yeteneklerine vurgu yapmakta ve bilgi işçisi olarak nitelendirilebilecek meslek sahipleri arasında doktorlar, avukatlar, bilim insanları, mühendisler, pazarlama, danışmanlık, finans, sigorta ve strateji geliştirme alanlarında çalışan profesyonelleri saymaktadırlar. Çalışmanın evrenini oluşturan Türkiye'de yaşayan bilgi işçilerinin bilgi saklama davranışlarını etkileyen bir faktör olarak psikolojik sahiplenme olgusu araştırmacıların dikkatini çekmiştir (Peng, 2013).

Pierce vd. (2003) psikolojik sahiplenmeyi, resmi ve hukuki sahiplikten tenzih bir bilinç hali olarak tanımlamakta ve psikolojik sahiplik nesnesinin somut veya soyut herhangi bir yapıda olabileceğine değinerek sahiplenme motifinin teorik temellerinin iyelik *(possession)* ve tasarruf duygularına dayandığını vurgulamaktadırlar. Örgüt yazını

açısından ele alındığında psikolojik sahiplenme, örgüt içerisinde yer alan herhangi bir nesneye karşı geliştirilmesi mümkün olan genel bir mülkiyet hissi ve algısıdır (Pierce & Jussila, 2011; Pierce, O'Driscoll & Coghlan, 2004; Pierce, Kostova & Dirks, 2001; Pierce, Kostova & Dirks, 2003;Van Dyne & Pierce, 2004).Psikolojik sahiplenmenin olumlu tarafları arasında örgütle bütünleşme, whistle-blowing (ihbar), bağlılık, vatandaşlık, kişisel fedakarlık, risk ve sorumluluk üstlenme ve hizmetkarlık gibi pozitif örgütsel davranış yansımaları gözlenirken olumsuz tarafları arasında yabancılaşma, sapkın davranışlar, grup normunun ihlali, psikolojik sahiplenme nesnesine saplantı, sabotaj, stres ve bir takım hastalıklar yer alabilmektedir.

Bilgi saklama davranışı, iki skalalı (promotion-prevention) psikolojik sahiplenme algısının alt boyutları ile açıklanabilecek bir davranıştır. Bu alt boyutlardan teşvik edici (promotion) temelli olan 4 faktörün bilgi saklama davranışı ile negatif, önleyici (prevention) temelli bölgecilik faktörünün ise pozitif ilişki içerisinde olacağı öngörülmektedir. Bir araştırma konusu olarak bölgeciliğin örgüt yazınına girmesi ve kendisiyle yakından ilişkili bir konu olan psikolojik sahiplenmeyle ilişkilendirilmesi Brown, Lawrence ve Robinson (2005) isimli araştırmacıların çalışmalarına denk gelir. Örgütsel bağlamda bölgecilik, fiziksel bir alan, fikir, rol ve ilişkiler üzerinde sahiplik duygusu besleme anlamına gelir (Brown vd, 2005). Bölgecilik, bir kimsenin fiziksel veya sosyal bir nesneye karşı davranışsal olarak sahiplik duygusu ifade etmesi olarak tanımlanır. "Bilgiyi psikolojik olarak sahiplenen bilgi işçileri bilgi saklama davranışında bulunurlar" ve "bilgiyi psikolojik olarak sahiplenen bilgi işçileri arasında bölgecilik eğilimi yüksek olanların bilgi saklama davranışında bulunma oranları daha yüksektir" hipotezleri çalışmanın temel dayanakları olup örneklem bireylerinin bilgi saklama davranışı konusunda demografik özellikler açısından farklılaşıp farklılaşmadığı da inceleme konusu yapılmaktadır.

Bu noktada temel sorunsal, soyut ya da gizil bir nesne olan bilginin saklanıp saklanmadığının kavramsallaştırılması ve işlemselleştirilmesidir. Bu amaçla Connelly vd. (2011) tarafından geliştirilen 3 boyutlu Bilgi Saklama Ölçeği ile Avey vd. (2009) tarafından geliştirilen 2-skalalı 5 alt boyutlu Psikolojik Sahiplenme Ölçeği kullanılarak 40 bilişim sektörü çalışanı üzerinde bir pilot çalışma yapılmıştır. Bilgi Saklama ölçüm aracının cronbach alpha iç tutarlılık katsayısı α=0.81 olarak hesaplanmıştır. Psikolojik

sahiplenme duygularının ölçümünde kullanılan iki skalalı anketin 1-4. maddeleri bölgecilik duyguları (önleyici psikolojik sahiplenme) ve 5-16. maddeleri teşvik edici psikolojik sahiplenmenin dört alt boyutu olan bireysel etkinlik, hesap verebilirlik, aidiyet duygusu ve bireysel kimlik (14-16)'e karşılık gelmektedir. Cronbach alpha katsayısı 0,89 olarak hesaplanmıştır. Van Dyne vd. (2004) tarafından geliştirilen psikolojik sahiplenme ölçeğinin üç maddesi bilgi-temelli psikolojik sahiplenme derecesini belirlemek üzere uyarlanmıştır (α=0.91). Pilot çalışma sonrasında bazı anket maddeleri değiştirilmiştir. Cinsiyet, yaş, meslek, pozisyon, çalışılan sektör, mezuniyet durumu ve mesleki deneyim çalışmanın demografik sorularıdır. Soru formunda "*Bilgi saklamanın çalıştığınız sektöre özgü bir gerekçesi var mıdır? Bu konudaki tutumunuzu açıklar mısınız?"* şeklinde bir de açık uçlu soru yer almaktadır.

TEXT OF THE OATH

I declare in lieu of oath that I wrote this MSc thesis titled “Knowledge as an object of Psychological Ownership and Knowledge Hiding via Territoriality among Knowledge Workers” myself in concordance with research ethics and all information derived from the work of others has been acknowledged in the text and a list of references is given.

Date

..../..../2014

Deniz İspirli

MASTER'S THESIS DEFENCE REPORT (VIVA VOCE)

Deniz İspirli, from the Department of Business Administration/Management and Organization Major was nominated for the defence of his/her MSc thesis titled "Knowledge as an Object of Psychological Ownership and Knowledge Hiding via Territoriality among Knowledge Workers" in front of a jury convened by Celal Bayar University Institute of Social Sciences at the meeting assembled on and with number in accordance with the article 8th of the Graduate Education Regulation. The candidate was accepted by the jury on / / at . Following the defence by the candidate of his/her personal research study, the answers provided by the candidate to questions raised by jury members either on the thesis topic or on the major of the research topic have been evaluated and the thesis was acknowledged to be;

SUCCESSFUL ☐ ☐ WITH UNANIMITY OF VOTES

REQUIRING REVISION* ☐ ☐ WITH MAJORITY OF VOTES

REJECTED** ☐

*In this case, the candidate is given 3 months.

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☐ ☐
This thesis must be printed.

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☐ ☐
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☐ ☐

TEZ SAVUNMA SINAV TUTANAĞI

Celal Bayar Üniversitesi Sosyal Bilimler Enstitüsü / / tarih ve sayılı toplantısında oluşturulan jürimiz tarafından Lisans Üstü öğretim Yönetmeliği'nin 8. Maddesi gereğince Enstitümüz..... Anabilim Dalı Yönetim ve Organizasyon Programı öğrencisi Deniz İspirli'nin "Knowledge as an Object of Psychological Ownership and Knowledge Hiding via Territoriality among Knowledge Workers" konulu tezi incelenmiş ve aday 5/6/2014 tarihinde saat 10:30 da/de jüri önünde tez savunmasına alınmıştır. Adayın kişisel çalışmaya dayanan tezini savunmasından sonra. 60 dakikalık süre içinde gerek tez konusu, gerekse tezin dayanağı olan anabilim dallarından jüri üyelerine sorulan sorulara verdiği cevaplar değerlendirilerek tezin,

BAŞARILI olduğuna ☒ ☒ OY BİRLİĞİ

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☐ ☐
Tez, mutlaka basılmalıdır.

☐ ☐
Tez, mevcut haliyle basılmalıdır.

☐ ☐
Tez, gözden geçirildikten sonra basılmalıdır.

☐ ☐
Tez, basımı gereksizdir.

☐ ☐

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CHAPTER I: INTRODUCTION TO THE STUDY

Purpose of the Study

The purpose of this study is to determine the effect of psychological ownership on employee knowledge hiding behaviour. The expected benefit from this study will be to demonstrate that knowledge hiding as an organizationally deviant behaviour could be accounted for by psychological ownership feelings targeted towards one's knowledge. Moreover, it is expected to demonstrate that knowledge hiding could be discouraged by mitigating overt psychological ownership feelings that appear in the form of territoriality upon one's personal belongings and knowledge regarding job and task processes.

Psychological ownership is defined as an overall feeling of possession and attachment targeted at various objects within the organization (Pierce, O'Driscoll, & Coghlan, 2004; Pierce, Kostova, & Dirks, 2001; Pierce, Kostova, & Dirks, 2003; Vandewalle, Van Dyne, & Kostova, 1995; Van Dyne & Pierce, 2004). Pierce et.al (2003) note that psychological ownership is a state of mind implying non-formal and non-legal ownership and the target of ownership could be tangible or intangible in essence with a conceptual core based on a sense of possession. Promotion-orientated dimensions of psychological ownership are comprised of self- efficacy, self-identity, accountability and a sense of belongingness. Prevention orientation is made up of the territoriality dimension.

Knowledge hiding is the conscious act of withholding a piece of knowledge from a person who requests to learn the nature of it. Knowledge hiding within organizations is an understudied subject whose significance has largely been overlooked. Knowledge hiding presumes and implies the possession of knowledge in the first place. Knowledge hiding could be in the form of not saying the whole truth, saying that the information is confidential and still not revealing it or distorting the reality of the knowledge by deception.

Preliminary studies on psychological ownership include recommendations on future empirical research outlets (Van Dyne & Pierce, 2004; Brown, Lawrence, & Robinson, 2005; Avey, Avolio, Crossly, & Luthans, 2009). The psychological ownership-territoriality-knowledge hiding relationship is one such realm of recommended further empirical investigation and the implications of this relationship are vital for the sustainability of knowledge producing and disseminating workplaces and perpetuation of collaborating organizational cultures. Organizations, as leeway for individual expression and free employee movement need to respect the underpinning psychological backgrounds of their primary value chain constituents, though by monitoring the detrimental consequences of any personal inclination and undertaking. Psychological ownership as an individual predilection and knowledge hiding via territoriality as an individual disorientation provide the skeleton for this body of research. This thesis study is a response to the call for exploring the roots of this organizationally deviant (but somehow personally positive) behaviour of knowledge hiding as a latent factor triggered by the behavioural displays of territorial compulsions. The effects of psychological ownership, especially territoriality dimension on knowledge hiding behaviour are investigated with a view to determine any (un)intended hazards and losses to the organizational well-being and development. Briefly, this study aims at theoretically conceptualizing, empirically operationalizing and objectively evaluating psychological ownership construct with a view to knowledge hiding behaviour.

Problem Statement

The arbitrary and sometimes inconsistent use of the term psychological ownership in the literature to denote a variety of meanings purport to a confusion stemming probably from its multidimensionality and abstract vagueness. Although it has been operationalized within business and management literature to measure various workplace attitudes, the construct psychological ownership and dimensions have been used as umbrella terms to connote more than what they indeed do. Responsibility, caring, influence, control, possession, belonging, appropriation, attachment, identification, loyalty, trust, self-identity, self-investment, accountability, risk-taking,

and commitment have been associated with (and even come to mean) psychological ownership, sometimes rightly and sometimes randomly. First of all, the definition of the term as a concept and as a construct needs to be clarified and an in-depth and thorough review of literature on psychological ownership needs to be conducted before delving deeper into a causality model. Second, psychological ownership being defined, the organizational effects of this cognitive-affective state are questioned with regard to the employee knowledge hiding behaviour. Knowledge hiding as an organizationally deviant behaviour could be explained by employee psychological ownership towards knowledge perpetuated by the so-called prevention focused territoriality dimension of the construct. The problem here is about how to understand, determine and measure the existence of the evasion of an intangible asset, which is tacit or explicit knowledge. This study attempts to gain insight into this elusive avoidance behaviour. Further, the deleterious facets of psychological ownership in the form of prevention orientation becoming evident in knowledge industry contrast sharply with the promotion orientation dimensions of the construct, which are mostly positive and desirable. This contrast is brought into sharp relief through the study; whereas psychological ownership towards the organization that is materialized by the promotion focused dimensions of the construct is expected to enhance knowledge sharing behaviour, psychological ownership towards knowledge and territoriality dimension are hypothesized to exacerbate the discordant attitude of knowledge hiding. The problem here is about the unpredictability of human behaviour, which is nowhere as rational as the presumptions of mainstream economy theories. Knowledge workers with high levels of psychological ownership towards their knowledge will tend to engage in knowledge hiding via the compounding effect of territoriality. However, less knowledge hiding will occur when the focus of psychological ownership feelings shifts towards the organization (Peng, 2013).Psychological ownership and employee territorial feelings are essential in explicating knowledge hiding behaviour. Thus, the research question is about whether this relationship does really exist and how, and the research problem is about framing a nomological network in testimony of the relationship.

Limitations and Delimitations

This research has a number of limitations that could have caused confounding at the various stages of the research process. There are also delimitations that were purposively established for narrowing the scope of the study to better focus on the issue of interest.

First is the possibility for person confounding that occurs when more than one group of units such as workers from different occupations are analysed together. The error variance in the experiment is increased by the variance in the units of sample population and this variance reduces the representativeness of the experiment sample.

In addition to the non-response bias, social desirability bias and courtesy bias might have intervened in sample responses. Deliberate falsification and unconscious misrepresentation are also among the potential limitations of the study whereby respondents might have evaded intimately responding to the questionnaires or unintentionally provided wrong answers due to forgetfulness or not having a real idea of the issue at hand (Sreejesh, Mohapatra, &Anusree, 2014, p.77).

The information regarding respondents' answers to a phenomenon are often more accurate than the information regarding their answers as to an attitude or opinion. To exemplify, an individual could explicitly detail his/her specific attitude and behaviours in the face of a specific situation. However, the information concerning a hypothetical event or situation could have been distorted by the lack of real life experience, thus rendering the evaluation just a possibility. This is one problem with the surveys that attempt to measure attitude (Islamoglu & Alniacik, 2013, p.140). The scales used in this study are not exempt from this bias also. As for the Likert scale that was utilized in administration of the questionnaires; *"Often one's intangible feelings about objects, concepts or people cannot be objectively measured and one should bear this in mind when drawing inferences from Likert scales" (Adams, Khan, Raeside, & White, 2007, p.140).* Another shortcoming of 5-point Likert scale is reported by Oppenheim (2000, p.70); *"Should you use five intervals in a scale or four? Five intervals will encourage a central tendency, i.e. respondents find it easier to give a mid-point reply than an*

extreme reply". The use of five-point Likert scale might have encouraged a central tendency on respondents and this might have systematically affected the analyses.

However scientific a researcher seeks his/her research to be, there are inevitable interventions in the perfectness of sample representativeness (Sonmez & Alacapınar, 2013, p.53). The sample population of this study was chosen from among knowledge workers. The population of the study was designated as Turkish knowledge workers but a sampling frame could not be determined as the exact number and qualifications of people to be denominated as knowledge workers could nowhere be specified. In this frame, the sampling method was designed as non-probability (judgemental) sampling. But, the basic sampling methodology states that research questions and objectives that need you to estimate statistically the characteristics of the population from sample require probability samples (Sreejesh et.al, 2014). Without the use of probability sampling, the generalizability of the research findings is relatively low and indeed, only limited to the sample on which the research was conducted. Considering the needs and different dynamics of social sciences research as opposed to the mainstream positivist sciences, the use of non-probability sampling could be justified by a few points. The first is, where it is not possible to construct a sampling frame, you will need to use non-probability sampling techniques. Non- probability sampling techniques also provide you with the opportunity to select your sample purposively and to reach difficult-to-identify members of the population (Saunders, Lewis, & Thornhill, 2009).Second, being modest with the research results and verifying the logicality of the assumptions and the corresponding findings will make sense in terms of them being materially true (Adams et.al.,2007, p.33). Overall, the limitations of this study lie in the sample and the method, and accordingly in its generalizability.

Significance and Contribution

A review of the literature in Turkish revealed no studies on knowledge hiding in organizational context. Knowledge hiding as a behavioural outcome has been left unexplored till this study and the first contribution of this thesis lies in its bringing the knowledge hiding construct to the scholarly attention in Turkish organization literature.

Second, psychological ownership has been found to be relatively understudied in Turkish context as well. This research will contribute to the development of psychological ownership literature in Turkey and further studies in various other contexts will hopefully be encouraged on this topic. Psychological ownership theory could be studied and developed in relation to other organizational concepts such as psychological empowerment, organizational commitment, turnover intention, intent to remain, person-organization fit, organizational culture and climate, and etc, by Turkish organizational scholars.

The concept of employee territoriality could explain and predict various other outcomes and attitudes that need to be investigated in organizational setting. This study attempted to highlight the paradoxical phenomenon to be perpetuated by territoriality in that opposing effects might have appeared depending on the target object to which territorial feelings are directed. Psychological ownership towards one's organization versus psychological ownership towards one's individual tacit knowledge could be further investigated in order to reveal the antecedents and prospective outcomes. The prevention versus promotion focus theory could also be further integrated into the organization studies as has been demonstrated by this study. This study is thus significant in terms of encouraging future original research outlets.

One of the most significant contributions of this study is the introduction and validation of three new measurement instruments through exploratory and confirmatory factor analyses to the Turkish organization literature. The psychological ownership scale, knowledge hiding scale, and knowledge-based psychological ownership scale have been tested on a sample of 305 Turkish knowledge workers in Turkish language with pilot-testing and further reliability analyses.

CHAPTER II: LITERATURE REVIEW

Conceptualization of Psychological Ownership

Ownership is conceptualized in various ways, including the legal right to possess (Pierce & Jussila, 2011), the ability to control and use an object (Hall, 2005; Rudmin & Berry, 1987),having voting power (Ward & Dolan, 1998), and an association between a person and an object (Heider, 1958, as cited in Beggan & Brown, 1993). The common element in various definitions of ownership is the existence of an owner, a target to be owned, and the relationship and interplay between them (Ikävalko, Pihkala, & Jussila, 2006). The basic pattern proposed in explanation of ownership is thus comprised of an owner (subject), an ownable object (object) and the interaction between the subject and the object (ownership). Ownership is not an obvious property of an object but rather it is communicated either through physical possession or verbal claim about ownership (Blake, Ganea, & Harris, 2012), an attribute that contributes to the abstractness of ownership as explained by Friedman & Neary (2008); *"Ownership is abstract because it cannot be perceived via the senses or inferred from sensory information. For example, we may see that a friend possesses a ball and is holding it, but we cannot see whether our friend owns the ball".*

Mattila & Ikävalko (2003) identifies four dimensions of ownership; social, legal, real and psychological. Beliefs of ownership, in whatever dimension of the concept, are the cognitive components of psychological ownership (Wagner, Parker, & Christiansen, 2003). Psychological ownership is defined as an overall feeling of possession and attachment targeted at various objects within the organization (Pierce, O'Driscoll & Coghlan, 2004; Pierce, Kostova, & Dirks, 2001; Pierce, Kostova, & Dirks, 2003; Vandewalle, Van Dyne, & Kostova, 1996; Van Dyne & Pierce, 2004). Pierce et.al (2003), in their seminal work on psychological ownership note that it is a state of mind implying non-formal and non-legal ownership and the target of ownership could be tangible or intangible in essence with a conceptual core based on a sense of possession. Pierce et.al (1991) note that psychological ownership is an important mediating

condition that combines formal ownership arrangement with individual level repercussions.

Scholars from various disciplines including psychologists and child development specialists note that possession and feelings of ownership are among the inherent conditions of human nature (Furby, 1980) and possessive feelings might be observed in a variety of everyday life instances like a scientist going to court to defend the ownership of her invention or an academic with a feeling of invasion, defending the right over her ideas in the face of plagiarism (Pierce et.al, 2004; Pierce & Jussila, 2011). In the preface to their co-authored book on psychological ownership, Pierce (2011) explains through what kind of different disciplines he sought to arrive at the genesis of psychology of ownership, whether it was an innate condition we are born with or a result of socialization practices promoted by social institutions like family and education, or a combination of both;

> It was my intention to devote my leave to giving meaning to the construct of ownership, and to this end I buried myself in child development, animal territoriality, anthropology, geography, philosophy, sociology, social and environmental psychology literatures in an attempt to come to understand this psychology, and the role that possessions play in human development and function (from Preface, p.xii).

In this pursuit, the sociobiological school of thought that emphasized the role of cultural institutions in teaching individuals what and how to own combined with the innate human motives emerged as the dominant answer to the genesis of this psychology of ownership.

After establishment of the genesis of psychological ownership feelings, the distinctiveness of the construct and the fact that no concept redundancy or unnecessary proliferation is on the stage should be proven (Pierce & Jussila, 2011). The distinctiveness of psychological ownership from related constructs like commitment, satisfaction, and involvement is communicated through the basic question raised by each concept respectively (Sieger, Bernhard & Frey, 2011, p. 80):

> Psychological ownership is a distinct concept because of the sense of possession as conceptual core (cp. Pierce et al., 2001; Van Dyne & Pierce, 2004).

Psychological ownership asks, ‘‘How much do I feel this organization is mine’’ (Van Dyne & Pierce, 2004, p.443); organizational commitment asks, ‘‘Why should I maintain my membership in this organization’’(cp.Meyer & Allen,1 997; Van Dyne & Pierce, 2004);organizational identification asks, ‘‘Who am I’’ (Dutton, Dukerich, & Harquail, 1994); and job involvement asks, ‘‘How important is the job and job performance to my self image?’’(Lawler & Hall, 1970).

Roots and Routes

The genesis and roots of psychological ownership feelings which explain the *why* of and basic motives behind those feelings have been conceptualized to be the need for efficacy and effectance, self-identity and having a place (Dittmar, 1992; Heino & Jussila, 2010; O’Driscoll, Pierce, & Coghlan, 2006; Oyserman, Elmore, & Smith, 2012; Pierce et.al, 2001; Pierce et.al, 2003; Pierce & Jussila, 2010; Pierce et.al, 2004; Pierce & Rodgers, 2004). Pierce & Jussila (2011) cautiously note that we should be tentative in our evaluation and treatment of the motives of effectance, self-identity, and having a home in that they are the reasons for but not the cause of the existence of psychological ownership. It is suggested that the individual motivation for ownership may be rooted in effectance motivation due to which the individual feels compelled to manipulate the environment. The acts of manipulation and control exercised by the individual lead to an accumulation of efficacy and competency feelings which in turn breed psychological ownership for targets that have come under individual control. Through repeated acts of control over the target, the object becomes a part of the extended-self. Sartre (1993) refers to three ways of self-extension by which objects come to be regarded as part and extension of the self; controlling an object for personal use, incorporating the object into the self and knowing the object. As for self-identity motive, people define themselves over their possessions and these possessions (the objects of psychological ownership) come to be a means of expressing the self to others as well as providing continuity to a definition of the self across time. Finally, the motivation for psychological experience of ownership stems in part from the need to be at home, to feel at home, to locate the self in a secure and comfortable space and inhabit a regular place (Pierce & Jussila, 2011).

It is now generally acknowledged in the relevant literature that there are three routes to psychological ownership which explain *what factors* affect the development of psychological ownership feelings, namely controlling the target, intimately knowing the target, and investing the self into the target (Pierce et.al, 2003). These three direct routes enhance the depth and intensity of the psychological ownership via different mechanisms including for example the investment of time, energy and effort as implied in investing the self into the target. The objects over which individual control is established tend to be more deeply experienced in terms of ownership (Csikszenthmihalyi & Rochberg-Halton, 1981; Fraser & Kemp, 2012; Furby, 1980; McClelland, 1951; Pierce et.al 2001; Pierce et.al 2003; Pierce et.al 2004; Sartre, 1993) and *"the more intimate knowledge an individual has over the object, the deeper the relation between the self and the object, and the further the fusion between the self and the target"* (Heino & Jussila, 2010, p.9). Dirks, Cummings & Pierce (1996, p.5) suggest that we may develop feelings of ownership for anything around ourselves ranging from our house and our reputation to our work and our organization, this latest being a complicated network of relations and processes among which there exists a variety of objects to psychologically own. As is noted by Belk (1988), presuming an object as part of ourselves is facilitated by a sense of control over the target, namely the more we perceive possessiveness of or by the object the more we are inclined to believe that the object is part of ourselves (Wallendorf & Arnould, 1988).Moreover, the targets with the strongest potential to be the objects of psychological ownership (the so-called psychologically proximal vs. distal targets) are those that fall within the controllable area of the individual, those that are most intimately known and recognized and those into which the individual self is most invested (Pierce et.al 2001; Pierce et.al, 2003; Pierce et.al, 2004). As exemplified by the same researchers, a scholar is more likely to psychologically own his research program than his university (proximity and control area) and he is most likely to psychologically own his doctoral students than his undergraduate students due to the investment of more effort and time for the former. In addition to three direct routes to the emergence of psychological ownership, there are some other indirect routes such as job design, organization structure, organizational processes, technology, participative decision making, and leadership.

Indeed, the emergence of psychological ownership is closely linked with the interactions among roots, routes, target factors and individual factors. From a deeper psychological perspective Csikszentmihalyi & Rochberg-Halton (1981, p.8) suggest that beyond the physical assets of effort, time and attention people invest "*psychic energy*" in objects which transform them into extensions of the self (Belk, 1988). Litwinski (1947), citing from the utilitarian British philosopher Jeremy Bentham (1748-1832) underlies the significance of psychological processes encircling the concept of possession:

"Unlike many others, he does not see in possession simply an exercise of physical power over an object but an exercise of psychical power as well, the power of foresight" (p. 251).

Heino & Jussila (2010) adds the motive of *social identity* to this tripartite model. The satisfaction of each demand serves to reinforce the need for another as in the case of an immigrant who would cherish the possession of a home for security and dwelling needs as well as the construction and continuity of self-identity via individual possessiveness of a target. Kleine and Baker (2004), leaning upon an extensive literature review on the nature of material possession attachment define the state of being attached to a specific possession as follows:

> Material possession attachment is a multi-faceted property of the relationship between an individual or group of individuals and a specific material object that has been psychologically appropriated, decommodified, and singularized through person-object interaction (p.1).

The researchers note nine characteristics to frame attachment: attachment is formed with specific material objects; attachment possessions must be psychologically adapted; attachments are extensions of the self; attachments are no longer regarded as mere commodities and they are viewed as unique; attachment develops over time and there needs to be experiences between person and possession; attachment is strong; attachment is not one-dimensional; attachment involves emotional sophistication; and attachments undergo changes through time just like the meaning of self is subject to alterations. Possessions are used to define the boundaries of the self. Just like those

possession attachments, place attachments also contribute to the definition of the self, as well as the continuity and stability of it. Collective possessions such as regionally, communally or nationally shared places or monuments like the Statue of Liberty (Belk, 1992) or a religious temple involve a nested togetherness of possession and place attachment. Objects of such dimension and effect as a country, city or religion own the person, rather than belonging to that person and communal feelings of ownership develop between such objects and individuals (Ozler, Yilmaz, & Ozler, 2008). Both types of attachments involve a common psychological element. It is also noteworthy that possessions do not need to have any tangible value, be scarce, or out of the common to become attachment objects (Kleine & Baker, 2004).

Dimensions of Psychological Ownership

Researchers identified various dimensions of psychological ownership that are basically categorized under two independent forms borrowed from the regulatory focus theory (Higgins, 1997), which are promotion and prevention. The hedonic principle that points to the human motivation as generally acknowledged within psychology literature for approaching pleasure and avoiding pain lays the groundwork for Higgins' study on regulatory focus (Brockner & Higgins, 2001; Crowe & Higgins, 1997; Higgins, 1997). According to Higgins, the hedonic principle delineates the events of approach and avoidance for maximizing pleasure, but it is silent as to an understanding of underlying processes and strategies. To fill this gap, he develops regulatory focus theory that distinguishes between self-regulation with a promotion focus and self-regulation with a prevention focus. Regulatory focus theory states that desired-end-states could be attained by both approach and avoidance strategies and there are different ways of approaching different types of desired-ends, that is *equifinality* (Shah, Higgins, & Friedman, 1998). Self-regulation towards desired ends is defined as the attempt to narrow the gap between one's current state and the desired-end-state. The difference between two distinct self-regulation foci of promotion versus prevention stem from the varying individual needs sought to be satisfied and goals pursued, as well as the psychological situation characterizing an individual at a specific time and place. These two distinct regulatory orientations result in varying consequences in terms of

behavioural outcomes and emotions. Needs related to growth and development are more prominent for promotive individuals; safety and security stand out for those with prevention focus. Aspiring to an ideal self-identity is more likely for a promotion-focused individual; complying with a normative image of identity is more likely for a prevention-focused individual. People with promotion self-regulation focus are more sensitive to presence and absence of positive outcomes and they are more likely to adopt approach strategy for achieving desired-ends whereas those with prevention self-regulation focus are more sensitive to presence/absence of negative outcomes and more likely to adopt avoidance strategies. This sensitivity could be better appreciated considering the following predilections of a person who wishes to get a good grade from a quiz and thus either studying hard in the library the day before it (approaching to a desired end state-promotion focus) or the same person rejecting an invitation to go out with friends the night before the quiz (avoiding an undesired end state-prevention focus). Promotion focused individuals are expected to persevere in the face of hardships whereas prevention focused individuals are expected to give up more easily. Individuals operating within the promotion motive are inclined to be more concerned with accomplishments and achievements whereas those operating within the prevention motive are more concerned about obligations and musts and tend to be more conservative and risk-averse. As for the motivational source behind their goal-attainment strategies, promotion-focused individuals try to reach their aspired goals whereas prevention-focused individuals seek to fulfil their obligations and evade punishments or losses.

In terms of psychological ownership theory, promotion and prevention foci have been proposed to be related with different employee reactions. Individuals with promotive psychological ownership feelings consider the improvements to the organization as self-fulfilling and regard change and creativity as upholding values for both their self-identities and the organization, hence more susceptible to share information with their colleagues whereas those with preventative psychological ownership tend to avoid information sharing due to conservative reservations about change and the desire for having things as they are (Avey et.al, 2009; Jeswani & Dave, 2012; Peng, 2013). Griffith (as cited in Ward, 2013) notes that an overall prevention orientation and

protectiveness might render a company susceptible to entropy as it becomes unable to adapt to the changing environment in the course of time.

Promotion orientated dimensions of psychological ownership are comprised of self-efficacy, self-identity, accountability and a sense of belongingness. Prevention orientation is made up of the territoriality dimension. This study assumes that individuals with promotion focused psychological ownership tend to be more sympathetic towards not hiding their knowledge whereas those with prevention focused tendencies view knowledge hiding more favourably.

Self-efficacy

Bandura (1995) expresses the human need for efficacy such that *"people strive to exercise control over events that affect their lives"* (p.1) and *"an affirmative sense of efficacy contributes to psychological well-being as well as to performance accomplishments"* (p.12). Feelings of self-efficacy and effectance stem from a belief in one's ability to successfully complete an assigned task and mirror the desire to effectively interact with one's environment (Heino & Jussila, 2010) as well as denoting the attainment of some pre-set goals by way of being in charge of and controlling the overall circumstances, i.e. a state of internal determination. The higher the perceptions of self-efficacy the higher the goal challenges on which sights are set and the higher is the belief in successful performance and outcomes and the lower is the stress and anxiety during task accomplishment. The sense of efficacy as a dimension of psychological ownership is about the personal intention to do a task and owning the responsibility to achieve success (Avey, Avolio, Crossley, & Luthans, 2009).

Controlling objects by way of owning them (Furby, 1978, as cited in Olckers & Du Plessis, 2012; Olckers, 2013) is a means of exercising personal efficacy whereby gratification is produced. As power, control and influence are instrumental functions of ownership (Ozler et.al, 2008), exercise of self-efficacy and effectance over one's possessions inspire a sense of ownership. The research suggests that exercising more control and authority, and investing more time and labour for a target and the capacity to produce effects in one's environment accompany the development of a greater bulk

of ownership feelings (Pierce et.al, 2001; Fraser & Kemp, 2012;Furby, 1980). Furby claims that possessions come to be parts of the extended self and in an organizational context they are of particular importance to employees as vehicles of control to be utilized for exercising power in their environment.

A feeling of control over a target has been explored by Rothbaum and colleagues (1982) with reference to a double process theory of perceived control. According to Moon (2005), Pierce et.al's root of control corresponds to the *primary control* of Rothbaum et.al's theory. The theory suggests that of the two processes of perceived control, primary control is about aligning the environmental conditions with those of individual wishes, i.e. an external adjustment of an object via outward behaviours such as influence, manipulation and active involvement whereas the secondary control is about bringing the self into alignment with environmental conditions, i.e. an internal adjustment of the self by inward behaviours such as passivity, withdrawal, compliance and conformity.

According to Brower (1980) control over a physical space is about appropriation by means of *occupancy, defense,* and *attachment.* In whatever type of the concept whether psychical, physical or psychological, and primary or secondary, control positively relates to psychological ownership and this latter could be explained by feelings and exercise of control over a target. The assumption of this proposition is that knowledge workers with higher levels of promotion focused psychological ownership in the form of control view knowledge hiding less favourably. The hypothesis follows that *knowledge workers with self-efficacy psychological ownership are less likely to report knowledge hiding.*

Accountability

Accountability is the sense of responsibility and obligation to be accountable in terms of the ownership target and to hold the others accountable on behalf of the owned object (Avey et.al, 2009). Accountability is a dimension of psychological ownership due to which individuals with high psychological ownership feelings expect others to be able to account for their impacts on the ownership target. Within organizational context,

expectations to share knowledge stems from the accountability component of psychological ownership as individuals psychologically owning the organization will perceive knowledge sharing as a collective responsibility of each employee as well as a natural right of all. Knowledge workers with higher levels of promotion focused psychological ownership in the form of accountability view knowledge hiding less favourably. It is thus hypothesized that *knowledge workers with accountability psychological ownership are less likely to report knowledge hiding.*

Sense of Belongingness

Sense of belongingness is about feeling "at home" with the target of ownership as Bauman (as cited in Ozler et.al, 2008) noted that humankind has always been in need of inhabiting a peaceful and risk-free, familiar and secure, controllable and defendable place. Individuals and groups are governed by an instinctual tendency to assert possession over physical space (Porteous, 1976). Both at micro-personal and macro-communal levels, there is a need for exercising control within a specified territory by which identity is established, security is guaranteed and stimulation is ensured. By personalizing and defending one's surroundings, the requirements for identity, security and stimulation are satisfied and the best place to realize these territorial satisfactions is the home. Through manipulation and personal arrangements on the claimed territorial space, people transfer their own personality onto the occupied spatial domain. Home provides a fixed physical space and it is the centre of emotional investment of the self and locus of physical and psychic satisfaction where people can exercise permanent personal control. In comparison to lower levels of territoriality such as one's office where sphere of control is reduced by the presence and invasion of others, home implies continuity and permanency. In line with the dichotomous perception of reality by psychic space division of "self" versus "none-self", geographical space is fundamentally defined and determined by the distinction between "home" versus "none-home". Knowledge workers with higher levels of promotion focused psychological ownership in the form of sense of belongingness view knowledge hiding less favourably, hence the hypothesis that *knowledge workers with sense of belongingness psychological ownership are less likely to report knowledge hiding.*

Self-identity

A sense of self develops as a result of interactions between one's actions in personal influence sphere and the outcomes of these actions regarding a target object (Furby, 1980). This sense of self is inevitably linked with what we might call as ours, i.e. our possessions (Belk, 1988) that is, the self is defined through possessions and ownership:

> It seems an inescapable fact of modern life that we learn, define, and remind ourselves of who we are by our possessions. Developmental evidence suggests that this identification with our things begins quite early in life as the infant learns to distinguish self from environment and then from others who may envy our possessions (p.160).

