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CONTENT

THE MODERATING ROLE OF SATISFACTION LEVEL OF MANAGEMENT INFORMATION SYSTEMS IN THE EFFECT OF INTELLECTUAL CAPITAL ON INNOVATION CAPABILITY[*]

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To cite this document
Kunt, O., Sundu, M. (2021). The moderating role of satisfaction level of management information systems in the effect of intellectual capital on innovation capability. Research Journal of Business and Management (RJBM), V.8(1), p.1-14.
Permanent link to this document: http://doi.org/10.17261/Pressacademia.2021.1389

ABSTRACT

Purpose- To examine the relation between intellectual capital, innovation and satisfaction level of management information systems.
Methodology- The research is a basic quantitative field study. Questionnaire was used as a data collection tool. Survey participants were reached using the convenience sampling method. 5-point Likert scales was used for measuring research variables.
Findings- Intellectual capital and management information systems satisfaction level have a positive and significant effect on innovation capability. The satisfaction level of management information systems has a moderating role in the relationship between innovation and intellectual capital.
Conclusion- It has been empirically demonstrated that innovation capability and intellectual capital are related concepts. The research findings have indicated that as the satisfaction level of the management information systems increases, the contribution of the intellectual capital to the innovation capability increases positively. It will be beneficial for companies to consider this issue in their digital transformation processes.

Keywords: Intellectual capital, innovation, management information systems, human capital, relational capital
JEL Codes: M15, O34, O31

ENTELEKTÜEL SERMAYENİN İNOVASYON YETENEĞİNE ETKİSİNDE YÖNETİM BİLİŞİM SİSTEMLERİ MEMNUNİYET DÜZEYİNİN ROLÜ

ÖZET

Amaç- Entelektüel sermaye, inovasyon yeteneği ve yönetim bilişim sistemleri memnuniyet düzeyi arasındaki ilişkiyi incelemektir.
Yöntem- Araştırma, nicel bir saha çalışması niteliğinde temel bir araştırmadır. Veri toplama aracı olarak anket kullanılmıştır. Kolayda örneklem metoduyla anket katılımcılarına ulaşılmıştır. Araştırmanın değişkenlerini ölçmek için ilişkin 5'li Likert Tipi ölçek kullanılmıştır.
Bulgular- Entelektüel sermayenin ve yönetim bilişim sistemleri memnuniyet düzeyinin inovasyon yeteneğine pozitif ve anlamlı bir etkisi olduğu ortaya çıkmıştır. İnovasyon ile entelektüel sermaye arasındaki ilişkide yönetim bilişim sistemlerinin memnuniyet düzeyinin düzenleyici bir role sahip olduğu görülmüştür.
Sonuç- İnovasyon yeteneği ve entelektüel sermayenin ilişkili kavramlar oldukları ampirik olarak ortaya konmuştur. Araştırma göstermiştir ki firmaların sahip olduğu yönetim bilişim sistemlerinden memnuniyet düzeyi artıkça entelektüel sermayenin inovasyon yeteneğine katkısını olumlu yönde artmaktadır. Firmaların dijital dönüşüm süreçlerinde bu konuyu dikkate almaları faydalı olacaktır.

Anahtar Kelimeler: Entelektüel sermaye, yönetim bilişim sistemleri, inovasyon, insan sermayesi, ilişkisel sermaye
JEL Kodları: M15, O34, O31

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[*] Bu makale, Dr. Öğr. Üyesi Mustafa SUNDU'unun danışmanlığında, Osman KUNT tarafından yazılan "Entelektüel Sermayenin İnovasyon Yeteneğine Etkisinde Yönetim Bilişim Sistemleri Memnuniyet Düzeyinin Rolü" başlıklı yüksek lisans tezinden üretilmiştir

1. GİRİŞ

Günümüzde yoğun rekabet, dinamik bir çevrenin varlığı, teknolojik gelişmeler işletmeler için zorluklar ortaya çıkarmaktadır. Rekabet avantajı elde etmek için çeşitli yeteneklere sahip olmak başarı için bir ön şart niteliğini taşımaktadır. Hayati önemdeki rekabet avantajını sağlayan yeteneklerin başında ise güçlü bir entelektüel sermayeye, inovasyon yeteneğine ve dijitalleşmenin imkanlarından faydalanma becerisine sahip olmak gelmektedir. Elbette her işletme değişik fonksiyonları olan departmanlardan, bir fonksiyonu veya birden fazla fonksiyonu kapsayan iş süreçlerinden oluşmaktadır. Ancak başarıyı belirleyen ise faaliyetleri destekleyen alt yapıya ve sistemlere sahip olmakla ve bu yeteneklerin nitelikle insan gücüyle hayata geçirilmesine bağlıdır.

Şirketlerin veya kurumların, sadece fiziksel varlıklarını hesaba katarak değerleri belirlenemez. 20. YY'da ve özellikle ikinci dünya savaşı sonrası, hızla küreselleşen dünyada, yatırımcılar için şirketlerin değerlerinin belirlenmesi zorunlu hale gelmiştir. Bu nedenle şirketlerin gerçek değerlerinin ölçülmesi ihtiyacı yeni birçok kavramın ortaya çıkmasına zemin hazırlamıştır. Bu kavramlar içinde ön plana çıkan en önemli kavram olarak entelektüel sermaye kavramı kabul görmüştür. Entelektüel sermayeyi kısaca özetlemek gerekirse, bir şirketin finansal tablolarla sergilenebilecek defter değeri ile bu şirkete sahip olmak için ödenmeye hazır olunan bedel arasındaki fark şeklinde tanımlanabilir. Gün geçtikçe globalleşen ekonomilerde, sanayinin çok hızlı bir şekilde gelişmesi ile geçmişte kazanılmış olan entelektüel birikimlerin önemi artmış ve bununla birlikte işletmelerin sahip olduğu sermayeye bir değer kattığı fark edilmiştir. Sanayi odaklı topluluklarda, nihai fiziksel ürüne (makine, yerleşke, teçhizat) verilen önem, yerini; bilgi birikimi, beceri ve iletişim gibi gözle görülemeyen soyut varlıklara bırakmıştır. Rakiplerine nazaran daha güçlü entelektüel sermayeye sahip olan işletmelerin ise müşteri ihtiyaçlarının karşılanması kapsamında güçlü inovasyon yeteneğine sahip olduklarına söylemek yanlış olmayacaktır. İnovasyon süreci, fikir sürecinden başlayarak, ürünün ham madde olarak belirlenmesinden, üretimin tüm aşamalarına, nihai ürünün oluşturulmasından pazara sunulmasına kadar olan tüm süreci kapsamaktadır. İnovasyon işletmeler için vazgeçilmez bir rekabet aracı olarak görülse de inovasyon yönetimi sanıldığı kadar kolay değildir. Her inovasyon girişiminin başarıya ulaştığı söylenemez. Özellikle teknolojik devrimlerin yaşandığı dönemlerde büyük işletmeler bile değişimlere adapte olmakta zorlanmaktadır. Bu dönemlerde birçok inovasyon denemesi harcanan zaman ve çabaya rağmen beklenilen toplumsal ve ekonomik faydayı sağlayamamaktadır. Bu nedenle inovasyon yönetiminin doğru yapılabilmesi için sürecin işleyişinin iyi bilinmesi gerekmektedir

Diğer yandan özellikle internetin hayatımıza girmesiyle hızlanan ürün, hizmet ve iş süreçlerinin dijitalleşmesi küçük büyük her firmayı etkilemektedir. Bazen planlı bazen aceleyle dijitalleşme gerçekleşmekte ancak kurulan dijital sistemler beklenen faydayı sağlamamaktadır. Bu dijital sistemlerin büyük bölümünü ise yönetim bilişim sistemleri oluşturmaktadır. Yönetim bilişim sistemlerinin başarışa birçok faktöre bağlı olmakla birlikte en önemli kriter bu sistemleri kullananların işleri kolaylaştırması ve yaratıcılıklarına katkı sağlaması olarak söylenebilir. Bu nedenle çalışmada, gün geçtikçe önemi artan kavramlar olan entelektüel sermaye, inovasyon yeteneği ve yönetim bilişim sistemleri memnuniyet düzeyi arasındaki ilişki incelenecektir.

2. LİTERATÜR ÖZETİ

2.1. Entelektüel Sermaye

Entelektüel Sermaye kavramı entelektüel sermayenin, akıl ve zihinsel yeteneklerin ötesinde bir bütün olarak incelenmesi gerektiğini belirtmiştir (Bontis, 2001). Entelektüel sermaye kavramının ilk ortaya çıkışı konusunda da farklı görüşler vardır. Sullivan'a göre, entelektüel sermayenin ilk ortaya çıkışı, Hiroyuki Itami'nin 1980 yılında yayınlanan "Mobilizing Invisible Assets" isimli çalışması ile olmuştur (Sullivan, 2000). Thomas Stewart (1991) "Brainpower – Beyingücü" adlı makalesinde entelektüel sermaye kavramını, ilk kez organizasyonel bakımdan ele almıştır. Entelektüel sermayeyi; "işletmelere, piyasada rekabet avantajı sağlayan, işletme çalışanlarının bildiği her şeydir" şeklinde ifade etmiştir. Ayrıca, değer yaratmada kullanılabilecek entelektüel mülkiyet, deneyim ve bilgi gibi her türlü entelektüel materyal, entelektüel sermayeyi oluşturduğunu iddia etmiştir. Entelektüel sermaye kavramının tanımlanmasında ve ölçülmesinde karşılaşılan zorluklara dikkat çekmiştir (Stewart, 1991). Entelektüel sermaye, işletmelerin etkin faaliyete geçmelerini sağlayan pazarın, entelektüel varlıkların, insana ait özelliklerin ve örgütsel altyapıya ilişkin maddi olmayan varlıkların tümüdür (Brooking, 1996). Entelektüel sermaye için, bir işletme veya örgütün bilgi odaklı öz sermayesi olarak değerlendirilmekte ve çalışanların bilgi ve birikimleri, bilgi sistemleri, marka değeri, patentler, nihai ürünler, iş süreçleri, müşteri güveni ve yönetim süreçlerini içeren bir kavramdır (Connell ve Brennan, 2000). Entelektüel sermaye, bilançoda yer almayan ticari haklar ve markalar gibi maddi varlık olarak nitelendirilmeyen kavramlardır. Bir başka deyişle işletme çalışanlarının sahip olduğu bilgilerin tamamı ve bu bilgilerin işletmeye uygulanmasıdır (Roos ve Roos, 1997, Bontis, 1998). İşletme için karlılığını en yüksek seviyelere çıkarma sürecinde, bilgi, birikim ve yaratıcılığa dayalı stratejiler oluşturulmasının en önemli yolu entelektüel sermayenin geliştirilmesidir (Carroll ve Tansey, 2000).

Entelektüel sermaye tanımlanırken, yönetim bakımından farklı bakış açıları geliştirildiği görülmektedir. Örnek olarak; muhasebeciler, entelektüel sermayeyi, maddi olmayan varlıklar olarak nitelemekteyken; entelektüel sermayenin, "sabit finansal olmayan varlıklar" olarak maddi anlamda var olmadığı, fakat gözetim altına alınabilen ve kanunlarla korunabilen varlıklar olarak tanımlanabileceği ve kontrol edilebileceği belirtilmektedir. Entelektüel sermaye, insan kaynakları için ise, çalışanların sahip olduğu bilgi, yetenek ve davranışlar olarak belirtilmektedir. Pazarlama açısından ele alındığında, entelektüel sermaye, müşteri tatmini ve marka olarak tanımlanmaktadır. Bilgi teknolojileri için ise; entelektüel sermayenin geliştirilmesinde bilgisayar ağları ve yazılım uygulamalarının önemine değinilmektedir (Marr ve Moustaghfir, 2005; Xu ve Wang, 2018). Sonuç olarak; entelektüel sermaye, işletmenin değerini artırmasına destek olacak soyut varlıklar, tecrübe, bilgi ve üst bilgi olarak ifade edilerek, kolektif bir beyin gücü veya örgüt içinde bulunan bilgidir (Bontis ve Richardson, S. Keow, 2000). Entelektüel sermayeyi İnsan sermayesi, yapısal sermaye ve müşteri sermayesi olmak üzere üç alt boyuttan oluşmaktadır.

İnsan sermayesi, kavram olarak ilk defa 1961 yılında Theodore William Schultz tarafından yapılmıştır. "İnsan sermayesine yatırım" isimli çalışmasında, insan kaynaklarını, sermayenin bir şekli ve yatırımın bir ürünü olarak görmek gerektiğini belirtmektedir. Shultz'a göre bireylerin sahip olduğu faydalı yetenekler insan sermayesini oluşturmaktadır. İnsan sermayesi, eğitim, deneyim, genetik miras ve hayat ile iş hakkındaki düşünce ve tavırlar olmak üzere dört faktörün birleşimi olarak tanımlanmıştır (Schultz, 1961, Hudson, 1993). İşletmenin, sorunlarına çözüm bulmak için sahip olduğu insan yeteneğinin tamamı insan sermayesini oluşturur (Grantham and Judith, 2002). İnsan sermayesi, bütün özellikleriyle insanın kendisidir ve bu nedenle işletmeler, insan sermayesine sürekli sahip olamazlar, kişinin firmayı terk etmesiyle bu değer kaybedilmiş olur (Luthy, 1998). İnsan sermayesinin etkinliği çalışanların işletmeye katkısı, çalışan tatmini, değer yaratma, eğitim, kilit personelin elde tutulması, süreçlerin uygulanması, liderlik, bilgi paylaşımı ve bilgi yaratımı, bilgiyi kullanarak artırılabilir (Bontis, 2001). İnsan sermayesi; çalışanlar ve yöneticiler olarak ikiye ayrılabilir. Çalışanlar için; deneyim, bağlılık, yetkinlik ve motivasyon gibi özellikler önem kazanmaktayken, yöneticiler için ise; stratejik beceriler, iletişim becerileri ve liderlik kalitesi gibi önemli faktörler ön plana çıkmaktadır (Jacobsen, Hofman-Bang ve Nordby, 2005; Veltri ve Puntillo, 2019).

Yapısal sermaye bir diğer ismiyle örgütsel sermaye, insan vücudunu ayakta tutan iskelet sistemi gibi, şirkete değer katan bütün alt birimleri birleştiren, onlara destek veren ve verimli olarak işlemesine yardımcı olan unsurdur. Yapısal sermaye, içeriğinde var olan etmenlerden dolayı süreç sermayesi, yenilik sermayesi ve örgüt sermayesi olmak üzere üçe ayrılmıştır. Yapısal sermayenin alt boyutlarından yenilik sermayesi, ticari markalar ve telif hakları gibi entelektüel mülkiyetle, işletmelerin düzgün bir biçimde faaliyetlerini sürdürmesini sağlayan diğer tüm yetenek ve teorilerden oluşan entelektüel varlıkları içerir. Süreç sermayesi, mal ve hizmetlerin nihai tüketiciye ulaşmasını sağlayan yöntemleri ve süreçleri içerir. Örgütsel sermaye, işletmenin, iş yapabilme yeteneğini yükseltecek bakış açısının işletmeye dâhil edilmesidir (Edvinsson ve S. Malone, 1997). Yapısal sermaye, organizasyonu güçlendirmeye dayalı, yeni fikir ortaya çıkarma yeteneğini olası hale getiren bütün varlıkların toplamıdır. Bu varlıkların içinde; şirketin temel değerleri, vizyonu, misyonu, şirket stratejileri ve iş yapma sistemleri olarak ayrılabilir. Yapısal sermaye, kendi kendine öğrenme organizasyonunu ortaya çıkaran ana ögelerden biridir. Şirket çalışanları hem yeterli hem de üstün yeteneklere sahip olsalar da sahip oldukları bu yetkinlikleri anlamlı bir sonuca ulaştıramayan, zayıf temellerden oluşmuş olan bir organizasyon yapısı, işletme performansını olumsuz yönde etkileyecektir. Çalışanların, daha istekli çalışmalarını sağlamak ve yapılmış olan hatalar sonrası öğrenebilmelerini, yeniden risk alabilmelerini ve bunun sonucunda başarılı olabilmelerini sağlayan en önemli etmen, güçlü bir yapısal sermayenin işletme içinde yer almasıdır (Bozbura ve Toraman, 2010).