In a series of three consecutive experiments, Beggan (1992) proved the existence of a mere ownership effect, defined as the favourable evaluation of an object due to a psychological bridging between the object and the owner. As a possible antecedent for this effect, Beggan points to the self-enhancement bias, i.e. a desire to see oneself in a more positive light, towards one's possessions whereby individuals reinforce their self-concepts. Possessions help manage one's identity and individuality in and through time via establishment, reproduction and transformation of self-identities (Dittmar, 1992).Morever, Wallendorf & Arnould contend that attachments to objects are symbols of security and expressions of self-concept as well as signs of connection or differentiation from others, which are all universal displays of a consumptive motive. Employees use ownership to define and distinguish themselves and perpetuate the continuity of their self-identities though time (Pierce et.al, 2003). Self-identity is thus about identifying with the target of ownership. Identifying with one's organization by way of psychologically owning the parts of it like a work team create a sense of meaningfulness and connectedness for individuals (Avey et.al, 2009; Buchem, 2012). Further, in addition to the three acknowledged motives, a sense of collective social identity has been posited to be a facilitating factor in development of collective psychological ownership feelings via its role in group membership (Heino & Jussila, 2010).Knowledge workers with higher levels of promotion focused psychological ownership in the form of self-identity view knowledge hiding less favourably.

Knowledge workers with self-identity psychological ownership are less likely to report knowledge hiding.

Territoriality

Territoriality as a research topic has been introduced into organization studies and intertwined with the highly related concept of psychological ownership by Brown, Lawrence and Robinson (2005). Territoriality implies possessive feelings over physical spaces, ideas, roles, and relationships within the organizational context (Brown et.al, 2005; Brown & Robinson, 2011). These researchers define territoriality *as an individual's behavioural expression of his or her feelings of ownership toward a physical or social object* (p.578). Taylor (1988) defines territoriality as an interwoven set of feelings, values and actions guided by societal and cultural influences and closely linked with physical settings and consisting of three core dimensions, namely territorial cognition, emotion and behaviour (Peng, 2013). Although defined differently by various researchers, territoriality is claimed to have two basic characteristics one of which is *attachment to and organization of territories* (Brown et.al, 2005; Sack, 1983) and the other is *the occupation and defence of territories* (Altman & Haythorn, 1967; Dyson-Hudson & Smith, 1978). As different from psychological ownership which is a psychological state implying possessiveness for and attachment to some objects, territoriality is a social behavioural concept and refers to actions and behaviours often resulting from a feeling of psychological ownership. And territoriality emerges only when an individual explicitly claims an object as his own, an action surpassing the limits of psychological feelings of ownership and falling into the realm of social interactions. Brower (1980) differentiates between the personal space and territoriality by reference to a mobile bubble that accompanies a person as concerns the former and a state untied to any geographic location in the case of the latter. By reference to the survival instinct that underlies animal territorial behaviour, she suggests that the prevalence of territorial feelings among human populations may have something to do with an elemental purpose. According to Altman (as cited in Brower, 1980), this elemental purpose is the need for regulating the social interactions, which differentiates between settings according to the respective use and thereby reducing the likelihood for

conflicts and creating an orderly and secure universe. Further, Altman refers to three segments of territories categorized according to the significance of a territory in a person's daily life and duration of use; primary, secondary and public. Primary territories occupy the most space and time in an individual's life and where one belongs as his/her reference group. Secondary territories are collateral to one's reference group and less relevant in terms of time-spent and the density of interactions. Public territories are interaction platforms for strangers and they occupy the least space in an individual's life.

Territoriality in the traditional sense has positive implications for organizational well-being in that it boosts employee commitment and hinders conflict whereas on the negative side it has the potential to lead to inter and intra-individual problems. Territoriality feelings are greatly challenged by external threats and those external threats lead to emergence of three territorial strategies in the form of; *increasing the defence of existing territorial claims; narrowing the field by shifting or shrinking territorial boundaries to a more defensible position; and renouncing one's territorial claims* (Brower, 1980). The risk of losing one's territory may lead to deviant behaviours such as politicking and lack of transparency, cooperation, and sharing due to defensive territoriality (Heino & Jussila, 2010). Claiming psychological ownership over an object as one's own property is an *"assertion of territoriality through ownership"* and it is an attempt on the part of the individual to extract from the target the given qualities ascribed to it by the society (Pierce et.al, 2003). The objects over which an individual develops psychological ownership are located within the safe and secure self-control territory and in that realm protection and withdrawal are most likely to occur, as a consequence of which the individual rejects sharing and interaction with third parties and reacts to infringement on a fiercer plane (Brown & Robinson, 2011). As Ward (2013) puts it; *"A prevention focus… is driven by territoriality, a desire to be in control, and an antipathy to sharing"*(p. 11). This logic lends material for the assertion that the stronger the psychological ownership feelings over an object, the stronger the possibility that territoriality will lead to withdrawal and hiding (Peng, 2013; Webster, Brown, Zweig, Connelly, Brodt, & Sitkin, 2008; Brown and Robinson, 2011). When an

individual has strong feelings of psychological ownership for a specified target within his own creation and control and investment realm, he has a paralleling territoriality over that target, hence the emergence of a defence and protection mechanism. In the case of the knowledge as an object of psychological ownership, strong feelings of possessiveness over knowledge will, exacerbated by the multiplying force of territoriality, lead to knowledge hiding. Peng (2013) posits that knowledge is a determining factor in the bargaining power of an employee in organizational setting as it embellishes its owner with a unique opportunity to enter and exit freely. That is, an employee with unique knowledge advantage has the privilege to move from one workplace to another due to i.e. lessened organisational commitment and an increased rate of turnover intention. Thus it is reasonable to argue that people can easily develop psychological ownership over knowledge, because control over knowledge translates into power and status. Following this inference, the hypothesis claims that knowledge-based psychological ownership is positively related to knowledge hiding. Knowledge workers with higher levels of prevention focused psychological ownership in the form of territoriality view knowledge hiding more favourably. *Knowledge workers with territoriality psychological ownership are more likely to report knowledge hiding. Moreover, knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding whereas knowledge workers with organization-based psychological ownership are less likely to report knowledge hiding.*

Knowledge-based psychological ownership is a micro-level tendency whereas organization-based psychological ownership is one of macro-basis, and as is suggested by Peng (2013) the implications of those two approaches vary greatly in terms of behavioural outcomes including knowledge hiding. Organization-based knowledge hiding might moderate the effect of knowledge-based psychological ownership on knowledge hiding via territoriality, by providing the employees with a strong sense of possession and territoriality regarding the organization, as their own property and space. Indeed, researchers have recommended a serious exploration of the instances when psychological ownership has positive consequences and when it has negative and counter-productive ones (Van Dyne & Pierce, 2004). This study will also be an attempt

to determine the difference between these two contrasting ends of the same behavioural tendency.

Contextualization of Psychological Ownership

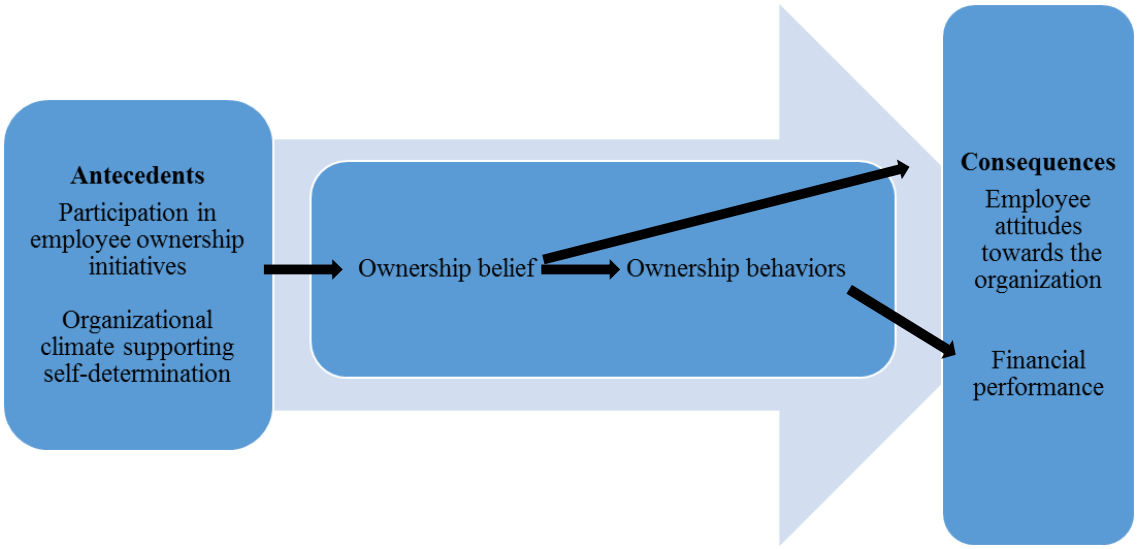
Influential Factors

Psychological ownership has been studied conceptually and empirically within the context of various disciplines including psychology (Karnilowicz, 2011), anthropology, and child development. The psychological ownership construct has also been anchored with the work and organizational context (Pierce & Jussila, 2011), especially the family business research as it is most relevant in a business setting where both legal and psychological ownership are present and its relationship with and effects on other organizational variables have been tested. As the contextual baseline of psychological ownership, herein is espoused the organizational setting.

Wang et.al (2006) divide the factors influencing the development of psychological ownership into three main categories including *individual factors, target factors* and *context factors.* Individual factors are usually such variables as gender, personality, social and economic background etc. that determine the differences in intensity of psychological ownership feelings whereas the target factors are about the attributes of the object that is the subject of psychological ownership. Context factors allude to the outer environmental conjecture where ownership behaviours emerge. Furthermore, this study claims that people utilize two kinds of marking behaviour to communicate their ownership; communicative or proactive *versus* defensive or reactive markers. The former allows people to know that the specified object has already been claimed by someone else but it does not apply any sanctions thwarting the third parties from access whereas the latter constructs impassable barriers stopping people in case of any attempt or violation.

Antecedents & Consequences

Wagner et.al (2003) proposed a model for the potential antecedents and consequences of psychological ownership. According to the model illustrated in the below figure, the antecedents of psychological ownership consist of participation in employee ownership initiatives and an organizational climate supporting self-determination. The prospective consequences thereof are composed of employees' attitudes toward the organization and financial performance (Figure 1). The model suggests that ownership beliefs are reinforced by employee participation (formal employee ownership like employee stock option plans) and perception of an organizational climate that promotes self-determination and individual willpower to be closely involved with decisions and work processes as in participative management or training opportunities. In China, for example, the introduction of ESOPs necessitated a redefining of ownership among workers by leading to a higher level of psychological and behavioural involvement (Chiu, Hui, & Lai, 2007) and increased levels of organizational commitment (Henry, 2006). In turn, ownership beliefs are closely correlated with ensuing employee behaviours and they have a determining role in the formation of attitudes towards the organization. The employee ownership behaviours are likely to positively affect the financial performance of work groups. In the same vein, Ward (2013) hypothesized that legal ownership would positively relate to psychological ownership in employee-owned firms as measured by the prevention and promotion focused dimensions of Psychological Ownership Questionnaire (Avey et.al, 2009). The firms with employee stock option plans would rank higher on the POQ scale and this affiliation would be enhanced by the length of employment.



Source: Wagner et.al (2003)

Figure 1: A model of psychological ownership in work groups

There are on the other hand, some natural and socially constructed barriers restricting the development of psychological ownership, such as bureaucratic organization structures, hierarchical patterns and a high degree of centralization, which limits the individual willpower, thereby serving to the opposite of the aforementioned routes. Such impediments reduce the potential for the development of psychological ownership behaviours, suggesting that self-control is the key to the emergence of psychological ownership (O'Driscoll, Pierce & Coghlan, 2001; Pierce et.al, 2003).

Pierce & colleagues also refer to the confluence of cultural dynamics as explored by Hofstede (1980) in development of and varieties within psychological ownership across cultures. Whereas in masculine cultural settings material targets could be considered as objects of value, in societies with more feminine sociocultural features the value might well be attributed to ideational targets for ownership considerations (Ozler et.al, 2008). Pierce & Jussila (2011) hint at this cultural determination of psychological ownership feelings and targets in the following excerpt;

> While taking a neutral stance to these debates, we note there appears to be widespread agreement that it is common for people, especially for those under the influence of Western cultures (that is, those with historically and

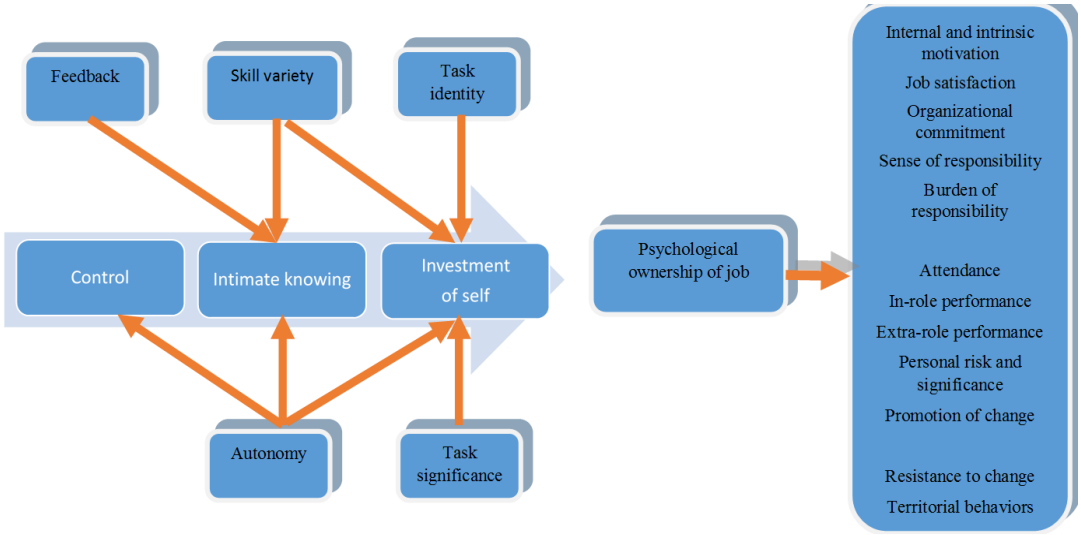
> geographically defined value and belief systems that highlight (personal) ownership as a central element of social organization), to develop feelings of ownership for objects that are material (for example, homes, automobiles) and immaterial (for example, ideas, relationships) in nature (p.2).

The purported conception of psychological ownership acquires a different character from that of legal ownership when they exist independently of each other in that, psychological ownership is acknowledged by the individual whereas legal ownership is attested by the society and any other formal institution (Etzioni, 1991). This situation results from the fact that psychological ownership is not dependant on any legal prerequisite whereby to legitimize itself. The reverse is also likely to be observed when legal ownership exists irrespective of an ensuing psychological ownership towards the target.

The psychological ownership construct was applied in the development of a unified definition of the *family firm*, which supposedly transcends the conceptualizations imposed by legality concerns with an emphasis on the feelings of ownership towards both the family and the business, (Henssen, Voordeckers, Lambrechts, & Koiranen, 2011) which is epitomized as the *familyness* of the family firms (Ikävalko et.al, 2006). The researchers underline that psychological ownership is best noticed when people act as owners, which implies a psychological feeling of possession and when they exercise control. The behavioural demonstration of ownership assumptions is rooted in the use, control and transfer of the possessions regarded as "*ours"*. The construction of psychological ownership over objects is claimed to be socially bound and emerge from a series of interactions between the individual and the object. The significance of experiencing and exercising control over one's job and work environment such as participation in decision making and the extent of this control as a harbinger of psychological ownership with social-psychological and behavioural effects is thus a well-documented phenomenon (Pierce et.al, 2004; Pierce, Rubenfeld, & Morgan, 1991). Within the family business research, psychological ownership promises some consequential implications in exposing the next-generation family members' feelings of belongingness to the family, the degree of their commitment to the family and business

and intention to stay as well as the willingness to be engaged in the business and its well-being (Ceja & Tapies, 2011; Heino & Jussila, 2010).

The target of psychological ownership gains significance as long as it is attributed a meaning (this entails that it is meaningless by itself) by the subject of psychological ownership, which is when it is *objectivised* by a human being (Asatryan & Oh, 2008; cf. Richins, 1994 for a discussion on private *vs*. public meanings of possessions).The object is endowed with either a natural or an artificial identity to render it identifiable with through various interactions. As Tuan (1980) rightfully connotes regarding the human need for integration and identification, *"our fragile sense of self needs support, and this we get by having and possessing things because, to a larger degree, we are what we have and possess"* (as cited in Belk, 1988). This assumption is followed by an automatic attribution and articulation of meaning to an otherwise disengaged unit. On the psychological states perpetuated by complex job design, Hackman & Oldham (1975) claim that there are three psychological moods linked with job design complexity, namely experienced meaningfulness of work, experienced responsibility for work outcomes and knowledge of results (as cited in Pierce, Jussila, & Cummings, 2009, p. 480). Among them, experienced meaningfulness of work reflects the degree of meaningfulness and value as perceived by the individual regarding his job. This psychological state triggered by job design in turn, mirrors positively on the employee in the case of one or more of the following responses, namely internal work motivation, job satisfaction, enhanced work performance, and etc. The assumption underlying the interactive nature of work design-employee response dyad is; the more the perceived meaningfulness regarding one's job, the responsibility required by and invested in job and the knowledgeability and accountability for the outcomes are necessitated by complex job designs, the more positive employee behaviour is expected to occur. Based on this proposition, Pierce et.al. (2009) extend the Hackman & Oldham's (1975) Job Characteristics Model to include the three routes for the emergence of psychological ownership as mediating factors in the relationship between job characteristics and work outcomes. Their psychological ownership-based revision of the Job Characteristics Model is shown in Figure 2.



Source: Pierce et.al, 2009.

Figure 2: A psychological ownership-based revision of the job characteristics model

As to the outcome of territorial behaviours, Brown, Lawrence & Robinson (2005) suggest that the psychology of ownership is the primary cause behind territoriality, which is defined as the behavioural demonstration of an individual's sense of ownership for a target object. Territorial behaviours are mostly displayed in one or several of the following forms; those that communicate one's territorial boundaries to the others; those that maintain an attachment to an object and those that defend the target of territorial feelings. Defensive behaviours, either anticipatory or reactionary in nature also emerge from territoriality (Brown et.al, 2005). Korman (as cited in Brown et.al, 2005) warned that the failure of those defence mechanisms over one's territory will lead to negative outcomes like the destruction of one's sense of personal identity. As the self becomes intertwined with the psychologically-owned object, people become more eager to assume responsibility in order to protect the self. Harper (as cited in Brown et.al, 2005) further elaborated that in the case of job-based psychological ownership, this assumption of responsibility may turn into a burden of responsibility and may result in feelings of fatigue and anger. On the other hand, strong feelings of psychological ownership within organizations may lead to unwillingness to share the target of

psychological ownership, thus resulting in some deviant behaviour such as theft and hiding and in more extreme cases destruction, sabotage or vandalism towards the object of psychological ownership so as to prevent the others from accessing the acknowledged territory of their self-construction. Moreover, preoccupation and isolation are the two precarious attendants of territoriality in that the former risks overlooking of priority issues by excessively indulging in territorial concerns whereas the latter risks lowered interaction with people around as a result of disproportionate interest in only the territorialized objects.

A target object has been shown to be evaluated more favourably when it was owned as opposed to when it was not owned (Beggan, 1992). In his master's degree thesis in psychology, Yeung (2012) investigates the role of ownership in the endowment effect, which is shaped by loss aversion. Endowment effect implies that people are unwilling to give up an object they own in exchange for a similar one they do not possess. The Endowment Effect as popularized by Richard Rosett and later integrated into the Prospect Theory within behavioural economics states that the response to a loss is stronger than the response to a corresponding gain (Kahneman, 2012). The perceived values of two identical goods are not equal because of loss aversion; *"Giving up a bottle of nice wine is more painful than getting an equally good bottle is pleasurable"* (p.293) and *"losses loom larger than gains"* (p. 297). Herein, Yeung (2012) hypothesizes, resides the inexorably impulsive force of psychological ownership that underlies this sense of endowment. Beggan (1992) notes that the conceptual core behind endowment effect is completely distinct from that of the mere ownership effect in that the former is a cognitive process of framing an object with value particularly when there exists a threat of potential "loss" whereas the latter is a motivational process in which people overvalue the objects they own due to self-enhancement bias. The researcher also refers to the explicit character (in the form of questionnaires) of the measures used in investigating the psychological ownership, which he criticizes might miss the implicit part of the question. To test his hypotheses regarding explicit measurement of psychological ownership, Yeung utilizes Van Dyne & Pierce (2004) questionnaire by adapting the six items in a way that they reflect the feelings of psychological ownership

on the experimenter's choice of target object, in their case a pen with a university logo (e.g. "*I have the feeling that it is my pen*"; "*The pen incorporates a part of mine*"; *I feel that the pen belongs to me*"). In another study, Reb & Connolly (2007) examine the relative contributions of legal ownership versus feelings of ownership (*objective vs. subjective ownership*) to the development of endowment effect. They find feelings of possession to be superior to legal entitlement in constructing a set of endowed targets and monetary evaluations of the objects. Endowment effect-psychological ownership relationship is investigated by consumer psychology researchers Shu & Peck (2011) where psychological ownership is attested to mediate object valuation and choice suggesting that emotions and attachment are important aspects of loss aversion. Taking possession of an object prior to full possession could trigger loss aversion and endowment upon the item due to pre-purchase interaction and customization. Options such as trial periods and test drives could be manipulated by retailers as strategies to create customer object attachment and endowment for selling their products at higher prices. Psychological ownership of an object before full legal possession affects the value that could be forgone in exchange for that object and customers need be wary of this marketing strategy in order not to pay more than the real value of an endowed object (Shu & Pack, 2011).

Dirks et.al (1996) address the question of how a change in an organization affects the disposition of an individual who psychologically owns his/her organization or a part of it. The types of change as explored by the researchers are as follows: 1) self-initiated vs. imposed change, 2) evolutionary vs. revolutionary change, 3) additive vs. subtractive change, all of which together describe the changes likely to emerge in organizations. Which one of those sort of changes promote change and which ones lead to resistance being the main research question, the researchers differentiate between the promoting and resistance-driving changes based on the three basic needs of the self, namely, the needs for self-enhancement, self-continuity and control and efficacy. Supposedly, individuals will appreciate any organizational change that which satisfy their need for self-enhancement, self-continuity and control and efficacy and will resist change efforts that endanger the fulfilment of the appertaining exigencies. The logical reasoning

behind this argument is the entailment that changing an individual's possessions implies and is almost equal to changing a part of that individual. Thus, the individual response to organizational change is shaped by the perception of threat/opportunity to the idea of the self coupled with the psychological ownership towards the organization.

According to Baer & Brown study (2012), the type of change and the intensity of individuals' psychological ownership over their ideas interact to create either resistance or acceptance of a change suggestion. To clarify the two-dimensional model of change adoption, there is basically either an additive change that which constructs upon and expands an existing idea or a subtractive change that which eliminates some parts of an existing idea. Individuals with enhanced psychological ownership feelings over their ideas are more likely to resist subtractive change as compared to those with limited psychological ownership. The underlying motive is that the elimination of an individual's ideas via subtractive change is the same as diminishing that person's notion of the self, and thereby causing a personal loss. In contrast, an additive change is an enhancement on the idea of the self through a sense of personal growth. The end result of this double-edged phenomenon is the welcoming of change by individuals with a strong sense of ownership over their ideas as an opportunity to enhance their possessions and self-territories. However, any change either additive or subtractive, could be threatening for individuals with strong psychological ownership feelings over their ideas, leading them to be "blind in one eye", which curtails the opportunity to benefit from the full fruits of a collaborative environment by way of hiding their ideas and thoughts from the contributions and change suggestions of others.

Bernhard & O 'Driscoll (2011) empirically test and statistically prove the relationship between psychological ownership and leadership style in their study on small family-owned businesses. According to their findings, leadership style- transformational, transactional or passive leadership- affects non-family employees' attitudes and behaviours in terms of extra-role behaviour, in-role behaviour, affective commitment, job satisfaction and turnover intention, and this relationship is mediated by psychological ownership. The reason that psychological ownership is eligible for investigation within the frame of small family business environments is the receptivity

towards psychological ownership due to emotional closeness between the employers and owner-managers as well as the binding of employees to the family business (Dirks, Cummings, & Pierce, 1996; Bernhard & O'Driscoll, 2011).

On the positive side to the psychological ownership are *citizenship, personal sacrifice and assumption of risk and experienced responsibility and stewardship* whereas on the dark side *alienation, deviant behaviours, violation of group norms, obsession with psychological ownership targets, sabotage, stress and sickness* are likely to be observed. Following is a general literature review regarding the acknowledged positive and negative consequences of psychological ownership.

Positive Consequences of Psychological Ownership

Asatryan (n.d.) differentiates between the positive and negative consequences of psychological ownership. In his examination of psychological ownership from a consumer behaviour perspective, the researcher notes among others the sense of responsibility and stewardship as by-products of psychological ownership. The sense of possessiveness associated with psychological ownership is also claimed to be positively linked with overall organizational disposition to keep up good relations (Asatryan & Oh, 2008) and citizenship behaviour (Organ, 1988) as well as other extra-role behaviours. Recent research has also found innovative constructive deviant behaviour, moderated by a collectivist orientation within the organization to be positively related to psychological ownership, which implies that individuals with strong collectivistic orientation will be more likely to engage in organizationally desirable and favourable out-of-the-norm behaviours (Chung & Moon, 2011;Fraser, 2010; Galperin & Burke, 2006;Moorman & Blakely, 1995; Robinson & Bennett, 1995; Spreitzer & Sonenshein, 2004; Warren, 2003). This relationship is further supported by the assumptions of the stewardship theory (Davis, Schoorman, & Donaldson, 1997). Constructive deviant behaviour includes inter alia, tempered radicalism, whistle-blowing, employee voice, creative disobedience and organizational dissent (Warren, 2003).As to the empirical finding of a positive relationship between organizationally favourable out-of-the-norm behaviours and psychological ownership however, Chung and Moon (2011) warn that

this finding should be cautiously approached in that employees with strong psychological ownership feelings may well be reluctant to violate the organizational norms and values and trespass the limits of their social identities, even when the deviant acts will improve the organizational performance.

Wagner et.al (2003) studied ownership behaviours in family firms within the context of employees' financial information seeking behaviour, willingness to improve job performance, cost-cutting behaviours and innovation initiatives and found strong correlation between psychological ownership behaviours and firm financial performance (cf. Donnelley, 1964). Björnberg & Nicholsan (2008) note that the attachment and identification nesting in the core of the family business ownership create a strong business culture shaped by unique capabilities in terms of competitiveness and family capital and they refer to an "emotional ownership" defined as a critical pathway between the next-generation and the family business. According to this assumption, the genesis of the psychological ownership is the family climate and the special relationship with one or more members of senior generation. Within this culture of strong attachment and identification towards the business, feelings of belongingness to the family and business and responsibility for decision making are enhanced by psychological ownership transferred to the next-generation family members via the three routes to development of psychological ownership, i.e. knowledge of the business, investing the self into the business and controlling the business (Ceja & Tapies, 2011). Henssen et.al. (2011) propose that family legal ownership is positively correlated with psychological ownership feelings and ownership behaviours of family members, which are in turn associated with stewardship behaviour towards the firm and firm financial performance. Stewardship theory is based on pro-organization behaviours intended at promoting the organizational interests and there are parallels between the behavioural demonstrations of stewardship theory and psychological ownership (Zhu, Chen, Li & Zhou, 2013). As an illustration of underlying consistencies, among the psychological antecedents of stewardship behaviour are the level of identification with and commitment to the organization (Davis et. al, 1997) and among the situational antecedents are collective-oriented organizational culture and trust climate, factors

which have been empirically proved to be related with psychological ownership as well. Indeed, according to Hennsen & colleagues psychological ownership feelings correlate with human capital and organizational capital resources of the family firm, thereby creating positive externalities in the form of reducing agency costs likely to emerge from clash of interests among the principal and the agent (Chrisman, Chua, & Litz, 2004). Also, psychological ownership for a franchise brand is found to be positively correlated with the willingness of the franchisee to diffuse the franchise brand to others likely to undertake the same initiative, thereby boosting the franchising opportunities and potentially extending the franchise chain (Hou, Hsu, & Wu, 2009). The franchisee psychological ownership over the franchised brand is further consolidated by the development of organizational commitment towards the franchisee organization. This commitment will in turn feed positively on the willingness to diffuse the franchisee brand, a virtuous circle. In terms of agency problems (cf. Eisenhardt, 1989) shaped by the allegedly self-centred and opportunist pursuits of the agents, higher levels of psychological ownership will alleviate the potentially detrimental consequences of agency relationship by aligning the mutual interests of the principals and the managers, thereby rendering a close monitoring unnecessary and superfluous (Sieger, Zellweger, & Aquino, 2013). Thus, *"psychological ownership turns agents into psychological principals"* (p.379).Monitoring, as a mediator between psychological ownership and individual-level entrepreneurial behaviour, will be a determining factor for the strength of the relationship such that this relationship is stronger when monitoring is low as compared to when it is high.

According to Van Dyne and Pierce (2004) the sense of psychological ownership is followed by three outcomes including positive attitudes towards the target, enhanced self-concept and a sense of responsibility (Furby, 1980; Furby, 1991). These fundamental corollaries of the psychology of possession are associated with respectively the work-related attitudes such as affective commitment (Allen & Meyer, 1990), self-concept as in the form of organizational-based self-esteem which is the employee evaluation regarding self-proficiency at work and behaviours like organizational performance and citizenship behaviour within the organizational context

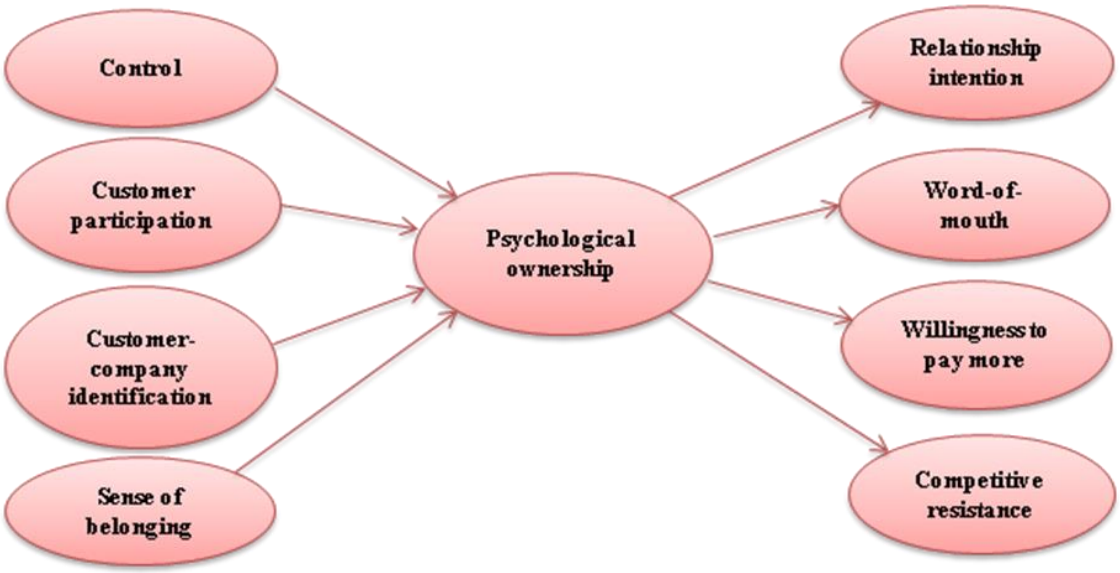
(Vandewelle et.al, 1995; Van Dyne & Pierce, 2004). Work-related attitudes provide people with a sense of possession, which in turn translates into a satisfaction in the form of a place, belonging and personal space. This sense of ownership for the organization and the ensuing psychic comfort and security (Porteous, 1976) is a predictor of the positive relationship between psychological ownership towards the organization and organizational commitment (affective commitment), which is defined as the individual's psychological attachment to the organization (O'Reilly & Chatman, 1986). Through heightened sense of responsibility for the ownership target, feelings of empowerment and autonomy as well as efficacy and control over their firm, senior managers with high levels of psychological ownership tend to engage in individual-level entrepreneurial behaviour, which is the root of innovation, creativity and change (Sieger, et.al, 2013).Van Dyne, Cummings, & McLean Parks (1995) ascertain a fully mediated relationship between psychological ownership and extra-role behaviour, stating that those with higher levels of psychological ownership are more likely to engage in extra-role behaviour to the best interests of the organization. The strength of the relationship between psychological ownership and extra-role behaviour is discerned to be more intense than the one between psychological ownership and in-role behaviour. Further, the role of satisfaction in leading to extra-role behaviour is less than that perpetuated by psychological ownership. In terms of evaluative judgments regarding one's job and work environment, psychology of possession is pregnant with meaning in that people think more favourably about the objects or concepts owned by themselves in comparison to those they do not own even in cases of equal worth and value (Beggan, 1992; Nuttin, 1987). This is evidence for a positive relationship between psychological ownership and job satisfaction as an extension of positive evaluations regarding the target, in this case the job and the organization. And finally, possessive feelings for the organization make people feel responsible for and towards the organization and work, thus increasing job performance beyond that provided by commitment and satisfaction and hence strengthening the power of the organizations in retaining talent via boosting the employee motivation to remain with the organization (Olckers & Du Plessis, 2012). In short, psychological ownership is positively related to commitment, satisfaction,

organization-based self-esteem, performance and organizational citizenship behaviour, either directly or through mediating factors (Pierce & Van Dyne, 2004).

Regarding employee psychological well-being and job satisfaction, Avey, Wernsing, & Palanski (2012) investigate the mediating role of psychological ownership along with the process of ethical leadership. As is already stated, psychological ownership posits a sense of possession among the employees towards their job and organization. Hackman & Oldham (as cited in Avey, et.al, 2012) remarks that having a sense of ownership over one's work is equal to having a sense of autonomy and this autonomy is a predictor of job satisfaction. Focusing on the potential influence of ethical managers on group norms, the researchers hypothesize that the following three core values related with psychological ownership are among the key determinants of the ethical managers' power*:* *equity*, *accountability* and *belongingness*. The argument goes that ethical leaders are more attentive to being fair and equitable with employees, a state that nurtures and augments the feeling of ownership among the employees towards the leader and the organization. Ethical leaders place value on the accountability of the employees by keeping them responsible for the means and end results of their actions in terms of ethical standards and code of ethics and organizational principles. Such kind of a leadership impregnates the pursuers with a mindset oriented towards both individual and collective adoption of accountability standards in their practices. An ethical leader who thus keeps the followers accountable for their and others' actions personifies an ideal organization and the more accountable the organizational members are, the more psychological ownership develops. Moreover, ethical leaders encourage the employees to psychologically own their specific work group and the overall organization via creating a sense of belongingness. These relations collectively add up to amass a crown of psychological well-being and job satisfaction in the organizational atmosphere.

Psychological ownership has been studied by marketing scholars in relation to a variety of marketing concepts including brand perceptions, brand value, internal brand building, and customer satisfaction (Chang, Chiang, & Han, 2012). Perceptions of positive feeling towards the organization or a product/service provided by the organization via the development of psychological ownership are discerned among satisfied customers in

marketing research literature. Asatryan & Oh (2008) explain the phenomena by referring to a study conducted by Heskett (2000) who found that some customers are deeply attached to a specific company so much so that they are transformed into stakeholders with key interests in the prospects of the organization and they tend to contribute to the long-term successful practices of it. Furthermore, these researchers develop a psychological ownership framework following the lead of the relations marketing approach and they explore links among the exogenous variables (of control, customer participation, customer-company identification and sense of belonging) and the endogenous variables (of relationship intention, word-of-mouth, and willingness to pay more and competitive resistance). Of the exogenous variables and precursors of psychological ownership, customer-company identification refers to the "value congruence" between the expectations and values of the customer and the company, which is in turn expected to positively relate to psychological ownership. Of the endogenous variables and consequences of psychological ownership, relationship intention refers to the long-term and stable willingness to sustain the relationship with the company despite and in the face of competing alternatives. The desire for a continuous interaction with the company triggered by a sense of psychological ownership is likened to the individual tendency to "maintain the continuity of the self across time". The hypothesis testing over the proposed model displayed an unexpected and contradictory-to-assumptions result in the case of the "control" variable that implied the existence of a positive relationship between employees' perceived control and psychological ownership toward the organization. Except this suggested hypothesis rejected within the model as contrary to the findings reported by Pierce & Rogers (2004), all the others were supported. The direction of each relationship is displayed by the arrows in the schematic illustration of the model in Figure 3.



Source: Asatryan & Oh (2008)

Figure 3: A proposed psychological ownership framework (in marketing research)–A completely mediated model

The organizational incentives offered to employees to align the interests of both parties as in the case of equity ownership or participation in decision making are tangible and concrete but there is a psychological side to this relationship between the organization and the worker that affects and empowers the employee perception regarding ownership, be it legal or psychological. This question of whether legal ownership might strengthen the feelings of psychological ownership for the organization has been raised by scholars (Chi & Han, 2008). In addition to studies demonstrating positive links between psychological ownership of the organization and job satisfaction, organizational commitment and citizenship behaviour (Buchko, 1993; O'Driscoll et.al, 2006; Van Dyne & Pierce, 2004; VandeWalle, Van Dyne, & Kostova, 1995) studies exploring the antecedents of the state of psychological ownership with a focus on the reasons for *why* legal ownership leads to psychological ownership are required to better appreciate this positive link. According to Pierce et.al (1991) formal ownership is centred on three basic rights including *equality, influence and information* along with the three routes leading to psychological ownership which are *investing the self into the target, controlling the target* and *coming to intimately know the target*. These three

formal rights are stated to be more or less parallel to the three psychological ownership routes, implying that *equity rights are similar to the route of investing one's self to the target*, *influence rights are similar to the route of controlling the target*, and *information rights are similar to the route of intimately knowing the target* (Chi & Han, 2008).According to this parallel relationship, the availability of any of the concerned legal rights contributes to development of psychological ownership, hence becoming an antecedent. Moreover, according to the empirical study conducted by Chi & Han (2008), the relationships among the three routes of psychological ownership and three legal rights are mediated by perceptions of organizational justice, distributive and procedural. In the context of family firms, the relationship between organizational justice perceptions(distributive justice) of the non-family employees and common work attitudes (affective commitment and job satisfaction) has also been found to be mediated by psychological ownership (Sieger et.al, 2013).

In a longitudinal study investigating the relationships among person-organization fit, person-job fit, psychological ownership and organizational performance, Han, Chiang & Chiang (2013) hypothesize that the compatibility between personal characteristics and organizational values leads to organizational identification and contextual performance by way of the development of an intangible contract between the employee and the organization extending into psychological ownership.

Within the group and teamwork contexts, creating effective teamwork mental models to be utilized by self-managed work teams (SMWTs) requires *inter alia* a shared psychological ownership of the team processes and outcomes (Druskat & Pescosolido, 2002). To encourage a sense of psychological ownership within the work teams in a selected sample of organizations, a number of changes in team work designs were introduced including reduced supervision, increased control over decision-making and the completion of the overall tasks. Organizational teams with psychological ownership orientation displayed higher levels of participation, higher levels of commitment to the organization and increased efforts at job safety and task proficiency. The study results suggested that organizations should be mindful of the socially constructed shared mental models that act as blue prints for team processes. Organizational support for

reformed task designs that contribute to development of psychological ownership, team continuous learning and heedful interrelating are crucial for the sustainability of the positive organizational behaviour outcomes.

Erkmen & Esen (2012) leaned on the relationship between internal locus of control and organizational commitment feelings of the employees in information technology sector, which they claimed to be mediated by psychological ownership. According to their argument, internal locus of control correlates with the effectance motive that is a root of psychological ownership. For individuals with an internal locus of control, effectance and controlling the surroundings are of utmost significance. Further, individuals with an internal locus of control believe their successes, failures and behavioural outcomes to be directed by their own willpower as opposed to those with external locus of control that attribute them to other sources like chance (Rotter, 1966, as cited in Erkmen & Esen, 2012). The study results suggest that internals perceive higher levels of psychological ownership of the organization as well as feeling psychologically more empowered and capable of influencing and controlling their environment. Therefore, high internal locus of control leads to higher levels of organizational-based psychological ownership and this translates into organizational commitment behaviour.

Moon (2005) addressed the role of psychological ownership and social identity in building e-loyalty towards blogging services within the framework of blogging service providers' e-business strategies for locking in their existing customers. According to the proposed model, blogging service providers need to meet social, psychological and technical needs of their customers to ensure future customer loyalty and corporate survival. One strategy for achieving e-loyalty is by restoring blogger psychological ownership via enhanced interface control and ease of use as well as more personalized blog space.

Ozler, Yılmaz, & Ozler (2008), as consistent with the argument that a participative work environment and authority delegation promote citizenship and commitment feelings, found job satisfaction and a participative organizational climate to be influential on development of psychological ownership of the organization.

Negative Consequences of Psychological Ownership

The "uncanny" and the "dark side" of the psychological ownership construct shimmers through some recent investigations. Dirks et.al (1996) list among others, egoistic behaviours to preserve one's possessions to the detriment of teamwork and cooperation, preoccupation with enhancing psychological possessions, obsession with one's job, organization or prestige and so forth, waste of energy in pursuit of ownership target at the cost of organizational priorities and individual health and sufferance as a result of resistance to change. The empirical study conducted by Brown, Crossley & Robinson (2013) focus on the potentially deleterious nature of territoriality as an extension of psychological ownership in the workplace. First, these researchers emphasize the pivotal role of social environment, particularly the role of trust as a key social variable in the development of psychological ownership over the organization or the job. According to the researchers, a high trust environment encourages cooperation and sharing of organizational resources due to feelings of high psychological ownership. In contrast to this, a low trust environment leads to interpersonal competitive impulses and territorial behaviour so as to stick to one's possessions at the risk of loss of team spirit. Second, they claim that the ambiguity and the inherent obscurity of the psychological ownership (as opposed to legal or formal ownership) render the behavioural reflections rather elusive and transient in that ownership is subject to different interpretations and perceptions whereby different individuals may claim possessiveness over the target(s) and engage in territorial behaviours to claim and defend their own territories. Based on this line of reasoning they infer that the increasing competition substantiated by territorial inclinations within the work environment undermines the team collaboration and the trust atmosphere. Furthermore, in a high trust environment the territorial person's ownership claims are judged negatively on grounds of seeking self-interest by the co-workers, risking social exclusion or ostracism by the team members. This seemingly heterodox outcome stems from the normative expectation that within a high trust environment territoriality is abnormal and anomalous and territorial actions unnecessary and unjustifiable as well as against the social contract. As a result, territoriality in the form of claiming behaviour or anticipatory defending behaviour

along with the negative feedback loop mirroring on all the organizational stakeholders ensues in high trust environments and positive organizational behaviours like sharing information with the group, being a team player and effective decision making are deterred and blocked (Brown et. al, 2013).

Within the family business context, varying degrees and forms of psychological ownership were identified as *weak vs. strong* and *negative vs. positive* (Ceja & Tapies, 2011). A negative psychological ownership is characterized by a lack of interest in the family business. Negative psychological ownership occurs when next-generation family member is negatively exposed to family firm as in a family conflict or lack of information on the family business; when the entry into the family business is forced by pressure, leading to frustration and feelings of constraint; and finally, when the family firm is not professional enough and the next-generation members are not delegated authority to control the family firm. In case of strong negative psychological ownership, the negative feelings of frustration, oppression, indebtedness, pressure, obligation and lack of freedom are felt intensely whereas in the weak negative psychological ownership state attachment to the family firm is weak and perception of and the attitude toward the family firm is negative.

As a negative consequence of collective psychological ownership over territory that ends in strife, the struggle between Israel and Palestine is an example of a conflict resulting from the rivalling causes resting on the same psychologically owned target whereupon the collective identities and sense of belongingness are based (Pierce & Jussila, 2011).

Types of Psychological Ownership

Organization-based vs. Job-based

Mayhew, et.al (2007) refer to a division between two types of psychological ownership namely organization-based versus job-based, both of which are claimed to be attitudinal and context-specific. Whereas organization-based psychological ownership is shaped by an attachment and psychological feelings of possession towards the organization as a

whole, job-based psychological ownership is concerned with individual feelings of attachment towards a specific job. These researchers raise three basic questions regarding the various features of psychological ownership which are, whether psychological ownership is distinct from positive work attitudes such as organizational commitment; whether job autonomy is *causa patent* for the development of psychological ownership and finally whether psychological ownership predicts some positive outcomes for the organization such as extra-role employee behaviour. Pointing to the increasing number of studies associating psychological ownership with territoriality, the researchers suggest that future researchers seek to highlight the relationships between individuals and target objects of psychological ownership in organizational contexts, which is among what this thesis attempts to undertake. They further emphasize the diverging paths of two different targets of ownership alleging that the roots of job satisfaction are grounded not in organization-based psychological ownership but rather job-based feelings of ownership. In a similar vein, organizational commitment stems from organization-based psychological ownership, rather than its job-based counterpart.

Of the two different targets of ownership, psychological ownership of the job versus psychological ownership of the organization, the appertaining affective or behavioural consequences may somehow diverge, in that job satisfaction, which is the extent to which people enjoy performing their job-related tasks (Spector, 1997) has been hypothesized to emerge from the former rather than being associated with the organization-based psychological ownership (Mayhew, Ashkanasy, Bramble, & Gardner, 2007).

Collective vs. Individual

Individual and collective attachment to and identification with a select physical setting is probably a universal human need and psychological ownership emanating from this interaction is formed at both the level individual and the collectivity;

> Some sort of ‘gathering’ around the self and the group—the assemblage of a material ‘world’, the marking-off of a subjective domain that is not ‘other’—is

> probably universal. All such collections embody hierarchies of value, exclusions, rule-governed territories of the self (Clifford, 1994, p. 259).

Of Hofstede's (1980) five cultural dimensions, collectivism and individualism reflect cultural characteristics that diverge across distinct social organizations. Individualism is characterized by an orientation towards personal achievement, autonomy, freedom, assertiveness, personal uniqueness and focus on social power, and self-direction. Collectivist orientation is the degree to which individuals emphasize responsibility towards their group and define themselves by their membership in that group and the extent whereby people subordinate their personal goals to group goals, and prioritize group interests over personal interests even when they are in conflict (Markus & Kitayama, 1991; Singelis, 1994; Triandis, 1993). In the organizational context, collectivistic orientation has been found to be positively related with organizationally desirable behaviours such as organizational citizenship behaviour (Moorman & Blakely, 1995). Individualistic orientation is, however, believed to be related with uplifting of personal self-interests and personal outcomes and emphasis on competitiveness as opposed to organizational harmony.

Psychological ownership within the organizational context is mostly studied from an individual perspective (Pierce & Jussila, 2010). As opposed to and in a way to provide an extension to this approach, Pierce & Jussila (2010) offer a collective psychological ownership construct which carries the subject of the ownership from an "I" and "me" to a "we" and "us" by conveying the concept to a *group-level psychological state* which refers to a socially constructed shared mental model (Druskat & Pescosolido, 2002) among the members of an organization.

"A shared mental model of psychological ownership would involve the collective belief that all members were part owners, and that team actions and outcomes were under the team's authority and responsibility, i.e. this is 'our' team" (p.291).

The genesis of the collective sense of ownership, underlying motives, the targets of collective psychological ownership and the conditions under which it develops are among the questions raised by researchers (Pierce & Jussila, 2010).The concept of

collective psychological ownership is differentiated from similar notions such as group identity and group-identification via the question asked in either case, namely "*who are we?*" for group identity versus "*what do we feel is ours?"* for collective psychological ownership as well as by diverging paths of motivation, theoretical basis, target objects, and due rights and responsibilities.

Turner (1984) notes that psychological group membership is comprised of three basic constituents, which are "identity", "interdependence" and "social structure" among the group members (In Tajfel, 1984, p. 518). Identity criterion necessitates the formation of a group perception and assertion and upholding of this collective perception as distinct from those of others. Interdependence refers to existence of mutual attraction and interaction among group members for the satisfaction of needs and realization of goals and reciprocity in terms of social influence and cohesion. Social structure provides a basis for organized division of responsibilities and power as well as creation of shared values and norms abided by each member of the psychological group. Social identity, despite there being no clear-cut or sharp distinction from personal identity, is the state of defining oneself by virtue of a group, towards which a sense of belongingness is felt, as opposed to defining the self in terms of unique individual characteristics. This social identity is the basic mechanism behind the group behaviour. Group behaviour in turn is based on some core features including perceived alikeness among group members; reciprocal bonds and respect; collaboration and altruism; group norms and shared values, and finally mutual emotional acumen. Based on social identity theory (SIT) in organizational context Van Dick (2004) specifies two prerequisites for the emergence of group behaviours, namely identification and category salience. Identification is a state of perceived relevance between the group and individual identity whereas the group salience refers to the distinguishing marks of a specific category. Organizational identification is "the perception of oneness with or belongingness to an organization" (Ashforth, 2001, p.25; Ashforth & Mael, 1989; Jones & Volpe, 2010). Identification with a group and perception of greater group salience increase the degree of experienced group membership and social identification. Abrams & Hogg (1998) clarify the underpinnings of these seemingly fuzzy and alike concepts as follows:

> Identity, specifically social identity, and group belongingness are inextricably linked in the sense that one's conception or definition of who one is (one's identity) is largely composed of self-descriptions in terms of the defining characteristics of social groups to which one belongs. This belongingness is *psychological,* it is not merely knowledge of a group's attributes. Identification with a social group is a psychological state very different from merely being designated as falling into one social category or another. It is phenomenologically real and has important self-evaluative consequences (p. 7).

As the pioneering researchers of social identity approach within the organizational context, Ashforth & Mael (1989) note that self-defining and self-referencing oneself as an organizational member underlies the perceived success and failure feelings associated with the work outcomes within the organization, for why the individual seeks to maximize the positive wing. As the socially and organizationally-identified individual's behaviour is dominated more by organizational membership than by individual identity, that person is more susceptible to engage in extra-role behaviour, lower absenteeism and higher work performance to the benefit of the organization and experience higher job and organizational satisfaction, higher motivation and organizational loyalty and physical-emotional well-being to the benefit of the individual self and organizational identification negatively relates to individuals' intent to leave the organization (Jones & Volpe, 2010; Adler & Adler, 1988; O'Reily & Chatman, 1986; Riketta,2005; Riketta & Van Dick, 2005).Identity in that sense is the extent whereby the individual incorporates the group membership into his self-concept and as distinct from the commitment (e.g. affective, continuance or normative), it is above and more than an attitude adopted towards the organization. The perceived positive aspects of the organizational identity and the constructed external identity of the organization also contribute to the identification of the employees with the organization (Dutton, Dukerich & Harquail, 1994)Creation of a team spirit and team identification within the organization will promote the employee attachment and individual performance as well as organizational effectiveness by way of strengthening the organizational image and identity, which is a sought-after managerial harvest (Van Dick, 2004). In the same vein, Haslam (2004) refers to a series of experiments on minimal group studies conducted by Tajfel & colleagues (Tajfel, 1982; Tajfel & Turner, 1986) where it is found that construction of a distinct and positive social identity stems from the individual knowledge of belonging to and sticking together with a group along with some

emotional attachment to it. This so-called "internalized group membership" is the end result of social identification with the organization. As Haslam (2001) puts it *a shared social identity is a prerequisite for collective action*, be it a protest against perceived social injustice (not in the sense of "collective action" arising out of "ancestral savagery" resting in "primitive crowds" as put forth by Le Bon, 1895) or a more positively regarded collective organizational behaviour such as collective psychological ownership of the organization. And as individuals empathize and identify, they *"perceive themselves as psychologically intertwined with the fate of the social category or role, sharing its common destiny, and experiencing its successes and failures"* (Ashforth, 2001).By the very same token, organization-based psychological ownership could be shared among and diffused by employees in a work group through organizational processes such as employee socialization, informal communication networks and peer support (Wagner et. al, 2003).

Ikävalko et. al (2006) emphasize the collective character of the "family" structure despite the fact that the family firm is usually studied from an individualistic viewpoint and spot three primary dimensions in their investigation of psychological ownership element within family firms, namely *social, action and object.* The term "family firm" connotes that a family as a social group collectively owns the family business and this collectiveness and state of familyness conceives a synergy underlying psychological ownership. The social dimension of psychological ownership in family firms is comprised of two factors: status within the company and higher outside social status. Action dimension is about taking care and freedom. Finally, object dimension includes extended self and tool of receiving things. Overall, they draw attention to the precedence of collective psychological ownership over individual psychological ownership within the context of the family firm.

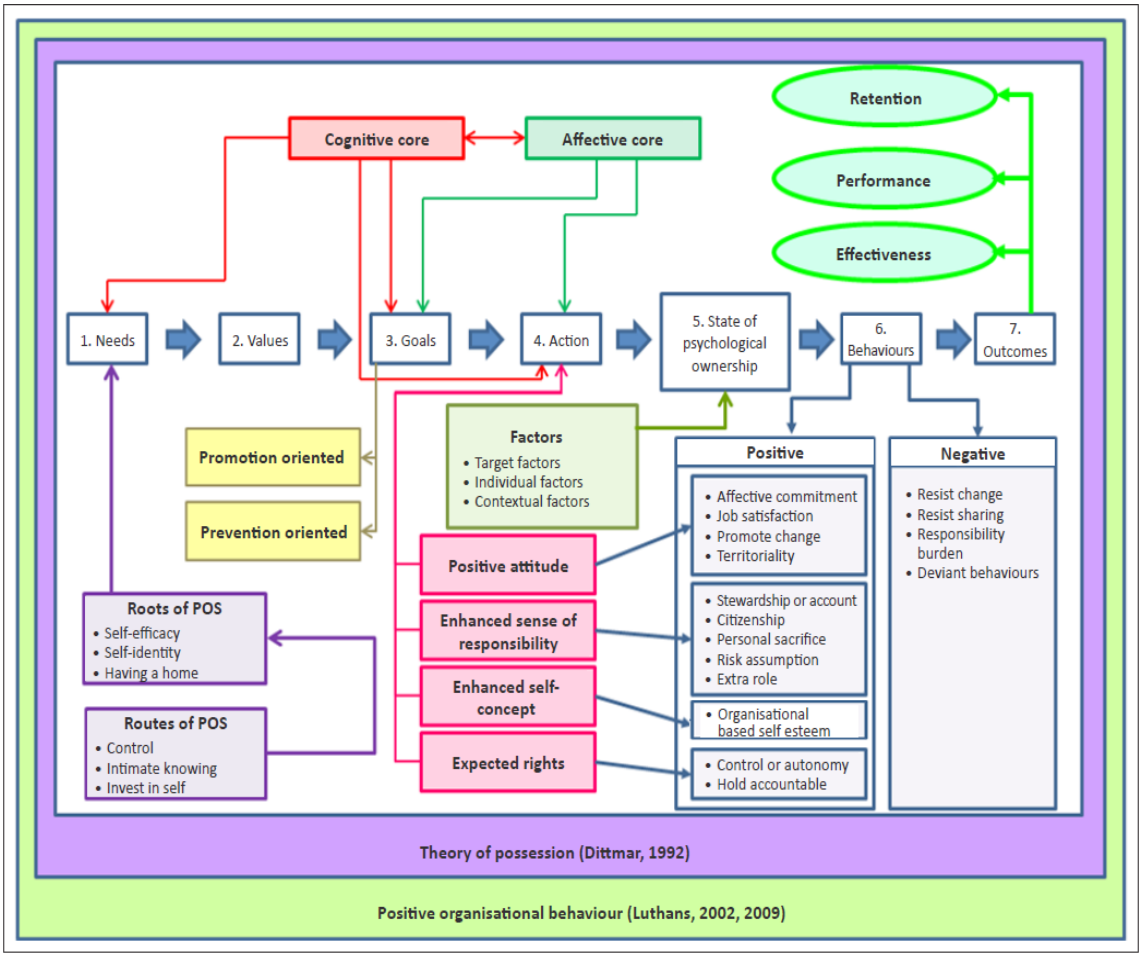
Liu & Lin (2012) develop a model which depends on the assumption that an individual's knowledge sharing behaviour frequency could be predicted by their belief in their knowledge sharing ability and intention to share knowledge. They hypothesize that collective psychological ownership of knowledge strengthens beliefs of knowledge sharing and individual knowledge sharing behaviours. This relationship is augmented

by organizational rewards, reciprocity, self-efficacy and altruism. Collectively denominated as beliefs of knowledge sharing, the fulfilment of the above criteria helps promote knowledge sharing behaviours among the organization members.

Van Dyne & Pierce (2004) suggested that future research into the dynamics of psychological ownership should be carried out in a different cultural setting than USA where ownership is defined by different legal and social understandings and conceptualizations. This study in the non-European and non-American context of Turkey, categorized as a collectivist country, is a response to this call where the effects and consequences of psychological ownership are expected to be largely dissimilar to those to be displayed in an individual-oriented setting.

An Integrated Frame of Psychological Ownership

Olckers & Du Plessis (2012) and Olckers (2013) studied the psychological ownership in South African context and extended the frame of the constructs offered by the previous researches (Pierce et.al, 2001; Avey et.al, 2009) to include two more dimensions in measurement of the psychological ownership as a result of the empirical research on South African organizations (see Figure 4). According to this framework which is the most extended of all the models offered in explanation of the psychological ownership construct (at least as encountered up till now by the author of this study) with antecedents, precedents, outcomes and interconnections, needs in the form of self-efficacy, self-identity, and having a home are the basis of psychological ownership. The human needs that are closely interrelated with the roots and routes of psychological ownership, and values determine goals and actions. Those goals and actions are affected by cognitive and affective core of the construct. Among the possible consequences of psychological ownership are included both the positive and negative behaviours and outcomes are classified into three basic categories which are retention, performance and effectiveness. The state of psychological ownership occurs in an environment where target, individual and contextual factors abound.



Source: Olckers & Du Plessis (2012). The role of psychological ownership in retaining talent: A systematic literature review. Adapted from Olckers, C.(2011). A multi-dimensional measure of psychological ownership for South African organizations. Unpublished doctoral dissertation.

Figure 4: Psychological ownership, roots, routes, precedents, antecedents, consequences and interaction

The integrated frame created by Olckers & Du Plessis (2012) includes two dimensions-promotion and prevention comprising respectively of following seven theory-driven components; self-efficacy, sense of belonging, self-identity, accountability, autonomy and responsibility for the former, and territoriality for the latter.

In this model territoriality is, despite being termed as a prevention-focused component of psychological ownership, counted among the positive outcomes of the psychological

ownership without resorting to a differentiation among targets of territorial feelings that could potentially lead to negative outcomes.

However, the negative outcome of resisting sharing and deviant behaviour finds body in our research in the form knowledge hiding as perpetuated by territorial feelings upon one's knowledge that could otherwise be promotive for the benefit of the organizational task accomplishment processes. According to the basic assumptions of our research, the negative behaviours of resisting sharing and deviant behaviours are supposed to be emerging from territorial compulsions targeting psychological ownership objects in individuals' respective workplaces or regarding their jobs.

Knowledge Hiding in Context of Knowledge Economy and Knowledge Work

Knowledge Economy

The term knowledge economy emerged when in near history the input of knowledge has come to be regarded as a more prominent production factor than its classical predecessors of land and labour. Contrary to the previously external role of knowledge and innovation in business activities, knowledge economy has placed knowledge input at the centre of task completion process by rendering it an integral part of the business and production cycles (Turkey Knowledge Economy Assessment Study, 2004).

Knowledge economy is the "*production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence* (Powell & Snellman, 2004, p. 201, as cited in Roberts, 2009).

Although highly contestable and open to debate, researchers point to some characterizing features of knowledge economy which include, *inter alia*;

- the rising significance of knowledge as an economic input,
- the rising significance of information and communication technologies,
- the rising significance of knowledge as an economic output,
- the transformation of knowledge into a trade-related good through intellectual property rights and etc.,
- the quantifying number of knowledge workers,
- the increasing impact of knowledge across all sectors of the economy,
- the rise of knowledge management practices, and globalisation as a force driving the expansion of the knowledge economy (Roberts & Armitage, 2008).

Roberts (2009) differentiate the key components of a knowledge economy as *"a greater reliance on intellectual capabilities than on physical inputs or natural resources, combined with efforts to integrate improvements in every stage of the*

production process, from the R&D lab to the factory floor to the interface with customers".

Among the growing proportion of knowledge workers, Reich (1992; as cited in Blackler, 1995) counts the engineers, attorneys, scientists, professors, executives, journalists, consultants and other "mind workers" who process information and symbols for a living. The rise of the knowledge economy is accompanied by a parallel demand for highly educated workers necessitating an increasing investment particularly in higher education.

Knowledge Work and Worker

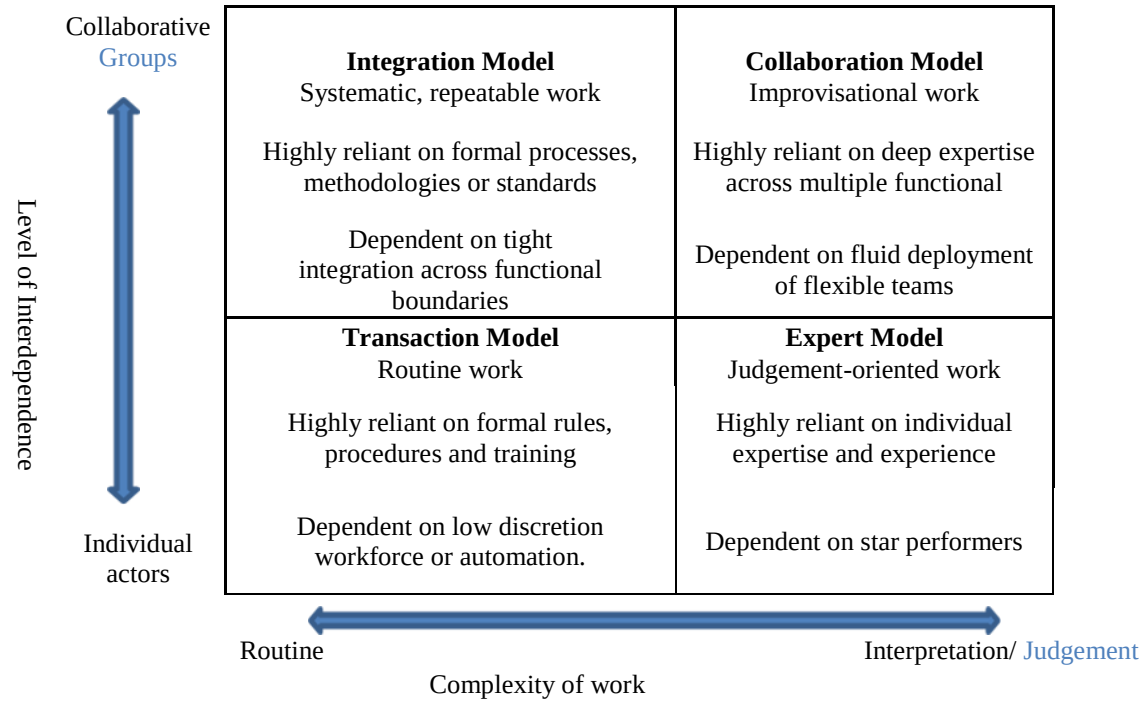
The universe of this thesis is comprised of the so-called knowledge workers within whom inimitable and competitive advantage providing tacit knowledge resides. But to select the sample population of the research calls for a specific definition of the term "knowledge worker" as the knowledge hiding behaviour will be observed where a worker is equipped with a sort of knowledge, thus becoming a knowledge possessing worker. Following is a general literature review regarding the various definitions and characterizations of the so-called knowledge worker who contributes to the knowledge economy by way of the emerging production factor of knowledge as opposed to the previous basic economic value drivers of labour and land.

The term knowledge work is as ambiguous as its operational foundation of knowledge economy. Drucker (1999) suggests that contemporary capitalism demands a radical shift of axis in terms of the relationship between knowledge and value creation, which is increasingly dependent on new technologies to perpetuate the application and development of new knowledges. The term "knowledge work" and the ensuing concept of "knowledge worker" are to date ambiguous in construct and frame according to which to classify specific occupations and workers. Some authors stressed the distraction and ambiguity caused by the usage of the concepts of knowledge work and workers terms (Blackler, 1995; Collins, 1993).They claimed that all work and workers are knowledgeable, and therefore assigning privileged status for some occupations in terms of knowledge is unjust, inappropriate and baseless. But the literature is loaded

with examples of distinctions among workers of various types. According to Turkey Knowledge Economy Assessment Study (2004), knowledge economy is composed of products and services requiring high intellectual inputs and depending less on conventional production factors of labour and land, such as computer software, media and entertainment, pharmaceuticals, and online commerce and banking. Morris (1995, as cited in Blyton & Jenkins, 2007) points out that *"the occupational categories covered by knowledge work are often so wide – ranging from managers and software engineers to consultants and scientists – as to make any detailed discussion and analysis of knowledge work (including a measure of the overall size of this category of worker) extremely difficult in practice"*. Recognizing this dilemma, some writers attempted to narrow the scope of this category by distinguishing between knowledge workers and professionals such as doctors, lawyers, and architects etc. who have monopoly power over their occupation-specific knowledge.

Helton (1988) and Kelly (1990) linked the definition of knowledge worker to the practice of non-repetitive, non-routine work entailing a substantial level of cognitive activity gained through heavy investment on personal education (as cited in Nor & Rosline, 2005).

Knowledge work is, according to Davenport (2010) divided into four categories based on the degree of work complexity and the level of worker interdependence. Those four categories are summarized in the Figure 5.



Source: Davenport (2010).

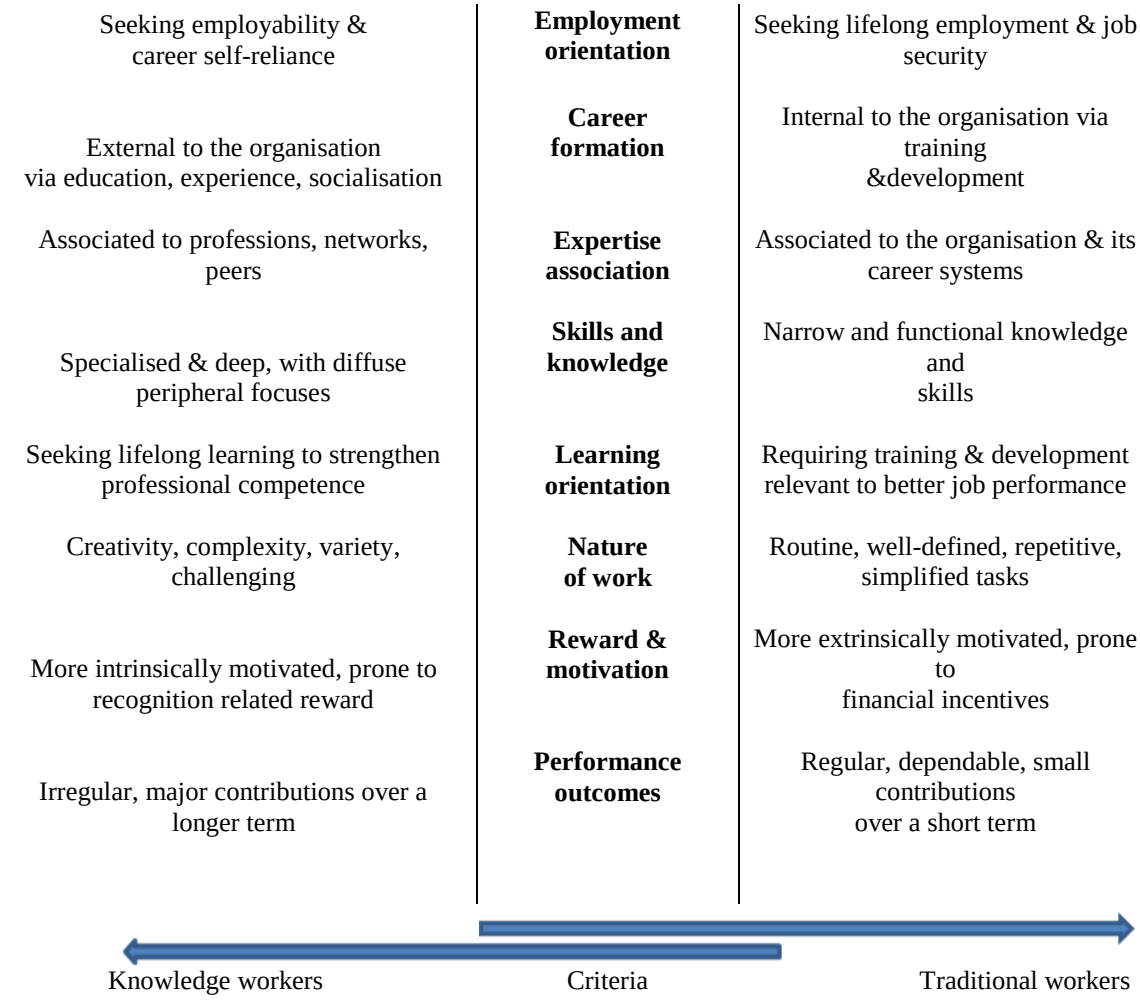
Figure 5: Four approaches to knowledge work

Davenport (2005) categorized knowledge workers as individuals with "high degrees of expertise, education or experience" and he stated that the primary purpose of their jobs is composed of the creation, distribution, or application of knowledge (El-Farr, 2009; Kogan & Muller, 2006). According to Winslow & Bramer (1994), knowledge work calls for creating solutions for problems within organizations, by way of interpreting and applying information (El-Farr, 2009; Noon & Blyton, 2007). As opposed to this view, El-Farr notes the view suggested by Reich (1993) that the value adding activity of the knowledge work has a symbolic element and it is neither tangible nor materialistic. He explains the core of knowledge work as follows; *"the principles, psychological insights about how to persuade or to amuse, systems of induction or deduction, or any other set of techniques for doing conceptual puzzles"* (Ackroyd, Batt, Thompson, & Tolbert, 2005). Reich (1991) also notes that 'symbolic analytic' workers have special competencies in the sense of problem solving like research, product design and fabrication; 2) problem identification, like marketing, advertising, and customer consulting; and 3) brokerage, like financing, searching and contracting (as cited in Blackler, 1995). Knowledge workers are the main players in the processes of innovation

and growth in contemporary organization (Davenport, 2010). They create new products and services, marketing programs and strategies. They constitute the basis of economic development and productive efficiency. The companies in the most rapidly growing and profitable industries are generally those crowded by knowledge workers like pharmaceuticals and IT firms. To make a sharp distinction between the labours of traditional worker versus the knowledge worker is an elusive undertaking but Figure 6 might provide a guideline for the assumptions of this study based on various criteria like employment orientation, career formation and etc.