İlişkisel sermaye veya bir diğer ismiyle müşteri sermayesi, işletmenin devamlılığını sağlayan, işletmenin satış yaptığı kişi ve kuruluşlarla olan ilişkilerinin değeridir. Değer zinciri, bir ürün ya da hizmetin ilk satıcıdan başlayarak son kullanıcıya kadar giden, hammaddeden ortaya çıkıp maddeye, oradan da raflara girene kadar nasıl hareket ettiğini gösterir. Bu sürecin her aşamasında, ürüne ya da hizmete değer katılması beklenir. Amaç, mümkün olduğunca az maliyetle olabildiğince fazla değer katmak elde etmektir (Stewart, 2000). İlişkisel sermaye, değer zinciri oluşturan bütün unsurlarla kurulan olumlu ilişkilerdir. İlişkisel sermaye, işletmenin müşterileriyle, tedarikçileriyle, yatırımcılarıyla ve partnerleriyle kısacası tüm paydaşlarıyla olan ilişkilerinin toplam değeri olarak ifade edilebilir. Sonuç olarak işletmenin, katma değer yaratabilecek her kişi ya da kurum ile (dağıtıcılar, müşteriler, tedarikçiler, yatırımcılar, ortaklar, devlet) olan ilişkilerini kapsamaktadır (Ölçer ve Şanal, 2007).

Şirket itibarını artırarak markalaşmayı sağlamak, entelektüel sermaye değerinin artışındaki en önemli etmenlerdendir. Bunun sonucunda da finansal verimliliğin ve kârın artmasının pozitif etkisi vardır (Bontis, 1998:41; Cheng ve Zervopoulos, 2014:899; Wang ve Huo, 2018:1864; Zambon, Marasca ve Chiucchi, 2019:291). Entelektüel sermayenin hesaplanması ve raporlanması, işletmenin türüne, yapısında, coğrafi yerleşimine, büyüklüğüne ve sahiplerine bağlı olmadan değerlendirilmesi her geçen zamanda daha önemli hale gelmektedir. Fakat, işletmenin tüm hareketlerinin finansal verilerle ifade edildiği geleneksel muhasebe sistemi, entelektüel sermayenin ölçülmesinde eksik kalmaktadır. Sonuç olarak, şirket değerinin büyük bölümünü oluşturan entelektüel sermaye değerlerinin finansal tablolara aktarılması istenilen seviyede mümkün olamamaktadır (Rodov ve Leliaert, 2002).

Entelektüel sermayeyi yönetememe korkusu işletmeleri yeni ölçüm araçları bulmaya teşvik etmektedir (Carroll ve Tansey, 2000; Wang ve Huo, 2018). İşletme yöneticilerinin büyük bir çoğunluğu, var olan entelektüel sermayenin değerini tam olarak hesaplayamadıklarından, işletmelerin kaynak yapılarını yanlış bir şeklide algılayabilmektedir. (Barsky ve Marchant, 2000: Ercan ve ark. 2003). Göran Roos ve Johan Roos'a göre ise; entelektüel sermayenin ölçümü, bilgi yönetimi ve enformasyonla birlikte gerçekleşir (Göran ve Johan, 1997). Entelektüel sermaye, şirketteki bilginin ve diğer maddi olmayan varlıkların nasıl daha iyi geliştirileceği ve ölçüleceği ile ilgilidir. Entelektüel sermayeyi tam olarak ölçebilmek her zaman mümkün olmayabilir. Ancak sektörel normlarla kıyaslama yapabilmek de yöneticilerin kendi entelektüel sermayelerini anlamalarına yardımcı olabilecektir (Chen, 2004).

2.2. İnovasyon

İnovasyon, Latince kökenli bir kavramdır ve "innovatus" kelimesinin türetilmesinden oraya çıkmıştır. İnnovatus'un sözlük anlamında; idari, kültürel ve toplumsal ortamlarda yeni metotların kullanılması olarak belirtilmektedir. İnovasyon ise kavram olarak, sürekli yenilik, yenileşme gibi sözcüklerle ifade edilmişse de inovasyon ile yenilik arasında önemli farklılıklar bulunmaktadır. Yenilik ile inovasyon arasındaki fark; inovasyonun, yenilikten farklı olarak müşteri için değer oluşturmasıdır (Drucker, 1985). İnovasyon; yeni düşünce ya da davranışın, örgütün başarısını sağlamayı hedeflemesidir. İnovasyonun benimsenmesi, yeni düşünce ya da davranışların uygulanması, geliştirilmesi ve oluşturmasına dayanan bir süreçtir (Damanpour, 1996; Fischer, 2001). İnovasyon işletmelerin yeni ürün ve düşünceleri benimsemesiyle kârlılıklarını ve rekabetçilik artırmasını amaçlayan çok önemli bir yetenektir (Roffe, 1996). İşletmelere, bir gelecek vizyonu ortaya koyma imkânı sağlayan unsur inovasyon yeteneği ve yönetiminde gösterdiğiniz başarıdır (Kuczmarski, 2003). Bilgiyi edinme yolları ve edinilen bilginin kullanımı, üretim amaçlayan işletmeler için, günümüz serbest piyasa koşullarında rakiplerine karşı rekabette avantajı sağlamak için oldukça önemlidir. Bunların dışında ayrıca, operasyonel yöntemlerde değişikliğe gidilmesinin gerekli olduğunun farkına varmak da bir o kadar önemlidir. Tüm süreçler, pazarda rakiplere karşı rekabet avantajını artıracak inovasyon ortamının sağlanmasıdır (Miller, 2006). İnovasyon, devam eden bir süreçten ayrılma, araştırma ve keşfetme olarak açıklanabilir ve sonucunda yeni organizasyon yapıları, yeni teknikler ve dolayısıyla yeni ürünler ve yeni pazarların keşfi gibi sonuçların ortaya çıkmasını sağlayacaktır (Avermaete, 2003). İnovasyon, sonuç olarak, iş uygulamalarında, şirket organizasyonlarında ya da dış ilişkilerde yeni ve önemli ölçüde geliştirilmiş bir ürünün (mal veya hizmet) ya da sürecin, yeni bir pazarlama yönteminin veya yeni bir örgütsel yöntemin uygulanmasıdır (OECD, 2006).

Müşteri için yeni değerler ortaya çıkarmak ve müşterilerin bu ortaya çıkan değerleri takdir etmesi işletmenin varlığını sürdürmesi için çok önemlidir. Müşteri için inovasyon yoluyla yaratılan bu değer işletmeye geri dönüşü ekonomik olabileceği gibi, müşteri sadakatini artırıcı, marka bilinirliği yükseltici etkiler olarak da karşımıza çıkabilir (Özkent, 2015). Başarılı bir şekilde tamamlanabilen inovasyon faaliyetlerinin, şirketlere ve dolayısıyla ülkelere çok önemli ekonomik katkılar yaptığı belirtilmiştir (Trott, 2005, Akgemci, 2010, Terzioğlu, 2008). Günümüzde, rakiplere karşı olan rekabet avantajını yalnızca düşük maliyetle üretim şeklinde görmek doğru değildir. Piyasanın ihtiyaçlarına uygun ürünün tüketici taleplerini göz önünde bulundurarak yeni, modern ve kullanışlı olarak tasarlanması önemli hale gelmiştir (Elçi, 2007). İnovasyonun, günümüzde pazar payını ve kârı artırmak için en önemli etken olarak görülmektedir (Valéry, 1999). İşletmelerin, inovasyon yeteneklerinin geliştirerek yeni hizmet ve ürünler üretilmesiyle, iç piyasaya ve yerel işletmelere canlılık getirebileceği gibi uluslararası ticarette yeni fırsatlarla birlikte ülke ekonomisi gelişiminin hız kazanmasına sebep olacaktır (Wang, Chengqi; Mario, 2009). İnovasyon kapasitesi, üstün örgüt performansına ulaşılabilmesi için en önemli dâhili kaynaklardan biri olarak kabul edilmektedir. (Saeed, Zhaled, Naude, Oghazi, Zeynaloo, 2018). Devletler tarafından inovatif ürünlerin ortaya çıkarılması için inovasyon odaklı şirketlere kamu desteği verilerek teşvik edilmesi, refah ve modern ekonomiler için önemli bir etken olduğu anlaşılmıştır (Yavuz, 2009).

2.3. Yönetim Bilişim Sistemleri

İşletme içerisinde, tümleşik verinin ortaya çıkmasına imkân sağlayan merkezi veri yönetimi, yönetim bilişim sistemleri olarak tanımlanmaktadır. Farklı fonksiyonel birimlerden verilerin toplanabilmesi, düzenlenmesi ve dağıtılması için bir veri tabanı yönetim sistemine ihtiyaç vardır. Bu, her fonksiyonel birimin veriyi kullanabilmesini sağlar (Abed, M. Naser, Mahmoud, 2020; Laudon, 2018; Dixon ve Collier, 1995). Günümüz sektörel yapısı içerisinde; yönetim bilgi sistemleri, karar veren yöneticinin her türlü bilgiye masa başı bilgisayar ekranı gösterimi ile erişebilmesi durumu olarak tanımlanmaktadır. İşletme veya organizasyon içerisindeki karar verici yani yöneticinin yönetim bilişim sistemleri uygulamalarından yararlanarak, karar verme eylemini sağlayabilmesi için; bir sorunun var olması, bir karar vericinin var olması, sorunun çözümü için ihtiyaç hissedilmesi ve sorunun çözümü için tercih yapılabilecek alternatif çözümlerin var olması şeklinde sıralamıştır (Demircan, 1997).

Yönetim bilişim sistemleri, bilişim teknolojilerinden yararlanarak karar alma ve karar verme süreçleri için yöneticilerin ihtiyaç duyduğu anda istediği bilgilere ulaşmasıdır (Schermerhorn, 2001). Yönetim bilişim sistemleri; yöneticilere, istenilen zamanda veriye ulaşma rahatlığını sağlayan bilgi teknolojilerinin kullanılmasıdır. Bilgisayar temelli yönetim sistemlerinin ve tümleşik bilgi

işleme sistemlerinin tamamını içermektedir. Yöneticilere, sağlıklı kararlar almalarını sağlamak için işletme verilerini harmanlayıp işleyebilen iletişim araçlarının aralarındaki bütünleşik ilişkilerin tamamıdır. Örgütün var olma ve gelişmesini sağlanması ile örgütsel faaliyetlerinin yürütülmesi, örgütlemesi, planlanması ve denetimi için yönetimin ihtiyaç duyduğu anda doğru ve anlamlı bilgiyi sağlayan ve geliştiren sistem yönetim bilişim sistemidir. Yönetim bilişim sistemleri tüm gerekli bilgi akışını sağlamanın yanında yönetim ve karar işlevleri için bilgi ve işleme desteği sağlamaktadır.

Günümüz dünyasında şirketlerde çalışan personeller ve yöneticiler her gün çok fazla veri ve bilgi ile karşılaşmaktadır. Gün içerisinde işlerin gerçekleştirilmesi sırasında bu veri ve bilgilerin analiz edilmesi her geçen gün daha da zorlaşmaktadır. Hızlı bir şekilde bu karmaşık bilgilerin analizlerinin yapılıp yorumlanması mümkün olmamaktadır. İşte bu nedenle yöneticilere ve çalışanlara yardımcı olmak amacıyla yönetim bilişim sistemleri analiz ve raporlar sunmaktadır. Yönetim bilişim sistemleri uygulamaları iletişim imkânları ve bilgisayar teknolojilerinde oluşan değişimle birlikte artış göstermiştir. (Eggert ve Alberts, 2020). Yönetim bilişim sistemleri ve ortaya çıkardığı yeni teknolojiler, işletmelerin tüm birimlerinde kullanılarak işletmeye fayda sağlamaktadır (Aydıner ve Tatoğlu, 2019). Büyük firmaların karmaşık yapılarından dolayı bilişim sistemleri kullanımına ihtiyaç duyarak bu alanda yatırım yaptıkları ve yönetim bilişim sistemleri uygulamalarını kullandıkları görülmektedir. Büyük şirketler, sürdürülebilirliklerini desteklemek için iş süreçlerindeki ayrıntıları anlamak ve yapısal olarak ele almak için bilgi akışına ihtiyaç duymakta ve bu yüzden bu tür teknolojik uygulamalara yatırım yapmaya daha meyilli olmaktadırlar (Aydıner ve Tatoğlu, 2019). Yönetim bilişim sistemleri, sosyal uygulamalar sağlayarak çalışanlarının bir arada olmasını sağlayan ve bu oluşumla birlikte bilgi paylaşımı yapmalarını kolaylaştırmakta ve inovasyon süreçlerine de büyük katkılar sunmaktadır (Panori, Kakderi, Komninos, 2020; Lill, Wald, Munck, 2020; Achi, Salinesi, Viscusi, 2016).

3. METODOLOJİ

Bu çalışmanın araştırma evreni olarak; İstanbul'da yönetim bilişim sistemleri uygulamaları kullanan tüm işletmeler belirlenmiştir. Araştırmanın örneklemini belirlemek içinse rastgele ve kolayda örneklem yöntemi seçilmiş ve bu kapsamda 543 orta ve üst düzey yönetici tespit edilmiştir. Bu örneklem çerçevesi belirlenirken birbirinden farklı şirketler ve sektörler belirlenmiş ve bu şirketler içinde çalışan yöneticilere WhatsApp, e-posta ve Linkedin gibi internet platformları kullanılarak elektronik ortamda hazırlanmış elektronik anket internet bağlantısı paylaşılmıştır. Paylaşılan internet bağlantıları sonucunda 258 katılımcının anketi tamamladığı görülmüştür. Bu sonuca dayanarak elektronik anket için geri dönüş oranı %47,5 olduğu ortaya çıkmıştır (Neuman, 2014).

Çalışmanın ilk boyutu olan Entelektüel Sermaye kavramının ölçümü için, Wang, Wang ve Liang tarafından geliştirilmiş olan 17 maddeli ölçek kullanılmıştır (Wang, Wang ve Liang, 2014). Wang, Wang ve Liang tarafından İngilizce olarak hazırlanan anket soruları araştırmacılar ve bir adet dil uzmanı tarafından Türkçe'ye çevrilmiştir. Bu çeviri, çapraz çeviri yöntemiyle yapılmıştır ve öncelikle İngilizce'den Türkçe'ye çevrimi sağlanmış ve daha sonra Türkçe'den İngilizce'ye tekrar çevrim gerçekleştirilmiştir. Çeviri işlemi gerçekleştirilirken, cümlelerin zamanını ifade eden yapılarda küçük değişiklikler yapılarak standart gramer kurallarına uygun hale getirilmiştir. Bu küçük değişiklikler, anlamda bozulma veya kayma yaratmayacak şekilde yapılmıştır. Daha sonra ölçeklerin; Türkçe ve İngilizce halleri karşılaştırılmış ve ortak mutabakata varılmıştır. Araştırmanın ikinci değişkeni olan inovasyon yeteneğinin ölçümü için, Calantone, Çavuşgil ve Zhao tarafından hazırlanmış ve Umut Avcı (Avcı, 2009) tarafından Türkçe'ye çevrilen 6 maddelik ölçek kullanılmıştır (Calantone, Cavusgil ve Zhao, 2002). Araştırmanın üçüncü değişkeni Yönetim Bilişim Sistemleri Memnuniyet Düzeyinin ölçümü için, Bülent Çizmeci tarafından geliştirilen 17 maddeli ölçek kullanılmıştır (Çizmeci, 2011). Bu anket çalışması, toplam 40 sorudan oluşmaktadır. Anket uygulamasında, 5'li likert ölçeği ile "Katılmıyorum" seçeneğinden başlayarak "Katılıyorum" seçeneğine doğru bir skalada, katılımcılardan kendilerine en doğru gelen seçeneği seçerek değerlendirme yapmaları istenmiştir.

3.1. Araştırmanın Modeli ve Hipotezler

Entelektüel sermaye insan, yapısal ve ilişkisel sermaye olmak üzere üç alt boyuttan oluşmaktadır. İşletmenin sorunlarına çözüm bulmak için sahip olduğu insan yeteneğinin tamamı insan sermayesi olarak adlandırılmaktadır (Grantham ve Judith, 2002). İnsan sermayesinin etkinliği; çalışanların işletmeye katkısı, çalışan tatmini, değer yaratma, eğitim, kilit personelin elde tutulması, süreçlerin uygulanması, liderlik, bilgi paylaşımı ve yeni anlamlı bilgiyi oluşturma ile artırılabilir (Bontis, 2001). Yapısal sermaye, işletmenin, iş yapabilme yeteneğini yükseltecek bakış açısının işletmeye dâhil edilmesidir (Edvinsson and S. Malone, 1997). Yapısal sermaye, kurum içi organizasyonu güçlendirmek odaklı, yeni fikir ortaya çıkarma yeteneğini olası hale getiren bütün varlıkların toplamıdır (Bozbura ve Toraman, 2010). İlişkisel sermaye veya bir diğer deyişle müşteri sermayesi, işletmenin devamlılığını sağlayan, işletmenin satış yaptığı kişi ve kuruluşlarla olan ilişkilerinin değeridir (Chen ve Zhu, 2004). İnovasyon ise yeni düşünce ya da davranışların, örgütün başarısında önemli bir faktördür. İnovasyon yeni düşünce ya da davranışların uygulanması, geliştirilmesi ve oluşturmasına dayanan bir süreçtir (Damanpour, 1996). Yeni bir şeyler yapabilmek için, yeni düşünme şekillerinin ve yolların ortaya çıkarılması ve bunların finansal ve kültürel aktivitelerde kullanması ve benimsenmesi inovasyonun işletme içinde var olmasının işaretidir (Fischer, 2001). Yönetim bilişim sistemleri ise, bilişim teknolojilerinden yararlanarak karar alma ve karar verme

süreçleri için yöneticilerin, ihtiyaç duyduğu anda istediği bilgilere ulaşmasıdır (Schermerhorn, 2001). Yönetim bilişim sistemlerinin en önemli katkısı ise organizasyon içi ve dışı aktörlerle iletişimi kolaylaştırmasıdır. İnovasyon süreci kolektif bir eylem olduğu için etkili yönetim bilişim sistemlerinin varlığı çok önemlidir. Entelektüel sermayenin geliştirilmesinde de bilgisayar ağları ve yazılım uygulamalarının önemine de yadsınamaz (Marr ve Moustaghfir, 2005; Xu ve Wang, 2018). Yönetim felsefesi, bilgi sistemleri, işletme kültürü, finansal ilişkiler ve yönetim süreci, entelektüel sermayenin gelişimi için çok önemlidir (Edvinsson ve S. Malone, 1997). İnovasyon odaklı bir üretimin modeline sahip olan işletmelerin, entelektüel sermayeyi en etkin biçimde kullandığı gözlemlenmiştir (Karchegani, Sofian ve Amin, 2013). Literatürde var olan bu açıklamalara dayanarak, entelektüel sermaye yüksek işletmelerde inovasyon yeteneğinin de yüksek olacağı ve bilişim sistemlerinin de bu ilişki de önemli bir rolünün olacağı önermesi yapılabilir. Bu önermeye bağlı olarak araştırmanın hipotetik modeli geliştirilmiştir (şekil 1). Araştırma modelinde iki bağımsız, bir bağımlı değişken vardır ve entelektüel sermaye bağımsız değişken ve yönetim bilişim sistemleri memnuniyet düzeyi düzenleyici bağımsız değişken, inovasyon ise bağımlı değişkendir.

Şekil 1: Araştırmanın Modeli
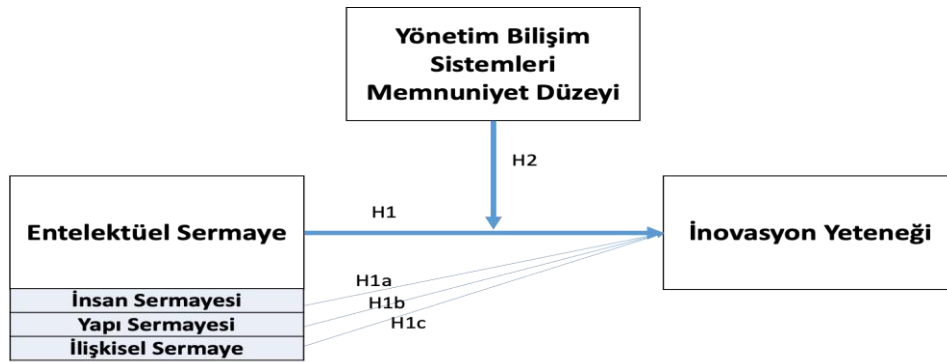
Araştırma modelindeki ilişkilere bağlı iki ana hipotez, üç de alt hipotez olmak üzere toplamda beş hipotez oluşturulmuştur ve bu hipotezler aşağıda belirtilmiştir.

H0: Entelektüel sermaye, inovasyon yeteneğini etkilemez**.**

H1: Entelektüel sermaye, inovasyon yeteneğini etkiler.

H1A: İnsan sermayesi, inovasyon yeteneğini etkiler.

H1B: Yapısal sermaye, inovasyon yeteneğini etkiler.

H1C: İlişkisel sermaye, inovasyon yeteneğini etkiler.

H20: Entelektüel sermayenin, inovasyon yeteneğinin etkisinde yönetim bilişim sistemleri memnuniyet düzeyinin düzenliyici etkisi yoktur.

H2: Entelektüel sermayenin, inovasyon yeteneğinin etkisinde yönetim bilişim sistemleri memnuniyet düzeyinin düzenliyici etkisi vardır.

3.2. Veri Analizi ve Bulgular

Araştırmaya katılanların %53,9'u erkek, %46,1'i kadın orta ve üst düzey yöneticilerden oluşmuştur. 26 ile 35 yaşları arasındaki katılımcı yüzdesi %65,9 olarak göze çarpmaktadır. Anket katılımcıları sektörel olarak ele alındığında; %43'lük katılımcının Bilişim / Teknoloji alanında çalışan bireyler oluşturduğu gözlemlenmiştir. Daha sonra sırasıyla hizmet sektörü, eğitim sektörü ve gıda sektörü gelmektedir. İleri düzey istatistik analizler için değişkenlere ait verilerin normallik analizi yapılmıştır. Daha sonra sırasıyla faktör analizi, güvenilirlik analizi, korelasyon analizi, regresyon analizi ve düzenleyici etki analizleri yapılmış ve bulgular tartışılmıştır.

3.2.1. Normallik Analizi ve Bulguları

Araştırma değişkenleri entelektüel sermaye, inovasyon ve yönetim bilişim sistemleri memnuniyet düzeyi ayrı ayrı normallik analizine tabi tutulmuş ve tablo 1'teki sonuçlar ortaya çıkmıştır.

_____

Tablo 1: Çarpıklık ve Basıklık

Değişkenler	Alt Boyutlar	Çarpıklık (Skewness)	Basıklık (Kurtosis)
Entelektüel Sermaye		-0,166	0,111
	İnsan Sermayesi	0,091	-0,383
	Yapısal Sermaye	-0,289	-0,157
	İlişkisel Sermaye	-0,591	0,679
İnovasyon		-0,289	0,034
Yönetim Bilişim Sistemleri		-0,693	0,435

Çarpıklık ve basıklık değerlerinin -1,96 ile +1,96 değerleri arasında olması sosyal bilimler araştırmaları için verinin normal dağıldığı anlamına gelmektedir (Tabachnick, Fidell ve Ullman, 2007). Tablo 1 incelendiğinde, değişkenler ve alt boyutların çarpıklık ve basıklık değerlerinin -1,96 ile +1,96 aralığında olduğu görülmektedir. Bu durumda, değişkenler ve alt boyutlarına ait verilerin normal dağıldığı kabul edilmiştir.

3.2.2. Faktör Analizi ve Bulguları

İnovasyon ve yönetim bilişim sistemleri memnuniyet düzeyi tek faktörlü değişkenlerdir. Bu nedenle bu değişkenler için faktör analizi yapılmamıştır. Entelektüel Sermaye değişkeni için yapılan Faktör Analizi Tablo 2'de gösterilmiştir.

Tablo 2: Entelektüel Sermaye Ölçeği Faktör Analizi Sonuçları

FAKTÖR	MADDELER	MADDE YÜKÜ	AÇIKLAYICI VARYANS (%)
İnsan Sermayesi	Çalışanlar, işlerini başarı ile gerçekleştirmek için uygun iş tecrübesine sahiptir.	0,525	19,63
	Çalışanlar, yaptıkları işlere uygun yeteneklere sahiptir.	0,571	
	Şirket, çalışanlara, iyi derecede tasarlanmış eğitim programları sunar	0,621	
	Çalışanlar, genellikler yeni fikir ve bilgiler geliştirir.	0,733	
	Çalışanlar, oldukça yaratıcıdır.	0,705	
Yapısal Sermaye	Şirketin operasyon prosedürleri çok verimlidir.	0,687	26,59
	Şirket, değişikliklere hızlı cevap veriyor.	0,698	
	Şirket, kolay ulaşılabilir bilgi sistemine sahiptir.	0,651	
	Şirketin sistem ve prosedürleri yeniliği destekler.	0,754	
	Şirketin kültürü ve atmosferi esnek ve rahattır.	0,528	
	Şirket, yeni pazar geliştirme yatırımları üzerinde durmaktadır.	0,581	
	Şirketin farklı departmanları birbirine karşı destekleyicidir.	0,655	
İlişkisel Sermaye	Şirket, etkin iş birliği ve samimi iletişim yoluyla problemleri keşfeder ve çözer.	0,675	21,47
	Şirket, paydaşları ile etkileşim içindedir.	0,681	
	Şirket, müşterileriyle uzun vadeli ilişkiler kurar.	0,579	
	Şirketin iyi tedarikçileri vardır.	0,66	
	Şirket, stratejik ortaklarıyla istikrarlı ve iyi ilişkiler içerisindedir.	0,663	
	Toplam Varyans		67,69
	KMO Ölçek Geçerliliği		0,92
	Barlett's kürsellik testi ki-kare		1888,726
	Sd		136
	P Değeri		0,000

Tablo 2 incelendiğinde entelektüel sermaye değişkeninin orijinal ölçeğe benzer bir şekilde üç faktör altında toplandığı görülmüştür. Faktörleşmenin KMO (0.92), Bartlett Küresellik (p<.05) değerlerinin uygun olduğu ve üç alt faktörün toplam varyansın %67,69'unu açıkladığı tespit edilmiştir.

3.2.3. Güvenilirlik Analizi ve Bulguları

Güvenirlilik analizi kapsamında içsel tutarlılık analizi gerçekleştirilmiştir. İçsel tutarlılık analizlerinde, çok maddeli bir ölçeğin her bir maddesinin birbirleriyle korelasyon ilişkileri dikkate alınarak maddeler arasında uyum ve yakınlık tespit edilmeye çalışılmaktadır. Sosyal bilimler alanı için yapılan literatür araştırmalarında, Cronbach's Alfa Katsayısı (güvenilirlik değeri) 0,50 ve üzeri gerçekleşen ölçümler güvenilir kabul edilmektedir (Nunnally, 1978). Değişkenlere ait Cronbach's Alfa değerleri Tablo 3'te verilmiştir.

Tablo 3: Faktörlerin Güvenilirlik (α) Değerleri

Değişkenler	Boyutlar	Soru Sayısı	Cronbach's Alfa (α) Değerleri Alt Boyutlar	Cronbach's Alfa (α) Değerleri
Entelektüel Sermaye	İnsan Sermayesi	5	0,808	0,912
	Yapısal Sermaye	7	0,832	
	İlişkisel Sermaye	5	0,808	
İnovasyon		6		0,732
Yönetimi Bilişim Sistemleri		17		0,937

Tablo 3'te görüldüğü üzere Entelektüel Sermaye ölçeğinin alt boyutları olan, İnsan sermayesinin (0,808), yapısal sermayenin (0,832) ve ilişkisel (müşteri) sermayesinin (0,808) Cronbach's Alfa değerlerinin güvenilir düzeyde olduğu görülmektedir. Entelektüel sermayenin ana değişkeninin (0,912), inovasyon ana değişkeninin (0,732) ve yönetim bilişim sistemleri memnuniyet düzeyi ana değişkeninin (0,937) Cronbach's Alfa değerleri de güvenilir düzeydedir. Bu durumda, araştırmanın tüm değişkenleri ve alt boyutları ölçeklerinin iç tutarlılığı bakımından yeterlidir ve analize uygundur.

3.2.4. Korelasyon Analizi ve Bulguları

Korelasyon analizinde görüldüğü üzere entelektüel sermaye, entelektüel sermayenin alt boyutları olan insan sermayesi, yapısal sermaye, ilişkisel sermaye ile birlikte inovasyon ve yönetim bilişim sistemleri memnuniyet düzeyi arasındaki birebir ilişkiler ele alınmıştır. Tablo 4'te değişkenlerine ait Pearson korelasyon katsayıları listelenmiştir.

Tablo 4: Korelasyon Analizi

Değişkenler	Entelektüel Sermaye	İnsan Sermayesi	Yapısal Sermaye	İlişkisel Sermaye	İnovasyon	Yönetim Bilişim Sistemleri
Entelektüel Sermaye	1					
İnsan Sermayesi	0,837**	1				
Yapısal Sermaye	0,926**	0,657**	1			
İlişkisel Sermaye	0,861**	0,594**	0,707**	1		
İnovasyon	0,729**	0,573**	0,71**	0,614**	1	
Yönetim Bilişim Sistemleri	0,678**	0,52**	0,631**	0,627**	0,646**	1

** Korelasyon significant değeri 0,01

Tablo 4'te verilen korelasyon değerleri incelendiğinde; entelektüel sermaye değişkeni ile alt boyutları insan sermayesi (r=0,837, p<0,01), yapısal sermaye (r=0,926, p<0.01) ve ilişkisel sermaye (r=0,861, p<0,01) boyutları arasında pozitif yönlü kuvvetli ve anlamlı ilişki olduğu tespit edilmiştir. Entelektüel sermaye ile inovasyon değişkeni arasında pozitif yönlü kuvvetli ve anlamlı ilişki (r=0,729, p<0,01) olduğu tespit edilmiştir. Entelektüel sermaye ile yönetim bilişim sistemleri memnuniyet düzeyi değişkeni arasında pozitif yönlü ve anlamlı ilişki (r=0,678, p<0,01) olduğu tespit edilmiştir.

3.2.5. Regresyon Analizi ve Bulguları

Araştırma modeli incelendiğinde (Şekil 1) iki bağımsız değişken bir bağımlı değişkenin olduğu görülmektedir. Modelde inovasyon yeteneği bağımlı değişken, entelektüel sermaye bağımsız değişken ve yönetim bilişim sistemleri memnuniyet düzeyi ise düzenleyici bağımsız değişken olarak ele alınmıştır. Bu nedenle birden fazla regresyon analizi yapılmıştır. İlk önce bağımlı değişken İnovasyon (INSORT) iken, entelektüel sermayenin alt boyutları olan insan sermayesi (EISORT), ilişkisel sermaye (EILSORT) ve yapısal sermaye

(EYSORT) bağımsız değişkenler olarak kabul edilmiştir. Bağımsız değişkenler "Enter" metodu ile regresyon analizine dâhil edilmiştir. Regresyon analizine ilişkin sonuçlar Tablo 5'te sunulmuştur.