Blyton & Jenkins (2007) define the knowledge work as a set of tasks entailing *"the deployment of complex and technical skills in areas such as consulting, scientific research, computing and strategic planning, where expert knowledge is used to undertake relatively complex problem-solving work and thereby enhance the final output"* (p.116).

Ware & Degoey (1998) notes the basic distinction between white-collar workers and knowledge workers by referring to the latter's ability to interpret and manipulate information and count, among others some specific occupations whose members are regarded as knowledge workers including the traditional professions, such as doctors, lawyers, scientists, and engineers as well as those who work in marketing, advertising, customer consulting, finance, insurance, and strategy development. Here resides a clash between routines and repetitiveness of white-collar work facilitated by computer technologies and dynamic pace of knowledge work evolving through information technologies. To further the argument, they create two categories of knowledge workers, namely those who are *knowledge executers* versus the *knowledge generators.* Whereas the former rely on existing knowledge and problem-solving procedures to utilize during work processes, the latter generate new ideas by cognitive and creative processes to transform the available information into some new set of problem solving mechanisms.



Source: Wang & Ahmed (2003). Managing Knowledge Workers

Figure 6: Comparative table of knowledge workers versus traditional workers

Based on the various definitions and references in the literature, the sample population of the study was chosen from among the Turkish employees in various sectors that could be accessed throughout the research duration and whose status as knowledge workers could be supported by evidence from the literature and who are by occupation more than what the traditional definition of white-collar implies.

Knowledge Sharing

The circulation and flow of knowledge across individuals out of the repositories where they tend to be hoarded, and incorporation thereof into organizational routines and practices (Bock, Zmud, Kim, & Lee, 2005) and translation of knowledge into financial benefit (Husted & Michailova, 2002) is dependent on employees' knowledge-sharing behaviours. Knowledge management initiatives are dependent upon knowledge sharing for success, which enables exploiting and capitalizing on existing knowledge-based resources (Wang & Noe, 2010). Knowledge management is defined as a planned and structured approach to manage the creation, sharing, utilizing and promotion of knowledge as an organizational asset to enhance an organization's competence and effectiveness in creating value for its customers in line with its overall mission and vision (Du Plessis, 2008), that is the institutionalization of knowledge (Grant, 1996). By its definition knowledge management, which is about fostering innovation and encouraging generation of new ideas to exploit organizational thinking power, rules out knowledge hiding. Knowledge sharing is a central process of knowledge management as a prerequisite for innovation and competitive advantage and it is significant due to its contribution to the generation of organizational capabilities vital to business performance of a firm (Kogut & Zander, 1996; Matzler & Mueller, 2011). Büchel (2007, p.45) notes that not only the creation of knowledge but also the transfer of it is required for execution in product development teams and one of the core responsibilities of such teams is knowledge dissemination as well as its initial creation. A core element of knowledge management initiatives, knowledge sharing has been posited to be positively related with sustainable competitive advantage (Cabrera & Cabrera, 2005), improved team performance (Cummings, 2004), and higher levels of firm performance in the form of firm revenue from new products and services and firm sales growth (Ngah & Ibrahim, 2011; Collins & Smith, 2006).In their study on key variables influential in intra-organizational exchange of knowledge, Cabrera, Collins, & Salgado (2006) found that self-efficacy, being open to experience, perceived support from co-workers and supervisors, organizational commitment, job autonomy, perceptions about the availability and quality of knowledge management systems, and perceptions of

rewards associated with sharing knowledge were predictive of the phenomenon. Cabrera and Cabrera (2005) suggested that trust, group identification, shared norms, common language, low perceived cost, perceived rewards, expectations of reciprocity, egalitarianism and perceptions of fairness will also contribute to the emergence of positive attitudes regarding knowledge sharing. Although there are various motivations behind knowledge sharing behaviour (Swift, Balkin, & Matusik, 2010), tacit[2] and explicit knowledge sharing is largely dependent on the corporate culture and practices and the value attributed to individual/organizational learning and innovation, and the technological equipment facilitating interaction, organizational structure and processes. Different organizations have different policies and regulations regarding the production, use, and dissemination of task-related knowledge as is evidenced by the below comparison;

> Involving the entire organisation in knowledge sharing activities, particularly within large organisations and MNCs – the widely discussed cases of Buckman Labs, Dow Chemical, Ernst & Young, Hewlett Packard, Monsanto, and Xerox provide some good examples – seems useful only if all employees need to work with and apply at least most of the knowledge they receive. At Buckman Labs, for instance, everyone has access to the knowledge base of the company (Buckman, 1998). This is also the case at Accenture and IBM. Whilst some companies impose no restrictions whatsoever on who can access what knowledge and information, others protect specific parts of their knowledge and information, restricting access to selected people and groups only, such as BMW, ChevronTexaco, DaimlerChrysler, Microsoft, PriceWaterhouseCoopers, SvenskaKullagerFabriken AB, and Telstra (Riege, 2005, p.19).

Other researchers however, suggest more fine-tuned distinctions between the effects of different variables on the intention to share knowledge. According to the empirical findings of the study by Hau, Kim, Lee, & Kim (2013), organizational rewards have a negative effect on tacit knowledge sharing intentions but a positive effect on explicit knowledge sharing intentions. Moreover, in addition to the individual motivations in the form of organizational rewards, reciprocity, and enjoyment, social capital in the form of social ties, social trust, and social goals affect the employee intentions to share tacit and

[2] Unarticulated aspects embedded in people's brains or physical reflexes. This dimension of knowledge is called stickiness of knowledge implying the difficulty of separating it from its source (Leonard, 2007, p. 60). Tacit knowledge is the personal knowledge resident with in the mind, behaviour and perceptions of individuals. Tacit knowledge includes skills, experiences, insight, intuition and judgement (Du Plessis, 2008).

explicit knowledge. Staples & Webster (2008) suggested that trust and task interdependence enable more interaction and facilitate such team processes as knowledge sharing. They also claim that team virtualization, the degree of geographic dispersion of team members, affects the sharing of knowledge and co-location promotes contact and communication through which sharing of tacit and sensitive and otherwise confidential knowledge occurs. Their hypothesis leans on the assumption that despite the facilitating role of technological advancements on communication and contribution of electronic communication channels to sharing of explicit knowledge, tacit knowledge sharing requires more intimate context and closer personal contact. That is, virtualization of communication might deteriorate both the process and quality of sensitive knowledge sharing.

Law & Ngai (2008) reveal, using partial least squares technique that knowledge sharing and learning behaviours positively correlated with business process improvements and product-service offerings.

Although some fuzzy lines exist for separating each dimension and they coexist and are intermingled most of the time, there are organizational, technological and individual barriers to sharing knowledge (Riege, 2005) as well as cultural ones (Ford & Chan, 2003). Among the individual factors impeding knowledge sharing are; lack of time to share or identify the need of a colleague for knowledge sharing, fear of loss of and reduction in job security, low awareness about the value of one's knowledge to others, use of status-based power and hierarchical distance, inadequate communication and feedback, lack of interaction, poor interpersonal communication skills, age, gender, experience and educational differences, national culture, lack of trust and social capital, and excessive ownership of intellectual property as well as the difficulty of transferring tacit knowledge. Organizational barriers to knowledge sharing include but are not limited to; problems about strategizing knowledge sharing, lack of leadership support, lack of reward and motivation systems, insufficient infrastructures, physical facilities and resources, unidirectional communication channels (mostly top-down), high levels of internal and external competitiveness, hierarchical structure and size of the organization. Among technology problems are; lack of integration of and compatibility between IT

systems, lack of technical support, avoidance of IT systems due to unfamiliarity, and lack of experience and training in new systems. Knowledge confidentiality in sectors such as health and safety, utilities, defence sector, transport sector etc. are among the general barriers suggested for under-sharing of knowledge (Du Plessis, 2008).

Of the individual determinants as antecedents for knowledge sharing activities, employee goal orientations (learning orientation versus performance orientation) are introduced as potential predictors (Matzler & Mueller, 2011). As a result of the empirical study conducted on a sample of 124 engineers, learning orientation is found to be positively correlated with knowledge sharing whereas performance orientation turns out to be a negative influence factor. The study conducted by Chen & Cheng (2012) on hospitality industry employees finds that an organizational culture conducive to knowledge sharing in terms of encouraging participation, coordination, trust, fairness, and trial and innovation as well as consolidation feelings of self-efficacy will help to shape the atmosphere to facilitate sharing of knowledge.

De Long (2004, as cited in Leonard, 2007, p. 58) recognizes that knowledge loss that occurs with the retirement and leaving of an expert workforce poses a serious threat to innovative capability, growth and efficiency. That is why strategic management of knowledge-based competence of a firm is shaped by creation, sharing and protection of knowledge as well as discarding of the obsolete to enable the promotion of new knowledge creation (Ichijo, 2007, p. 84). Creativity depends very much on information and knowledge sharing, which is why it could be heavily influenced by knowledge hiding (Černe, Nerstad, Dysvik, & Škerlavaj, 2012). Without knowledge sharing, little synergy will be created and less innovation will occur (Staples & Webster, 2008) as ground-breaking innovations are conceived through the harnessing and sharing of tacit knowledge (Mascitelli, 2000).

Knowledge Hiding

Knowledge hiding is the conscious act of withholding a piece of knowledge from a person who requests to learn the nature of it. Knowledge hiding within organizations is an understudied subject whose significance has largely been overlooked. Knowledge

hiding presumes and implies the possession of knowledge in the first place. Knowledge hiding could be in the form of not saying the whole truth, saying that the information is confidential and still not revealing it or distorting the reality of the knowledge by deception. Considering the value of knowledge transfer and its invaluable contribution to organizational performance and well-being, knowledge hiding is mostly an undesirable situation. To this negative end, knowledge hiding has recently been conceptualized as a novel construct with three dimensions corresponding to three related factors, namely *playing dumb*, *evasive hiding,* and *rationalized hiding* (Connelly et.al, 2011). The first knowledge hiding factor-*playing dumb* denotes behaviours whereby the hider pretends to be ignorant of the relevant knowledge and this dimension of knowledge hiding involves some deception. No knowledge is forthcoming in response to the request. The second factor of knowledge hiding-*evasive hiding* refers to instances where the hider provides incorrect information or makes a misleading promise of a full answer in the future, although there is no intention to actually provide this. As with the playing dumb dimension, this dimension also involves some deception. The third factor of knowledge hiding-*rationalized hiding* does not necessarily involve deception whereby the hider is offering a justification for failing to provide requested knowledge by either suggesting he or she is unable to provide the knowledge requested or by blaming another party (Connelly et.al, 2011).

The three separate strategies that were identified and that employees may use in order to hide their knowledge from their colleagues – playing dumb, evasive hiding, and rationalized hiding represent distinct strategies and correspond to a broad spectrum of employee hiding behaviours. It should be stressed that in all three cases the underlying goal of the behaviour is the same: to hide knowledge from a co-worker who has requested it.

Knowledge hiding is different from but still has some common denominators with related concepts such as knowledge sharing, counterproductive work behaviour, deviant behaviour, and social undermining and workplace incivility. Knowledge hiding behaviour can be predicted by interpersonal and contextual variables like distrust,

organizational justice perceptions and organizational climate and reciprocity among others (Černe et.al, 2012; Connelly et.al, 2011).

An employee could resort to knowledge hiding when there is an external threat in the form of criticism from peers and superiors or in case that the knowledge at hand presents a relative advantage over co-workers. In both situations, intentional knowledge hiding as activated by the regulatory focus of prevention, which is rooted in the instinctual need for security and protection (Higgins, 1997) could occur. This knowledge hiding as promoted by prevention focus hinders exploitation of that employee's knowledge by others and reinstates feelings of safety in a competitive work atmosphere. Without an environment of knowledge transfer however, and a reciprocal distrust loop whereby co-workers engage in knowledge hiding to reciprocate each other's knowledge hiding behaviour, creativity is discouraged by the behavioural avoidance of prevention focus (Černe et.al, 2012).

In her study on the effect of trust in management on knowledge sharing, Renzl (2008) demonstrates that the fear of losing one's unique value and the ensuing withdrawal to share knowledge and resistance to document it is mediated by trust in management. Pointing to the fragile process of knowledge sharing, Renzl underlines the following proposition that justifies knowledge withdrawal and hiding to a great extent; *"It seems unreasonable that individuals contribute their knowledge, effort, and time, when they can easily free-ride on what others have contributed" (p.207).*

In a similar vein, Bock, Zmud, Kim, & Lee (2005) claim that employees may refuse to share knowledge on grounds that doing so will reduce their chances for promotion or because knowledge sharing accrues non-reciprocated time and effort.

Michailova & Husted (2001) refer to the knowledge hoarding as an opposite end of knowledge sharing which, according to them, is associated with either fear of losing one's individual value and the concern for protecting competitive advantage or the cost accruing each time knowledge is attempted to be shared. Moreover, suspicion and confidentiality are proposed to be the primary factors behind knowledge hoarding in Russian context as associated with the former socialist experience. In the highly

politicized organizational context of Russian workplaces, knowledge sharing could lead to dire consequences for the knowledge transmitter due to misinterpretation or misuse by the third parties.

Psychological ownership is one precedent of knowledge hiding behaviour whereby to predict the emergence of territoriality as well. To this end, this part of the study aims to reveal that, *knowledge hiding among the select knowledge workers does exist and psychological ownership is a predictor of knowledge hiding.* The support for this proposition comes from the following excerpt from Pierce & Jussila; *" Which one of us has not observed that co-worker who hoards information, the co-worker who will not share his/her tools, and/or the one who takes full credit for work accomplishments in which you (or others) were involved" (p.2).*

The main drawback to this part of the study could have been the under-reporting of knowledge hiding as it is a socially undesirable initiative. To test the suggested hypotheses, survey method in the form of a questionnaire was utilized. Selected knowledge workers were requested to describe a recent event where they engaged in knowledge hiding behaviour and fill in a questionnaire form with related items to reveal the degree and type of their knowledge hiding motivation.

CHAPTER III: RESEARCH MODEL[3]

Research Questions and Hypotheses

Interconnectedness of knowledge hiding and psychological ownership has been brought to the scholarly attention by Peng (2013) via a mediation model where territoriality was introduced as a distinct variable that mediated the link between two constructs. The scales and instruments that were used to operationalize knowledge hiding and psychological ownership were those that were created for the relevant study by the researcher himself and that of Pierce et.al (2001) respectively. According to the assumptions of the study, psychological ownership was a 3-factor construct and knowledge-based psychological ownership and organization-based psychological ownership could be measured by re-wording of the same measurement instrument. The study regarded knowledge based psychological ownership as a more relevant variable for predicting knowledge hiding behaviour, a relationship that was enhanced by feelings of territoriality over knowledge. As different from the previously offered model of knowledge hiding, this study utilizes two other and updated scales to measure the same relationship, where territoriality is a conjoined part of the psychological ownership construct rather than a mediator. The population of the preliminary study was designated as knowledge workers, who were delimited as the IT workers in a specific organization. In this study however, this frame has been enlarged, within the scope of the literature on knowledge workers, to include other knowledge professionals as well. Organization-based psychological ownership is integrated into the measurement tool as well, which means a rewording of the same tool is redundant and self-identity and belongingness dimensions of the psychological ownership scale measure employee perceptions regarding organizational belongingness and identifying with one's organization. Psychological ownership scale validated and utilized in this study measures both feelings of territoriality and organization-based psychological ownership

[3] The following famous quotation is useful in evaluating the legitimacy of the following and any other empirical research to be conducted in particularly social sciences; *"All models are wrong, but some are useful.—G.E. Box (1979) (Statistician)"*, From Adams et.al, 2007, p. 34.

feelings, without needing supplementary measurement instruments. In this context, the hypotheses have been constructed as follows;

H1: There is a negative and causal relationship between psychological ownership and knowledge hiding.

H1a: Psychological ownership is a predictor of knowledge hiding.

H2: There is a positive and causal relationship between knowledge hiding and knowledge-based psychological ownership.

H2a: Knowledge-based psychological ownership is a predictor of knowledge hiding.

H3: Knowledge workers with promotion psychological ownership are less likely to report knowledge hiding.

H3a: Knowledge workers with self-efficacy psychological ownership are less likely to report knowledge hiding.

H3b: Knowledge workers with accountability psychological ownership are less likely to report knowledge hiding.

H3c: Knowledge workers with sense of belongingness psychological ownership are less likely to report knowledge hiding.

H3d: Knowledge workers with self-identity psychological ownership are less likely to report knowledge hiding.

H4: Knowledge workers with prevention psychological ownership are more likely to report knowledge hiding.

H4a: Knowledge workers with territoriality psychological ownership are more likely to report knowledge hiding.

H5: Knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding.

H5a: Knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding and this is enhanced further by territorial feelings upon one's knowledge.

H6: Knowledge workers with organization-based psychological ownership are less likely to report knowledge hiding.

Below is the hypothesized research model that is investigated via correlation and regression analyses through the rest of this thesis study. The measurement models of psychological ownership and knowledge hiding constructs are validated via exploratory and confirmatory factor analyses respectively.

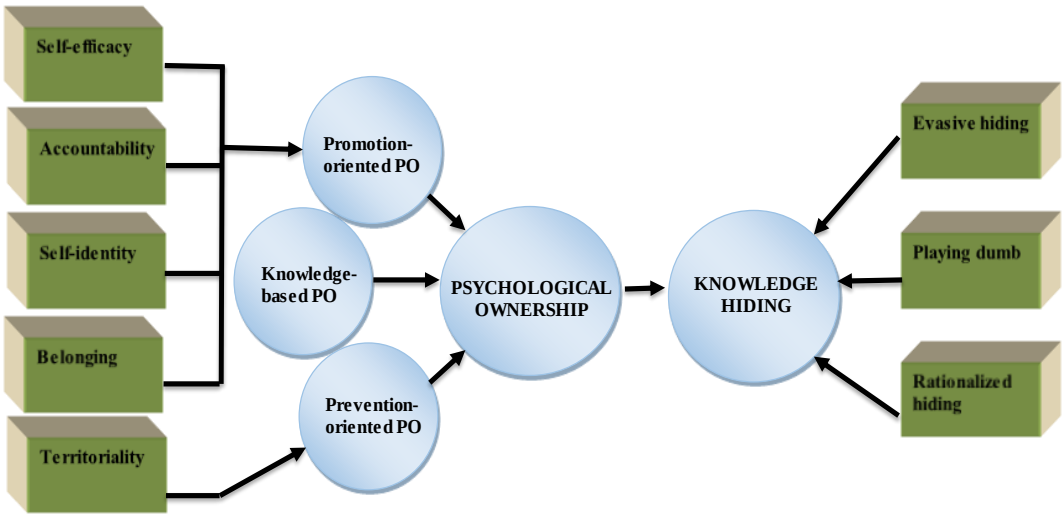


Figure 7: Research model

According to this model, psychological ownership is measured by five subscales representing promotion-orientation and prevention-orientation. The subscales correlate with knowledge hiding dimensions. Whereas the four promotive forms of psychological ownership are negatively correlated with knowledge hiding subscales, one preventive form of it is positively related to knowledge hiding in the form of playing dumb, evading, and rationalizing. Knowledge-based psychological ownership compounds the effect of psychological ownership on employee knowledge hiding behaviour by

enhancing feelings of territoriality over one's knowledge. Knowledge-based psychological ownership is a predictor of knowledge hiding and it positively correlates with knowledge hiding subscales as does territoriality. We also hypothesize that the more the feelings of knowledge-based psychological ownership, the more territoriality develops on knowledge and this relationship leads to even more knowledge hiding. Knowledge-based psychological ownership acts as a compounding factor on knowledge hiding behaviour. To juxtapose with the effect of knowledge based psychological ownership, we resort to the effect of sense of belongingness and identifying with the organization on knowledge hiding behaviour, which represents what we term as "organization-based psychological ownership". We expect to find that knowledge workers with knowledge based psychological ownership will differ from those with organization based psychological ownership in terms of their knowledge hiding attitudes.

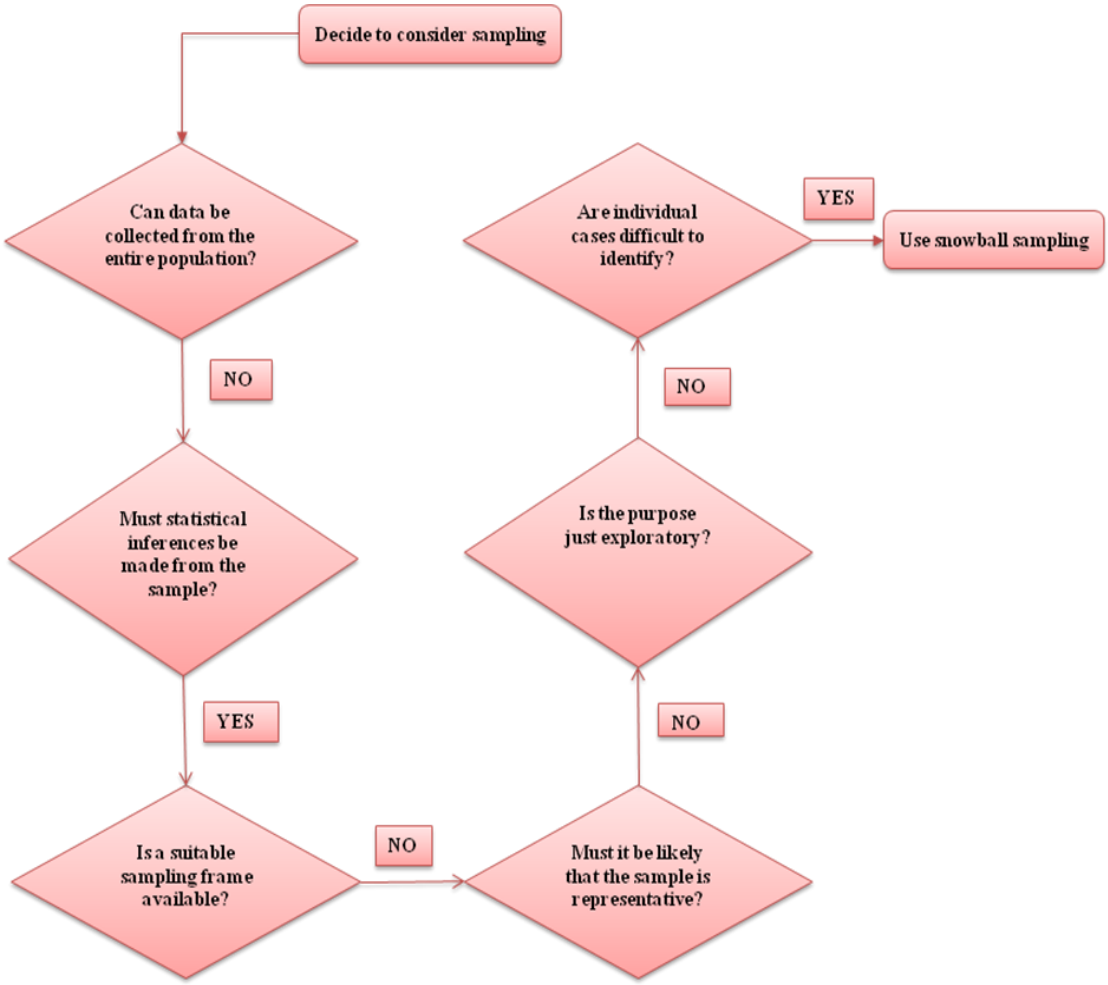
Sample

A well-defined sample has the same characteristics as the larger population by which the results obtained represent the characteristics of the whole population. The population of this study was designated as knowledge workers following the lead of similar studies into psychological ownership and knowledge hiding. The scope was constricted to knowledge workers working in Turkey in typical workplaces where interactions with colleagues and stakeholders take place as part of the work routine and where employees communicate with each other rather than work in isolated spaces. As the number of people who are regarded or regard themselves to be knowledge workers is not likely to be computed and constructing a sampling frame is elusive, depending upon the literature on research methods in social sciences, the non-probability sampling technique of snowball sampling mixed with simple random technique was adopted. Having acquiesced to the shortcomings of the subjective judgemental sampling methods especially in comparison to the probability sampling means that are eligible for making statistical inferences about the characteristics of the larger population, we selected this mixed method due to the need for reaching difficult-to-identify members of the population, which was determined purposively as has been seen fit to be analysed

within the scope of the research question. With snowball sampling, the likelihood of sample being representative is relatively low but the selected cases will have the desired characteristics. The types of research that snowball sampling is useful for is where cases are difficult to identify and reach (Fig. 8). The relative cost associated with the method is reasonable and control over sample contents is quite low (Saunders et.al, 2009). To this end, the universe of the study was designated as Turkish knowledge workers and the sample was collected randomly once a workplace was picked for research and others were accessed via personal appointment. The sample representativeness could be sacrificed to some extent in cases when a measurement instrument is attempted to be validated in a cultural setting different from its place of origin. In this study, all the three items are newly introduced to Turkish organizational literature.

The individuals within the sample population were picked up among knowledge workers who work in various organizations and who were available to respond to the questionnaires when the researcher visited their respective workplaces[4]. The first case was reached via individual networks and acquaintances and prior appointments before the meeting was the regular practice. All people working in the respective organization constituted a population in itself and each member of the population was granted an equal chance to participate in the study. The response rates differed among them and the biggest non-response factors were non-availability and refusal to reply. A total of 400 questionnaire forms were printed and distributed, of which 305 complete and usable were recollected, corresponding to a 76 % overall response rate. With high variation populations the sample size is recommended to be large enough than with a less varied population (Greener, 2008, p.52). Considering the heterogeneity of the population termed knowledge workers, it was acknowledged that the larger the sample, the more the representativeness.

[4] In the original study by Avey et al. (2009) published in the distinguished *Journal of Organizational Behavior*, the sample selection was done on a similar basis; *"The primary sample for this study was comprised of a heterogeneous sample of 316 working adults in the United States from a wide cross section of organizations who volunteered to participate in a large Midwestern University sponsored research project on leadership and motivation"*.



Source: Adapted from Saunders et.al. (2009), Selecting a non-probability sampling technique.

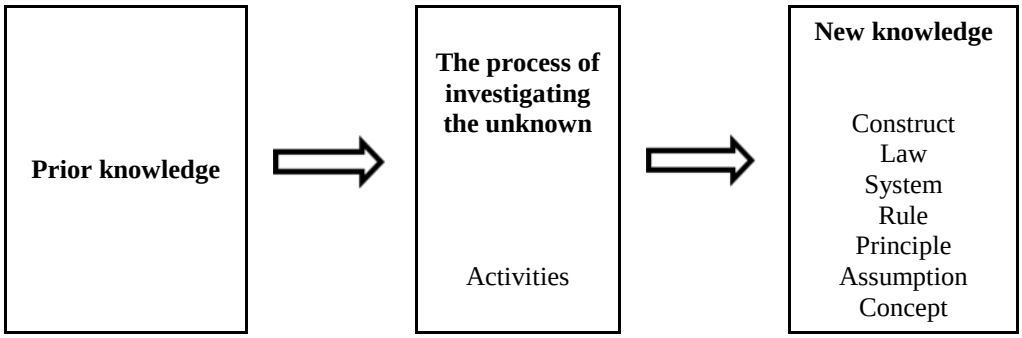
Figure 8 : Sampling method

A public hospital, two software companies, a textile manufacturer MNC, two branches of armed forces (navy and aviation), a law office, a construction company, two private bank branches, an investment and consulting company, and a NGO were visited within the scope of the research.

Once the sample was determined, survey method was implemented by way questionnaires that have already been analysed for their original purpose.

Data and Procedure

According to the handling of the subject matter and its methodology, this research is respectively a correlational research design and follows deductive reasoning pattern which implies operating from the general to the specific (Adams et.al, 2007, p.29). As for the purpose of the study, it is a cross-sectional assessment research conducted via quasi-experimental[5] survey method and this method is supported and enriched by qualitative data. As to the production of knowledge that this study attempts to perpetuate, departing from the existing knowledge and through activities new knowledge in the form of assumptions and new concepts are put forward (Figure 9).



Source: Islamoglu & Alniacik, 2013, p.60.

Figure 9: Production of knowledge

After a general literature review, data were collected from secondary sources. The field research that aimed to reveal the existing situation was conducted via survey method and implemented by way of a structured questionnaire form.

The questionnaire form was pilot-tested for reliability and validity concerns. The basic reason for pilot testing is to ensure that the measurement items are understandable and reliable. Having been pilot-tested, the questionnaire form was updated and adjusted before the primary study.

[5] This study's design is indeed non-experimental because there is no manipulation of the independent variables and no random assignment of subjects to treatment and control groups (Tepeci, 2001).

Quantitative data analysis was realized through IBM SPPS Statistics Program 20.0 and Lisrel 8.7, and qualitative data was organized via NVivo 10 for discerning any non-random pattern. Descriptive statistics (percentages, mean scores, standard deviations) were utilized for initial evaluations. For comparison of quantitative data, independent sample t-test, one way Anova, and post-hoc tests were used. The relations among exogenous (independent) and endogenous (dependent) variables were analysed via Pearson correlation, and the influence was analysed via regression model. The findings were interpreted within 95 % confidence interval with 5 % level of significance.

Measures

Survey method forms the basis for the empirical part of this thesis. Face and content validities of the below measurement instruments were testified through the relevant literature and acknowledged by the supervisor of this thesis study. As for the construct, convergent and discriminant validity, exploratory and confirmatory factor analyses confirmed that the constructs are valid for measuring the intended phenomena.

The original survey instruments were translated into Turkish by the author of this thesis and a philologist following back-translation approach and revised by three other scholars fluent in English[6]. No major differences were found in translation-back-translation comparisons. After pilot testing on 40 employees working in a software company some items were further revised and changed.

The 16-item psychological ownership questionnaire developed by Avey et.al (2009) was used to measure psychological ownership. Building on the three previously recognized dimensions of psychological ownership as designated by Pierce et.al, (2001) *i.e.* belonging, self-efficacy and self-identity, two additional concepts-territoriality and accountability- were posited as additional aspects and integrated into the existing literature on psychological ownership. The items of the psychological ownership measuring tool was developed via both inductive and deductive reasoning. A

[6] Faculty members from Psychology, Organizational Behaviour and Marketing majors respectively.

comprehensive review of the literature on psychology of ownership, possessiveness and related terms was complemented by the discussions of an organizational behaviour research group consisting of faculty and doctoral students. Four theory-driven domains were determined to best represent the promotion-oriented form of psychological ownership - self-efficacy, accountability, sense of belonging, and self-identity with the target. Territoriality was recognized as a prevention-oriented from of psychological ownership. Of the sixteen subscale items that were finally proven to be valid and reliable on the basis of internal consistency, bivariate relationships, and strong predictive power of the outcome variables, three items accounted for each of the promotion-oriented ownership subscales and four items for the prevention-oriented feelings of territoriality (Avey et.al, 2009).

The permission for using the POQ was granted by an authority of www.mindgarden.com upon a signed agreement. The respondents were asked to rate their degree of agreement with 16 items on a 5-point Likert scale anchored by endpoints "strongly disagree" and "strongly agree".

Cronbach's coefficient alpha for psychological ownership 16-item scale is .85. According to item total statistics, deletion of none of the items promised a higher composite reliability coefficient. Of the corrected total item correlations, the lowest is ,35 (PO2) and the highest is ,56 (PO16). The scale variance is 87,209 with a standard deviation of 9,339. The subscale reliability scores are consistent with and medium to highly reliable according to the below criteria (Islamoglu & Alniacik, 2013, p.278; Özdamar, 2013).

- $,00 \leq \alpha < ,40$ no reliability,
- $,40 \leq \alpha < ,60$ low level of reliability,
- $,60 \leq \alpha < ,80$ acceptable level of reliability,
- $,80 \leq \alpha < 1.00$ high level of reliability

Knowledge hiding behaviour was measured via the Connelly et.al (2011)'s three-dimensional 12-item instrument. The critical incident method utilized in the original English version of the construct was not adopted in this study. Instead the respondents were given the following vignette; *"please think of a moment in which a co-worker requests knowledge from you and you decline to share your knowledge or expertise with him/her or do not give all of the information needed. For example, you might not show this co-worker how to do something, only give a part of the information needed, decline to tell something s/he needs to know, or do not help him/her learn something important. Please describe your opinions regarding such a scenario"*[7]. After this scenario question, the respondents were asked to rate their degree of agreement with 12 items on a 5-point Likert scale anchored by endpoints "strongly disagree" and "strongly agree" (see Appendix I). To evaluate the respondents 'attitude regarding the knowledge hiding behaviour, an open-ended question was also added (i.e. Do you have any sector-specific reason for hiding knowledge? Please describe your attitude about this issue.)

Cronbach's coefficient alpha for knowledge hiding is ,94 with corrected item total correlations greater than ,50 and high as ,83.

Knowledge-based psychological ownership was measured by three items adapted from Van Dyne and Pierce (2004)'s scale. Cronbach's coefficient alpha for knowledge-based psychological ownership is ,94 with item total correlations from ,84 to ,91.

Exploratory Factor Analysis (EFA)

Factor analysis is a multivariate analysis technique that facilitates reduction in the number of variables based on inter-item correlations (Islamoğlu, 2011, p. 238). Certain items are grouped under a specific subscale through factor analysis. The first prerequisite for factor analysis is achieving the desired level of observations, which is

[7] Original question: Please think of a recent episode in which a specific co-worker requested knowledge from you and you declined to share your knowledge or expertise with him/her or did not give all of the information needed. For example, you might not have shown this co-worker how to do something, only gave a part of the information needed, declined to tell something s/he needed to know, or did not help him/her learn something important. Please describe the episode in which you declined to share knowledge with your co-worker. In this specific situation, I...

according to Islamoğlu (2011, p.238) five times the number of survey items. Hair, Anderson, Tatham, & Black (1998) state that factor analysis requires from 5 to 10 subjects per questionnaire item (as cited from Tepeci, 2001). In this study, the number of items to be subjected to factor analysis is 31 and the number of observations is 305, which more than satisfies this precondition. Prior to the factor analysis, the validity of the Bartlett's test of sphericity needs to be confirmed as well. The significance level of the BT should be above 0,05 indicating that items are correlated enough for conducting a factor analysis.

The factor structure of the scales was determined by exploratory factor analysis. Four distinct psychological ownership dimensions emerged from exploratory factor analysis, as different from its 5-factor predecessor. KMO measure of sampling adequacy for psychological ownership scale is ,79 and four-subscales explain the 67,80 % of the total variance. Unweighed least squares analysis with promax rotation resulted in the following factor loadings (Table 1). Two dimensions, self-identity and sense of belongingness were combined in one factor in the exploratory factor analysis with factor loadings ranging from ,57 to ,82, and it was named the "identity and belongingness" psychological ownership. Identity and belongingness psychological ownership subscale account for the 29, 47 % of the total variance explained by the construct. Territoriality subscale with four items account for 16, 07 % of the total variance explained. Self-efficacy psychological ownership has factor loadings from ,87 to ,94 and accounts for 12, 91 % of the total variance. The lowest and highest factor loadings for accountability psychological ownership are ,80 and ,90 with 9, 33 % variance explained.