Tablo 5: Entelektüel Sermaye ve İnovasyon Regresyon analizi sonuçları

Model	R	R²	Düzeltilmiş R²	Df	F	P
1	0,735	0,54	0,535	3	99,386	0.000

Bağımlı Değişken: İnovasyon
Bağımsız Değişken: İnsan Sermayesi, Yapısal Sermaye, İlişkisel Sermaye

Tablo 5 incelendiğinde; regresyon modelinin anlamlı (p <0,01) olduğu tespit edilmiştir. Bağımsız değişken olan entelektüel sermaye, bağımlı değişken inovasyonun anlamlı bir yordayıcısıdır. Modelde bağımsız değişkenler bağımlı değişkendeki varyansı %53,5'i açıklanmaktadır (R²: 0,535). Bağımsız değişkenlerin her birinin modele katkısı tablo 6'da görülmektedir.

Tablo 6: Entelektüel Sermaye Alt Boyutları ile İnovasyon Katsayılar Tablosu

Model	Beta	Standart Sapma	Düzenlenmiş Beta	t	Sig. (p)
Sabit	0,483	0,179		2,699	0,007
İnsan Sermayesi	0,148	0,059	0,145	2,497	0,013
Yapısal Sermaye	0,468	0,064	0,482	7,27	0
İlişkisel Sermaye	0,191	0,063	0,187	3,013	0,003

Bağımlı Değişken: İnovasyon

Tablo 6 incelendiğinde; Entelektüel Sermaye alt boyutları olan İnsan Sermayesi, Yapısal Sermaye ve İlişkisel Sermaye için p değerleri sırasıyla; 0,013, 0,000 ve 0,003 ve Beta katsayıları ise 0,148, 0,468 ve 0,191 olduğu görülmektedir. Her bir alt boyutun (p <0,05) Beta değerleri pozitif olduğu için pozitif yönde anlamlı bir etkileri vardır. Bu durumda, bağımlı değişken olan İnovasyona en büyük etkinin 0,468 Beta katsayısıyla Yapısal Sermaye olduğu tespit edilmiştir. Tablo 6'daki verileri kullanarak regresyon analiz denklem aşağıdaki gibi ifade edilebilir.

INSORT = 0,483 + EISORT*0,148 + EYSORT*0,468 + EILSORT*0.191

Düzenleyici etki analizine geçilmeden önce düzenleyici bağımsız değişken olan Yönetim Bilişim Sistemleri memnuniyet düzeyinin inovasyon değişkeni üzerindeki etkileri incelemek için ikinci bir regresyon modeli oluşturulmuştur. Bu modele ait regresyon analizi sonuçları Tablo 7'de sunulmuştur.

Tablo 7: Yönetim Bilişim Sistemleri ve İnovasyon Regresyon Analizi Sonuçları

Model	R	R²	Düzeltilmiş R²	F	p
1	0,646	0,417	0,415	183,12	0,000

Bağımlı Değişken: İnovasyon
Bağımsız Değişken: YBS Memnuniyet Düzeyi

Tablo 7 incelendiğinde; regresyon modelinin anlamlı (p <0,01) olduğu tespit edilmiştir. Bağımsız değişken olan yönetim bilişim sistemleri memnuniyet düzeyi, bağımlı değişken inovasyonun anlamlı bir yordayıcısıdır ve bağımlı değişkendeki varyansı %41,5'i açıklanmaktadır. (R²: 0,415). Regresyon denklemindeki katsayılara ilişkin değerler Tablo 8'dedir.

Tablo 8: YBS Memnuniyet Düzeyi ve İnovasyon Regresyon Modeli Katsayılar Tablosu

Model	Beta	Standart Sapma	Düzenlenmiş Beta	t	Sig. (p)
Sabit	0,405	0,219		1,847	0,066
YBS Memnuniyet Düzeyi	0,753	0,056	0,646	13,532	0,000

Bağımlı Değişken: İnovasyon

Tablo 8 incelendiğinde yönetim bilişim sistemleri memnuniyet düzeyinin inovasyon değişkeni üzerinde anlamlı bir etkisi (Beta: 0,753, P: 0,000) vardır. Regresyon analizi için aşağıdaki denklem oluşturulabilir;

INSORT = 0,405 + 0,753 * YBSORT

3.1. Düzenleyici Etki Analizi

Entelektüel sermaye ile inovasyon arasındaki ilişkide yönetim bilişim sistemleri memnuniyet düzeyinin düzenleyici etkisini incelemek üzere oluşturulan regresyon modelinin sonuçları Tablo 9'de sunulmuştur.

Tablo 9: İnovasyon, Entelektüel Sermaye ve YBS Düzenleyici Analiz Sonuçları

R	R²	MSE	F	df1	df2	p
0,7822	0,6118	0,1889	133,4397	3,0000	254,0000	0,0000
Model	**Katsayı**	**se**	**t**	**p**	**LLCI**	**ULCI**
Sabit	3,5080	0,0309	113,4747	0,0000	3,4471	3,5689
ZENSORT	0,3432	0,0355	9,6569	0,0000	0,2732	0,4132
ZYBSORT	0,2679	0,0369	7,2569	0,0000	0,1952	0,3406
Int_1	0,0485	0,0232	2,0870	0,0379	0,0027	0,0942

Tablo 9 modeli bir bütün şeklinde anlamlı olduğu (p<0.05) incelendiğinde, entelektüel sermayenin ve yönetim bilişim sistemleri memnuniyet düzeyinin, inovasyonu anlamlı bir şekilde yordadığı (p<0,05) tespit edilmiştir. Etkileşim (Int_1) satırı incelendiğinde ise; etkileşim değişkeninin de inovasyonu anlamlı (p<0,05) bir şekilde yordadığı görülmektedir. Bu değerler, yönetim bilişim sistemleri memnuniyet düzeyinin entelektüel sermayenin inovasyona etkisinde düzenleyici etkisi olduğunu göstermektedir. Yönetim bilişim sistemleri memnuniyeti için düşük düzey memnuniyet durumu, orta düzey memnuniyet durumu ve yüksek düzey memnuniyet durumundaki etkilerine ilişkin veriler Tablo 10'de gösterilmiştir.

Tablo 10: Düzenleyici Etki Değişkenin Alt, Orta ve Üst Değerler Tablosu

ZYBSORT	Katsayı	se	t	p	LLCI	ULCI
-1,0441	0,2926	0,0438	6,6773	0,0000	0,2063	0,3789
0,0911	0,3476	0,0355	9,7869	0,0000	0,2777	0,4176
0,9642	0,3900	0,0413	9,4532	0,0000	0,3087	0,4712

Tablo 10 incelendiğinde düşük düzeyde yönetim bilişim sistemleri memnuniyetinin, entelektüel sermaye ile inovasyon ilişkisine 0,2926 birim seviyesinde düzenleyici etkiye sahip olduğu görülmektedir. Orta düzeyde yönetim bilişim sistemleri memnuniyetinin, entelektüel sermaye ile inovasyon ilişkisine 0,3476 birim seviyesinde düzenleyici etkiye sahip olduğu görülmektedir. Yüksek düzeyde yönetim bilişim sistemleri memnuniyetinin ise, entelektüel sermaye ile inovasyon ilişkisine 0,39 birim seviyesinde düzenleyici etkiye sahip olduğu görülmektedir. Yönetim bilişim sistemleri memnuniyet düzeyinin değişik seviyelerdeki (alt, orta ve üst) düzenleyici etkisini gösteren grafik Şekil 2 'de sunulmuştur.

Şekil 2: Düzenleyici Etki Grafiği
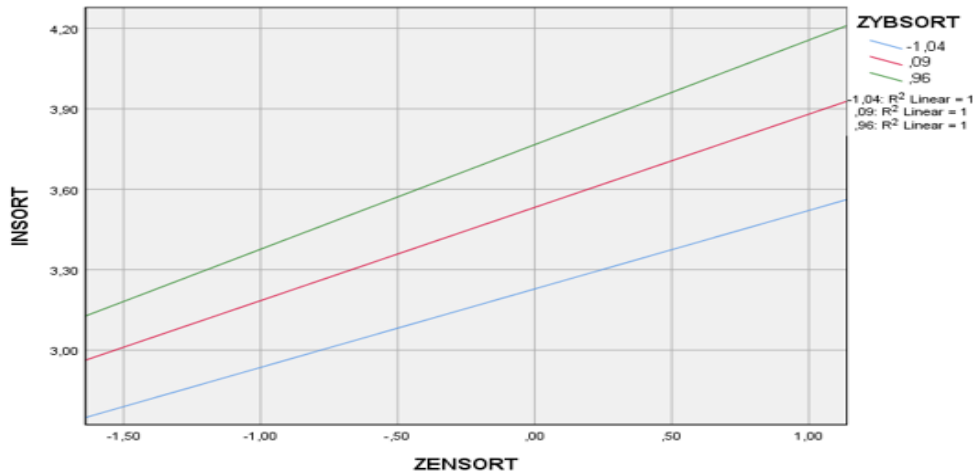
Düzenleyici etki grafiği incelendiğinde, yönetim bilişim sistemleri düşük, orta ve yüksek düzey memnuniyet seviyelerinin birbirinden ayrıştığı görülmektedir.

Analiz bulguları sonucuna göre, "Entelektüel sermayedeki artış, inovasyon yeteneğini pozitif yönlü ve anlamlı bir şekilde etkilemektedir" (H1), "entelektüel sermayenin insan sermayesi alt boyutundaki artış, inovasyon yeteneğini pozitif yönlü ve anlamlı bir şekilde etkilemektedir" (H1A), "entelektüel sermayenin yapısal sermayesi alt boyutundaki artış, inovasyon yeteneğini pozitif yönlü ve anlamlı bir şekilde etkilemektedir" (H1B) ve "entelektüel sermayenin ilişkisel sermaye alt boyutundaki artış, inovasyon yeteneğini pozitif yönlü ve anlamlı bir şekilde etkilemektedir" (H1C) şeklindeki hipotezler doğrulanmıştır. Düzenleyici etki analizi ile ortaya çıkan sonuca göre ise "entelektüel sermayenin, inovasyon yeteneğinin etkisinde yönetim bilişim sistemleri memnuniyet düzeyinin pozitif yönlü ve anlamlı bir düzenleyici etkisi vardır" (H2) hipotezi desteklenmiştir.

4. SONUÇ

İşletmelerin, rakipleri karşında rekabet avantajı sağlamalarında bilgi işçilerinin önemli bir rolü vardır. Bu üretkenlik, günümüzde ve gelecekte yöneticilerin en çok odaklanacakları alandır (Drucker, 1991). 21. yüzyılda, inovasyona dayalı üretim ve yönetim, sürdürülebilir ve rekabet edebilir bir şirket olmanın en önemli etkenidir. Günümüzde, işletmeleri, sahip olduğu maddi varlıklarla ifade etmenin yetersiz olduğu açıktır Bununla birlikte maddi olmayan soyut varlıklar da hesaba katıldığında işletmelerin gerçek piyasa değerleri ortaya çıkmaktadır. Bu nedenle, şirketlerin entelektüel bilgi ve birikimleri ve bunun farkında olmak ve yönetmek önemli hale gelmektedir. İşletmeleri başarılı kılan en önemli etkenler, bilgiye dayalı veya entelektüel sermaye varlıklarının üretkenlik derecesi ve birikim ile doğrudan bağlantılı olmasıdır (Gümüştekin, 2004). Dolayısıyla; en güçlü işletmeler en büyük maddi veya finansal varlıklara sahip olanlar değil, entelektüel sermayelerini güçlendirebilen ve söz konusu sermayeyi en etkili şekilde yönetebilen firmalardır. (Arslan, 2005). Entelektüel bilgi ve birikim, şirketlerin sahip oldukları insan sermayesi, yapısal sermaye ve müşteri sermayesinin bir bütünü olarak ortaya çıkmaktadır. Bu değerli birikim çağın gereklerine uygun şekilde dijital dönüşüm ve alt yapıyla desteklenirse önemli bir inovasyon yeteneği kazanmak mümkündür. Bu yetenek beraberinde rekabet avantajını getirecektir. Bu araştırmanın özünü de bu önerme oluşturmaktadır. Entelektüel sermaye, inovasyon ve yönetim bilişim sistemleri kavramları arasındaki ilişkileri incelmek üzere hipotezler oluşturulmuş ve ampirik bir çalışma gerçekleştirilmiştir.

Literatür incelendiğinde, entelektüel sermaye ile inovasyon arasındaki ilişki birçok kez incelenmiş ve arasında anlamlı bir ilişki olduğu saptanmıştır (Hutahayan, B., 2020; Obeidat vd.,2021). Bu çalışmada benzer sonuçlar elde edilmiştir. Entelektüel sermaye ile inovasyon arasında anlamlı bir ilişki olduğu ortaya çıkmıştır. Entelektüel sermayenin alt boyutlarının bağımsız değişken olduğu regresyon analizi sonuçlarına göre, insan, yapısal ve ilişkisel sermayenin inovasyon yeteneğini etkilediği ortaya çıkmıştır. En yüksek katkı yapan bağımsız değişken yapısal sermaye olarak ortaya çıkmıştır. Teknolojik altyapı organizasyon yapısının sermaye değerini belirleyen temel bir unsurdur (Hsu ve Fang, 2009, Nazari, vd., 2009). Yönetim bilişim sistemleri bir yönüyle yapısal sermayenin bir parçası olarak görülmektedir. Literatürde bilgi sistemlerinin ve bilgi yönetim yeteneğinin inovayon yeteneğini etkilediğine ilişkin araştırmalar mevcuttur (Sontoro vd., 2018; Masloboev, A. V., & Langhans, M., 2018; Hutahayan, B., 2020). Ancak dijitalleşmenin hızla arttığı günümüzde yönetim bilişim sistemleri yapısal sermayenin bir parçası olmanın ötesinde tek başına önemli bir faktör haline gelmiştir. Bu nedenle araştırmada bağımsız bir değişken olarak ele alınmıştır. Yönetim bilişim sistemlerinin etkinliğini ölçmek için kullanıcıların memnuniyet düzeyi dikkate alınmıştır. Yönetim bilişim sistemleri memnuniyet düzeyi ile inovasyon yeteneği arasında yapılan regresyon analizi gerçekleştirilmiştir. Analiz sonuçlarına göre yönetim bilişim sistemleri inovasyon yeteneğini olumlu yönde etkilemektedir. Fakat literatürde, entelektüel sermaye ile inovasyon arasındaki ilişki de yönetim bilişim sistemleri memnuniyet düzeyinin düzenleyici etkisine odaklanan bir çalışma tespit edilememiştir. Böyle bir ilişkinin ampirik olarak ortaya konması işletme yönetim sürecine önemli bir katkı sağlayacaktır. Bu noktadan hareketle bu ilişkileri inceleyen bir araştırma modeli geliştirilmiş ve veri toplanarak istatiksel analizler gerçekleştirilmiştir. Analiz sonuçları entelektüel sermayenin inovasyon yeteneğine etkisinde yönetim bilişim sistemleri memnuniyet düzeyinin düzenleyici rolü olduğu ortaya çıkmıştır.

Araştırma sonucunda elde edilen veriler doğrultusunda; yönetim bilişim sistemleri memnuniyet düzeyindeki artışın inovasyon yeteneğine önemli katkı sağlayacağı ampirik olarak belirlenmiştir. Aynı şekilde, entelektüel sermayeniz ne kadar güçlü olursa olsun yönetim bilişim sistemleri memnuniyet düzeyindeki düşüklük de inovasyon yeteneğini olumsuz yönde etkileyebilecektir. İçinde bulunduğumuz çağda tüm firmaların zorunlu olarak dijitalleşme ihtiyacı duyduğu bilinmektedir. Bu dijitalleşme süreçleri önemli miktarda yatırım, doğru bir planlama ve yönetim süreci gerektirmektedir. Aceleyle gerçekleştirilen bir dijital dönüşüm büyük miktarlarda maliyetlere katlanılsa bile organizasyonun ihtiyaç duymadığı, kullanıcılar memnun olmadığı bir yönetim bilişim sistemleri alt yapısı olarak karşımıza çıkabilir. Böyle bir durum sadece başarısız bir yönetim bilişim sistemi sahip olmakla kalmayıp firmanın inovasyon süreçlerine de olumsuz etkileri olabilir. İşte bu sonuçlar göz önüne alındığında, işletmelerin mutlak surette, yönetim bilişim sistemleri entegre edilen, geliştirilen, dönüştürülen organizasyonlarda doğru bir planlama ve tüm kullanıcıların dahil olduğu bir dijital dönüşüm süreç yönetimine ihtiyacı vardır. Dijital dönüşüm sürecinde planlama aşamasından başlayıp

uygulama aşamasına kadar tüm safhalarda kullanıcılar da dikkate alınmalı ve bu süreçlere dahil edilmelidir. Rekabetçi avantajı elde etmek için çok önemli etkenler olan, entelektüel sermaye, inovasyon yeteneği ve yönetim bilişim sistemleri uyum içinde olmalıdır.

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ADAPTATION AND VALIDATION OF THE SCALES FOR ASSESSING WORKPLACE FUN IN TURKEY

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To cite this document

ABSTRACT

Purpose - Fun in the workplace has frequently been highlighted in the popular media and increasingly attracted research attention. Its various positive outcomes have also been pointed out in the literature. Despite the growing relevance of workplace fun, its measurement has not been extensively tested, particularly in emerging markets. Accordingly, this study was intended to adapt and validate existing scales measuring different aspects of workplace fun in Turkey.

Methodology - Four measures of workplace fun, namely "fun activities", "fun job responsibilities", "coworker socializing" and "manager support for fun", were identified from the literature. These measures were translated and adapted for a Turkish sample. Their face validity and content validity were checked by experts in the field. Subsequently, the measures were tested on a sample of 254 employees working in startups in Turkey. The sample was randomly split into two groups for exploratory factor analysis and confirmatory factor analysis.

Findings - 24 items were derived from the literature. As expected, four factors were revealed in the exploratory factor analysis. One item was removed due to the insufficient factor loading on any factor. The reliability values of all factors were satisfactory. These results were confirmed in the confirmatory factor analysis, which showed that the measurement model had an acceptable fit to the sample data. In addition, the discriminant validity and the convergent validity were established.

Conclusion - The findings of this study suggested that the adapted version of the scales for measuring "fun job responsibilities", "fun activities", "manager support for fun", and "coworker socializing" can be used in Turkey. Researchers can employ these scales to examine the four dimensions of workplace fun as distinct constructs. Additionally, managers can utilize the validated indicators of workplace fun as a basis for creating a fun workplace.

Keywords: Workplace fun, fun activities, fun job responsibilities, coworker socializing, manager support for fun, startup
JEL Codes: M10, M13, O15

1. INTRODUCTION

Fun in the workplace is increasingly becoming more relevant in today's business world. The fun work environment of many well-known companies is frequently highlighted by the popular media. Google and Facebook are good examples. The East Coast headquarters of Google lets its employees have fun by providing several areas for playing, conference rooms decorated in a Broadway theme, areas for socialization that imitate vintage subway cars, standing desks equipped with treadmills, etc. (Stewart, 2013, March 15). The engineering office of Facebook in London is another example of offices that are designed to be a fun place. The employees there can play games with their coworkers in the games room and are offered a wide selection of meals and desserts for free (Tech Insider, 2018, December 19). These famous and fun companies have influenced many young companies, particularly startups. Indeed, workplace fun is now generally considered as part of the startup culture (Studholme, 2014).

The relevance of fun in the workplace is not only recognized by the media and popular opinion. Many scholars are also interested in understanding what role fun plays in organizations. Academic research that has been done up to this time has suggested that fun benefits organizations in many different ways. For example, workplace fun was found to positively affect customer service quality (Karl & Peluchette, 2006), job satisfaction (McDowell, 2004; Peluchette & Karl, 2005), employee commitment (McDowell, 2004), employee performance (Fluegge, 2014), applicant attraction (Tews, Michel, & Bartlett 2012) and job engagement (Müceldili & Erdil, 2016). On the other hand, it was reported to be negatively related to emotional exhaustion (Karl, Peluchette, & Harland, 2007) and turnover intention (Karl, Peluchette, & Hall, 2008; McDowell, 2004; Tews, Michel, & Stafford, 2013).

To quantitatively measure fun at work, researchers have taken different approaches. Karl, Peluchette and their colleagues operationalized it as an individual's perception of the existence of fun in the workplace and treated it as a single unidimensional construct (e.g. Karl & Peluchette, 2006; Karl et al., 2008; Peluchette & Karl, 2005). McDowell (2004) and Fluegge (2014) examined workplace fun as a multidimensional construct composed of "socializing with coworkers", "celebrating at work", "personal freedoms" and "global fun". However, both researchers aggregated the four dimensions of fun at work into a single measure.

Recently, Tews and his colleagues have directed research attention to the individual dimensions of workplace fun. Rather than combining those dimensions into one construct, they treated them as distinct constructs (e.g. Tews et al., 2012; Tews et al., 2013; Tews, Michel, & Allen, 2014). In this way, they were able to assess the effect of each dimension of workplace fun on specific outcomes. Their studies revealed that different dimensions of workplace fun did not necessarily have the same effect. For instance, Tews et al. (2013) found that "manager support for fun" was negatively related to volunteers' turnover, whereas "fun activities" positively affected their performance. Their findings highlighted the importance of measuring the dimensions of workplace fun separately.

Although the measurements of workplace fun have been used in multiple studies, validation of these measurements in emerging markets is still lacking. In Turkey, they have not yet been extensively tested. This study was intended to fill this gap in existing research. To accomplish this objective, it drew on Michel, Tews and Allen's (2019) framework, which suggests four dimensions of workplace fun: "fun activities", "fun job responsibilities", "coworker socializing" and "manager support for fun". The scales measuring these dimensions of workplace fun were derived from the literature. Then, they were adapted and validated on a sample of employees working in startup companies in Turkey.

2. DEFINITIONS OF WORKPLACE FUN

Defining fun in the workplace is not as straightforward as it may seem. The definitions that exist in the literature contain some inconsistencies. One of them concerns the types of activities in which individuals can have fun. According to McDowell (2004), workplace fun are those activities "not specifically related to the job that are enjoyable, amusing, or playful (p. 9)". On the contrary, Fluegge (2008) defined workplace fun as "any social, interpersonal, or task activities at work of a playful or humorous nature which provide an individual with amusement, enjoyment, or pleasure (p. 15)". That is to say, fun task activities are excluded in McDowell's (2004) definition but are included in Fluegge's (2008) definition.

Another inconsistency in the definitions of workplace fun is related to how it happens. Ford, McLaughlin and Newstrom (2003) stated that a fun work environment "intentionally encourages, initiates, and supports a variety of enjoyable and pleasurable activities that positively impact the attitude and productivity of individuals and groups (p. 22)". For them, such activities include celebrations, social events, and competitions that the company organizes. However, according to Bolton and Houlihan (2009), these fun activities are just one form of workplace fun, which they termed "packaged fun" or "managed fun". They pointed out that there is another form of workplace fun, which is called "organic fun". This form of workplace fun inheres in the work that employees do rather than comes from those fun activities.

Michel et al. (2019) proposed a more inclusive definition of workplace fun by drawing on the literature pertaining fun in organizations. They defined workplace fun as "characteristics or features of the work environment of a social, playful, and humorous nature, which have potential to trigger positive feelings of enjoyment, amusement, and lighthearted pleasure in individuals (p. 99)". The present study was based on this definition as it incorporates the different aspects of fun in the workplace. Specifically, this study considered both work-related and non-work-related activities and both "managed fun" and "organic fun" as workplace fun.

To further clarify the meaning of workplace fun, it is important to also consider the definitions of other similar concepts. In the organization literature, fun, humor, and play are easily confused with one another due to their closeness in meaning, but there are some differences that differentiate them. Play in organizational contexts is defined as "an intrinsically motivated, fun activity,

carried out recursively in the form of a practice, typically in the context of social relationships (Statler, Heracleous, & Jacobs, 2011, p. 238)". According to this definition, play resembles fun since both of them involve enjoyable activities. Also, play has two forms that are analogous to "managed fun" and "organic fun". Mainemelis and Ronson (2006) posited that play can be manifested as a form of diversion from work tasks, which is similar to "managed fun", or as a form of engagement with those tasks, which is similar to "organic fun". Nevertheless, Michel, et al. (2019) argued that the concept of play in the workplace is more narrowly focused and is in fact a sub-component of workplace fun. To illustrate, play activities, such as competing in an office beer pong tournament and playing computer games with coworkers, are part of workplace fun. However, not all types of workplace fun are play. For example, company picnics and birthday celebrations are not considered as play.

Humor at work is defined as "any event shared by an agent (e.g. an employee) with another individual (i.e. a target) that is intended to be amusing to the target and that the target perceives as an intentional act (Cooper, 2005, pp. 766–767)". Cooper (2005) stated that humor could manifest itself in many forms, including verbal expressions, such as using sarcasms and making jokes, and non-verbal expressions, such as sharing humorous images or messages. Humor and fun at work are similar in the sense that both of them give a feeling of amusement. However, they are argued to be two different concepts. Michel, et al. (2019) pointed out that humor is one aspect of workplace fun and that workplace fun includes a wider range of activities and interactions that do not involve humor.

3. COMPONENTS OF WORKPLACE FUN

Researchers have offered different categorizations of workplace fun based on their perspectives and focuses. Some of them viewed workplace fun as a single construct and focused specifically on fun activities. This group of researchers includes Ford et al. (2003), who sought to identify activities that create a fun work environment. Based on a review of the related literature and a survey of human resource managers, they proposed ten categories: "celebrations", "employee recognition", "social events", "activities for relieving stress", "games", "community volunteerism", "opportunities for personal development", "friendly employee competition", "humor" and "entertainment (e.g. musical bands and theatrical plays)". These activities were reported to contribute to a fun work environment to different extents. Karl, Peluchette, Hall and Harland (2005) similarly based their categorization of fun activities at work on the literature and a survey. They suggested that there are eight types of fun activities: "outings", "food", "awards/prizes", "gifts", "contests", "games", "celebrations" and "wild and wacky (e.g. giving prizes for the most bold and unusual clothing and hula hoop races)". Chan (2010) took a grounded theory approach and identified four categories of fun activities: "staff-oriented workplace fun" (e.g. celebrations for birthdays and work anniversaries), "social-oriented workplace fun" (e.g. trips and parties organized by the company), "supervisor-oriented workplace fun" (e.g. informal gatherings and lunches with supervisors) and "strategy-oriented workplace fun" (e.g. food and refreshments provided by the company, sessions for asking top management questions).

Another group of researchers recognized that fun at work has dimensions other than fun activities but still treated it as a single construct. Among these researchers, McDowell (2004) offered a framework of workplace fun, which she developed based on a quantitative study. The framework consists of four dimensions: "socializing with coworkers", "personal freedoms", "celebrating at work" and "global fun". However, she combined these dimensions into an overall measure of workplace fun in her subsequent study of the effects of workplace fun on employees' affective commitment and turnover intention. Her framework was similarly used in other research. For example, in Fluegge's (2014) study of the relationships between workplace fun and performance outcomes, the four dimensions of workplace fun were aggregately examined.

There has been a call for researchers to study individual aspects of workplace fun instead of combining them into one single construct. Researchers who followed this call have developed different sets of dimensions of workplace fun and examined them as distinct constructs. Tews and his colleagues were the major contributors to the research in this stream. Their studies were focused on specific aspects of workplace fun. These include "fun coworker interactions", "formal fun activities" and "fun job responsibilities" in Tews et al. (2012); "manager support for fun" and "fun activities" in Tews et al. (2013); "manager support for fun", "fun activities" and "coworker socializing" in Tews et al. (2014); and "manager support for fun", "fun activities", "coworker socializing" and "fun job responsibilities" in Tews, Michel, Xu and Drost (2015). Tews and the co-authors also examined the relationships between the above dimensions of workplace fun and some outcomes and found that they had different effects. For example, "manager support for fun" was negatively related to "employee turnover" but had no impact on "employee performance", whereas "fun activities" had no relationship with "employee turnover" but positively affected "employee performance" (Tews et al., 2013). These findings highlighted the importance of investigating different aspects of workplace fun.

More recently, Michel et al. (2019) has introduced a new framework, which incorporates the various aspects of workplace fun. From a review of the literature, they identified two main dimensions of workplace fun: "fun events" and "support for fun", which are composed of different sub-dimensions. The former includes "fun activities", "fun job responsibilities" and "coworker socializing", and the latter includes "manager support for fun" and "personal freedom". According to the authors, "personal freedoms" can be considered as part of "manager support for fun". Therefore, they might be combined into one construct.

4. MEASURES OF WORKPLACE FUN

The present study was based on Michel et al.'s (2019) framework. To be specific, it was focused on four dimensions of workplace fun, which were (1) "fun activities", (2) "fun job responsibilities", (3) "coworker socializing" and (4) "manager support for fun". The measures of these constructs were derived from the related literature. Subsequently, they were translated from English into Turkish and adapted for a Turkish sample. All of the measures were reviewed and confirmed for the face validity and content validity by academics who were experts in the field.

4.1. Fun Activities

Fun activities have been commonly accounted one of the main aspects of workplace fun and have been the focus of many studies pertaining fun in organization contexts. They are defined as "social and group activities initiated by the organization intended to promote enjoyment among employees (Tews et al., 2014, p. 928)". There is a wide range of activities that are considered as fun activities at work. Examples of these activities include parties, competitions, company outings, and celebrations. Much research effort has been devoted to identifying these activities and possible categorizations, which have subsequently been used as bases for developing scales measuring fun activities. Ford et al. (2003) were among the main contributors to this research stream. They focused their study on identifying activities that contributed to a fun work environment. Their findings, which suggested ten types of fun activities, were used in later quantitative studies. These include Tews et al.'s (2013) study, where a scale of fun activities was developed based on the previous study. The scale contained five items: "social events", "teambuilding activities", "competitions", "public celebrations of work" and "recognition of personal milestones". These items were tested on a sample of restaurant employees in the US. The Cronbach's alpha coefficient of .75 was reported. The same scale was also used on a similar sample in Tews et al.'s (2014) study, where the Cronbach's alpha coefficient was .76, and on a sample of employees in Turkey's service sector in Müceldili and Erdil's (2016) study, where the Cronbach's alpha coefficient was .85.

Another scale for measuring fun activities was developed by Karl et al. (2005). Unlike Tews et al.'s (2013) scale, this scale contains twenty-six items, which are categorized into eight types of fun activities: "awards/prizes", "contests", "games", "outings", "gifts", "food", "wide and wacky" and "celebration". In other words, each type of fun activities consists of more than one item. The fun activities that are included in the scale range from conventional ones, such as "celebrate employees' birthdays by bringing in cake and ice cream once a month" to less common ones, such as "start meetings by asking everyone to complete an open-ended sentence: "wouldn't it be fun if…" or "the funniest thing I've seen at work is…" (Karl et al., 2005, p. 7)". The scale was validated by using a sample of various occupations in different types of organizations, including non-profit organizations, public organizations and private organizations. The Cronbach's alpha coefficients were obtained for each type of fun activities, ranging from .69 to .93.