Table 1: Factor Loadings for Psychological Ownership[8]

Items (alpha=.85)	Identity and belongingness	Territoriality	Self-efficacy	Accountability
PO1		0,84		
PO2		0,80		
PO3		0,79		
PO4		0,82		
PO5			0,93	
PO6			0,94	
PO7			0,87	
PO8				0,90
PO9				0,80
PO10				0,84
PO11	0,57			
PO12	0,62			
PO13	0,77			
PO14	0,82			
PO15	0,82			
PO16	0,80			
Variance	29,477	16,07	12,919	9,335
Alpha	,88	,89	,93	,89
KMO		,79		
Bartlett'sTS		3241,182	p<,0001	

KMO[9] measure of sampling adequacy for knowledge hiding scale is ,91 and three sub-scales explain the 78, 76 % of the total variance. Bartlett's test of sphericity is computed to be 3847,940 at .001 significance level. Factors with eigenvalue statistics > 1 and factor loadings > ,32 were accepted for composing a subscale. Unweighed least squares technique with promax rotation[10] resulted in the following factor loadings (Table 2).

[8] The values in the original scale developed by Avey et.al is as follows; *"Internal reliabilities for the components were: self-efficacy (α = .90), accountability (α = .81), sense of belongingness (α = .92), and self-identity (α = .73). The four territoriality items also demonstrated acceptable reliability (α = .84)"*.

[9] KMO measure of sampling adequacy is expected to be closer to 1, which indicates that the number of observations is enough for higher correlations and subsequent factor loadings.

[10] Orthogonal rotation techniques like varimax are applied when no correlation is assumed to exist among sub-scales whereas non-orthogonal techniques like direct oblimin and promax are applied when inter-subscale correlations are assumed to exist. Despite the fact that two approaches almost always result in similar outcomes and varimax rotation is mostly used with multifactorial structures and it is the most

The subscale reliability coefficients indicated good fit as well; evasive hiding α = ,95, playing dumb α = ,89, and rationalized hiding α = ,94. The lowest and highest factor loadings are ,76 and ,87 respectively. The scree plot confirmed the 3-factor structure despite most of the variance is explained by the evasive hiding subscale (62, 64 %).

Table 2: Factor Loadings for Knowledge Hiding[11]

Items (alpha=.94)	Evasive hiding	Rationalized hiding	Playing dumb
KH1			0,58
KH2			0,92
KH3			0,90
KH4			0,87
KH5	0,82		
KH6	0,96		
KH7	0,87		
KH8	0,94		
KH9		0,74	
KH10		0,84	
KH11		0,85	
KH12		0,92	
Variance	62,645	8,892	7,405
Alpha	,95	,94	,89
KMO		,909	
Bartlett's TS		3847,94 p<,0001	

Knowledge-based psychological ownership scale explained 90, 18 % of the total variance with ,75 KMO measure of sampling adequacy. The number of observations could be enlarged to guarantee this high variance explained. Factor loadings of the three items are displayed in Table 3.

frequently used factor rotation technique (almost the default option), we chose to apply promax for achieving a more reliable factorial structure, even if not as reliable as with parallel analysis.

[11] In the original study by Connelly et.al (2011); playing dumb α = ,84, evasive hiding α = ,73, and rationalized hiding α = ,76.

Table 3: Factor Loadings for Knowledge-based Psychological Ownership

Items	Factor Loadings
KPO1	0,94
KPO2	0,96
KPO3	0,87
Variance	90,186
Alpha	,94
KMO	,754
Bartlett's TS	899,889 p<,0001

Knowledge-based psychological ownership scale is a unidimensional scale and that is why the components of the unweighed least squares could not be rotated. The high factor loadings indicate that the three item measurement tool is highly reliable for measuring knowledge-based psychological ownership and the confounders are mostly eliminated (a saturated model with perfect fit). The scale could be further validated with a more homogenous and larger sample in another context to ensure a similar factorial structure.

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is used to test whether measures of a construct are consistent with a hypothesized research model that has been proposed in accordance with a theoretical-conceptual background. The researcher tests the compatibility of the data with a preconfigured factorial structure. In contrast to exploratory factor analysis that determines the factorial structure of a data set without a premise; confirmatory factor analysis predicts the existence of a projection that specific variables will weigh on specific latent variables. Researchers resort to confirmatory factor analysis for scale adaptation from abroad in order to verify the validity of a measurement tool whose construct validity has already been proved in a totally different cultural setting and language (Seçer, 2013, p.135).Confirmatory factor analysis is used to verify the validity of a measurement model, which connotes the relationships among a set of observed variables and latent variables.

According to the generally accepted criteria (Bogazzi & Yi, 1988; Seçer, 2013; Şimşek, 2007), a measurement model is considered to be a good fit if the confirmatory factor analysis exhibits approximately the following model outputs; x^2/d.f<5, RMSEA<,080, SRMR<,10, NFI>,90, NNFI>,90, GFI>,90, AGFI>,80, IFI>90, RFI>90, CFI>,90 and RMR between 0,50 and 0,80 (Bentler & Bonett, 1980; Hair et.al., 1998; Jöreskog & Sörbom, 1988). The initial confirmatory factor analysis for knowledge hiding scale demonstrated an unfit model within the scope of these criteria (Figure 10).

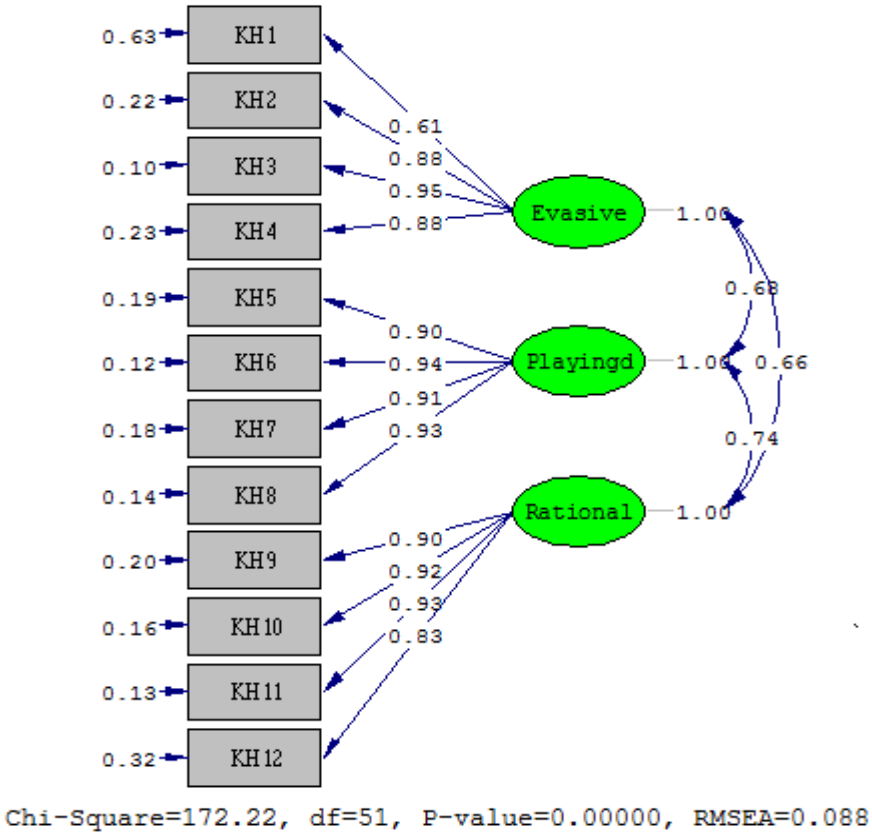


Figure 10: Confirmatory factor analysis for knowledge hiding

Goodness of fit statistics for the initial model were; x^2/d.f=3,376, RMSEA=,088, NFI=,98, NNFI=,98, IFI=,98, RFI=,98, RMR=,076, SRMR=,033, GFI=,91, AGFI=0,87, and CFI=,98.

Modification indices and residuals demonstrated no error or warning messages. Most of the modification indices were within acceptable limits which only necessitated establishment of covariance among some variables.

The model output indices suggested a number of modifications to increase the goodness of fit of the hypothesized model. Application of the suggested modifications among KH5-KH6, KH6-KH7 and KH9-KH11 resulted in the following model (Figure 11).

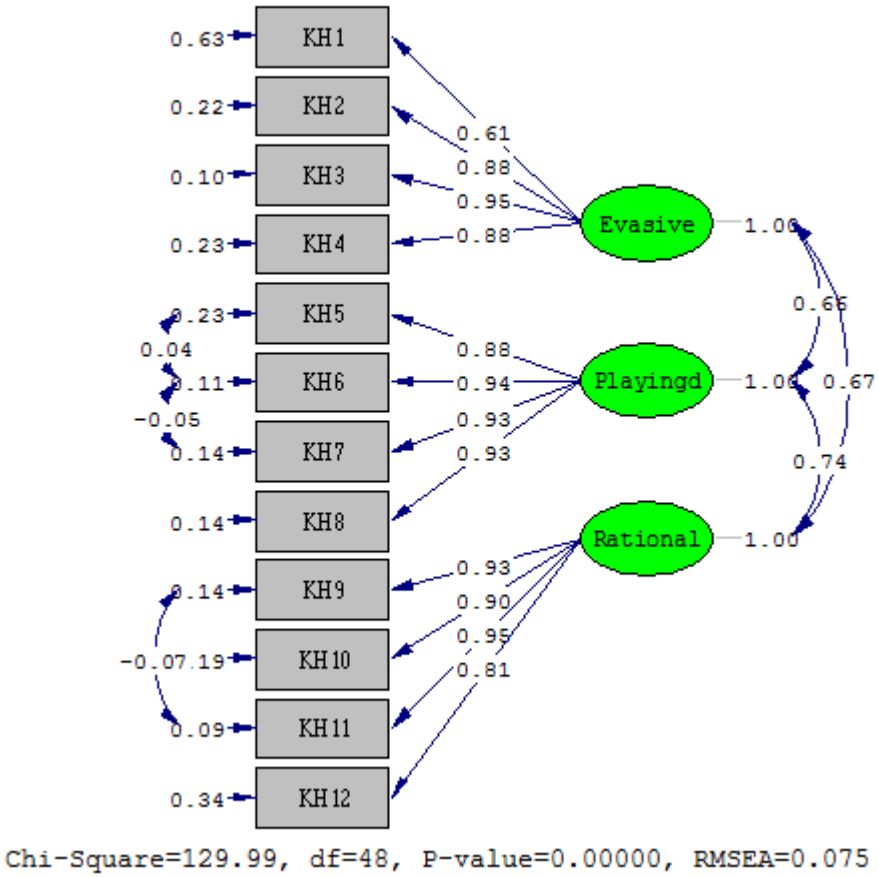


Figure 11: Modified factor analysis for knowledge hiding

After the modifications, all research variables conformed to the above criteria and factor loadings of all questions demonstrated the fitness of the overall model (Table 4).

Table 4: Goodness of Fit Criteria for Knowledge Hiding before and after Modifications

Acceptable	Before	After
Normed Fit Index (NFI)>90	0,98	0,99
Non-Normed Fit Index NNFI>90	0,98	0,99
Incremental Fit Index IFI>90	0,98	0,99
Relative Fit Index RFI>90	0,98	0,97
Comparative Fit Index CFI>95	0,98	0,99
Goodness of Fit Index GFI>85	0,91	0,93
Adjusted Goodness of Fit Index AGFI>85	0,87	0,89
Root Mean Square Residual RMR<0,080	0,076	0,068
Standardized RMR<0,1	0,033	0,029
Root Mean Square Error of Approximation RMSEA<0,080	0,088	0.075
Chi-Square/ degrees of freedom x2/d.f<4	3,376	2,708

High-order confirmatory factor analysis was conducted to demonstrate that the three-factor knowledge hiding measurement model obtained via first-order confirmatory factor analysis is representative of the second-order concept of knowledge hiding (Figure 12). The outputs of the second-order model are exactly the same as that of the first-order confirmatory factor analysis. According to Şimşek (2007), this is proof that second-order relations are ineffective on values of the parameters included in the model. The variance explained of the second-order latent variable by the first-order latent variables are respectively; rationalized hiding (86 %), evasive hiding (85 %), and playing dumb (78 %). Şimşek (2007) recommends that of the two models that demonstrate similar results, the more parsimonious one, that is the simplest plausible model with the fewest possible number of variables is preferable. Thus, it is more appropriate to adopt the model that emerged from the first-order confirmatory factor analysis.

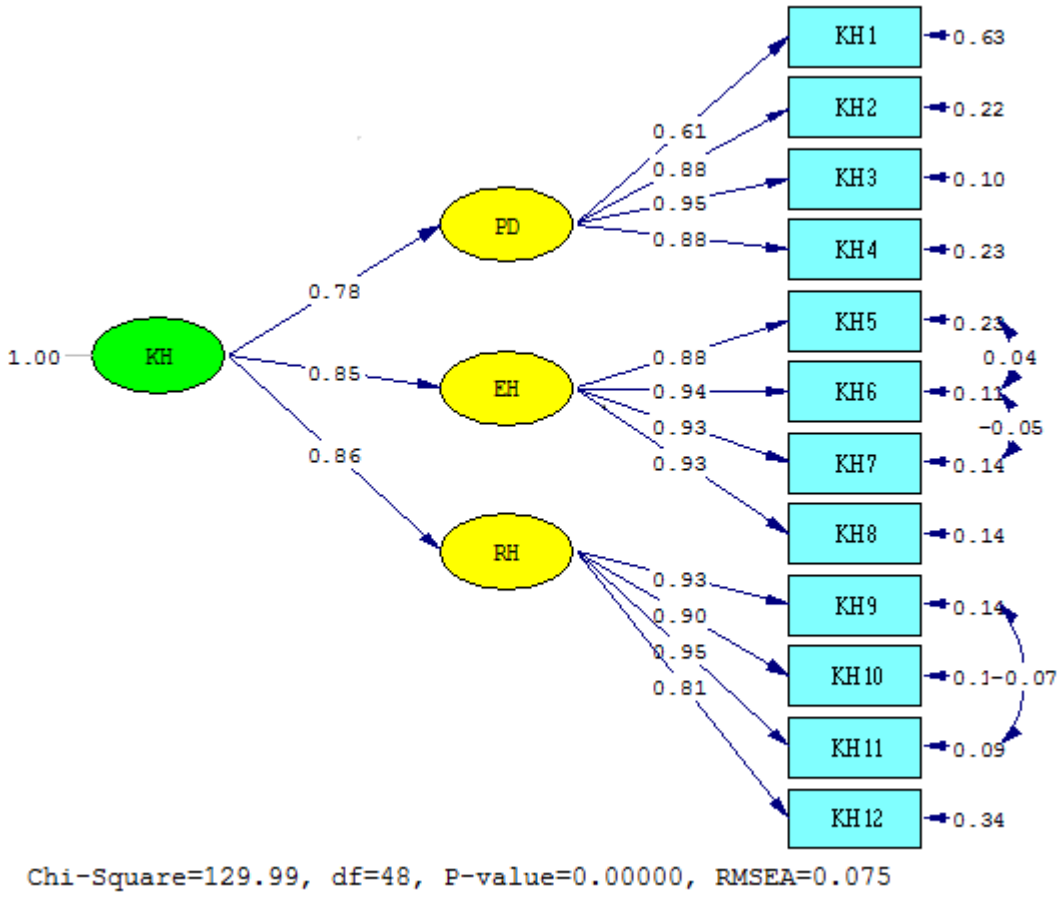


Figure 12: Second-order confirmatory factor analysis for knowledge hiding scale

The initial confirmatory factor analysis for psychological ownership scale (Figure 13) demonstrated an unfit model within the scope of the acknowledged goodness of fit criteria; x^2/d.f=3955, RMSEA=,096, NFI=,91, NNFI=,91, IFI=,93, RFI=,89, RMR=,068, SRMR=,065, GFI=,87, AGFI=,82, and CFI=,93.

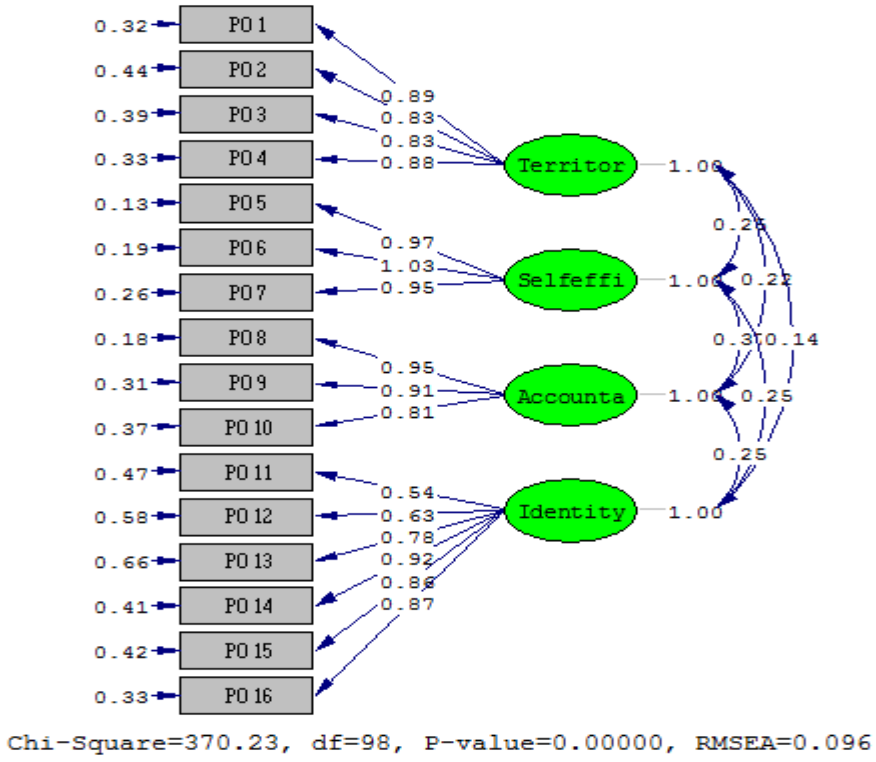


Figure 13: Confirmatory factor analysis for psychological ownership

The model output indices suggested a number of modifications to increase the goodness of fit of the hypothesized measurement model. Application of the suggested modifications among PO13-PO11, PO12-PO11, PO14-PO11, and PO15-PO13 resulted in the following model (Figure 14).

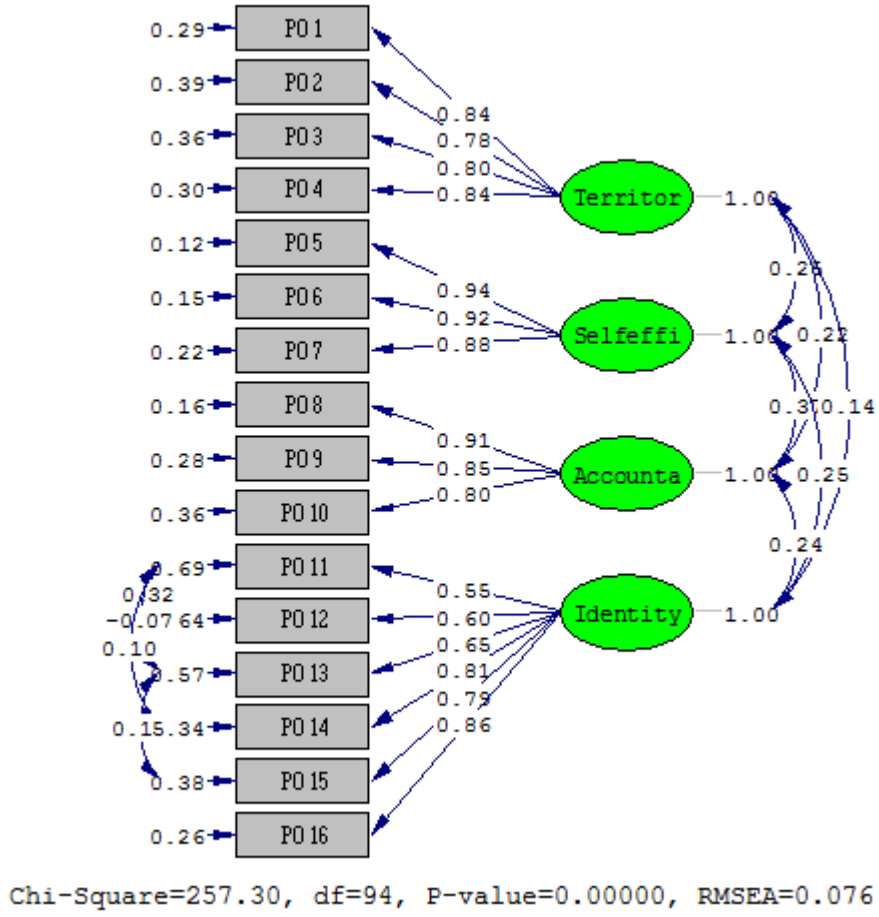


Figure 14 : Modified factor analysis for psychological ownership

After the modifications, all research variables conformed to the above criteria and factor loadings of all questions demonstrated the fitness of the overall model (Figure 14).

Table 5: Goodness of Fit Criteria for Psychological Ownership Before and After Modifications

Acceptable	Before	After
Normed Fit Index (NFI)>90	0,910	0,930
Non-Normed Fit Index NNFI>90	0,910	0,940
Incremental Fit Index IFI>90	0,930	0,950
Relative Fit Index RFI>90	0,890	0,910
Comparative Fit Index CFI>95	0,930	0,950
Goodness of Fit Index GFI>85	0,870	0,900
Adjusted Goodness of Fit Index AGFI>85	0,820	0,860
Root Mean Square Residual RMR<0,080	0,068	0,065
Standardized RMR<0,1	0,065	0,060
Root Mean Square Error of Approximation RMSEA<0,080	0,096	0.076
Chi-Square/ degrees of freedom x2/d.f<4	3,955	2,737

High-order confirmatory factor analysis was conducted to demonstrate that the four-factor psychological ownership measurement model obtained via first-order confirmatory factor analysis is representative of the second-order concept of psychological ownership (Figure 15). The outputs of the second-order model are almost exactly the same as that of the first-order confirmatory factor analysis (Table 5). The variance explained of the second-order latent variable by the first-order latent variables are respectively; self-efficacy (83 %), accountability (73 %), identity-belonging (44 %), and territoriality (41 %).

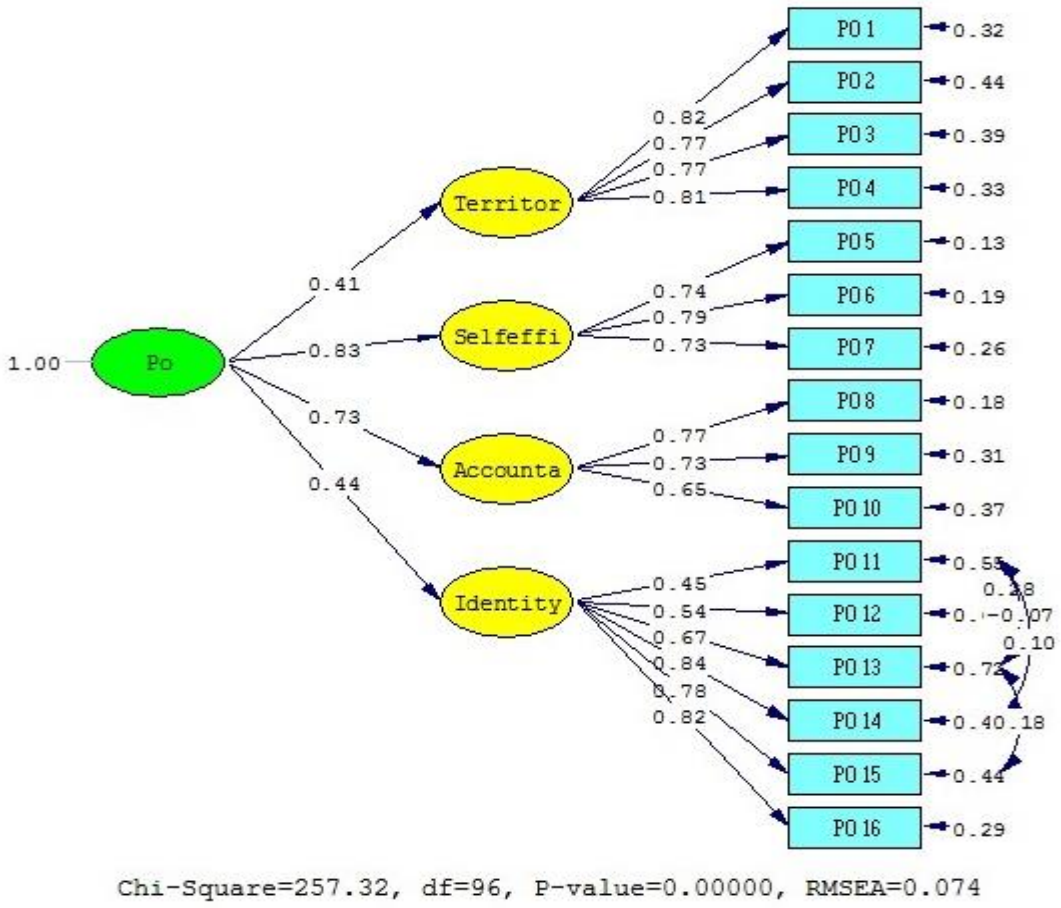


Figure 15: Second-order confirmatory factor analysis for psychological ownership

CHAPTER IV: DATA ANALYSIS AND RESULTS

Descriptive Statistics and Demographic Characteristics

As is evident from Table 6, the respondents are comprised of 128 (42%) women and 177 (58%) men, most of whom are aged between 26-30 years range (48, 5%). A great many of them are university graduates (82, 6%). Occupation-wise, there is a wide array of options which is bound by the categorical variable of knowledge work. These work groups are mostly from the private sector (65, 9%). In terms of the organizational hierarchy, the respondents are white-collar workers (50, 8%), experts (37, 4%), mid-level executives (9, 5%) and top-level executives (2, 3%). As compatible with the relatively young age range, the range of work experience is mostly 0-5 years (45, 2%). The questionnaire form also included an item inquiring about the field in which the recruiting organization operates (education-health-finance/banking-IT-consultancy, and other). Seeing that most of the respondents put a mark on the "other" option by writing down their own choice of statement, we decided to omit that demographic question from further analysis and interpretation. In a similar vein, although the members of the armed forces that participated in the study are indeed public employees who mostly work in software-communication technologies-aviation technologies, and etc., they chose not to click "IT" but instead checked for "other" and wrote down "army", "soldier" and "armed forces". Similarly, some doctors and researchers regarded themselves as "white-collar workers" whereas some others checked for "experts". We discovered that these terms needed to be clarified despite no such problem was encountered during pilot-testing. The confusion that was triggered by our two demographic questions regarding field and position discouraged us from making strong claims based on those asymmetrical and biased responses.

Table 6: Demographic Characteristics[12]

		N	%
Gender	woman	128	42
	man	177	58
Age	20-25	29	9,5
	26-30	148	48,5
	31-35	86	28,2
	36-40	21	6,9
	40+	21	6,9
Education	college	3	1
	university	252	82,6
	master's degree	43	14,1
	doctor's degree	7	2,3
Sector	Public	85	27,9
	Private	201	65,9
	Civil society	16	5,2
	Owner	3	1
Position	top level executive	7	2,3
	mid level executive	29	9,5
	expert	114	37,4
	white-collar worker	155	50,8

		N	%
Occupation	bank employee	22	7,2
	business executive	20	6,6
	industrial designer	5	1,6
	researcher	39	12,8
	engineer	19	6,2
	chemist	8	2,6
	economist	10	3,3
	software developer	53	17,4
	consultant	19	6,2
	purchase specialist	9	3
	architect	8	2,6
	tax auditor	7	2,3
	accountant	18	5,9
	lawyer	11	3,6
	medical doctor	23	7,5
	military officer	34	11,1
Experience	0-5 years	138	45,2
	6-10 years	115	37,7
	11-15 years	31	10,2
	16-20 years	17	5,6
	21 +	4	1,3

Almost half of the respondents belonged to the same age range and a great many of them were university graduates, which resulted in just a little systematically significant difference in terms of those categorical variables. Position-wise, the preponderance of experts and white-collar workers, and the unforeseen confusion regarding the difference between those two categories rendered further comparisons a little bit biased as well. No

[12] The question of "field" in our original questionnaire form is not included here, considering that the "other" option was the most selected and the number of responses elicits further analysis. Moreover, making a comparison occupation-wise will be similar to making a comparison field-wise because the field reflects the occupation in our sample. We chose to place this question at the beginning of the study in order to pinpoint exactly the occupation and field because some people might be working in a totally different field than their occupation. This has not been the case with our observations. The responses are armed forces, construction and mining, textile, health, education, research, software, IT, banking and finance, consultancy, accounting, and law.

hypotheses were composed regarding demographic variables following the lead of some authors who claimed that a proper hypothesis should be based on the research problem and question, and never be arbitrarily constructed upon socio-demographic variables (Erdogan, 2012, p.95). However, t tests and one-way analyses of variance were conducted to reveal any pattern that might exist regarding demographic variables.

No statistically significant difference was discerned regarding knowledge hiding and psychological ownership scale mean scores and sub-scale mean scores in terms of the gender of knowledge workers participating in the study (Table 7).

Table 7: Psychological Ownership and Knowledge Hiding Mean Scores According to the Gender of Knowledge Workers

	Group	N	Mean	SD	t	p
Evasivehiding	Woman	128	2,426	1,258	-0,932	0,35
	Man	177	2,568	1,353		
Playingdumb	Woman	128	2,432	1,238	-0,869	0,39
	Man	177	2,564	1,358		
Rationalizedhiding	Woman	128	2,953	1,587	-0,002	0,98
	Man	177	2,953	1,461		
KHmean	Woman	128	2,604	1,202	-0,653	0,51
	Man	177	2,695	1,208		
KPOmean	Woman	128	3,396	1,595	-0,315	0,75
	Man	177	3,454	1,582		
Territoriality	Woman	128	4,107	0,905	0,321	0,75
	Man	177	4,073	0,916		
Selfefficacy	Woman	128	4,107	0,943	0,699	0,49
	Man	177	4,025	1,064		
Accountability	Woman	128	4,008	0,858	0,399	0,69
	Man	177	3,964	0,997		
Identitybelonging	Woman	128	3,845	0,855	-1,048	0,30
	Man	177	3,944	0,789		
POmean	Woman	128	3,990	0,587	-0,076	0,94
	Man	177	3,995	0,583		

T-test results display no statistically meaningful mean score difference among independent groups ($p < 0,05$) for all scales and sub-scales. According to this finding,

knowledge workers do not differ in terms of their respective gender as to their knowledge hiding or psychological ownership and knowledge-based psychological ownership attitudes.

Table 8: Psychological Ownership and Knowledge Hiding Mean Scores According to the Age of Knowledge Workers

(N=305)	Group	N	Levene Statistic	Sig.*	Mean	SD	F	p	Difference
Evasive hiding	20-25	29	1,807	0,127	1,897	1,235	4,057	0,003	2>1 2>5
	26-30	148			2,655	1,326			
	31-35	86			2,587	1,303			
	36-40	21			2,726	1,313			
	40+	21			1,774	0,942			
Playing dumb	20-25	29	9,596	**0,000**	1,914	1,084	13,6 7,114**	0,000 0,000	2>1 2>5 3>1 3>5 4>5
	26-30	148			2,610	1,307			
	31-35	86			2,674	1,295			
	36-40	21			2,952	1,503			
	40+	21			1,488	0,649			
Rationalized hiding	20-25	29	7,904	**0,000**	1,879	1,423	14,228 8,58**	0,000 0,000	2>1 2>5 3>1 3>5 4>1
	26-30	148			3,152	1,516			
	31-35	86			3,174	1,446			
	36-40	21			3,083	1,619			
	40+	21			2,000	0,637			
KHmean	20-25	29	8,603	**0,000**	1,897	1,049	16,803 9,375**	0,000 0,000	2>1 3>1 4>1 4>5
	26-30	148			2,806	1,226			
	31-35	86			2,812	1,157			
	36-40	21			2,921	1,205			
	40+	21			1,754	0,525			
KPOmean	20-25	29	1,991	0,096	2,885	1,684	3,303	0,011	2>5
	26-30	148			3,624	1,523			
	31-35	86			3,454	1,555			
	36-40	21			3,619	1,848			
	40+	21			2,524	1,369			
Territoriality	20-25	29	1,045	0,384	4,250	0,989	2,34	0,055	
	26-30	148			4,149	0,821			
	31-35	86			3,980	0,987			
	36-40	21			4,321	0,959			
	40+	21			3,643	0,910			
Self-efficacy	20-25	29	6,477	**0,000**	4,161	1,122	3,643	0,010	1>5

	26-30	148			4,178	0,841	5,444**	0,001	3>5 4>5
	31-35	86			4,062	0,967			
	36-40	21			4,175	1,104			
	40+	21			2,952	1,431			
Account-ability	20-25	29	0,923	0,451	4,138	0,819	1,665	0,158	
	26-30	148			3,987	0,913			
	31-35	86			3,892	1,014			
	36-40	21			4,365	0,745			
	40+	21			3,730	1,063			
Identity belonging	20-25	29	0,742	0,564	4,356	0,828	5,65	0,000	
	26-30	148			3,880	0,808			
	31-35	86			3,676	0,789			
	36-40	21			3,944	0,784			
	40+	21			4,325	0,657			
POmean	20-25	29	0,247	0,911	4,252	0,541	3,793	0,005	
	26-30	148			4,023	0,534			
	31-35	86			3,865	0,613			
	36-40	21			4,161	0,637			
	40+	21			3,786	0,651			

**Equal variances not assumed if p<0,05.*
***Asymptotically F distributed. Welch and Brown-Forsyth F scores respectively*

One-way Anova comparisons of psychological ownership and knowledge hiding subscale mean scores in terms of the age of knowledge workers display a number of differences among the designated age groups (Table 8). First of all, homogeneity of variances were tested in order to decide which mean scores to evaluate and then, which post-hoc technique to apply. Where equal variances could be assumed, F statistic and Tukey post-hoc test results were referenced. If homogeneity of variances could not be attested, Welch and Brown-Forsythe asymptotically distributed F statistic was considered and Tamhane post-hoc method utilized. According to the post-hoc test results, there are a number of statistically significant mean score differences in terms of five different age groups.

In terms of evasive hiding, 26-30 (2,655±1,326) age group reported significantly more knowledge hiding than 20-25 (1,897±1,235) and 40+ (1,774±0,942) group (F=4,057; p=0,003 > 0,05). In terms of playing dumb, 26-30 (2,610±1,307) age group reported significantly more knowledge hiding than 20-25 (1,914±1,084) and 40+ (1,488±0,649)

group (F=13,6; p=0,000<0,05). 31-35 (2,674±1,295) age group also reported significantly more knowledge hiding than 20-25 (1,914±1,084) and 40+ (1,488±0,649) group. In terms of rationalized hiding, 26-30 (3,152±1,516) age group reported more knowledge hiding than 20-25 (1,879±1,423) and 40+ (2,000±0,637) group (F=14,228; p=0,000 < 0,05).