A measure of fun activities can also be found in McDowell's (2004) study. It is termed "celebrating at work" and is among the four dimensions of the fun climate scale, which measures the overall fun in the workplace. Similar to the previously mentioned fun activities scales, celebrating at work is composed of a list of fun activities. There are six items in total: "celebrations at work", "office parties", "company provided refreshments", "observing birthdays and other events", "festivities during holidays and other special times" and "throwing parties to recognize accomplishments". However, after the scale was tested on employees working in a private oil company in the US, one item, "company provided refreshments", was removed. The Cronbach's alpha coefficient of the five-item version of the scale was reported at .79. Tew et al. (2015) adopted this scale in their study. Based on a sample of employees in different organizational settings, the results showed a Cronbach's alpha value of 0.88.

Following Tews et al. (2014) and Müceldili and Erdil (2016), this study used Tews et al.'s (2014) five-item scale for measuring the fun activities dimension of workplace fun. Respondents were asked to rate how frequently each fun activity happened. The items were rated along a six-point interval format continuum ranging from 1 (never) to 6 (always).

4.2. Fun Job Responsibilities

Fun job responsibilities are defined by Tew et al. (2012, p. 108) as "tasks that are personally enjoyable, meaningful, and a good fit to the person's interests." This dimension of workplace fun has received relatively small attention in research on fun in the workplace compared to other dimensions. It was argued that fun at work is not related to the work itself (McDowell, 2004).

Nevertheless, some scholars regarded work-related fun as an aspect of workplace fun (e.g. Fluegge, 2014; Michel et al., 2019; Tew et al., 2015). Tew et al. (2012) conducted an experiment to examine the impact of fun job responsibilities and other aspects of workplace fun on companies' applicant attraction. In their study, participants were assigned to different scenarios where job responsibilities were presented as either fun or not fun. Building on this study, Tew et al. (2015) developed a four-item scale for measuring fun job responsibilities and tested it on employees in the US. They reported a Cronbach's alpha coefficient of 0.88 for the scale.

Although fun job responsibilities are seemingly overlooked in the workplace fun literature, the concept has been extensively examined in research on workaholism and work enthusiasm. Spence and Robbins (1992) stated that work enthusiasts find their job enjoyable, whereas workaholics have low enjoyment. They developed a scale called "work enjoyment" to measure the extent to which an individual finds their job responsibilities fun and enjoyable. According to the authors, this scale can be used to determine workaholism, work enthusiasm as well as other work-related profiles. The scale is composed of ten items and has been validated as a component of the workaholism battery along with "work involvement" and "drivenness" (e.g. Andreassen, Hetland, & Pallesen, 2010, 2014; Ersoy-Kart, 2005; McMillan, Brady, O'Driscoll, & Marsh, 2002; McMillan & O'Driscoll; 2004).

In this study, Spence and Robbins's (1992) scale was used to assess fun job responsibilities together with three other dimensions of workplace fun. Respondents were asked to indicate how frequently each of the statements occurred by rating on an interval type scale ranging from 1 (never) to 6 (always).

4.3. Coworker Socializing

Coworker socializing refers to social interactions that are friendly and playful among employees (Michel et al., 2019). Such interactions include sharing personal stories with one another, hanging out together and exchanging jokes. Researchers commonly view coworker socializing as an aspect of workplace fun (e.g. Fluegge, 2014; McDowell, 2004; Tew et al., 2014) and generally use McDowell's (2004) measure of socializing with coworkers as a basis for measuring the construct. In Fluegge's (2014) study, all of the six original items were used. Based on a sample of working students in the US, the results showed a Cronbach's alpha coefficient of 0.85. Tew and his colleagues adapted the original scale in their measurement of coworker socializing. In Tew et al.'s (2014) and Tew et al.'s (2015) studies, a four-item scale was used, and the Cronbach's alpha coefficients were reported at .83 and .90, respectively. These results were also based on employees in the US. Recently, this adapted version of the scale has been used in Turkey by Müceldili and Erdil (2016), who reported a Cronbach's alpha coefficient of .86.

To be consistent with the previous study that was conducted in Turkey, the present study also used Tews et al.'s (2014) coworker socializing scale to assess the extent to which employees socialized with their coworkers. All items were scored on an interval type scale ranging from 1 (never) to 6 (always).

4.4. Manager Support for Fun

Manager support for fun is the extent to which managers allow and encourage subordinates to have fun at work (Tews et al., 2014). It was examined as a distinct construct in several studies concerning workplace fun (e.g. Karamfilov, 2018; Müceldili & Erdil, 2016; Tews et al., 2014; Tews et al., 2015). However, in some other studies (e.g. Fluegge, 2014; McDowell, 2004), manager support for fun was treated as one of the items for assessing the overall fun in the workplace. To measure the manager support for fun construct, Tews et al. (2014) and Tews et al. (2015) used the same scale, which was adapted from Shanock and Eisenberger's (2006) measure of "supervisor support". The scale contains five items and the Cronbach's alpha coefficients in the two studies were reported at .92 and .94, respectively. This scale was also tested in Turkey by Müceldili & Erdil (2016) and the Cronbach's alpha value in this study was .93. Another measure of manager support for fun was developed by Karamfilov (2018). It is a seven-item scale modified from McDowell's (2004) fun climate scale to focus on leaders' endorsement of workplace fun, and was validated on a sample of employees in various industries in the US. The results indicated a Cronbach's alpha coefficient of 84.

It should be noted that manager support for fun is similar to personal freedom. Both constructs concern employees' opportunity to have fun. Thus, Michel et al. (2019) suggested that they can be combined into one construct. Nevertheless, past studies were generally focused on either of them. For example, McDowell (2004) and Fluegge (2014) studied personal freedom, whereas Tews et al. (2014) and Tews et al. (2014) chose manager support for fun.

In this study, manager support for fun was selected to be the focus and was measured by using Tews et al.'s (2014) five-item scale. Employees were asked to indicate how frequently each statement related to their managers happens by using an interval scale ranging from 1 (never) to 6 (always).

5. DATA AND METHODOLOGY

The sample used in this study consisted of 254 employees working in startup companies in Turkey. A startup is defined as a "product focused private tech company with lots of blurry things like revenue model, customer, and product (Presidency of the Republic of Turkey Investment Office, 2019, p. 22)". In recent years, interest in building startup companies has significantly increased, especially in Turkey. Between 2013 and 2017, Turkey saw the highest number of newly registered startup companies among the countries in Europe (Tolentino, 2018, July 12). Startup culture has also received much attention. Startup companies are particularly known for their various "fun" benefits, such as unlimited free snacks, video games in the office and exciting team outings, which are used to attract talented candidates and motivate existing employees (Studholme, 2014). Given such characteristics, startup companies were deemed suitable for this study.

The respondents were obtained by using convenience sampling and their responses were collected through questionnaires. Two types of questionnaires were used: a self-administered paper-and-pencil questionnaire and a self-administered web-based questionnaire. These two questionnaires were composed of the same list of items arranged in the same order. The questionnaire items included the measures of "coworker socializing", "manager support for fun", "fun activities", "fun job responsibilities" and basic demographic information. All of the respondents were informed about the purpose of the study and the confidentiality and anonymity of their responses.

63 percent of the respondents were male and 37 percent were female. The average age of the respondents was 27 years with standard deviation of 4 years. 86 percent of them were single and 98 percent had completed a bachelor's degree or higher. All respondents were working on a full-time basis and the majority of them (60 percent) had been working in the company for less than one year. The average of their weekly working hours was approximately 49 hours. The respondents were in different departments; 40 percent were involved in programing and product development, 20 percent supported business clients or end users and the rest worked in various other areas, including marketing, human resources, accounting and sales.

Prior to analyses, the sample was randomly divided into two groups. The first group, which consisted of 131 respondents, was used in exploratory factor analyses (EFA) to identify the underlying patterns of the measurement scales of workplace fun. Varimax was used as the rotation method. Subsequently, to verify the validity of the structure obtained from the EFA, confirmatory factor analysis (CFA) was carried out on the second group of the sample, which comprised 123 respondents. Also, the convergent validity and discriminant validity were evaluated.

6. FINDINDS

6.1. Exploratory Factor Analysis

In order to identify the underlying patterns of the scales for measuring workplace fun, EFA was performed. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was at a satisfactory level (.912) and Bartlett's test of sphericity was significant (χ^2 = 2279.80, df = 253, p < .001). These results indicated that the data were appropriate for conducting factor analyses.

A principal components analysis with varimax rotation was carried out initially on 24 items. As expected, the analysis revealed four factors, which were called "fun activities", "fun job responsibilities", "coworker socializing" and "manager support for fun", in line with the literature. However, one item originally from the "fun job responsibilities" scale was eliminated because it did not load on any factor with a sufficiently large factor loading (< .5).

Table 1 presents the results of the EFA. The cumulative percentage of the total variance accounted for by these four constructs was at an acceptable level (70.529 percent). The percentages explained by "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing" were 24.398 percent, 16.571 percent, 16.516 percent and 13.044 percent, respectively. Cronbach's alpha reliability analyses were applied to measure the internal consistency of the constructs. The results were found to be above the acceptable threshold of .7 (Hair, Black, Babin, & Anderson, 2014). "Fun job responsibilities" attained a value of .922; "fun activities", .877; "manager support for fun", .945; and "coworker socializing", .826.

Table 1: Factor Loadings for Exploratory Factor Analysis (Varimax Rotation)

Item	1	2	3	4
Fun job responsibilities				
FR5 "Most of the time my work is very pleasurable"	.802			
FR8 "My job is more like fun than work"	.799			
FR6 "Sometimes I enjoy my work so much I have a hard time stopping"	.783			
FR1 "My job is so interesting that it often doesn't seem like work"	.782			
FR3 "I lose track of time when I'm involved in a project"	.745			
FR4 "I do more work than is expected of me strictly for the fun of it"	.737			
FR7 "I like my work more than most people do"	.729			
FR2 "When I get involved in an interesting project it's hard to describe how exhilarated I feel"	.715			
FR10 "Sometimes when I get up in the morning I can hardly wait to get to work"	.712			
Fun activities				
FA1 "Public celebrations of work achievements"		.841		
FA4 "Social events"		.787		
FA2 "Team building activities"		.739		
FA5 "Competitions"		.643		
FA3 "Recognition of personal milestones"		.587		
Manager support for fun				
MS4 "My managers care about employees having fun on the job"			.840	
MS3 "My managers try to make my work fun"			.815	
MS1 "My managers encourage employees to have fun on the job"			.718	
MS2 "My managers emphasize employee fun in the workplace"			.706	
MS5 "My managers allow employees to play around on the job"			.636	
Coworker socializing				
CS2 "My coworkers and I joke around with each other"				.839
CS1 "My coworkers and I share stories with each other"				.835
CS3 "My coworkers and I socialize at work"				.758
CS4 "My coworkers and I socialize outside of work"				.690
Eigenvalues	9.872	3.338	1.705	1.307
% variance explained	24.398	16.571	16.516	13.044
Cronbach's alpha	.922	.877	.945	.826

Note: Kaiser-Meyer-Olkin (KMO) = .912 and Bartlett's test of sphericity < .001.

6.2. Confirmatory Factor Analysis

To assess the validity of the structure obtained via the EFA, CFA was performed on a four-factor measurement model for "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing". Figure 1 presents the output of the CFA model and table 2 summarizes the fit statistics. This study followed the model fit criteria recommended by Hair, et al. (2014). Specifically, the TLI and CFI values of greater than .90 and the RMSEA and SRMR values of lower than .08 were considered acceptable. The results showed that the chi-square statistic was statistically significant. While a significant chi-square may indicate a poor fit to the data, it is argued that it has some limitations, including the sensitivity to the model complexity and the sample size, and should not be a basis for rejecting a model (Schermelleh-Engel, Moosbrugger, & Müller, 2003). The other model fit indices were as follows: the TLI value was .934, the RMSEA value was .066, the CFI value was .941 and the SRMR value was .061. According to the thresholds mentioned earlier, these values indicated an acceptable model fit.

Figure 1: Measurement Model of Fun Job Responsibilities, Fun Activities, Manager Support for Fun and Coworker Socializing
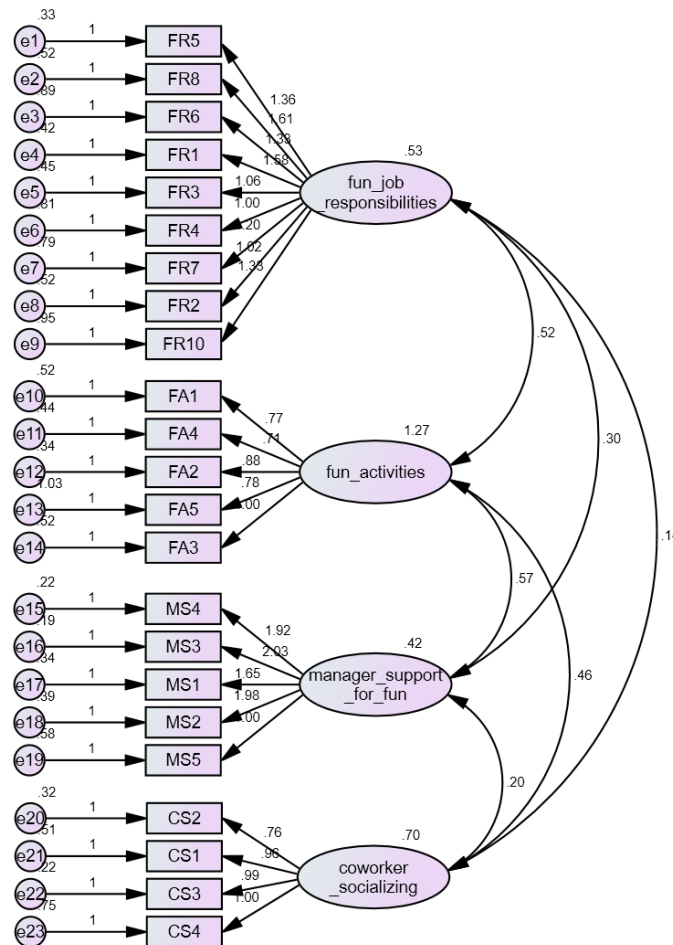
Table 2: Fit Statistics of Measurement Model

χ²	df	χ²/df	TLI	RMSEA	CFI	SRMR
334.602*	224	1.494	.934	.066	.941	.061

Note: * p < .05

The unstandardized and standardized parameter estimates for "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing" are shown in tables 3. As can be seen in the table, all of the indicators loaded on the underlying factors substantially with the factor loadings above the cut-off value of .50 (Hair, et al., 2014), ranging from .628 to .949. Since the model fit indices as well as the factor loadings demonstrated satisfactory results, any model respecification was not necessary.

Table 3: Parameter Estimates and Cronbach's Alpha Coefficients of Fun Job Responsibilities, Fun Activities, Manager Support for Fun and Coworker Socializing

Item	Unstandardized	C.R.	Standardized	Cronbach's alpha
Fun job responsibilities				.922
FR5	1.026	9.110	.864	
FR8	1.211	8.983	.852	
FR6	.997	7.565	.714	
FR1	1.186	9.166	.870	
FR3	.800	7.986	.754	
FR4	.752	6.670	.628	
FR7	.905	7.432	.701	
FR2	.768	7.607	.718	
FR10	1.000	-	.703	
Fun activities				.880
FA1	.769	9.876	.769	
FA4	.708	9.878	.769	
FA2	.877	11.716	.862	
FA5	.777	7.879	.653	
FA3	1.000	-	.843	
Manager support for fun				.936
MS4	1.922	8.747	.936	
MS3	2.035	8.830	.949	
MS1	1.651	8.345	.879	
MS2	1.984	8.492	.899	
MS5	1.000	-	.647	
Coworker socializing				.841
CS2	.758	7.329	.745	
CS1	.961	7.343	.747	
CS3	.994	8.150	.870	
CS4	1.000	-	.695	

6.4. Convergent and Discriminant Analyses

To test the discriminant validity, the average variance extracted (AVE) analysis was carried out. In this analysis, if the square root of the AVE value of each individual latent construct is larger than its correlation with other latent constructs, the discriminant validity is confirmed (Zait & Bertea, 2011). To assess the convergent validity, the AVE and the composite reliability, which indicate how well the indicators measure their latent construct, were examined. If the AVE value of the latent construct and its composite reliability value are greater than 0.5 and 0.6 respectively, the convergent validity can be established (Bagozzi & Yi, 1988).

Table 4 shows the AVE, the construct reliability and the square root of the AVE for each construct, and the correlations among the four constructs. The AVE values of "fun job responsibilities" (.578), "fun activities" (.613), "manager support for fun" (.755) and "coworker socializing" (.588) were over the minimum threshold of .50, which confirmed the convergent validity. Their composite reliability values (.924, .887, .938 and .850, respectively) were also found to be greater than the recommended threshold of .60. This indicated that the scales for the four constructs were reliable. These scales were further tested for the discriminant validity. As shown in table 4, the square roots of the AVE values for the four constructs, which are in the diagonal entries, were larger than their correlations, which are in the off-diagonal entries. These results confirmed the discriminant validity.

Table 4: Results of Convergent and Discriminant Analyses

Latent	CR	AVE	MSV	MS	FR	FA	CS
MS	.938	.755	.608	**.869**			
FR	.924	.578	.412	.642	**.760**		
FA	.887	.613	.608	.780	.632	**.783**	
CS	.850	.588	.239	.368	.235	.489	**.767**

Note: MS: manager support for fun; FR: fun job responsibilities; FA: fun activities; CS: coworker socializing; CR: composite reliability; AVE: average variance extracted; MSV: maximum shared squared variance;
The numbers in bold denote the square root of the AVE and the other numbers indicate the correlation between variables.

7. DISCUSSIONS AND CONCLUSION

In the present study, the scales for measuring the four dimensions of workplace fun, namely "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing", were adapted for the use in Turkey. These dimensions of workplace fun and their measurement scales were derived from the literature pertaining fun in the workplace. Subsequently, the scales were validated in the context of startups through EFA, CFA and other necessary analyses.

The results from EFA showed that 23 items loaded with sufficient factor loadings on the four dimensions of workplace fun as expected. Only one item, which was originally from the "fun job responsibilities" scale, did not sufficiently load on any dimension and hence was eliminated. Also, all of the scales were found to be reliable with the Cronbach's alpha coefficients of above .8. The structure obtained from the EFA was confirmed by the CFA results. The fit indices, including TLI, SMSEA, CFI and SRMR, indicated that the measurement model for the four constructs had an acceptable fit to the sample. The square root of every AVE for each construct exceeded the correlation of any pairs of constructs. This indicated the discriminant validity. Furthermore, the AVE and composite reliability values of over 0.5 and 0.6 respectively provided evidence for the convergent validity.

This study validated the measures of "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing" with a sample of employees in startup companies in Turkey. By means of this, it provides an important contextual contribution to the literature on fun at work as past studies have not extensively validated these measures in this type of organizations or outside developed markets. Specifically, quantitative studies of workplace fun have been mostly conducted in established companies in the US (e.g. Fluegge, 2014; McDowell, 2004; Tews et al., 2014; Tews et al., 2015). This suggests that the measures of workplace fun can be used to assess the level of fun in startup companies in Turkey and may possibly be extended to studies in other contexts.

The theoretical contribution of this study is the inclusion of "fun job responsibilities" as another construct of workplace fun. This dimension of workplace fun has not been examined as much as the other dimensions. However, Michel et al. (2019) highlighted the importance of including "fun job responsibilities" in the model of workplace fun. Also, Tews et al. (2015) provided empirical evidence that "fun job responsibilities" were more effective in terms of enhancing job embeddedness. Thus, it is important for future research to include this construct when examining workplace fun.

As a methodological contribution, the confirmed discriminant validity of the measures suggested that there was sufficient difference among the four dimensions of workplace fun. This supports Michel et al.'s (2019) argument that "fun job responsibilities", "fun activities", "manager support for fun" and "coworker socializing" are theoretically and practically distinct and should not be combined into one single construct. The scales validated in this study can be used to examine these dimensions of workplace fun as individual constructs.

This study also has implications for practice. It suggests that founders, co-founders or managers who desire to create fun workplace should place importance on the different aspects of workplace fun and use the indicators this study confirmed as a basis for enhancing those fun aspects. Fun activities are particularly expected in start-up companies (Studholme, 2014). Managers may consider organizing fun activities of different types (i.e. celebrations of employees' achievements, recognition of their milestones, social events, competitions, and team building activities). To encourage socialization among employees, managers can provide dedicated areas and opportunities for them to socialize. Areas with playful themes in Google's headquarters (Stewart,

2013, March 15) are practical examples. While freedom and fun are commonly incorporated in the culture of startup companies (Studholme, 2014), the leaders themselves still play a primary role in supporting or preventing fun (Karamfilov, 2018). Therefore, managers may also want to openly communicate their support for employees having fun in the workplace. Finally, enjoyable work can be created by matching employees with roles and tasks that they personally like and enjoy doing. If their interests and roles are mismatched, internal transition should be allowed.

However, some limitations should be noted. For one thing, the scales for measuring the four dimensions of workplace fun were validated on a sample of employees working in startup companies. The sample size was not large enough to test the invariance across different demographical characters. Future research may need to validate the scales in other types of organizations, for example, governmental organizations and large enterprises as well as different demographical groups, to confirm the results. For another thing, this study did not include "personal freedom" as a dimension of workplace fun due to its similarity with "manager support for fun" (Michel et al., 2019). However, future research may test them together to see whether they are perceived as different constructs.

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EVALUATION OF THE IMPACT AND IMPORTANCE OF INFORMATION SHARING IN THE AVIATION SECTOR WITH TWO DIFFERENT QUALITATIVE ANALYSIS

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ABSTRACT

Purpose- Aviation has an important place in the world economy. The correct management of operations in this sector is equivalent to the correct management of financial resources. Operations in aviation are a combination of very complex relationships. Effective information sharing and communication cohesion play a vital role in these relationships. This study focuses on the impact and importance of information sharing in aviation on team communication.

Methodology- The study is handled from the perspective of knowledge-based theory and learning organization. The study was conducted through semi-structured interviews with 15 senior operations managers in aviation. The data obtained from these interviews were analyzed in two different qualitative data programs, NVivo 12 and Maxqda 20.

Findings- As a result of the study, an intense relationship was found between criteria such as coordination, organizational success, operational success and effective decision making.

Conclusion- As a result of the study, a cycle was determined. It has been concluded that the impact of information sharing in aviation on team communication and the continuity of operational success supports the organizational success with coordination efficiency in the long term.

Keywords: Information sharing, team communication, organizational learning, aviation sector.
JEL Codes: O15, O19, M12

1. INTRODUCTION

The aviation sector has a very important place in the world economy. The information and technology infrastructure of the sector is brought along to be affected quickly by change. The most important point in this sector is to be able to properly spread this information to the system. Organizations in this sector manage large-scale activities. However, these activities are the sum of the operations of very different small teams. Considering the information-based structure of the sector, every operation needs information sharing. This sharing means a serious communication network. In this respect, the operational success of the sub-units is considered important in the success of the organization. However, in this sector, sub units require different skills to be used at the same time. In this respect, the study has two interdependent objectives.

First of all, it is to measure the infrastructure of the focus group that is researched on information sharing and team communication in aviation, related to the conceptual aspect of the subject. This measurement is considered from the point of view of the managers of information sharing and team communication. Another aim of the study is to reveal the passwords determined by the managers in the effect of sharing information on team communication.

In this study, it is aimed to present a perspective on the issue of information sharing by feeding from knowledge-based theory and team communication by feeding from learning organizations. The nature of aviation is also emphasized in the study. In the second part of the study, categories were created using the phenomenology method in order to understand the conceptual skills of the people who are in managerial positions in operational activities in the aviation sector. Content analysis method was used to

understand the relationships between the concepts obtained from the category result. Nvivo 12 program was used to demonstrate the phenomenological method. In order to understand the relationship between the concepts revealed, two different qualitative analysis techniques were used by using the Maxqda 20 program.

In the conceptual framework of this study, first of all, as information sharing requires a certain infrastructure, a theoretical support from knowledge-based theory to information sharing has been attempted.

Organizational skill effective in sharing information is communication. For this reason, the fact that aviation operations consist of the activities of teams that are different from each other and small in number within the organization makes it necessary to share information consciously. The consciousness mentioned here is the transfer of knowledge by learning. Therefore, the subject of team communication is handled from the learning organization perspective.

In the last part of the conceptual framework, the nature of aviation was conveyed through the focus of information sharing and team communication.

2. CONCEPTUAL FRAMEWORK

2.1. Knowledge-Based Theory to Knowledge Sharing

It is not easy to define information. Knowledge constitutes an area where even important thinkers in history cannot reach consensus since Plato (Grant, 1996). Knowledge is the process of making information meaningful after integrating with experience and values to provide a new perspective to expert opinions (Brakensiek, 2002). In this respect, information is the processed form of information. The nature of knowledge directs power relations and creates motion energy with sharing. In this respect, sharing all of the static resources of the enterprises can reveal energy.

Especially in a systematic and formal format, the information that is accepted to be accurate, documented, archived, easily accessible and transferred by every employee is called open information. The sharing of this open information points to technical knowledge (know-how) that are not easily accessible. On the other hand, information that is a whole in terms of values and more valuable for the organization shared through social interaction is called implicit knowledge sharing (Bruning et al., 1999). At this point, knowledge-based theory makes a deep distinction between explicit knowledge and types of implicit knowledge. Implicit knowledge; While explicit knowledge is defined as knowledge that exists only in one's own mind; It is clearly visible in the organizational setting. It is possible to make this distinction as follows; When asked what techniques a cycling bike uses, the person cannot answer the questions theoretically, but can still ride a bike without any problems (Polanyi, 1997). Explicit knowledge, on the other hand, is information that can be fully defined and systematically presented. Knowledge according to the knowledge-based theory; It is preserved at the individual level, but has a collective character through knowledge-based actions, integration mechanisms, and coordination of organization members (Simon, 1991). The ability of the aforementioned knowledge to generate motion energy is fed by this theory.

The way organizations can manage their knowledge can determine their success or failure (Miles 2012). At this point; Thanks to organizational integration and coordination mechanisms, the obstacles brought by the limited rationality of individuals to organizations can be overcome. For this reason, organizations are considered as entities that provide the necessary information integration for the application of individual knowledge, beyond being entities that create, store and use information (Simon, 1991). Individuals carry the knowledge acquired through the act of learning to the organizational level with organizational procedures, rules, norms and structures. The main task of organizations is to be able to coordinate the efforts of individuals with different specialized knowledge and to ensure information integration. Organizations are social entities that hide, integrate and use in-house knowledge, skills and abilities that are vital for survival, growth and success (Grant, 1996). This point is knowledge-based theory; It examines how organizational performance differs depending on the organization's main resources or technical (know-how) knowledge (Miller 2002). The research underlying this theory has focused on the role, importance and organizational outcomes of sharing knowledge for organizations.

At this point, organizations have the task of applying and using knowledge, as well as obtaining and creating knowledge. In particular, knowledge-based theory focuses on the coordination of organization members for the use of knowledge and the integration of their specialized knowledge in a concerted effort. In this direction, the theory examines how the organizational need for improving the coordination and harmony of the employees in the learning process can be met (Kogut & Zander, 1992). This role of sharing knowledge in knowledge-based theory also supports the learning organization structure, which is constructed as a theoretical basis for team communication activity, which is another variable of the study.

According to the knowledge-based theory; information is not only a strategic resource that provides a sustainable competitive advantage. It has a special structure that enables organizations to have knowledge-based capabilities. With this aspect, information; organizational culture is an asset that can be transferred, stored and processed through structures such as identity, norms and routines (Keskin, 2016). In this respect, businesses can reveal energy by sharing intangible resources in static state.

In this respect, information sharing is based on factors that have active interaction among determinants such as motivation, communication, coordination, organizational structure, culture, incentives, needs, and most importantly, trust (Steinheider and Al-Hawamdeh, 2004: 1-2). At this point, it can be said that information sharing is a tool for management to capture functional efficiency.

Knowledge is important in the organizational structure as it enables everyone to share their individual values. Language, symbolic communication tools, shared specialist knowledge, shared meaning and mutual harmony make up various common types of knowledge. At this point, organizations' sharing of information plays an important role (Dandridge et al, 1980). Information sharing is generally explained as the activities of transferring, coding and interpreting information from one person or group to another person or group (Linn & Lee, 2005). Knowledge sharing provides mechanisms that can be rearranged to create organizational value and solve problems, and transform individual knowledge into organizational knowledge. This sharing is a guide for activities and decisions (Gupta et al., 2007: 71). At this point, sharing information; It provides a task-related technical benefit in solving problems, developing new ideas, implementing policies and procedures, and cooperating (Cummings, 2004). The purpose of information sharing includes organizational learning and the formation of a culture of joint problem solving (Abidi, 2006: 67). At this point, Gold et al. (2001) concluded in their study that organizational effectiveness is closely related to the knowledge management process. Chang Lee et al. (2005) argue that this process consists of knowledge production, accumulation, sharing, use and internalization. Understanding how knowledge is obtained and shared is important for organizational success (Galunic et al., 2014). At this point, various researchers reported that knowledge sharing has a key role in achieving organizational success (Alavi & Leidner, 2001).

2.2. Learned Organization to Team Communication

Communication; It refers to the transfer of information, request or a message from a source to the recipient (Taylor and Cooren, 1997: 420). Communication is a process that affects organizational performance both directly and indirectly (Garnett, et al.; 2008: 266). Managers; He conveys what, how and when to do to his subordinates through the communication process. Organizational communication is the process of changing employees' attitudes or influencing their behavior through information (Kelly, 2000: 92). Organizations are divided into various functions within themselves. The most important tool that determines the success of the organization is the quality of the communication between these functions. The main reason for organizational functions to be in communication is to provide the ability to act together. This ability, which is defined as coordination in the literature, is also the most important function of management that includes movement. From this point of view, we can say that the communication process is a dynamic process. Within these dynamic processes, even in the same department, there are parts, groups, teams and teams that are intertwined with each other. Especially in sectors with predominant operational functions, sub-teams and teams are frequently encountered. The ability to achieve quality in total is often hidden in the harmonious and effective relationship of these sub-units. The success of the teams depends on the sharing of the information obtained as a result of teamwork.

As a matter of fact, according to Fleming and Monda-Amaya (2001: 159), for the effectiveness of teamwork, members of the team must share the information. This information should be fully and accurately communicated to all team members, because the effectiveness of teams is in a structure that increases with information sharing. Any information shared with team communication needs to support the success of the team. Therefore, it is very important that the communication between the team members is compatible (Hayashi, 2004). Basically, very fast information exchanges take place within this network of relationships. This exchange of information spreads from the bottom to the top in an interconnected way.

As the teams work in connection with each other; It supports employees to communicate and collaborate in order to learn new methods or ways (Garvin, 1993). As a result of this exchange, organizations realize learning as a result of the activities and interactions of people working in small teams. At this point, learning teams constitute an important link between learners and learning organizations (Senge, 1990a: 236). At this point, Hidalgo (2011, p. 2) states that "the ability of a firm to be productive depends not only on the skills of its employees, but also on the way they interact". This interaction progresses from the bottom up and is provided by the communication of the teams, which are the lowest unit. Sharing knowledge also offers the opportunity to evaluate every known knowledge at an organizational level. This structure, which creates a transitive memory, can support the learning process of organizations and thus support the learning organization structure with information sharing, team communication.