In terms of knowledge-based psychological ownership, 26-30 (3,624±1,684) age group reported significantly more psychological ownership over their knowledge than 40+ (2,524±1,369) group (F=3,303; p=0,011 < 0,05). The younger knowledge workers seem to opt for more knowledge-based psychological ownership than their older colleagues.

Finally, in terms of self-efficacy psychological ownership, 20-25 (4,161±1,122), 31-35 (4,062±0,967) and 36-40 (4,175±1,104) age groups reported significantly more psychological ownership than 40+ group (2,952±1,431) (F=3,643; p=0,010 < 0,05).

Table 9: Psychological Ownership and Knowledge Hiding Mean Scores According to the Occupation of Knowledge Workers

(N=305)	Group	N	Levene Statistic	Sig.*	Mean	SD	F	p	Difference
Evasive hiding	bank employee(1)	22	6,159	**0,000**	1,182	0,519	33,402	0,000	4>1,4>3
	business executive(2)	20			1,838	0,957			4>11,4>12
	industrial designer(3)	5			1,050	0,112			4>14,8>1
	researcher(4)	39			2,731	1,471			8>2,8>3
	engineer(5)	19			1,566	0,975			8>5,8>10
	chemist(6)	8			1,906	0,743			8>11,8>12
	economist(7)	10			3,375	1,459			8>14,9>1
	software developer(8)	53			3,193	0,978			9>3,9>14
	consultant(9)	19			2,711	1,370	15,221**	0,000	13>1,13>3
	purchase specialist(10)	9			1,611	0,741			13>11,13>2
	architect(11)	8			1,563	0,496			13>14,15>1
	tax auditor(12)	7			1,464	0,393			15>2, 15>3
	accountant(13)	18			2,917	1,088			15>5,15>10
	lawyer(14)	11			1,114	0,131			15>11,15>12
	medical doctor(15)	23			2,978	0,980			15>14,16>1
	military officer(16)	34			3,544	1,180			16>2,16>3
									16>5, 16>6
									16>10,16>11
									16>12,16>14

Playing dumb	bank employee(1)	22	3,057	**0,000**	1,568	0,842	15,163	0,000	4>12,8>1 8>2,8>4 8>5,8>10 8>11,8>12 8>14,9>14 13>1,13>2 13>10,13>11 13>12,13>14 15>12,15>14 16>1,16>2 16>4,16>5 16>10,16>11 16>12,16>14
	business executive(2)	20			1,638	0,912			
	industrial designer(3)	5			1,500	0,707			
	researcher(4)	39			2,327	1,156			
	engineer(5)	19			2,013	1,135			
	chemist(6)	8			1,969	1,039			
	economist(7)	10			3,225	1,227			
	software developer(8)	53			3,311	1,271			
	consultant(9)	19			2,632	1,194	11,712**	0,000	
	purchase specialist(10)	9			1,833	0,750			
	architect(11)	8			1,563	0,477			
	tax auditor(12)	7			1,393	0,349			
	accountant(13)	18			3,389	1,186			
	lawyer(14)	11			1,205	0,292			
	medical doctor(15)	23			2,544	1,068			
	military officer(16)	34			3,419	1,322			
Rationalized hiding	bank employee(1)	22	4,914	**0,000**	1,250	0,463	12,163	0,000	2>1,4>1 4>3,4>14 7>3, 8>1 8>2,8>3 8>5,8>11 8>14, 9>1 9>3,9>14 13>1,13>2 13>3,13>11 13>14,15>1 15>2,15>3 15>5,15>11 15>14,16>1 16>2,16>3 16>4,16>5 16>11,16>14
	business executive(2)	20			2,113	0,825			
	industrial designer(3)	5			1,000	0,100			
	researcher(4)	39			2,891	1,450			
	engineer(5)	19			2,184	1,333			
	chemist(6)	8			2,500	1,408			
	economist(7)	10			3,650	1,496			
	software developer(8)	53			3,802	1,316			
	consultant(9)	19			2,908	1,372	11,221**	0,000	
	purchase specialist(10)	9			2,222	1,071			
	architect(11)	8			1,688	0,799			
	tax auditor(12)	7			2,143	1,314			
	accountant(13)	18			4,056	1,697			
	lawyer(14)	11			1,227	0,261			
	medical doctor(15)	23			3,761	1,099			
	military officer(16)	34			4,029	0,850			
KHmean	bank employee(1)	22	3,804	**0,000**	1,333	0,470	39,985	0,000	4>1,4>3,4>14 7>3,8>1,8>2 8>3,8>4,8>5 8>10,8>11,8>12 8>14,9>1 9>3,9>14 13>1,13>2 13>3,13>5 13>10,13>11 13>12,13>14 15>1,15>2 15>3,15>5 15>11,15>12 15>14,16>1 16>2,16>3 16>4,16>5 16>10,16>11 16>12,16>14
	business executive(2)	20			1,863	0,579			
	industrial designer(3)	5			1,183	0,266			
	researcher(4)	39			2,650	1,068			
	engineer(5)	19			1,921	0,975			
	chemist(6)	8			2,125	1,042			
	economist(7)	10			3,417	1,333			
	software developer(8)	53			3,436	0,903			
	consultant(9)	19			2,750	1,140	19,054**	0,000	
	purchase specialist(10)	9			1,889	0,693			
	architect(11)	8			1,604	0,525			
	tax auditor(12)	7			1,667	0,538			
	accountant(13)	18			3,454	1,297			
	lawyer(14)	11			1,182	0,174			
	medical doctor(15)	23			3,094	0,746			
	military officer(16)	34			3,664	0,838			

KPOmean	bank employee(1)	22	4,122	**0,000**	1,970	1,494	9,696	0,000	6>1,6>2
	business executive(2)	20			2,633	1,506			
	industrial designer(3)	5			1,933	0,894			
	researcher(4)	39			2,658	1,659			
	engineer(5)	19			3,263	1,680			
	chemist(6)	8			4,500	0,436			
	economist(7)	10			3,433	1,423			6>4,6>10
	software developer(8)	53			4,491	0,967			8>1,8>2
	consultant(9)	19			3,351	1,412	7,728**	0,000	8>4,8>10
	purchase specialist(10)	9			2,074	1,222			13>1,15>1
	architect(11)	8			3,333	1,182			16>1,16>4
	tax auditor(12)	7			3,238	1,536			
	accountant(13)	18			4,167	1,543			
	lawyer(14)	11			2,970	1,059			
	medical doctor(15)	23			3,884	1,644			
	military officer(16)	34			4,049	1,280			
Territoriality	bank employee(1)	22	1,456	0,121	4,114	0,671	1,157	0,305	
	business executive(2)	20			3,788	0,540			
	industrial designer(3)	5			3,250	1,225			
	researcher(4)	39			4,071	0,790			
	engineer(5)	19			3,868	1,025			
	chemist(6)	8			4,438	0,704			
	economist(7)	10			3,750	0,920			
	software developer(8)	53			4,212	0,956			
	consultant(9)	19			3,974	0,986			
	purchase specialist(10)	9			3,806	1,322			
	architect(11)	8			4,094	0,640			
	tax auditor(12)	7			4,393	1,069			
	accountant(13)	18			4,472	0,675			
	lawyer(14)	11			4,182	0,662			
	medical doctor(15)	23			4,022	1,108			
	military officer(16)	34			4,221	1,029			
Selfefficacy	bank employee(1)	22	4,727	**0,000**	3,742	1,182	1,257	0,255	
	business executive(2)	20			3,350	1,412			
	industrial designer(3)	5			3,733	1,738			
	researcher(4)	39			4,120	0,782			
	engineer(5)	19			3,912	1,196			
	chemist(6)	8			4,375	0,786			
	economist(7)	10			3,667	0,817			
	software developer(8)	53			4,101	0,878			
	consultant(9)	19			4,333	0,720	1,569**	0,102	
	purchase specialist(10)	9			3,333	1,641			
	architect(11)	8			4,083	1,231			
	tax auditor(12)	7			4,286	0,951			
	accountant(13)	18			4,259	0,852			
	lawyer(14)	11			4,546	1,036			
	medical doctor(15)	23			4,319	0,832			
	military officer(16)	34			4,265	0,778			

Account-ability	bank employee(1)	22	2,604	**0,001**	3,985	0,857	1,445 1,832**	0,154 0,039	
	business executive(2)	20			3,967	0,683			
	industrial designer(3)	5			3,667	1,312			
	researcher(4)	39			3,709	0,943			
	engineer(5)	19			4,105	1,144			
	chemist(6)	8			3,875	0,942			
	economist(7)	10			4,300	0,618			
	software developer(8)	53			4,176	0,770			
	consultant(9)	19			4,316	0,613			
	purchase specialist(10)	9			4,074	1,321			
	architect(11)	8			3,958	0,881			
	tax auditor(12)	7			4,238	0,763			
	accountant(13)	18			3,982	0,718			
	lawyer(14)	11			4,242	0,870			
	medical doctor(15)	23			4,261	0,829			
	military officer(16)	34			3,382	1,280			
Identity belonging	bank employee(1)	22	4,012	**0,000**	4,083	1,097	7,478 4,959**	0,000 0,000	2>8,2>15 6>8,6>15 9>4,9>8 9>15,12>4 12>8,12>15 12>16,13>8 13>15,14>4 14>8,14>15 14>16
	business executive(2)	20			4,367	0,690			
	industrial designer(3)	5			3,833	0,726			
	researcher(4)	39			3,654	0,899			
	engineer(5)	19			3,825	0,939			
	chemist(6)	8			4,292	0,330			
	economist(7)	10			4,200	0,990			
	software developer(8)	53			3,547	0,648			
	consultant(9)	19			4,474	0,699			
	purchase specialist(10)	9			4,167	0,629			
	architect(11)	8			4,208	0,603			
	tax auditor(12)	7			4,452	0,284			
	accountant(13)	18			4,139	0,425			
	lawyer(14)	11			4,470	0,306			
	medical doctor(15)	23			3,471	0,529			
	military officer(16)	34			3,637	0,896			
POmean	bank employee(1)	22	2,363	**0,003**	4,009	0,682	2,585 1,823**	0,004 0,036	
	business executive(2)	20			3,956	0,453			
	industrial designer(3)	5			3,638	0,524			
	researcher(4)	39			3,856	0,640			
	engineer(5)	19			3,905	0,770			
	chemist(6)	8			4,266	0,358			
	economist(7)	10			4,006	0,742			
	software developer(8)	53			3,935	0,502			
	consultant(9)	19			4,293	0,403			
	purchase specialist(10)	9			3,903	0,705			
	architect(11)	8			4,109	0,461			
	tax auditor(12)	7			4,366	0,444			
	accountant(13)	18			4,215	0,246			
	lawyer(14)	11			4,369	0,367			
	medical doctor(15)	23			3,916	0,571			
	military officer(16)	34			3,853	0,697			

*Equal variances not assumed if p<0,05.

**Asymptotically F distributed. Welche and Brown-Forsyth F scores respectively.

In terms of knowledge hiding overall mean scores, the occupation-wise rankings successively from the most knowledge-hiding to the least are as follows (Table 9); military officer (3,664±0,838), accountant (3,454±1,297), software developer (3,436±0,903), economist (3,417±1,333), medical doctor (3,094±0,746), consultant (2,750±1,140), researcher (2,650±1,068), chemist (2,125±1,042), engineer (1,921±0,975), purchase specialist (1,889±0,693), business executive (1,863±0,579), tax auditor (1,667±0,538), architect (1,604±0,525), bank employee (1,333±0,470), industrial designer (1,186±0,266), and lawyer (1,182±0,174) ($F=39,985$; $p=0,000 < 0,05$). Considering the diversity of occupations and the variance among group proportions, the comparisons should be headed with discretion. There are a number of mean score differences ascertained via post-hoc results, yet only the featured significant differences are highlighted in the following interpretation.

In terms of evasively hiding knowledge, military officers (3,544±1,180) report significantly more knowledge hiding than bank employees (1,182±0,519), business executives (1,838±0,957), industrial designers (1,050± 0,112), engineers (1,566±0,975), chemists (1,906±0,743), purchase specialists (1,611±0,741), architects (1,563±0,496), and lawyers (1,114±0,131) ($F=33,402$; $p=0,000 < 0,05$). Software developers (3,193±0,978) report significantly more knowledge hiding than bank employees (1,182±0,519), business executives (1,838±0,957), industrial designers (1,050± 0,112), engineers (1,566±0,975), purchase specialists (1,611±0,741), architects (1,563±0,496), tax auditors (1,464±0,393), and lawyers (1,114±0,131). Medical doctors (2,978±0,980) report significantly more knowledge hiding than bank employees (1,182±0,519), business executives (1,838±0,957), industrial designers (1,050± 0,112), engineers (1,566±0,975), purchase specialists (1,611±0,741), architects (1,563±0,496), and lawyers (1,114±0,131).

In terms of playing dumb, software developers (3,311±1,271) report significantly more knowledge hiding than bank employees (1,568±0,842), business executives (1,638±0,912), engineers (2,013±1,135), purchase specialists (1,833±0,750), architects (1,563±0,477), tax auditors (1,393±0,349), and lawyers (1,205±0,292) ($F=15,163$; $p=0,000 < 0,05$). Military officers (3,419±1,322) report significantly more knowledge

hiding than bank employees (1,568±0,842), business executives (1,638±0,912), researchers (2,327±1,156), purchase specialists (1,833±0,750), architects (1,563±0,477), tax auditors (1,393±0,349), and lawyers (1,205±0,292).

In terms of rationalized hiding, military officers (4,029±0,850), software developers (3,802±1,316), and medical doctors (3,761±1,099) report significantly more knowledge hiding than bank employees (1,250±0,463), business executives (2,113±0,825), industrial designers (1,000±0,010), engineers (2,184±1,333), architects (1,688±0,799), and lawyers (1,227± 0,261) ($F=12,163$; $p=0,000 < 0,05$).

In terms of knowledge-based psychological ownership, software developers (4,491±0,967) and chemists (4,500±0,436) report significantly more psychological ownership than bank employees (1,970±1,494), business executives (2,633±1,506), researchers (2,658±1,659), and purchase specialists (2,074±1,222) ($F=9,696$; $p=0,000 < 0,05$).

In terms of identity-belonging psychological ownership, business executives (4,367±0,690) report significantly more psychological ownership than software developers (3,547±0,648) and medical doctors (3,471±0,529) ($F=7,478$; $p=0,000 < 0,05$). Chemists (4,292±0,330) report significantly more psychological ownership than software developers (3,547±0,648) and medical doctors (3,471±0,529). Consultants (4,474±0,699) report significantly more psychological ownership than researchers (3,654±0,899), software developers (3,547±0,648), and medical doctors (3,471±0,529). Tax auditors (4,452±0,284) report significantly more psychological ownership than researchers (3,654±0,899), software developers (3,547±0,648), medical doctors (3,471±0,529), and military officers (3,637±0,896). Accountants (4,139±0,425) also report significantly more psychological ownership than software developers (3,547±0,648) and medical doctors (3,471±0,529). Lawyers (4,470±0,306) report significantly more psychological ownership than researchers (3,654±0,899), software developers (3,547±0,648), medical doctors (3,471±0,529), and military officers (3,637±0,896).

Whereas software developers, military officers, and medical doctors score highest among knowledge hiding subscales and knowledge-based psychological ownership, they score the lowest for identity- belonging psychological ownership, which represents organization-based psychological ownership. This finding affirms the assumption that these groups of knowledge workers most particularly own their knowledge rather than their organization. Of all the other knowledge workers, they psychologically own their knowledge more than they psychologically own their organization and the most profoundly so.

Table 10: Psychological Ownership and Knowledge Hiding According to the Sector of Knowledge Workers

	Group	N	Mean	SD	t	p
Evasivehiding	Public	85	2,712	1,358	1,853	0,65
	Private	201	2,403	1,257		
Playingdumb	Public	85	2,565	1,271	0,498	0,62
	Private	201	2,48	1,329		
Rationalizedhiding	Public	85	3,062	1,406	0,824	0,41
	Private	201	2,901	1,554		
KHmean	Public	85	2,779	1,107	1,191	0,24
	Private	201	2,595	1,237		
KPOmean	Public	85	3,137	1,716	-2,005	0,05
	Private	201	3,546	1,51		
Territoriality	Public	85	4,071	0,987	-0,676	0,5
	Private	201	4,149	0,86		
Selfefficacy	Public	85	4,157	0,799	1,157	0,25
	Private	201	4,005	1,092		
Accountability	Public	85	3,616	1,08	-4,033	0,00
	Private	201	4,098	0,85		
Identitybelonging	Public	85	3,604	0,861	-4,318	0,00
	Private	201	4,037	0,737		
POmean	Public	85	3,827	0,646	-3,288	0,00
	Private	201	4,071	0,54		

According to the sector in which the recruiting organization operates, most of the knowledge workers in our sample (65,9 %) work in private sector whereas 27,9 % work in publicly-owned institutions. The remaining 6,2 % are either owners or work in

NGOs. Considering this vast difference, it was found appropriate just to make a sector-based comparison via independent sample t-test between these two categorical variables to discern any difference in terms of knowledge hiding and psychological ownership.

In terms of knowledge-based psychological ownership, knowledge workers working in private sector (3,546±1,51) reported significantly more psychological ownership than their public sector colleagues (3,137±1,716) (Table 10).

In terms of accountability and identity-belonging psychological ownership, knowledge workers in private sector (4,098±0,85 and 4,037±0,737 respectively) scored significantly higher than their counterparts in public sector (3,616±1,08 and 3,604±0,861 respectively). However, sector-related findings should be approached with caution considering the difference between the number of observations.

Table 11: Psychological Ownership and Knowledge Hiding Mean Scores According to the Position of Knowledge Workers

(N=305)	Group	N	Levene Statistic	Sig.*	Mean	SD	F	p	Difference
Evasive hiding	top level executive	7	1,372	0,251	1,929	1,018	9,261	0,000	3>2 3>4
	mid level executive	29			2,112	1,300			
	expert	114			2,996	1,257			
	white-collar worker	155			2,250	1,269			
Playing dumb	top level executive	7	0,516	0,671	1,821	1,419	11,947	0,000	3>2 3>4
	mid level executive	29			1,931	1,180			
	expert	114			3,042	1,273			
	white-collar worker	155			2,255	1,224			
Rationalized hiding	top level executive	7	6,647	**0,000**	2,214	1,150	11,221 12,323**	0,000 0,000	3>2 3>4
	mid level executive	29			2,517	1,390			
	expert	114			3,546	1,302			
	white-collar worker	155			2,632	1,564			
KHmean	top level executive	7	2,786	**0,041**	1,988	0,853	14,729 16,418**	0,000 0,000	3>2 3>4
	mid level executive	29			2,187	1,152			
	expert	114			3,194	1,067			
	white-collar worker	155			2,379	1,185			
KPOmean	top level executive	7	2,176	0,091	2,571	1,988	2,79	0,041	
	mid level executive	29			3,391	1,499			
	expert	114			3,734	1,542			
	white-collar worker	155			3,252	1,587			
Territoriality	top level executive	7	0,244	0,865	3,250	0,817	2,542	0,056	
	mid level executive	29			3,931	1,002			

	expert	114			4,158	0,946			
	white-collar worker	155			4,103	0,855			
Self efficacy	top level executive	7	6,013	**0,001**	3,381	1,311	2,725 2,972**	0,065 0,046	
	mid level executive	29			3,586	1,356			
	expert	114			4,029	0,935			
	white-collar worker	155			4,200	0,950			
Account-ability	top level executive	7	0,485	0,693	4,429	0,833	0,813	0,488	
	mid level executive	29			4,023	0,882			
	expert	114			3,909	1,005			
	white-collar worker	155			4,009	0,905			
Identity belonging	top level executive	7	5,146	**0,002**	4,048	1,397	5,32 3,353**	0,006 0,047	2>3 4>3
	mid level executive	29			4,190	0,680			
	expert	114			3,675	0,822			
	white-collar worker	155			4,010	0,773			
POmean	top level executive	7	2,001	0,114	3,795	0,834	1,998	0,114	
	mid level executive	29			3,981	0,640			
	expert	114			3,906	0,597			
	white-collar worker	155			4,069	0,544			

**Equal variances not assumed if p<0,05.*
***Welch and Brown-Forsyth F scores respectively.*

In terms of knowledge hiding overall mean scores (Table 11), experts (3,194±1,067) report significantly more knowledge hiding than top-level executives (1,988±0,853) and mid-level executives (2,1187±1,152) (F=14,729; p=0,000 < 0,05). Experts also report significantly more knowledge hiding in terms of evasive hiding (F=9,261; p=0,000 < 0,05), playing dumb (F=11,947;p=0,000 < 0,05) and rationalized hiding (F=11,221; p=0,000 < 0,05).

In terms of identity-belonging psychological ownership mid-level executives (4,190±0,680) and white-collar workers (4,010±0,773) report significantly more psychological ownership than experts (3,675±0,822).

Whereas experts score highest among knowledge hiding subscales, they score lower for identity-belonging psychological ownership, which represents organization-based psychological ownership. This finding confirms the assumption that this level of knowledge workers most particularly own their knowledge rather than their organization. Of all the other hierarchical levels, experts psychologically own their knowledge more than they psychologically own their organization.

Table 12: Psychological Ownership and Knowledge Hiding Mean Scores According to the Education of Knowledge Workers

(N=305)	Group	N	Levene Statistic	Sig.*	Mean	SD	F	p	Difference
Evasive hiding	college	3	1,388	0,262	1,417	0,722	1,252	0,291	
	university	252			2,529	1,311			
	master's	43			2,564	1,364			
	doctor's	7			1,893	1,117			
Playing dumb	college	3	3,672	**0,013**	1,417	0,520	4,830 2,627**	0,032 0,062	
	university	252			2,542	1,325			
	master's	43			2,494	1,276			
	doctor's	7			1,857	0,802			
Rationalized hiding	college	3	5,081	**0,002**	1,167	0,289	27,323 2,349**	0,000 0,106	2>1 3>1
	university	252			2,991	1,535			
	master's	43			2,919	1,354			
	doctor's	7			2,571	1,638			
KHmean	college	3	3,721	**0,012**	1,333	0,507	6,371 3,236**	0,016 0,034	
	university	252			2,687	1,224			
	master's	43			2,659	1,115			
	doctor's	7			2,107	0,885			
KPOmean	college	3	2,585	0,053	2,444	1,503	3,946	0,009	2>4
	university	252			3,545	1,558			
	master's	43			3,078	1,649			
	doctor's	7			1,857	1,069			
Territoriality	college	3	2,159	0,093	2,833	0,764	5,02	0,002	2>3
	university	252			4,165	0,888			
	master's	43			3,721	0,976			
	doctor's	7			4,107	0,349			
Selfefficacy	college	3	2,25	0,083	3,778	0,839	0,469	0,704	
	university	252			4,090	1,038			
	master's	43			3,915	0,957			
	doctor's	7			3,952	0,356			
Account-ability	college	3	1,309	0,271	3,222	0,192	2,336	0,074	
	university	252			4,042	0,930			
	master's	43			3,752	0,943			
	doctor's	7			3,571	1,134			
Identity belonging	college	3	1,452	0,228	3,833	1,443	3,189	0,024	2>4
	university	252			3,944	0,787			
	master's	43			3,806	0,896			
	doctor's	7			3,024	0,802			

	college	3			3,458	0,452			
POmean	university	252	0,352	0,788	4,045	0,563	4,528	0,004	2>3
	master's	43			3,795	0,656			
	doctor's	7			3,571	0,437			

**Equal variances not assumed if p<0,05.*
***Asymptotically F distributed. Welch and Brown-Forsyth F scores respectively.*

There is an asymmetrical distribution among education sub-categories which is why the below comparisons should be taken with caution and evaluations be only considered within the scope of the observations encompassed by our sample (Table 12).

In terms of rationalized hiding, university graduate knowledge workers (2,991±1,535) and those with master's degree (2,919±1,354) report significantly more knowledge hiding than college graduates (1,167±0,289) (F=27,323; p=0,000 < 0,05).

In terms of knowledge-based psychological ownership, university graduate knowledge workers (3,545±1,558) report significantly more knowledge hiding than those with doctor's degree (1,857±1,069) (F=3,946; p=0,009).

In terms of identity-belonging psychological ownership, university graduate knowledge workers (3,944±0,787) report significantly more knowledge hiding than those with master's degree (3,806±0,896) (F=3,189; p=0,024 < 0,05).

In terms of psychological ownership overall mean scores, university graduate knowledge workers (4,045±0,563) reported significantly more knowledge hiding than those with master's degree (3,795±0,656) (F=4,528; p=0,004< 0,05).

Table 13: Psychological Ownership and Knowledge Hiding Mean Scores According to the Experience of Knowledge Workers

(N=305)	Group	N	Levene Statistic	Sig.*	Mean	SD	F	p	Difference
	0-5 years	138			2,489	1,372			
	6-10	115			2,744	1,259			
Evasive hiding	11-15	31	1,986	0,060	2,315	1,221	3,866	0,040	2>4
	16-20	17			1,779	0,984			
	21 +	4			1,000	0,000			
Playing	0-5 years	138	7,16	**0,000**	2,475	1,370	12,406	0,000	1>4

dumb	6-10	115			2,809	1,229	8,415**	0,000	2>4 3>4
	11-15	31			2,266	1,235			
	16-20	17			1,456	0,669			
	21 +	4			1,375	0,750			
Rationalized hiding	0-5 years	138	12,761	**0,000**	2,813	1,610	19,687 11,732**	0,000 0,000	1>4 1>5 2>3 2>4
	6-10	115			3,420	1,376			
	11-15	31			2,605	1,402			
	16-20	17			1,897	0,662			
	21 +	4			1,563	0,427			
KHmean	0-5 years	138	11,716	**0,000**	2,592	1,287	24,998 12,276**	0,000 0,000	1>4 1>5 2>4 2>5 3>5
	6-10	115			2,991	1,091			
	11-15	31			2,395	1,079			
	16-20	17			1,711	0,558			
	21 +	4			1,313	0,322			
KPOmean	0-5 years	138	0,979	0,419	3,389	1,617	2,943	0,021	2>4
	6-10	115			3,632	1,521			
	11-15	31			3,570	1,559			
	16-20	17			2,333	1,359			
	21 +	4			2,583	1,873			
Territoriality	0-5 years	138	0,958	0,431	4,196	0,818	2,787	0,027	1>4
	6-10	115			4,098	0,988			
	11-15	31			3,831	0,900			
	16-20	17			3,544	0,965			
	21 +	4			4,375	0,479			
Self-efficacy	0-5 years	138	1,981	0,097	4,191	0,896	11,171	0,000	1>4 2>4 3>4
	6-10	115			4,145	0,945			
	11-15	31			4,000	0,970			
	16-20	17			2,588	1,283			
	21 +	4			3,750	1,371			
Account-ability	0-5 years	138	0,932	0,445	3,925	0,903	2,628	0,035	2>4
	6-10	115			4,110	0,991			
	11-15	31			4,032	0,776			
	16-20	17			3,392	0,988			
	21 +	4			4,417	0,788			
Identity belonging	0-5 years	138	1,639	0,164	3,935	0,834	3,102	0,016	4>2
	6-10	115			3,746	0,815			
	11-15	31			4,027	0,740			
	16-20	17			4,324	0,655			
	21 +	4			4,542	0,534			
POmean	0-5 years	138	0,156	0,960	4,046	0,522	2,342	0,055	
	6-10	115			3,977	0,623			

11-15	31	3,974	0,641
16-20	17	3,629	0,593
21 +	4	4,328	0,555

**Equal variances not assumed if p<0,05.*
***Asymptotically F distributed. Welch and Brown-Forsyth F scores respectively.*

In terms of evasive hiding, knowledge workers with 6-10 years of experience (2,744±1,259) report significantly more knowledge hiding than knowledge workers with 16-20 years of experience (1,779±0,984) (F=3,866; p=0,040 < 0,05). More experienced knowledge workers seem to opt for less evasively hiding knowledge (Table 13).

In terms of playing dumb, knowledge workers with 0-5 years of experience (2,475±1,370), 6-10 years of experience (2,809±1,229), and 11-15 years of experience (2,266±1,235) report significantly more knowledge hiding than knowledge workers with 16-20 years of experience (1,456±0,669) (F=12,406; p=0,000 < 0,05). More experienced knowledge workers seem to opt for less playing dumb.

In terms of rationalized hiding, knowledge workers with 0-5 years of experience (2,813±1,610) and 6-10 years of experience (3,420±1,376) report significantly more knowledge hiding than knowledge workers with 16-20 years of experience (1,897±0,662) (F=19,687; p=0,000 < 0,05). Knowledge workers with 0-5 years of experience (2,813±1,610) also report significantly more knowledge hiding than those with 21+ years of experience (1,563±0,427). Knowledge workers with 6-10 years of experience (3,420±1,376) report significantly more knowledge hiding than knowledge workers with 16-20 years of experience (1,897±0,662) and 21+ years of experience (1,563±0,427). More experienced knowledge workers seem to opt for less rationalized hiding.

In terms of knowledge-based psychological ownership, knowledge workers with 6-10 years of experience (3,632±1,617) report significantly more psychological ownership than knowledge workers with 16-20 years of experience (2,333±1,359) (F=2,943; p=0,021 < 0,05). More experienced knowledge workers seem to opt for less knowledge-based psychological ownership. This finding is compatible with the previous

observation that younger knowledge workers seem to opt for more knowledge-based psychological ownership compared to their older colleagues.

In terms of territoriality, knowledge workers with 0-5 years of experience (4,196±0,818) report significantly more psychological ownership than knowledge workers with 16-20 years of experience (3,544±0,965) (F=2,787; p= 0,027 < 0,05). More experienced knowledge workers seem to opt for less territoriality.

In terms of self-efficacy psychological ownership, knowledge workers with 0-5 years of experience (4,191±0,896), 6-10 years of experience (4,145±0,945), and 11-16 years of experience (4,000±0,970) report significantly more psychological ownership than knowledge workers with 16-20 years of experience (2,588±1,283) (F=11,171; p=0,000 < 0,05). More experienced knowledge workers seem to opt for less self-efficacy psychological ownership.

In terms of accountability psychological ownership, knowledge workers with 6-10 years of experience (4,110±0,991) report significantly more psychological ownership than knowledge workers with 16-20 years of experience (3,392±0,988) (F=2,628; p=0,035 < 0,05). More experienced knowledge workers seem to opt for less accountability psychological ownership.

In terms of identity-belonging psychological ownership, knowledge workers with 16-20 years of experience (4,324±0,655) report significantly more psychological ownership than knowledge workers with 6-10 years of experience (3,746±0,815) (F=2,628; p=0,035 < 0,05). More experienced knowledge workers seem to opt for more identity-belonging psychological ownership.

Hypotheses Testing

The first proposition and assumption of the study is *"Knowledge hiding does exist among knowledge workers",* which is partly acknowledged and confirmed by the scale mean score whereby the investigated phenomenon is proved to be existing and operationalized by the knowledge hiding scale.

The scale mean scores that were obtained by computing new variables corresponding to the knowledge hiding scale mean (2,66, although non-significant, p=,413 > ,05), psychological ownership scale mean (3,99, p=,00 < ,05) and knowledge-based psychological ownership scale mean (3,43, p=,00 < ,05) were all greater than the baseline of 2,60 based on 5-point Likert scale as compared via the one sample t tests. This confirmed the assumptions that the investigated phenomena do indeed exist and the respondents do hide knowledge, psychologically own a target object, and have knowledge-based psychological ownership. There are also variances among the subscale mean scores (Table 14). Of the knowledge hiding subscales, rationalized knowledge hiding has the highest mean score (2,95, p=,00 < ,05) and this is the only statistically significant mean score of all the knowledge hiding subscales. As with psychological ownership scale, territoriality dimension is scored the highest (4,08, p=,00 < ,05). Knowledge-based psychological ownership scale as a one-dimensional construct has a scale mean of 3, 43 (p=,00 < ,05) out of 5.00.

Table 14: Scale Means

Subscale Mean Scores with One Sample t Test

(N=305, t=2,60[13])	Mean	SD	t	Sig.
Territoriality	4,08	0,910	28,546	0,000
Selfefficacy	4,05	1,014	25,132	0,000
Accountability	3,98	0,940	25,698	0,000
Identitybelonging	3,9	0,818	27,822	0,000
Rationalized	2,95	1,513	4,079	0,000
Evasive	2,51	1,313	-1,221	0,223
Playingdumb	2,51	1,308	-1,226	0,221
POmean	3,99	0,583	41,688	0,000
KPOmean	3,43	1,585	9,139	0,000
KHmean	2,66	1,204	0,82	0,413

Turkish knowledge workers participating in this study reported more territoriality psychological ownership than promotion-oriented forms of the attitude. In terms of knowledge hiding, the observations display a higher tendency to hide knowledge by

[13] 5-point Likert scale with 4 intervals and .80 increments equal to a midpoint of 2.60.

rationalizing the reason for doing so than by resorting to more deviant means such as acting like ignorant or trying to evade from sharing knowledge as much as possible. The respondents have an indifferent attitude towards knowledge hiding by playing the dumb and by evading as is demonstrated by the central tendency. Significance levels also prove that the respondents are indifferent in terms of their inclination towards these two forms of knowledge hiding (p<, 05).

Correlation analysis was used to test the linear relationships between the research variables and between the constructs (Table 15).

There is a significant negative relationship between psychological ownership feelings of knowledge workers and their knowledge hiding behaviour (p<, 05), which means as psychological ownership increases, knowledge hiding decreases. H1 is thus confirmed.

There is a significant positive relationship between knowledge-based psychological ownership and knowledge hiding. According to this finding, as knowledge-based psychological ownership increases, knowledge hiding increases too. H2 is thus confirmed.

Self-efficacy psychological ownership is significantly positively related to evasive hiding, rationalized hiding and playing the dumb respectively. According to this finding, as self-efficacy psychological ownership increases, knowledge hiding in the form of evading, rationalizing and playing the dumb increases as well. This finding is contrary to our expectations as we assumed that all promotion-oriented forms of psychological ownership would be negatively related to knowledge hiding. Thus, H3a which states that knowledge workers with self-efficacy psychological ownership are less likely to report knowledge hiding is rejected.

There is no statistically significant relationship between accountability psychological ownership and knowledge hiding subscales. Thus, H3b which states that knowledge workers with accountability psychological ownership are less likely to report knowledge hiding is rejected.

Identity-belonging psychological ownership is significantly negatively related to playing dumb, evasive hiding and rationalized hiding. According to this finding, as identity-belonging psychological ownership increases, knowledge hiding in the form of evading, playing the dumb and rationalizing decreases. This finding is compatible with our initial expectations and complies with the hypotheses that knowledge workers with identity psychological ownership and sense of belongingness psychological ownership are less likely to report knowledge hiding. Because self-identity and belongingness psychological ownership dimensions in the original scale did not come out but instead combined to form a single scale in our study, two different hypotheses that were formed in their sake needed to be combined as well. H3c and H3d are thus both confirmed.

Territoriality psychological ownership is significantly negatively related to playing the dumb. That is, as territoriality psychological ownership increases, knowledge hiding in the form of playing the dumb decreases. There is no other statistically significant correlation between territoriality and knowledge hiding subscales. As contrary to our expectations, knowledge workers with territoriality psychological ownership are not more likely to report knowledge hiding, thus H4a is rejected.

Evasive hiding, playing dumb and rationalized hiding significantly positively correlated with knowledge-based psychological ownership. The more the knowledge-based psychological ownership, the more the knowledge hiding by rationalizing, evading and playing the dumb respectively. These findings are compatible with H5 that knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding. H5 is confirmed.

Promotive psychological ownership subscales of accountability and self-efficacy are significantly positively related to knowledge-based psychological ownership whereas prevention-orientated territoriality is negatively so. There is a significant negative correlation between territoriality and knowledge-based psychological ownership. As territoriality increases, knowledge-based psychological ownership decreases. Knowledge-based psychological ownership does not promote territoriality, and nor does vice versa. H5a which states that knowledge workers with knowledge-based

psychological ownership are more likely to report knowledge hiding and this is enhanced further by territorial feelings upon one's knowledge seems to have been falsified. This hypothesis is further tested by a regression model.

Organization-based psychological ownership (identity-belonging psychological ownership) significantly negatively correlates with knowledge hiding. As the organization-based psychological ownership increases, knowledge hiding decreases. Thus, H6 which states that knowledge workers with organization-based psychological ownership are less likely to report knowledge hiding is accepted.

Table 15: Correlations among All Research Variables

	KH playingdumb	KH evasive	KH rationalized	KH mean	PO identity-belonging	PO selfefficacy	PO accountability	PO territoriality	PO mean	KPO mean
KHplayingdumb	1									
KHevasive	,629**	1								
KHrationalized	,606**	,698**	1							
KHmean	,844**	,883**	,892**	1						
POidentity-belonging	-,152**	-,209**	-,188**	-,210**	1					
POselfefficacy	,634**	,993**	,693**	,881**	-,213**	1				
POaccountability	-0,101	-0,106	0,064	-0,049	,383**	-,114*	1			
POterritoriality	-,142*	-0,03	-0,096	-0,102	-0,082	-0,043	-,119*	1		
POmean	-,128*	-,152**	-0,086	-,138*	,855**	-,162**	,718**	0,037	1	
KPOmean	,460**	,502**	,610**	,605**	-0,03	,484**	,153**	-,167**	0,063	1

**p< 0.01

* p< 0.05

Regression models were constructed in order to test more complex and sophisticated hypotheses and to reveal more deeply-grounded relationships among the latent research variables.

Table 16: The Effect of Psychological Ownership on Knowledge Hiding

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Knowledge Hiding	Constant	4,761	1,235	,043	8,061	,000	,216
	Psychological Ownership	,577					

Regression model that measures the effect of overall psychological ownership feelings on knowledge hiding is statistically significant (F=8,061; p=, 043 < ,05) (Table 16). The variance explained of knowledge hiding behaviour of the select knowledge workers via the level of psychological ownership reported by the respondents is 21, 6 %. H1a, which states that psychological ownership is a predictor of knowledge hiding, is thus confirmed, although the remaining 70, 4 % of the variance is accounted for by other variables not included in this present model and within the scope of this study.

Table 17: The Effect of Knowledge-based Psychological Ownership on Knowledge Hiding

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Knowledge Hiding	Constant	1,081	8,204	,000	174,512	,000	,363
	Knowledge-based PO	,605					

Regression model that measures the effect of knowledge-based psychological ownership on knowledge hiding is statistically significant (F=174,512; p=, 000 < ,05) (Table 17). The variance explained of knowledge hiding behaviour of the select knowledge workers via the level of their self-reported knowledge-based psychological ownership is 36, 3 %. H2a, which states that knowledge-based psychological ownership is a predictor of knowledge hiding, is thus confirmed, although the remaining 60, 7 % of the variance is accounted for by other variables not covered within the scope of this study.

Table 18: The Effect of Promotive Psychological Ownership on Evasive Hiding

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Evasive hiding	Constant	3,007	6,679	,000	8,618	,000	,070
	Self-efficacy	,242	4,044	,000			
	Accountability	-,087	-1,451	,148			
	Identity-belonging	-,205	-3,554	,000			

Regression analysis that measures the effect of promotion-orientated forms of psychological ownership of self-efficacy, accountability and identity-belonging on knowledge hiding subscale of evasive hiding is statistically significant (F=8,618; p=,000 < ,05) (Table 18). The explanatory power of self-efficacy, accountability and identity-belonging psychological ownership in terms of the variance in evasive hiding is relatively low (R^2=, 070 or 7%). Self-efficacy psychological ownership leads to an increase in evasive hiding behaviour of the knowledge workers (β=, 242). Accountability psychological ownership does not affect the level of evasive hiding behaviour of the knowledge workers (p=, 148 >, 05). Identity-belonging psychological ownership leads to a decrease in knowledge hiding behaviour of knowledge workers (β=-,205), which is compatible with our assumptions that organization-based psychological ownership is negatively related to knowledge hiding.

Table 19: The Effect of Promotive Psychological Ownership on Playing Dumb

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Playing dumb	Constant	2,838	6,241	,000	5,571	,001	,043
	Self-efficacy	,207	3,406	,001			
	Accountability	-,081	-1,337	,182			
	Identity-belonging	-,154	-2,63	,009			

Regression analysis that measures the effect of promotion-orientated forms of psychological ownership of self-efficacy, accountability and identity-belonging on knowledge hiding subscale of playing dumb is statistically significant (F=5,571; p=,001 < ,05) (Table 19). The explanatory power of self-efficacy, accountability and identity-

belonging psychological ownership in terms of the variance in playing dumb is relatively low (R^2=, 043 or 4,3%). Self-efficacy psychological ownership leads to an increase in playing dumb behaviour of the knowledge workers (β=, 207). Accountability psychological ownership does not affect the level of playing dumb behaviour of the knowledge workers (p=, 182 >, 05). Identity-belonging psychological ownership leads to a decrease in knowledge hiding behaviour of knowledge workers (β=-,154), which is compatible with our assumptions that organization-based psychological ownership is negatively related to knowledge hiding.

Table 20: The Effect of Promotive Psychological Ownership on Rationalized Hiding

Dependent variable	**Independent variable**	**Beta**	**t**	**p**	**F**	**Model (p)**	**R^2**
Rationalized hiding	Constant	3,416	6,628	,000	9,910	,000	,081
	Self-efficacy	,181	3,049	,003			
	Accountability	,067	1,125	,262			
	Identity-belonging	-,276	-4,802	,000			

Regression analysis that measures the effect of promotion-orientated forms of psychological ownership of self-efficacy, accountability and identity-belonging on knowledge hiding subscale of rationalized hiding is statistically significant (F=9,910; p=,000 < ,05) (Table 20). The explanatory power of self-efficacy, accountability and identity-belonging psychological ownership in terms of the variance in rationalized hiding is relatively low (R^2=, 081 or 8,1%). Self-efficacy psychological ownership leads to an increase in rationalized hiding behaviour of the knowledge workers (β=, 181). Accountability psychological ownership does not affect the level of rationalized hiding behaviour of the knowledge workers (p=, 262 >, 05). Identity-belonging psychological ownership leads to a decrease in knowledge hiding behaviour of knowledge workers (β=-,276), which is compatible with our assumptions that organization-based psychological ownership is negatively related to knowledge hiding.

The previous three regression models show that H3 is partly confirmed.

Table 21: The Effect of Preventive and Knowledge-based Psychological Ownership on Evasive Hiding

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Evasive hiding	Constant	,859	2,660	,008	52,296	,000	,249
	Knowledge-based PO	,499	10,003	,000			
	Territoriality	,039	,787	,432			

Regression analysis that measures the effect of prevention-orientated form of psychological ownership of territoriality and knowledge-based psychological ownership on knowledge hiding subscale of evasive hiding is statistically significant (F=52,296; p=,000 < ,05) (Table 21). The explanatory power of territoriality psychological ownership plus knowledge-based psychological ownership in terms of the variance in evasive hiding is 24, 9%. Knowledge-based psychological ownership leads to an increase in rationalized hiding behaviour of the knowledge workers (β=, 499). Territoriality psychological ownership does not affect the level of evasive hiding behaviour of the knowledge workers (p=, 432 >, 05). The ineffectiveness of territoriality is explaining the overall variance in knowledge hiding behaviour is incompatible with our initial assumptions which predicted territoriality as a proximate factor in explicating knowledge withholding and evading intentions of knowledge workers.

Table 22: The Effect of Preventive and Knowledge-based Psychological Ownership on Playing Dumb

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Playing dumb	Constant	,828	2,514	,012	41,682	,000	,211
	Knowledge-based PO	,455	8,903	,000			
	Territoriality	,067	1,306	,192			

Regression analysis that measures the effect of prevention-orientated form of psychological ownership of territoriality and knowledge-based psychological ownership on knowledge hiding subscale of playing dumb is statistically significant (F=41,682; p=,000 < ,05) (Table 22). The explanatory power of territoriality psychological

ownership plus knowledge-based psychological ownership in terms of the variance in playing dumb is 21, 1%. Knowledge-based psychological ownership leads to an increase in playing dumb behaviour of the knowledge workers (β=, 455). Territoriality psychological ownership does not affect the level of playing dumb behaviour of the knowledge workers (p=, 192 >, 05). The ineffectiveness of territoriality is explaining the overall variance in knowledge hiding behaviour is incompatible with our initial assumptions which predicted territoriality as a proximate factor in explicating knowledge withholding and fooling intentions of knowledge workers.

Table 23: The Effect of Preventive and Knowledge-based Psychological Ownership on Rationalized Hiding

Dependent variable	Independent variable	Beta	t	p	F	Model (p)	R^2
Rationalized hiding	Constant	,730	2,143	,033	89,920	,000	,369
	Knowledge-based PO	,607	13,285	,000			
	Territoriality	,035	,760	,448			

Regression analysis that measures the effect of prevention-orientated form of psychological ownership of territoriality and knowledge-based psychological ownership on knowledge hiding subscale of rationalized hiding is statistically significant (F=89,920; p=,000 < ,05) (Table 23). The explanatory power of territoriality psychological ownership plus knowledge-based psychological ownership in terms of the variance in rationalized hiding is 36, 9%, which is by far the highest variance explained of all knowledge hiding subscales. Knowledge-based psychological ownership leads to an increase in rationalized hiding behaviour of the knowledge workers (β=, 607). Territoriality psychological ownership does not affect the level of rationalized hiding behaviour of the knowledge workers (p=, 448 > ,05). The ineffectiveness of territoriality is explaining the overall variance in knowledge hiding behaviour is incompatible with our initial assumptions which predicted territoriality as a proximate factor in explicating knowledge withholding and rationally concealing intentions of knowledge workers.

Territoriality psychological ownership proves to be ineffective in terms of explicating knowledge hiding behaviour in each component of the measurement tool. So, H4 is

rejected. H5a which states that knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding and this is enhanced further by territorial feelings upon one's knowledge is also rejected.

Table 24: A Summary of the Research Hypothesis and Analyses Results

HYPOTHESES	RESULTS
H1: There is a negative and causal relationship between psychological ownership and knowledge hiding.	**Confirmed**
H1a: Psychological ownership is a predictor of knowledge hiding.	**Confirmed**
H2: There is a positive and causal relationship between knowledge hiding and knowledge-based psychological ownership.	**Confirmed**
H2a: Knowledge-based psychological ownership is a predictor of knowledge hiding.	**Confirmed**
H3: Knowledge workers with promotion psychological ownership are less likely to report knowledge hiding.	**Partly Confirmed**
H3a: Knowledge workers with self-efficacy psychological ownership are less likely to report knowledge hiding.	**Rejected**
H3b: Knowledge workers with accountability psychological ownership are less likely to report knowledge hiding.	**Rejected**
H3c: Knowledge workers with sense of belongingness psychological ownership are less likely to report knowledge hiding.	**Confirmed**
H3d: Knowledge workers with self-identity psychological ownership are less likely to report knowledge hiding.	**Confirmed**
H4: Knowledge workers with prevention psychological ownership are more likely to report knowledge hiding.	**Rejected**
H4a: Knowledge workers with territoriality psychological ownership are more likely to report knowledge hiding.	**Rejected**
H5: Knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding.	**Confirmed**
H5a: Knowledge workers with knowledge-based psychological ownership are more likely to report knowledge hiding and this is enhanced further by territorial feelings upon one's knowledge.	**Rejected**
H6: Knowledge workers with organization-based psychological ownership are less likely to report knowledge hiding.	**Confirmed**

Qualitative Data

The qualitative data collected by means of an open-ended question regarding any sector-specific reason behind knowledge hiding as perceived by the respondent was coded into NVivo 10 for Windows qualitative data analysis software in order to discern any regular pattern that might emerge from the totality of responses. An occupation-based "attributes" category was created under case nodes in order to sort the respondents' statements according to their occupation. Within this assortment, a holistic approach, rather than an atomistic analysis of the written data was adopted and the frequency of the words used by the respondents was regarded as a literal indicator of their attitude in terms of knowledge hiding behaviour. To explore the codes and organize them in a meaningful way, respondents' answers to the open-ended question were first transcribed into a word document with each occupation on a different column to be easily allocated under attributes, and then subjected to word frequency analysis. Of the 16 different occupational subcategories, the most frequently used words of some groups that were meaningful nouns and adjectives or verbs are as follows; the word and derivatives of the word "confidentiality" (12) by military officers (n=34), the word and derivatives of the word "knowledge" (12) by software developers (n=53), the word and derivatives of the word "share" (10) by consultants (n=19), the word and derivatives of the word "help" (8) by medical doctors (n=23), the word and derivatives of the word "sector" (8) by accountants (n=18), the word and derivatives of the word "responsibility" (5) by business executives (n=20), and the word and derivatives of the word "competition" (4) by engineers (n=19). Overall, top ten most frequently used words are; "knowledge" (28), "share" (27), "help" (25), "my organization" (24), "hide" (20), "colleague" (18), "do not share" (16), "do not hide" (15), "appropriate" (12), and "confidentiality" (12). Some exemplary statements are as follows; *"I share my expert knowledge as long as I believe that the requesting party could appreciate it" (A software developer). "I am supposed to share my knowledge for the good of humankind by verbally warning them and physically treating them" (A medical doctor).* "*Superior-subordinate relationship*

requires that I do whatever I am commanded to do. In addition to that, confidentiality of knowledge is a top priority in defence sector" (A naval lieutenant).

CHAPTER V: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

In this part of the study, conclusions drawn from the findings of the field research and appertaining recommendations will take place.

Discussion and Conclusions

The study regarding the effect of psychological ownership on knowledge hiding as measured through the select knowledge workers that participated in our study resulted in the following conclusions.

The psychological ownership levels of the knowledge workers were measured through four different subscales including self-efficacy (mean score=4, 05), accountability (3, 98), identity-belonging (3, 9) and territoriality (4, 08). According to scale mean scores, the respondents have high levels of psychological ownership feelings in terms of each subscale of the measurement tool. That is, knowledge workers participating in our study reported high levels of psychological ownership feelings. In terms of knowledge-based psychological ownership feelings, the respondents reported relatively high levels of ownership (3, 43) as well.

The knowledge hiding levels of the knowledge workers were analysed through three different dimensions including evasive hiding (2, 51), playing dumb (2, 51) and rationalized hiding (2, 95). According to scale mean scores, the respondents have reported moderate levels of knowledge hiding behaviour. That is, knowledge workers participating in our study have moderate levels of knowledge hiding attitudes, and the rationalized hiding form of knowledge scale is the only statistically significant form of all the subscales and it is scored the highest. Turkish knowledge workers choose to rationalize their reason for withholding knowledge by stating an acceptable and reasonable excuse (even if not correct or honest) for not succumbing to the request of a co-worker. The respondents have an indifferent attitude towards knowledge hiding by playing the dumb and by evading as is demonstrated by their central tendency. Significance levels also prove that the respondents are indifferent in terms of their

inclination towards the other two forms (i.e. evasive hiding and playing dumb) of knowledge hiding (p< ,05).

The psychological ownership reported by the knowledge workers participating in our study is more closely related to a collectivistic oriented form of psychological ownership than an individualistic one in terms of its consequences. The high level of territoriality reported did not translate into and even contribute to a subsequent exclusive ownership as one would expect to find in an individualist western context. The high level of territoriality reported and the high mean scores in terms of other psychological ownership subscales did not result in high correlations with knowledge hiding subscales. Even if the respondents psychologically own their organization (i. e. identity-belonging), their job and tasks (i.e. accountability), and their individual skills and accomplishments (i.e. self-efficacy), this is more of a collective ownership than personal ownership. Our finding is compatible with the proposition that;

> Individualism/ collectivism will play a significant role as a boundary condition in the development of job-and organization-based psychological ownership, such that individualists are more likely to develop feelings of exclusive ownership, while collectivists are more likely to develop feelings of shared ownership (Pierce & Jussila, 2011, p.57).

The following hypothesis by Pierce & Jussila (2011) that establishes a relationship between the type of psychological ownership *i.e.* individualist or collectivist, and outcomes with an emphasis on cross-cultural differences is the most probable reason underlying the results of our study;

> The effects of psychological ownership (for example, assumption of personal risk; taking care/nurturance of the owned object) will be stronger under conditions of individualistic versus collectivistic values. (Thus, individualism-collectivism will moderate the psychological ownership-outcome relationship.) (p.150).

The different socio-cultural context of Turkish organizations demonstrated completely dissimilar outcomes. The subsequent correlations followed suit as well.

Self-efficacy psychological ownership, which is about the perceived control over and effectance feelings towards a target object/subject, is significantly positively related to

evasive hiding, rationalized hiding and playing the dumb respectively. According to this finding, as self-efficacy psychological ownership increases, knowledge hiding in the form of evading, rationalizing and playing the dumb increases as well. This finding is contrary to our expectations as we assumed that all promotion-oriented forms of psychological ownership would be negatively related to knowledge hiding. We find that Turkish knowledge workers with more self-efficacy psychological ownership engage in significantly more knowledge hiding ($p < ,05$). As their perceived sphere of control and feelings of efficacy enlarge, Turkish knowledge workers hiding behaviour soar. Although we could not discern a regular pattern as regards organizational status and knowledge hiding relationship, this finding might have its roots in organizational hierarchy of the respondents. The sphere of control rises with organizational status and span of control, which might in turn affect the value and confidentiality of the knowledge owned and the subsequent intention to share. Moreover, it is also plausible to find knowledge workers hiding more of their knowledge on ground of competitive compulsions. The so-called "One man" syndrome might underlie the linear relationship between self-efficacy psychological ownership and knowledge hiding. According to this line of thought, as the control over the target rises, so does the fear of losing the ensuing privileges.

There is no statistically significant relationship between accountability psychological ownership and knowledge hiding subscales. Turkish knowledge workers participating in our study seem indifferent in terms of knowledge hiding as anchored by their predisposition to being held/ holding others accountable for their organizational tasks. Transparency and accountability in each phase of organizational operations and task processes is not a traditional part of doing business in Turkish business culture and asymmetrical information and non-delegation of responsibility to lower levels of the hierarchy shape most of the non-corporate workplaces still in our country. In this context, non-correlational relationship between accountability and knowledge hiding subscales might stem from the business culture of the surveyed respondents' respective workplaces. Though high levels of accountability are recorded, in practice the individuals at lower levels of the organizational hierarchy are not expected to hold their

superiors or seniors accountable for their practices. Assuming accountability is not an integrated and internalized part of the business culture in the respondents' workplaces, no association whatsoever with knowledge hiding intentions and behaviour is likely to be established in practice.

Identity-belonging psychological ownership as we termed it, is significantly negatively related to evasive hiding, rationalized hiding and playing the dumb respectively (p< ,05). According to this finding, as identity-belonging psychological ownership increases, knowledge hiding in the form of evading, playing the dumb and rationalizing decreases. As the surveyed knowledge workers' feelings of self-efficacy and belongingness towards their organization rise, they become united and even one with the organization, which reduces the likelihood that they will engage in counterproductive work behaviours. Identifying with the organization and feeling as if they belong to the organization/the organization belongs to them, the select knowledge workers tend to be more altruistic towards and work for the good of the organization even at the price of their personal interests. This finding is compatible with the following hypothesis by Pierce & Jussila (2011); "*There is a negative relationship between organization-based psychological ownership and counterproductive organizational behaviours that are consciously directed toward the diminution of the target of ownership (that is, the organization*) (p.106).

Territoriality psychological ownership is significantly negatively related to playing the dumb (p< ,05). That is, as territoriality psychological ownership increases, knowledge hiding in the form of playing the dumb decreases. There is no other statistically significant correlation between territoriality and knowledge hiding subscales. Contrary to our expectations, knowledge workers with territoriality psychological ownership are not more likely to report knowledge hiding. Here, territoriality realizes not in the sense of defending one's pre-set boundaries and fenced-off space, or an offensive attitude towards third party infringements. The respondents do not own their individual space in a manner to be angry with and act aggressively against their co-workers when they encounter a trespassing. This is also a probable outcome of the business culture where territorial feelings are not perpetuated by an individual concentration upon spatial

divisions and material objects, and where territorial feelings are not so much founded upon corporal goods or concrete brick-and-mortar bodies. As knowledge workers score high in terms of territoriality psychological ownership and this much territorial compulsion does not translate into knowledge hiding, it is proof for the proposition that territoriality realizes on a collective basis rather than on an individual one, and defensive acts would most probably be directed towards outsiders rather than the colleagues working in and sharing the same workplace.

Evasive hiding, playing dumb and rationalized hiding significantly positively correlated with knowledge-based psychological ownership. The more the knowledge-based psychological ownership, the more the knowledge hiding by rationalizing, evading and playing the dumb respectively. Knowledge-based psychological ownership came to be a more proximal predictor of knowledge hiding behaviour than the overall psychological ownership measurement tool with prevention vs. promotion subscales. Although we privileged the latter in terms of its explanatory power to predict the dependent variable, the results showed that this three-item micro-scale is more robust and parsimonious in accounting for the variance in knowledge hiding behaviour of the select knowledge workers. From this study onwards, psychological ownership as encouraged by knowledge-based compulsions (or any other subject, via a rewording of the instrument) could be operationalized by this tool.

There is a significant negative correlation between territoriality and knowledge-based psychological ownership. As territoriality increases, knowledge-based psychological ownership decreases. Knowledge-based psychological ownership does not promote territoriality, and nor does vice versa. We expected knowledge-based psychological ownership and territoriality psychological ownership to have similar effects on knowledge hiding behaviour. Whereas the former provided affirmative evidence for the hypothesized relationship, the latter failed to do so.

The qualitative data demonstrated that occupation-wise the respondents differ in terms of their attitudes towards and reservations in terms of hiding their knowledge. Whereas military officers are concerned about the breach of confidentiality as a potentially

injurious action against their organization, software developers prioritize “knowledge” as the most significant concern underlying their attitude towards knowledge hiding. The consultants who are expected to market and sell their ideas and opinions for pecuniary return emphasize the value of “sharing” as is reflected by their choice of words, whereas medical doctors employ the word “help” in explaining their view about knowledge hiding. The business executives who are expected to assume an inclusionary approach towards their organization and hold everyone accountable for their actions by way of emphasizing the value of responsibility use the word “responsibility”, which is articulative of their (expected) stance towards knowledge hiding. These findings are consistent with and conclusive in terms of occupational expectations from each of these categories. The quantitative analysis provided weak evidence for the occurrence of knowledge hiding among the sample respondents, which is supported by the qualitative data via the employment of the word “share” within the most frequently-used words sequence, second only to the word “knowledge”. “Sharing” outscores “hiding” and “not sharing”, a finding which is reinforced by the subsequent use of the word “help” and “organization” with the possessive pronoun “my”.

Demographic-wise, the sample knowledge workers do not differ in terms of their respective gender as to their knowledge hiding or psychological ownership and knowledge-based psychological ownership attitudes.

In terms of age, no linear or regular pattern is observed for knowledge hiding and psychological ownership subscales to enable substantive inferences. Only in terms of self-efficacy psychological ownership, the first three age groups reported significantly more psychological ownership than the fourth oldest age group. With age diminish the feelings of self-efficacy and perceptions of personal competency. In terms of knowledge-based psychological ownership younger age group reported significantly more psychological ownership over older knowledge workers. The younger knowledge workers seem to opt for more knowledge-based psychological ownership than their older colleagues.

Top three knowledge hiders are military officers, accountants, and software developers. Knowledge workers belonging to these three categories engage in highly complex task assignments as part of their job, which is why we would expect them to more psychologically own their job than those with less complex job designs. However, no significant pattern exists as proof to higher levels of self-efficacy, accountability, identity-belonging or territoriality psychological ownership on their part. Moreover, whereas software developers and military officers score highest among knowledge hiding subscales and knowledge-based psychological ownership, they score the lowest for identity- belonging psychological ownership, which represents organization-based psychological ownership. This finding might be rooted in the assumption that these groups of knowledge workers most particularly own their knowledge rather than their organization. Of all the other knowledge workers, they psychologically own their knowledge more than they psychologically own their organization and the most profoundly so. The high levels of knowledge hiding reported by them does not correlate with and stem from psychological ownership feelings, but rather rests on reservations like confidentiality and complexity of the task that prevents non-expert colleagues from sound appreciation of their labour.

Private sector knowledge workers reported more accountability and identity-belonging psychological ownership than public sector knowledge workers.

Whereas experts score highest among knowledge hiding subscales, they score lower for identity-belonging psychological ownership, which represents organization-based psychological ownership. This finding might be rooted in the assumption that this level of knowledge workers most particularly own their knowledge rather than their organization. Of all the other hierarchical levels, experts psychologically own their knowledge more than they psychologically own their organization.

In terms of education, no linear or regular pattern is observed for knowledge hiding and psychological ownership subscales to enable substantive inferences. In terms of rationalized hiding, university graduate knowledge workers and those with master's degree report significantly more knowledge hiding than college graduates. In terms of

knowledge-based psychological ownership, university graduate knowledge workers report significantly more knowledge hiding than those with doctor's degree. In terms of identity-belonging psychological ownership, university graduate knowledge workers report significantly more knowledge hiding than those with master's degree.

More experienced knowledge workers seem to opt for less evasively hiding knowledge, playing dumb, and rationalized hiding. More experienced knowledge workers seem also to opt for less territoriality, self-efficacy psychological ownership, and accountability psychological ownership. More experienced knowledge workers seem to opt for more identity-belonging psychological ownership. With experience come higher levels of organization-based psychological ownership. Finally, more experienced knowledge workers seem to opt for less knowledge-based psychological ownership. This finding is compatible with the previous observation that younger knowledge workers seem to opt for more knowledge-based psychological ownership compared to their older colleagues. With age and experience diminish knowledge-based psychological ownership feelings.

Overall, the findings of this study contribute to a better understanding of knowledge hiding in the workplace, and more specifically to the impact of psychological ownership on the employees' knowledge hiding behaviours from their colleagues. It also illuminates the relationships among knowledge hiding and psychological ownership subscales in a Turkish organizational-cultural context. Thus, our results contribute to literature on organizational psychology and organizational behaviour as well as knowledge hiding. The scales validated in this study could be utilized in business, educational, psychological, and sociological studies as well.

Recommendations

The previous researchers called for replications of the empirical studies conducted to date on psychological ownership involving different employees, on different jobs, in different organizations, at different times and in different geographical areas (Pierce & Jussila, 2011, p. 276). The importance of this call is rooted in the need for affirmative evidence in support of the existing findings to reveal that they are not biased deviations and the most significantly, to testify the generalizability of the current research

evidence. The same recommendation is congruous in view of the findings of our study. Following are a few research outlets that might be helpful in theory and practice, especially considering the evidence-based managerial practice studies.

A learning orientation versus a performance orientation has been suggested to be influential on knowledge sharing intentions (Matzler & Mueller, 2011). A learning orientated employee is driven by a motivation to develop personal skills and mastery of new situations which necessitates knowledge sharing whereas a performance orientated person is driven by the motivation to take immediate results by avoiding challenges such as knowledge sharing and demonstrating their ability as well as outperforming others. The difference between these two orientations is basically that learning-oriented individuals assume their ability as "shapeable" (incremental theory) whereas performance-oriented individuals assume their ability as "fixed" (entity theory). Based on this differentiation, knowledge sharing intentions and the tendency to engage in knowledge sharing activities could be predicted. Different goal orientations could also account for psychological ownership feelings and knowledge hiding intentions. In line with the goal orientation and knowledge hiding constructs, it could be hypothesized and further tested that whereas performance orientation positively influences knowledge hiding, learning orientation negatively does so.

As individual motivations and social capital have already been empirically proven to be influential on knowledge sharing intentions (Hau et.al, 2013) in the future the effects of social capital on employee knowledge hiding behaviour, tacit or explicit, could be explored.

The effect of complex versus simple job design on employee psychological ownership feelings and the emergence thereof is a previously recommended future research domain. Particularly, the hypothesis that complex job design leads to more psychological ownership of the job via enhanced perceptions of competence compared to simple job design that diminishes employee ownership feelings via routine monotony and repetitiveness that absorbs creative juice is still in need of practical evidence. To date, this recommendation has not been fulfilled.

Knowledge hiding has been measured by a 12-item scale that included questions regarding situations where the respondent "agrees to, pretends to, says to…" in the face of a request by a co-worker demanding a certain knowledge. This scale of knowledge hiding measures the qualitative dimension of the construct rather than the quantitative "how often" part of knowledge hiding. The frequency within which a worker engages in knowledge hiding could be measured by yet another construct in future studies.

The results may indicate that, compared to a heterogeneous sample of accountants, consultants, engineers, medical doctors, software developers, and etc., a more homogenous employee sample may lead to better correspondence between psychological ownership and knowledge hiding, and in turn may be more conducive to studying psychological ownership.

REFERENCES

Abrams, D., & Hogg, M.A. (1998). Prospects for research in group processes and intergroup relations. *Group Processes and Intergroup Relations, 1*: 7-20.

Ackroyd, S., Batt, R., Thompson, P., & Tolbert, P.S. (2004). The Oxford Handbook of Work and Organization. Oxford: Oxford University Press.

Adams, J., Khan, H.T.A., Raeside, R., & White, D. (2007). Research Methods for Graduate Business and Social Science Students. Sage Publications Inc.

Adler, P. A., & Adler, P. (1988). Intense loyalty in organizations: A case study of college athletics. *Administrative Science Quarterly, 33*: 401–417.

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology, 63*: 1–18.

Altman, I., & Haythorn, W. (1967). The ecology of isolated groups. *Behavioral Science, 12(*3): 169-182.

Asatryan, V (n.d). I am what I have: Psychology of mine-ness and consumer behaviour. Retrieved September 15, 2013 from http://www.cbfa.org/Asatryan_Paper_I_Am_Not_My_Own.pdf.

Asatryan, V., & Oh, H. (2008). Psychological ownership theory: An exploratory application in the restaurant industry. *Journal of Hospitality and Tourism Research, 32*(3): 363-386.

Ashforth, B. E. (2001). Role transitions in organizational life: An identity-based perspective. Lawrence Erlbaum Associates, Publishers (LEA), 2001, Mahwah, New Jersey: London.

Ashforth, B.E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Journal, 14*: 20-39.

Avey, J. B., Wernsing, T.S., & Palanski, M.E. (2012). Exploring the process of ethical leadership: The mediating role of employee voice and psychological ownership. *Journal of Business Ethics, 107*: 21-34.

Avey, J.B., Avolio, B.J., Crossley, C.D., & Luthans, F. (2009). Psychological ownership: theoretical entensions, measurement and relation to work outcomes. *Journal of Organizational Behavior, 30*: 173-191.

Baer, M., & Brown, G. (2012). Blind in one eye: How psychological ownership of ideas affects the types of suggestions people adopt. *Organizational Behavior and Human Decision Processes, 118*:60-71.

Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. In Bandura, A. (Ed.), *Self efficacy in changing societies*, pp.1-46, Cambridge, UK: Cambridge University Press.

Baş, T., & Akturan, U. (2013). Nitel Araştırma Yöntemleri: Nvivo ile Nitel Veri Analizi, Örnekleme, Analiz, Yorum. Ankara: Seçkin Yayıncılık.

Beggan, J. K. (1992). On the social nature of nonsocial perception: The mere ownership effect. *Journal of Personality and Social Psychology*, *62*(2): 229-237.

Beggan, J.K., & Brown, E.M. (1993). Association as a psychological justification for ownersip. *The Journal of Psychology, 128*(4): 365-380.

Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research, 15*.

Bentler, P.M., & Bonett, D.G. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin, 88*: 588-606.

Bernhard, F., & O'Driscoll, M. P. (2011). Psychological ownership in small family-owned businesses: Leadership style and nonfamily-employees' work attitudes and behaviours. *Group and Organization Management, 36*(3): 345-384.

Björnberg, Å., & Nicholson, N. (2008). Emotional ownership: The critical pathway between the next generation and the family firm. London Business School, Institute for Family Business.

Blackler, F. (1995). Knowledge, knowledge work and organizations: An overview and interpretation. *Organization Studies, (16)* 6: 1021-1046.

Blake, P.R., Ganea, P.A., & Harris,P.L. (2012). Possession is not always the law: With age, preschoolers increasingly use verbal information to identify who owns what. *Journal of Experimental Child Psychology*, http://dx.doi.org/10.1016/j.jecp.2012.06.008.

Blyton, P., & Jenkins, J. (2007). Knowledge work. In *Key concepts in work*, pp.116-120. London: Sage Publications.

Bock, G.W., Zmud, R.W., Kim, Y.G., & Lee, J.N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly, 29*(1): 87−111.

Bogazzi, R.P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*:74-94.

Brockner, J., & Higgins, E.T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational Behavior and Human Decision Processes, 86*(1): 35-66.

Brower, S.N. (1980). Territory in urban settings. In Altman, I., Rapoport, A., and Wohlwill, J.F. (Eds.), *Human Behavior and Environment Advances in Theory and Research*: *Environment and Culture*, pp. 180-208, New York: Springer Science + Business Media.

Brown, G., & Robinson, S.L. (2011). Reactions to territorial infringement. *Organization Science, 22*(1): 210-224.

Brown, G., Crossley, C. & Robinson, S.L. (2013). Psychological ownership, territorial behavior, and being perceived as a team contributor: the critical role of trust in the work environment. *Personnel Psychology, 00*: 1–23.

Brown, G., Lawrence, T.B., & Robinson, S.L. (2005). Territoriality in organizations. *Academy of Management Review, 30*(3): 577–594.

Büchel, B. (2007). Knowledge creation and transfer: from teams to the whole organization. In Ichijo, K. & Nonaka, I. (Eds.), *Knowledge Creation and Management: New Challenges for Managers*, pp.44-56, Oxford University Press.

Buchem, I. (2012). Psychological Ownership and Personal Learning Environments: Do sense of ownership and control really matter? Paper presented at the PLE Conference, July 2012, Aveiro, Portugal.

Buchko, A.A. (1993). The effects of employee ownership on employee attitudes: an integrated causal model and path analysis. *Journal of Management Studies, 30*(4):633–657.

Büyüköztürk, Ş. (2002). Faktör analizi: Temel kavramlar ve ölçek geliştirmede kullanımı. *Kuram ve Uygulamada Eğitim Yönetimi, 32*: 470-483.

Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management, 17*(2): 245−264.

Cabrera, E. F., & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *International Journal of Human Resource Management, 16:*720−735.

Ceja, L., & Tapies, J. (2011). A model of psychological ownership in next-generation members of family-owned firms: a qualitative study. IESE Business School, University of Navara, July, 2011, Working Paper-929.

Černe, M., Nerstad, C.G.L., Dysvik, A., & Škerlavaj, M. (2012). What goes around comes around: knowledge hiding, perceived motivational climate, and creativity. Academy of Management Journal.

Chang, A., Chiang, H.H., & Han, T.S. (2012). A multilevel investigation of relationships among brand-centered HRM, brand psychological ownership, brand citizenship behaviors, and customer satisfaction. *European Journal of Marketing, 46*(5): 626-662.

Chen, W-J., & Cheng, H-Y. (2012). Factors affecting the knowledge sharing attitude of hotel service personnel. *International Journal of Hospitality Management, 31*:468-476.

Chi, N.W., & Han, T.S. (2008). Exploring the linkages between formal ownership and psychological ownership for the organization: The mediating role of organizational justice. *Journal of Occupational and Organizational Psychology, 81*: 691–711.

Chiu, W.C.K., Hui, C.H., & Lai, G.W.F. (2007). Psychological ownership and organizational optimism amid China's corporate transformation: effects of an

employee ownership scheme and a management-dominated board. *The International Journal of Human Resource Management, 18*(2): 303-320.

Chrisman, J.J., Chua, J.H., & Litz, R. A. (2004). Comparing agency costs of family and non-family firms: Conceptual issues and exploratory evidence. *Entrepreneurship Theory and Practice, 28*: 335-354.

Chung, Y. W., & Moon, H.K. (2011). The moderating effects of collectivistic orientation on psychological ownership and constructive deviant behavior. *International Journal of Business and Management, 6*(12): 65-77.

Clifford, J. (1994). Collecting ourselves. In Susan M. Pearce (Ed), *Interpreting objects and collections*, pp.258-268, Taylor & Francis e-Library, 2003.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of Management Journal, 49*(3): 544−560.

Collins, D. (1997). Knowledge work or working knowledge? Ambiguity and confusion in the analysis of the "knowledge age". *Employee Relations, 19*(1):38-50.

Collins, H. (1993). The structure of knowledge. *Social Research 60*: 95-116.

Connelly, C.E., Zweig, D., Webster, J., & Trougakos, J.P. (2011). Knowledge hiding in organizations. *Journal of Organizational Behavior, 3* (1): 64-68.

Crowe, E., & Higgins, E.T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes, 69*(2): 117-132.

Csikszenthmihalyi, M., & Rochberg-Halton, E. (1981). *The meaning of things: Domestic symbols and the self*, pp.1-20, Cambridge, UK: Cambridge University Press.

Cummings, J. N. (2004). Work groups, structural diversity, and knowledge sharing in a global organization. *Management Science, 50*(3): 352−364.

Davenport, T.H (2010). Process management for knowledge work. In Vom Brocke & M. Rosemann (Eds.) *Handbook on Business Process Management I: Introduction, Method and Information Systems*, pp. 616-636, Berlin, Heidelberg: Springer-Verlag.

Davis, J.H., Schoorman, F.D., & Donaldson, L. (1997). Toward a stewardship theory of management. *The Academy of Management Review, 22*: 20-47.

Dirks, K. T., Cummings, L.L., & Pierce, J.L. (1996). Psychological ownership in organizations: Conditions under which individuals promote and resist change. *Research in Organizational Change and Development, 9*:1-23.

Dittmar, H. (1992). The social psychology of material possessions: To have is to be. New York: St.Martin's Publication.

Donnelley, R. (1964). The family business. *Harvard Business Review, 42*: 93-105.

Drucker, P. F. (1999). Knowledge-worker productivity: the biggest challenge. *California Management Review 41*(2): 79-94.

Druskat, V. U., & Pescosolido, A.T. (2002). The content of effective teamwork mental models in self-managing teams: Ownership, learning and heedful interrelating. *Human Relations, 55*(3): 283–314.

Du Plessis, M. (2008). What bars organisations from managing knowledge successfully? *International Journal of Information Management, 28*: 285-292.

Dutton, J.E., Dukerich, J.M., & Harquail, C.V. (1994). Organizational images and member identification. *Administrative Science Quarterly, 39*: 239-263.

Dyson-Hudson R, Smith EA. (1978). Human territoriality: An ecological reassessment. *American Anthropologist*, *80*: 21–41.

Eisenhardt, K.M. (1989). Agency theory: An assessment and review. *The Academy of Management Review, 14*(1): 57-74.

El-Farr, H.K. (2009). Knowledge work and workers: A critical literature review. Leeds University Business School Working Paper Series, Vol. 1, No. 1. ISSN nr. 1743-6796.

Erdoğan, İ. (2012). Pozitivist Metodoloji ve Ötesi: Araştırma Tasarımları, Niteliksel ve İstatistiksel Yöntemler. Geliştirilmiş 3. Baskı. Ankara: Erk Yayınları.

Erkmen, T., & Esen, E. (2012). The mediating role of psychological ownership on the relationship between internal locus of control and organizational commitment. *International Journal of Business and Management Studies*, *4*(2): 171-185.

Erol, H. (2010). SPSS Paket Programı ile İstatiksel Veri Analizi. Adana: Nobel Kitabevi.

Etzioni, A. (1991). The socio-economics of property. *Journal of Social Behavior and Personality, 6*(6)*:* 465-468.

Ford, D. P., & Chan, Y. E. (2003). Knowledge sharing in a multi-cultural setting: A case study. *Knowledge Management Research & Practice, 1*(1): 11−27.

Fraser, K., & Kemp, S. (2012). Effects of employee governance and operational control on psychological ownership and perceived justice. *New Zealand Journal of Psychology, 41*(3): 13-20.

Fraser, K.J. (2010). *Employee Ownership and Preferences for Organisational Control* (Doctoral Dissertation). Available from University of Canterbury Research Repository.

Friedman, O., & Neary, K. R. (2008). Determining who owns what: Do children infer ownership from first possession. Cognition, doi:10.1016/j.cognition.2007.12.002.

Furby, L. (1980). The Origins and Early Development of Possessive Behavior. *Political Psychology, 2*(1): 30-42.

Furby, L. (1991). Understanding the psychology of possession and ownership: A personal memoir and an appraisal of our progress. *Journal of Social Behavior and Personality, 6*(6): 457-463.

Galperin, B.L., & R.J. Burke (2006). Uncovering the relationship between workaholism and workplace destructive and constructive deviance: An exploratory study. *International Journal of Human Resource Managemen*t, *17*: 331-347.

Grant, R.M. (1996). Prospering in dynamically competitive environments: Organizational capability as knowledge integration. *Organizational Science, 7*(4): 375-387.

Greener, S. (2008). Business Research Methods. Ventus Publishing.

Hair, J.F., Anderson, R.E., Tahtam, R.L., & Black, W.C. (1998). Multivariate data analysis. 5th edition. New Jersey: Prentice Hall.

Hall, A. (2005). Beyond the legal: Psychological ownership and responsibility in the family business. Proceedings of the FBN 16th annual world conference, September, Brussels.

Han, T.S., Chiang, H.H., & Chiang, C.L. (2013). The Investigation of the relation between person-organization fit, person-job fit, psychological ownership, and contextual performance: A longitudinal approach. Proceedings of the International Symposium on Marketing, Logistics, and Business (MLB), September 24-26, 2013, Nagoya, Japan.

Haslam, S. A. (2004). Psychology in organizations: The social identity approach. 2nd edition. Sage Publications, London.

Haslam, S.A., Reicher, S.D., & Plato, M.J. (2010). The new psychology of leadership: Identity, influence, and power. Psychology Press, Taylor & Francis e-Library.

Hau, Y.S., Kim, B., Lee, H.,& Kim, Y-G. (2013). The effects of individual motivations and social capital on employees 'tacit and explicit knowledge sharing intentions. *International Journal of Information Management, 33:*356-366.

Heino, N., & Jussila, I. (2010). Psychological ownership: A key mediator in family involvement – effects –relationship. Paper presented at the 10th Annual IFERA World Family Business Research Conference, July 6-9, 2010, Lancaster, UK.

Henry, T.Z.C. (2006). Employee Stock Option and Psychological Ownership: A Study of a Foreign-invested Company in China (Doctoral Dissertation). Available from Hong Kong Polytechnic University Pao Yue-kong Library.

Henssen, B., Voordeckers, W., Lambrechts, F., & Koiranen, M. (2011). A different perspective on defining family firms: The ownership construct revisited. *Academia.edu.* Retrieved September 25, 2013, from http://www.academia.edu/2033049/A_different_perspective_on_defining_family_firms_The_ownership_construct_revisited.

Higgins, E.T. (1997). Beyond pleasure and pain. *American Psychologist, 52*(12): 1280-1300.

Hogg, M. A., & Abrams, D. (1998). Social identifications: A social psychology of intergroup relations and group processes, Routledge, NY.

Hou, S.T., Hsu, M.Y., & Wu, S.H. (2009). Psychological ownership and franchise growth: An empirical study of a Taiwanese taxi franchise. *International Journal of Entrepreneurial Behaviour & Research, 15*(5): 415-435.

Husted, K., & Michailova, S. (2002). Diagnosing and fighting knowledge-sharing hostility. *Organizational Dynamics, 31*(1): 60−73.

Ichijo, K. (2007). Enabling knowledge-based competence of a corporation. In Ichijo, K. & Nonaka, I. (Eds.), *Knowledge Creation and Management: New Challenges for Managers*, pp.83-96, Oxford University Press.

Ikävalko, M., Pihkala, T., & Jussila, I. (2006). Psychological ownership and family businesses – Identifying the common ground through discriminant analysis. Paper presented at the RENT Conference on Research in Entrepreneurship and Small Business, November 2006, Brussels, Belgium.

Islamoğlu, A.H. (2011). Sosyal Bilimlerde Araştırma Yöntemleri SPSS Uygulamalı. Beta Basım Yayın.

Islamoğlu, A.H., & Alniaçik, U. (2013). Sosyal Bilimlerde Araştırma Yöntemleri. Gözden Geçirilmiş ve Genişletilmiş 3. Baskı. İstanbul: Beta Yayınları.

Jeswani, S., & Dave, S. (2012). Conceptual Framework on Psychological Ownership as Predictor of Turnover Intentions. *International Journal of Research in Social Sciences and Humanities (1).* Online ISSN: 2278 - 0157.

Jones, C., & Volpe, E.H. (2010). Organizational identification: Extending our understanding of social identities through social networks, *Journal of Organizational Behavior*.

Jöreskog, K.G., & Sörbom, D. (1988). LISREL 7: A guide to the program and applications. Chicago, IL: SPSS Inc.

Kahneman, D. (2012). Thinking, fast and slow. Penguin Books, London.

Karnilowicz, W. (2011). Identity and psychological ownership in chronic illness and disease state. *European Journal of Cancer Care, 20*: 276-282.

Kindred, J. (2009). Belonging(s) at Work: Psychological Ownership at the end of the Industrial Age. USA: Verlag Dr. Müller.

Kleine, S.S., & Baker, S.M. (2004). An integrative review of material possession attachment. *Academy of Marketing Science Review.* http://www.amsreview.org/articles/kleine01-2004.pdf

Kogan, S. L., & Muller, M.J. (2006). Ethnographic study of collaborative knowledge work. *IBM Systems Journal, 45*(4): 759-771.

Kogut, B., & Zander, U. (1996). What firms do? Co-ordination, identity and learning. *Organizational Science, 7*: 502-510.

Law, C.C.H., & Ngai, E.W.T. (2008). An empirical study of the effects of knowledge sharing and learning behaviors on firm performance. *Expert Systems with Applications, 34:* 2342-2349.

Le Bon, G. (2002). The crowd: A study of the popular mind, Dover Publications, NY. Originally published in French as *La psychologie des joules* in 1895 and first published in English in 1896 by T. Fisher Unwin, London.

Leonard, D. (2007). Knowledge transfer within organizations. In Ichijo, K. & Nonaka, I. (Eds.), *Knowledge Creation and Management: New Challenges for Managers*, pp.57-68, Oxford University Press.

Litwinski, L. (1947). The psychology of "mine". *Philosophy, (22)* 83: 240-251.

Liu, M.S.L., & Lin, S.Y. (2012). Collective psychological ownership of knowledge and individual knowledge sharing behaviors - an empirical study of Taiwanese high-tech companies. Paper presented at 2012 International Conference on Education and Management Innovation, Singapore.

Mael, F., & Ashforth, B.E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior, 13*: 103-123.

Markus, H., & Kitayama, S. (1991). Culture and the self: implications for cognition, emotion, and motivation. *Psychological Review, 98*: 224-253.

Mascitelli, R. (2000). From experience: Harnessing tacit knowledge to achieve breakthrough innovation. *Journal of Product Innovation Management, 17*(3): 179-193.

Mattila J., & Ikävalko, M. (2003). Participative strategy process in a professional organization and the concept of psychological ownership. Paper presented at 17th Nordic Conference on Business Studies, Reykjavik, Island.

Matzler, K., & Mueller, J. (2011). Antecedents of knowledge sharing-Examining influence of learning and goal orientation. *Journal of Economic Psychology, 32*:317-329.

Mayhew, M.G., Ashkanasy, N.M., Bramble, T., & Gardner, J. (2007). A study of the antecedent and consequences of psychological ownership in organizational settings. *The Journal of Social Psychology, 147*:477-500.

McClelland, D.C. (1951). Personality. Holt, Rinehart & Winston: New York.

Michailova, S., & Husted, K. (2001). Dealing with knowledge sharing hostility; Insight from six case studies. Copenhagen Business School Department of Management, Politics, and Philosophy MPP Working Paper No. 10/2001.

Miller, D. (2001). Possesions. In Miller, D. (Ed.), *Home possessions: Material culture behind closed doors*, pp. 107-121, Oxford, UK:Berg.

Moon, J. (2005). The Role of Psychological Ownership and Social Identity in E-business: Strategies for Building E-loyalty towards Blog Services (Doctoral Dissertation).Available from ProQuest Dissertations and Theses database. (UMI No. 3203955)

Moorman, R.H., & Blakely, G.L. (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. *Journal of Organizational Behavior, 16*: 127-142.

Newbold, P. (1995). Statistics for Business and Economics. New Jersey: Prentice-Hall Inc.

Ngah, R., & Ibrahim, A.R. (2011).The Influence of Intellectual Capital on Knowledge Sharing: Small and Medium Enterprises' Perspective. IBIMA Publishing Communications of the IBIMA. Article ID 444770.http://www.ibimapublishing.com/journals/CIBIMA/cibima.html

Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company. Oxford: Oxford University Press.

Nonaka, I., & Toyama, R. (2003).The knowledge-creating theory revisited: Knowledge creation as a synthesizing process. *Knowledge Management Research & Practice, 1*(1): 2-10.

Noon, M., & Blyton, P. (2007). The Realities of Work, 3rd edition. Palgrave Macmillan.

Nor, N.M., & Rosline, K. (2005). Managing knowledge workers in a knowledge-based economy: The changing role of human resource management in the MSC status

companies, Malaysia. Research Students HRM Department. Cardiff Business School.

Nuttin, J. M. (1987). Affective consequences of mere ownership: The name letter effect in twelve European languages. *European Journal of Social Psychology, 17*(4): 381–402.

O'Driscoll, M. P., Pierce, J. L., & Coghlan, A. M. (2001). Psychological ownership of the job and organization. Paper presented at the New Zealand Psychological Society Annual Conference, August 2001, Auckland, New Zealand.

O'Driscoll, M. P., Pierce, J.L., & Coghlan, A.M. (2006). The psychology of ownership: Work environment structure, organizational commitment, and citizenship behaviors. *Group and Organization Management, 31* (3): 388-416.

Olckers, C. (2013). Psychological ownership: Development of an instrument. *SA Journal of Industrial Psychology 39*(2)*:* http://dx.doi.org/10.4102/ sajip.v39i2.1105

Olckers, C., & Du Plessis, Y. (2012). The role of psychological ownership in retaining talent: a systematic literature review. *SA Journal of Human Resource Management.* Retrieved October 19, 2013, from http://dx.doi.org/10.4102/ sajhrm.v10i2.415.

Oppenheim, A.N. (2000). Questionnaire Design, Interviewing and Attitude Measurement. Bloomsbury Academic.

O'Reilly, C. A., & Chatman, J. (1986).Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behaviour, *Journal of Applied Psychology, 71*(3): 492-499.

Organ, D. W. (1988). Organizational citizenship behavior: The good soldier syndrome. Lexington, MA: Lexington Books.

Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self-concept, and identity. In Leary, M.R., & Tangney, J.P. (Eds.), *Handbook of self and identity,* 2nd edit., chap. 4, pp. 69-104, New York, USA: Guilford Press.

Özdamar, K. (2013). Modern Bilimsel Araştırma Yöntemleri. Yenilenmiş 2. Baskı. Ankara: Nisan Kitabevi.

Ozler, H., Yilmaz, A., & Ozler, D. (2008). Psychological ownership: An empirical study on its antecedents impacts upon organizational behaviors. *Problems and Perspectives in Management, 6* (3): 38-47.

Pasher, E., & Ronen, T. (2011). The Complete Guide to Knowledge Management: A Strategic Plan to Leverage Your Company's Intellectual Capital. John Wiley & Sons, Inc.

Peng, H. (2013). Why and when do people hide knowledge? *Journal of Knowledge Management, 17*(3): 398-415.

Pierce, J. L., & Jussila, I. (2010). Collective psychological ownership within the work and organizational context: Construct introduction and elaboration. *Journal of Organizational Behavior, 31:* 810–834.

Pierce, J. L., & Rodgers, L. (2004). The psychology of ownership and worker-owner productivity. *Group and Organization Management, 29*(5): 588-613.

Pierce, J. L., Kostova, T., & Dirks, K. (2001). Toward a theory of psychological ownership in organizations. *The Academy of Management Review, 26*(2): 298-310.

Pierce, J. L., Kostova, T., & Dirks, K. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology, 7*(1):84-107.

Pierce, J. L., O'Driscoll, M.P., & Coghlan, A.M. (2004). Work environment structure and psychological ownership: The mediating effects of control. *The Journal of Social Psychology, 144*(5): 507–534.

Pierce, J. L., Rubenfeld, S.A., & Morgan, S. (1991). Employee ownership: A conceptual model of process and effects. *The Academy of Management Review, 16* (1):121-144.

Pierce, J.L., & Jussila, I. (2011). *Psychological ownership and the organizational context: Theory, research, evidence, and application.* New Horizons in Management Series. UK: Edward Elgar Publishing.

Pierce, J.L., Jussila, I., & Cummings, A. (2009). Psychological ownership within the job design context: revision of the job characteristics model. *Journal of Organizational Behavior, 30*(4): 477–496.

Porteous, J. (1976). Home: The territorial core. *Geographical Review, 66*: 383-390.

Reb, J., & Connolly, T. (2007). Possession, feelings of ownership and the endowment effect. *Judgment and Decision Making, 2*(2): 107–114.

Reich, R. (1991). The Wealth of Nations: Preparing Ourselves for 21st Century Capitalism. Simon and Schuster: London.

Renzl, B. (2008). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *Omega 36*: 206-220.

Richins, M.L. (1994). The public and private meanings of possessions. *Journal of Consumer Research, 21*(3): 504-521.

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management, 9*(3): 18-35.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior, 66*: 358–384.

Riketta, M., & Van Dick, R. (2005). Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behavior, 67*:490–510.

Roberts, J. (2009). The global knowledge economy in question. *Critical Perspectives on International Business, 5*(4): 285-303.

Roberts, J., & Armitage, J. (2008). The Ignorance Economy. *Prometheus: The Journal of Issues in Technology Change, Innovation, Information Economics, Communications and Science Policy, 26* (4): 335-354.

Robinson, S.L., & Bennett, R.J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal, 38*: 555-572.

Rothbaum, F., Weisz, J.R., & Snyder, S.S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology 42*(1): 5-37.

Rudmin, F. W., & Berry, J. W. (1987) Semantics of ownership: A free-recall study of property. *The Psychological Record*, 37(22): 257-268.

Sack, R.D. (1983). Human territoriality: A theory. *Annals of the Association of American Geographers, 73*(1): 55-74.

Sartre, J. P. (1993). *Being and nothingness: An essay on phenomenological ontology*, The Washington Square Press. Originally published in French as *L'Êtreet le néant: Essaid'ontologie phénoménologique* in 1943 and translated into English by Hazel E. Barnes.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students, 5th edition, Prentice Hall.

Seçer, İ. (2013). SPSS ve Lisrel ile Pratik Veri Analizi: Analiz ve Raporlaştırma. Ankara: Anı Yayıncılık

Şenol, Ş. (2012). Araştırma ve Örnekleme Yöntemleri. Ankara: Nobel Akademik Yayıncılık.

Shah, J., Higgins, E.T., & Friedman, R.S. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology*, *74*(2):285-293.

Shu, S.B., & Peck, J. (2011). Psychological ownership and affective reaction: Emotional attachment process variables and the endowment effect. *Journal of Consumer Psychology*, *21*: 439-452.

Sieger, P., Bernhard, F., & Frey, U. (2011). Affective commitment and job satisfaction among non-family employees: Investigating the roles of justice perceptions and psychological ownership. *Journal of Family Business Strategy, 2*:78-89.

Sieger, P., Zellweger, T., & Aquino, K. (2013). Turning agents into psychological principals: Aligning interests of non-owners through psychological ownership. *Journal of Management Studies, 50* (3): 361-387.

Şimşek, Ö. F. (2007).Yapısal Eşitlik Modellemesine Giriş: Temel İlkeler ve Lisrel Uygulamaları. Ankara: Ekinoks.

Singelis, T.M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, *20*: 580-591.

Sönmez, V., & Alacapınar G. F. (2013). Örneklendirilmiş Bilimsel Araştırma Yöntemleri. Anı Yayıncılık.

Spector, P. (1997). Job Satisfaction: Application, Assessment, Causes and Consequences. California: Sage Publications.

Spreitzer, G. M., & Sonenshein, S. (2004). Toward the construct definition of positive deviance. *American Behavioral Scientist, 47* (6): 828-847.

Sreejesh, S., Mohapatra, S., & Anusree, M.R. (2014). Business Research Methods: An Applied Orientation. Springer.

Staples, D.S., & Webster, J. (2008). Exploring the effects of trust, task interdepence and virtualness on knowledge sharing in teams. *Information Systems Journal, 18*: 617-640.

Swift, M., Balkin, D.B., & Matusik, S.F. (2010). Goal orientations and the motivation to share knowledge. Journal of Knowledge Management, *14*(3): 378-393.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, *33*:1-39.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In Worchel, S., & Austin, W.G. (Eds), *Psychology of Intergroup Relations*, 2nd edit., pp. 7–24, Chicago: Nelson-Hall.

Tepeci, M. (2001) *The effect of personal values, organizational culture, and person-organization fit on individual outcomes in the restaurant industry* (Doctoral Dissertation). Available from YÖK Thesis Database.

Triandis, H.C. (1993) Collectivism and individualism as cultural syndromes. *Cross-Cultural Research*, 27: 155-180.

Turkey Knowledge Economy Assessment Study (2004).http://akgul.bilkent.edu.tr/BT-BE/WB_KEAS_Turkey.pdf

Turner, J. C. (1984). Social identification and psychological group formation. In Henri Tajfel (Ed.), *European Studies in Social Psychology: The Social Dimension*. Vol II, pp. 518-559, Cambridge, UK: Cambridge University Press.

Van Dick, R. (2004). My job is my castle: Identification in organizational contexts. In Cary L. Cooper & Ivan T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*, pp. 171-203, John Wiley & Sons.

Van Dyne, L., & Pierce, J.L. (2004). Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behaviour. *Journal of Organizational Behavior, 25*: 439-459.

Van Dyne, L., Cummings, L.L., & McLean Parks, J. (1995). Extra-role behaviors: In pursuit of construct and definitional clarity (a bridge over muddied waters). *Research in Organizational Behavior, 17*: 215-285.

Vandewalle, D., Van Dyne, L., & Kostova, T. (1995). Psychological ownership: an empirical examination of its consequences. *Group& Organization Management, 20* (2): 210-226.

Wagner, S.H., Parker, P., & Christiansen, N.D. (2003). Employees that think and act like owners: effects of ownership beliefs and behaviors on organizational effectiveness, *Personnel Psychology, 56*: 847-871.

Wallendorf, M., & Arnould, E.J. (1988). My favorite things: A cross-cultural inquiry into object attachment, possessiveness and social linkage. *Journal of Consumer Research, 14*: 531-547.

Wang, L., & Ahmed, P.K. (2003). Managing knowledge workers. Working Paper Series, University of Wolverhampton.

Wang, Q.Y., Battocchi, A., Graziola, I., Pianesi, F., Tomasini, D., Zancanaro, M., & Nass, C. (2006). The role of psychological ownership and ownership markers in collaborative working environment. The Eight International Conference on Multimodal Interfaces ICMI'06, November 2–4, 2006, Banff, Alberta, Canada.

Wang, S., & Noe, R.A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Research Review, 20*: 115-131.

Ward, B. (2013). Prevention- and Promotion-Focused Psychological Ownership in Small Employee Owned Firms (Doctoral Dissertation).Available from ProQuest Dissertations and Theses database (UMI No. 3557894).

Ward, J., & Dolan, C. (1998), Defining and describing family business ownership configurations. *Family Business Review, 11*: 305–310.

Ware, J., & Degoey, P. (1998). Knowledge Work and Information Technology. Working Paper. Fisher Center for Management and Information Technology Walter A. Haas School of Business University of California, Berkeley.

Warren, D. (2003). Constructive and destructive deviance in organization. *Academy of Management Review, 28*: 622-632.

Webster, J., Brown, G., Zweig, D., Connelly, C., Brodt, S., & Sitkin, S. (2008). Beyond knowledge sharing: Knowledge hiding and hoarding at work. *Research in Personnel and Human Resources Management*, 27: 1-37.

Yazıcıoğlu, Y., & Erdoğan, S. (2011). SPSS Uygulamalı Bilimsel Araştırma Yöntemleri. Ankara: Detay Yayıncılık.

Yeung, K.L. (2012). *An implicit approach to object valuation and psychological ownership* (Doctoral Dissertation, Iowa State University). Available from http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=3576&context=etd.

Zhu, H., Chen, C.C., Li, X., & Zhou, Y. (2013). From personal relationship to psychological ownership: The importance of manager–owner relationship closeness in family businesses. *Management and Organization Review, (9)*2: 295–318.

APPENDICES

Appendix A. Original Survey Instruments

Psychological Ownership Items[14]

T: Territoriality, SE: Self-efficacy, A: Accountability, B: Belongingness, SI: Self-identity

Below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement or disagreement with each statement.

Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree Strongly Agree

1 2 3 4 5 6

T1. I feel I need to protect my ideas from being used by others in my organization.

T2. I feel that people I work with in my organization should not invade my workspace.

T3 & T4.

SE1. I am confident in my ability to contribute to my organization's success.

SE2. I am confident I can make a positive difference in this organization.

SE3.

A1. I would challenge anyone in my organization if I thought something was done wrong

[14] A Research Permission Agreement for Research Edition Use and Translation was signed with a representative of mindgarden.com for use of Psychological Ownership Questionnaire and according to the terms of this agreement, we are not allowed to publish more than two items per subscale. Future research that will utilize the original and translated version of the questionnaire should follow suit as well.

A2. I would not hesitate to tell my organization if I saw something that was done wrong.

A3.

B1. I feel I belong in this organization.

B2. This place is home for me.

B3.

SI1. I feel this organization's success is my success.

SI2. I feel being a member in this organization helps define who I am.

SI3.

Knowledge Hiding Items

EH: Evasive hiding, PD: Playing dumb, RH: Rationalized hiding

Please think of a recent episode in which a specific co-worker requested knowledge from you and you declined to share your knowledge or expertise with him/her or did not give all of the information needed. For example, you might not have shown this co-worker how to do something, only gave a part of the information needed, declined to tell something s/he needed to know, or did not help him/her learn something important. Please describe the episode in which you declined to share knowledge with your co-worker. In this specific situation, I...

Not at all *To a great extent*

1 2 3 4 5 6 7

EH1. Agreed to help him/her but never really intended to

EH2. Agreed to help him/her but instead gave him/her information different from what s/he wanted

EH3. Told him/her that I would help him/her out later but stalled as much as possible

EH4. Offered him/her some other information instead of what he/she really wanted

PD1. Pretended that I did not know the information

PD2. Said that I did not know, even though I did

PD3. Pretended I did not know what s/he was talking about

PD4. Said that I was not very knowledgeable about the topic

RH1. Explained that I would like to tell him/her, but was not supposed to

RH2. Explained that the information is confidential and only available to people on a particular project

RH3. Told him/her that my boss would not let anyone share this knowledge

RH4. Said that I would not answer his/her questions

Knowledge-based Psychological Ownership Items

Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree Strongly Agree

1 2 3 4 5 6

KPO1. This is MY knowledge.

KPO2. I sense that this knowledge is MY knowledge.

KPO3. I feel a very high degree of personal ownership for this knowledge.

Appendix B. Questionnaire Form (In Turkish)

Değerli Katılımcı,

Bu anketi yüksek lisans tezimin alan araştırması safhası için hazırladım. Çalışma sonucu elde edeceğim verileri bilimsel amaçlı çıkarımlar yapmakta kullanacağım. Anket formları sadece tarafımca incelenecek olup hiçbir kişi veya kurumla paylaşılmayacaktır. Ankete vereceğiniz samimi yanıtlar bilimsellik adına son derece önemlidir. Katkılarınız için şimdiden teşekkür ederim.

Arş. Gör. Deniz İSPİRLİ

BİRİNCİ BÖLÜM

Cinsiyet	Kadın ( )	Erkek ( )				
Yaşınız						
Mesleğiniz						
Çalıştığınız sektör	Kamu ( )	Özel ( )	Sivil Toplum ( )	Kendi işim ( )	Diğer ( )	
Çalışma alanınız	Eğitim ( )	Sağlık ( )	Finans-Bankacılık ( )	Bilişim ( )	Danışmanlık ( )	Diğer ( ) ……
Pozisyonunuz	Üst düzey yönetici ( )	Orta düzey yönetici ( )	Uzman ( )	Beyaz yakalı çalışan ( )	Diğer ( ) ……..	
Mezuniyet Durumu	Lise ( )	Yüksekokul ( )	Üniversite ( )	Yüksek Lisans ( )	Doktora ( )	Diğer ( )
Mesleki Deneyim	0–5 Yıl ( )	6–10 Yıl ( )	11–15 Yıl ( )	16–20 Yıl ( )	21 Yıl Üzeri ( )	

İKİNCİ BÖLÜM

İş arkadaşlarınızdan birinin sizden bir bilgi talep ettiği ve sizin konuyla ilgili bilgi veya tecrübenizi paylaşmayı reddettiğiniz ya da iş arkadaşınıza yeterince bilgi vermediğiniz bir anı düşünün. Örneğin, bu arkadaşınıza bir işin tam olarak nasıl yapıldığını göstermiyor; gerekli bilginin yalnızca bir kısmını aktarıyor; bilmesi gereken bir şeyi söylemekten kaçınıyor ya da önemli bir şeyi öğrenmesine yardım etmiyor olabilirsiniz. Lütfen bu olaya dair düşüncelerinizi kısaca anlatınız:

Bu olayı düşündüğünüzde aşağıdaki ifadelere katılma derecenizi belirtiniz:

1-Kesinlikle aynı fikirde değilim…….5-Kesinlikle aynı fikirdeyim olacak şekilde seçeneklerden birini **(X)** koyarak işaretleyiniz.

SORU NO	SORULAR	1 Kesinlikle aynı fikirde değilim	2	3	4	5 Kesinlikle aynı fikirdeyim
1.	İş arkadaşıma yardımcı olmayı istemeyerek de olsa kabul ederim.	1	2	3	4	5
2.	İş arkadaşıma yardımcı olmayı kabul ederim ancak istediğinden farklı bir bilgi aktarırım.	1	2	3	4	5
3.	İş arkadaşıma daha sonra yardımcı olacağımı söylerim ancak bunu elimden geldiğince ertelerim.	1	2	3	4	5
4.	İş arkadaşıma talep ettiği bilginin yerine başka bir konuda bilgi vermeyi öneririm.	1	2	3	4	5
5.	O konuda bilgim yokmuş gibi davranırım.	1	2	3	4	5
6.	Bilgim olmasına rağmen bilmediğimi söylerim.	1	2	3	4	5
7.	Neden bahsettiğini bilmiyormuş gibi davranırım.	1	2	3	4	5
8.	O konuda fazla bilgili olmadığımı söylerim.	1	2	3	4	5
9.	Kendisini bilgilendirmek istediğimi ama bunun gerekli olmadığını söylerim.	1	2	3	4	5
10.	Talep ettiği bilginin gizli olduğunu ve yalnızca belirli bir projede görev alan kişilerle paylaşılabileceğini söylerim.	1	2	3	4	5
11.	Patronumun bu bilgiyi kimseyle paylaşmama izin vermediğini söylerim.	1	2	3	4	5
12.	Sorularına cevap vermeyeceğimi söylerim.	1	2	3	4	5

Bilgi saklamanın çalıştığınız sektöre özgü bir gerekçesi var mıdır? Bu konudaki tutumunuzu açıklar mısınız? :

Sahip olduğunuz bilgiyle ilgili düşüncelerinize yönelik olarak aşağıdaki ifadelerden size uygun olanı işaretleyiniz.

13.	Bu bilgi benim bilgimdir.	1	2	3	4	5
14.	Bu bilgiyi çok fazla sahiplenirim.	1	2	3	4	5
15.	Bu bilgi yalnızca bana aitmiş gibi hissederim.	1	2	3	4	5

ÜÇÜNCÜ BÖLÜM

Aşağıda yer alan her bir ifadeye ilişkin size en uygun olan seçeneği işaretleyiniz:

1- Kesinlikle katılmıyorum……5- Kesinlikle katılıyorum olacak şekilde seçeneklerden birini **(X)** koyarak işaretleyiniz.

SORU NO	SORULAR	1 Kesinlikle katılmıyorum	2	3	4	5 Kesinlikle katılıyorum
16.	Aynı kurumda birlikte çalıştığım insanların benim fikirlerimi kullanmasını önlemem gerektiğini düşünürüm.	1	2	3	4	5
17.	Aynı kurumda birlikte çalıştığım insanların benim kişisel iş alanıma girmemeleri gerektiğini düşünürüm.	1	2	3	4	5
18.		1	2	3	4	5
19.		1	2	3	4	5
20.	Çalıştığım kurumun başarısına katkıda bulunabilecek kabiliyetteyim.	1	2	3	4	5
21.	Çalıştığım kurumda pozitif yönde farklılık yaratabilirim.	1	2	3	4	5
22.		1	2	3	4	5
23.	Çalıştığım kurumda herhangi bir şeyin yanlış yapıldığını düşünürsem herkese karşı çıkabilirim.	1	2	3	4	5
24.	Çalıştığım kurumda herhangi bir şeyin yanlış yapıldığını düşünürsem bunu kurumuma bildirmekten çekinmem.	1	2	3	4	5
25.		1	2	3	4	5
26.	Kendimi çalıştığım kurumun bir parçası gibi hissederim.	1	2	3	4	5
27.	Burası benim evim gibidir.	1	2	3	4	5
28.		1	2	3	4	5
29.	Bu kurumun başarısını kişisel başarım gibi görürüm.	1	2	3	4	5
30.	Bu kurumun bir üyesi olmak kim olduğumu tanımlamada bana yardımcı olur.	1	2	3	4	5
31.		1	2	3	4	5