Indeed, Senge (1990); He suggests that it is possible for an organization to become a learning organization, by activating individual information within the teams established within the enterprise, and transforming it into "team learning" through the interaction of members and moving from there to the organizational dimension. At this point; One of the characteristics of successful teams is the ability to see together. Learning teams become working groups that develop themselves and their organizations by learning from each other, from the process and the results, while conducting their work in line with their shared goals, interacting with each other and with their environment, using the expertise and experience of their members.

Hamel (1999) states that team members working in interaction with each other will eliminate the deficiencies and provide integrity. It also emphasizes that with this union, members will reach faster thinking and learning that complement each other. At this point, Jensen (2003) and Potter (2003) argued that information communication at organizational level plays an important determinant role in organizational integration and success in different studies. Organizational level communication; supports functions such as information sharing, feedback of transmitted messages, coordination of different functions, persuasion, sharing feelings and innovation (Bolarinwa and Olorunfemi, 2009: 2). In De Vries and Van den Hooff (2006); He stated that sharing information has an effect on communication, job satisfaction and performance among team members.
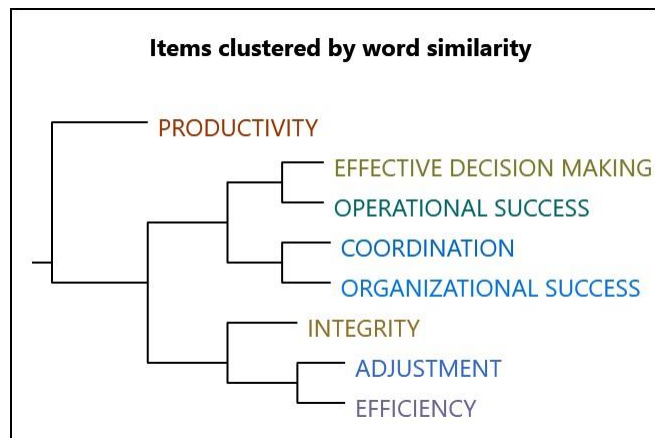
2.3. Nature of the Aviation Industry

This study has been applied especially in the aviation industry, where operational activities take place intensely. As it is known, this sector has a deep information infrastructure and the effect of continuous change. This change brings a serious flexibility requirement to the sector. Aviation is the most reliable transportation sub-branch as transportation. However, there is almost no chance to survive accidents in this sector. Moreover, the death rate in a single accident is very high. This shows how little error margin of the sector is. At this point, it is vital that information is shared effectively from lower units to upper units. This means that information sharing and team communication efficiency in the sector is at the highest level without any room for error. In this respect, understanding the nature of the sector in which the application is performed is considered valuable in terms of revealing the nature of the study.

In aviation, the relationship between the members of a team or team, such as collecting and sharing information, planning, leadership, effective decision making and identification, management of errors and problems, is provided through communication (Nevile 2006: 5). There are many findings showing the critical importance of communication in ensuring safety in aviation. Sexton and Helmreich (2009) state that operational communication is fundamental to the safe and efficient results of any flight. Thus; It is known that communication plays an important role in aviation accidents and incidents. Accidents and incidents in aviation are human-induced rather than mechanical errors. According to industry statistics, while the human-induced error rate for accidents and incidents in airline transportation is close to 80%, the rate of mechanical and other errors is 20% (FAA 1999: 3). In addition, 60-70% of all aviation accidents are caused by ineffective communication and other communication-related deficiencies (FAA 2004: 4). From this point of view, the lack of communication is vital for the aviation industry, which has a dense information infrastructure. At this point, due to the nature of the sector, it has a multinational structure. It has been stated in some studies that sharing knowledge and learning activities may be a limiting factor with this national culture effect (Husted and Michailova, 2002: 20; Riege, 2005: 25). Of course, it is not possible to say that every piece of information is important. However, the important thing is that correct transfer of information provides operational success. At this point, many activities at operational level, from start-up procedures to finishing procedures, are independent from each other. However, the efficiency of coordination in this sector, which carries out its activities by integrated teams, is possible with the sharing of information and the efficiency of communication. As a matter of fact, almost all aviation operations that took place smoothly were successful thanks to the performance of approving information at every step. At this point, the most important resources are the written, controllable and accessible reports of all team activities that take place in the air and on the ground due to the nature of aviation.

3. METHODOLOGY

This study focuses on the impact and importance of information sharing on team communication in the aviation industry. For this purpose, categories were created using the phenomenology method to understand the conceptual skills of the people who are in managerial positions in operational activities in the aviation sector. Content analysis method was used to understand the relationships between the concepts obtained as a result of the category. Nvivo 12 program was used to demonstrate the phenomenological method. In order to understand the relationship between the concepts revealed, two different qualitative analysis techniques were used by using the Maxqda 20 program.

3.1. Method and Sampling

Phenomenology method mostly involves collecting data through clinical interview, but it is possible to collect individuals' experiences or thoughts about concepts through group interviews, observations, answers to open-ended questions, drawings, and historical documents (Marton, 1994). The reason for using NVivo software in this method; It provides advanced tools for visualizing data by allowing deep analysis (Patton, 2002). This software has the capacity to analyze, classify and categorize the data obtained from the interviews (Welsh, 2002). It also enables the researcher to control large amounts of data and create a model for themes and sub-themes (Gibbs, 2002). NVivo is a powerful tool that supports qualitative and mixed method research and can facilitate many aspects of the grounded theory process, from design and sampling procedures to analysis of data, theoretical development, and presentation of findings (Hutchison, Al, 2010).

The purpose of using the MAXQDA 20 program to understand the relationship analysis is; In sampling, focus group interviews (Kitzinger, 1995), which provide the opportunity to form a solid basis with detailed one-to-one interviews with the data, are preferred due to their systematic structure. At this point, MAXQDA provides functions adapted especially for qualitative data analysis of focus group data (Saillard, 2011). In this program; Recorded interviews are written word for word to analyze data from focus groups. Later, it enables codes to be made with the MAXQDA software program (MAXQDA, 2020). The last reason is; This program helps provide intuitive access to statements and contributions from selected participants of the focus group (Kuckartz & R¨adiker, 2019).

3.2. Data Analysis

The data obtained as a result of interviews with 15 people working in operational units in the aviation sector were brought together. The phenomena important in operational processes in aviation have been previously investigated in the literature. At this point, the important thing is that the concepts that the managers frequently repeat overlap with the literature and have similar meanings to these concepts. NVivo 12 package was used for data analysis of the information provided by the managers in the documents obtained. The words, sentences and paragraphs in the interview texts are separated according to their usage and frequency. As a result of the interviews of 15 people who have various responsibilities in the aviation industry, the concepts prioritized are "Organizational Success", "Operational Success", "Productivity", "Efficiency", "Effective Decision Making", "Integrity", "Adjustment" and "Coordination". It was understood and these data were transferred in the word find, which is the type of evaluation obtained in the analysis made with Nvivo. The word cloud is shown in Figure 1.

Figure 1: Word Cloud

The importance of word cloud in this analysis; It is the creation of a common pool of the most frequently mentioned words among all the words that operational managers use when evaluating the impact of information sharing on team communication. The fact that the words in this pool are bigger or thicker than the other means that the word is emphasized more by the administrators. This is a kind of text analysis of the relationships between information sharing and team communication in aviation organizations.

Another evaluation obtained in the analysis made in the nvivo 12 program is items clustered by word similarity.

_____

Figure 2: Items Clustered by Word Similarity

Items Clustered By Word Similarity importance in this analysis; Operational managers use concepts in parallel with the literature in explaining the questions asked while evaluating the impact of information sharing on team communication, and provides information on what concept they support when explaining a concept. The light of this information provides information about the level of conceptual knowledge while explaining a subject that managers are experts in the field. For example; The combined use of the concept of effective decision making and operational success is also frequently mentioned in the list. In addition, coordination and organizational success create conceptual foundations that support each other. It means that these four concepts in total offer conceptual infrastructures that support each other. As a matter of fact, having results parallel to the literature has been a supporting factor in terms of analyzing the relationship between concepts contextually. Therefore; Interviews with operational unit managers in the aviation industry were brought together for content analysis. MAXQDA 20 package was used for data analysis. The data are coded with the program interface, divided into themes and made ready for interpretation. The words, sentences and paragraphs in the interview texts were interpreted and encoded. As a result of the coding process, 8 main codes were determined. These codes are "Organizational Success", "Operational Success", "Productivity", "Efficiency", "Effective Decision Making", "Integrity", "Adjustment" and "Coordination".

Table 1: Code Relationship Browser

The relationship between the codes was analyzed according to the coding frequency in the same sentence or paragraph, and the matrix in Table 1 was obtained. According to this analysis, the number of interactions between various codes was quantitatively evaluated. The purpose of the evaluation is to show the strong and weak correlation ties between the codes. These links revealed the elements used by the operational managers participating in the study in their evaluations. According to this matrix; "Coordination" and "Organizational Success" 8 times, "Coordination" and "Operational Success" 4 times, "Operational Success" and "Effective Decision Making" 4 times, "Coordination" and "Effective Decision Making" 3 times, "Efficiency" and "Productivity" 3 times, "Efficiency" and "Adjustment" 3 times were used together and the relationship was transferred. It is possible to mention that the highly interactive codes obtained from these findings create common models and patterns for operational managers working in aviation. According to the relations analysis; In order to achieve success in aviation organizations, the effect of ensuring coordination has come to the fore. At the same time, this situation supports operational success. According to these data, the relationship between being able to coordinate in aviation organizations and effective decision making is high. It is also one of the important findings that effective decision-making within these organizations both supports organizational harmony and affects

productivity. In addition to these effective relationships, the codes that are less related to each other in terms of impact; There have been "effective decision making" and "adjustment", "efficiency", "coordination" and "productivity". When these codes with low relationship effects were examined, it was observed that some managers avoided putting the two terms together conceptually or used these terms interchangeably. The concepts of "Effective decision making" and "efficiency" are examples of this situation. The reason for this may be the distance of the people working in the sector to academic terms, as well as the fact that words that are close to each other and associated with each other are not used in the same sentence. Another evaluation obtained in the analysis with Maxqda; It is code-based frequency analysis. Code-based frequency analysis; To show to what extent managers interviewed emphasized each code assigned to the study in their text analysis. In the code-based frequency analysis, which was found according to the data obtained from the study, it was determined that managers concentrated on 8 codes at different rates. 93.3% of the managers focused on "coordination", 86.7% "organizational success", and 73.3% "operational success" and "efficiency" code. It is shown in Figure 3.

Figure 3: Code Based Frequency Analysis

Documents with code
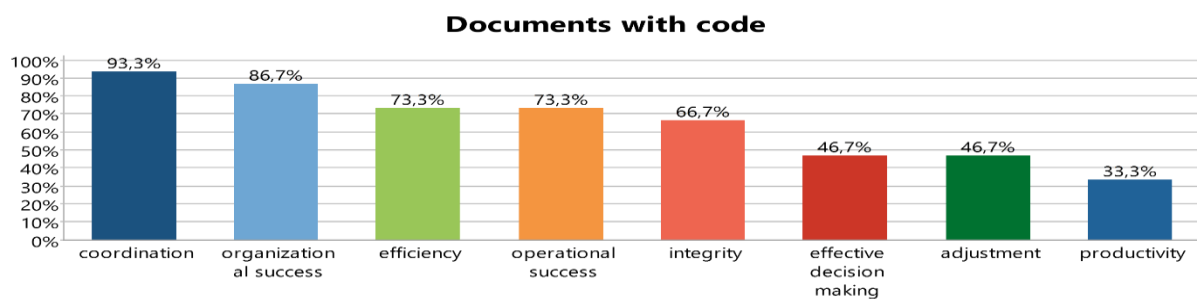
The most important feature of code-based frequency analysis; It can be evaluated as deciphering the password of the work done by the research focus group based on their experience within their expertise. At this point, the focus group, which is a senior manager in aviation and operational processes, is the key to the sector; coordination and organizational success. Another evaluation obtained in the analysis made with Maxqda; it is a single case model analysis. Single case model; It is a single-structured code relationship that emerges as a result of evaluating all the data as a source based on all codes during reading of words, sentences and paragraphs in the texts obtained as a result of the interviews. Single case model; It is a single-structured code relationship that emerges as a result of evaluating all the data as a source based on all codes during reading of words, sentences and paragraphs in the texts obtained as a result of the interviews. This model differs from code-based frequency analysis in that it evaluates all data in a single structure and collects each manager in a single structure. The Maxqda single case model map for coding is presented in Figure 4.

Single-Case Model
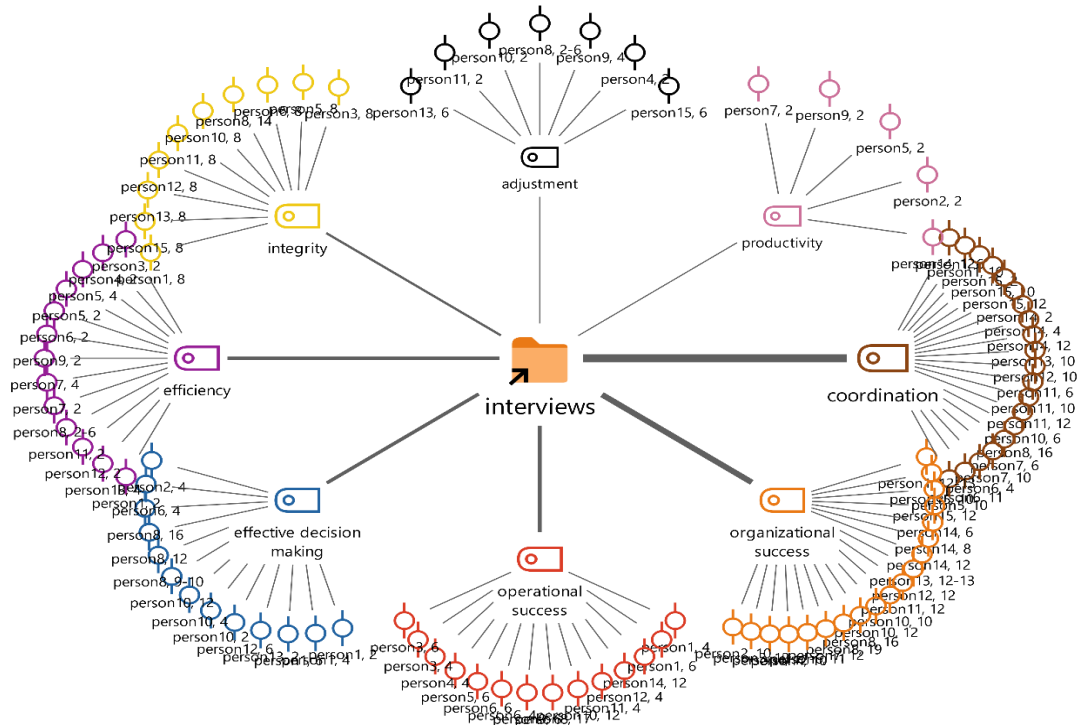
The only case model presented for the study; It conveys the perspective of the interviewed focus group on the impact of information sharing in aviation on team communication. The thickness of the lines emerging from the single structure containing the interview texts transferred in this model towards the codes shows the density of the relationship between the focus group and the relevant code. The quantitative density of the lines coming out of the codes provides the model by detailing the density of the population. According to the single case model, it was determined that the focus group gave the coordination code the main role in the effect of information sharing in aviation on team communication.

4. CONCLUSION AND DISCUSSION

The aviation sector has a locomotive feature in the transportation industry. Due to the nature of the sector, more than one operation activity is carried out at the same time. For example, when a passenger plane lands at the airport, on the one hand, incoming passenger operations are carried out, on the other hand, outgoing passenger operations are carried out for the same aircraft. At this point, considering the slot services, gate rights, airport taxes and other costs, it is expected that the difference between the time spent on the ground and the preparation time for reopening is expected to be low. In this respect, it is necessary to manage important information flow in a short time. At the same time, the services of the interface units for the same aircraft are carried out with multiple different team work. At this point, when all flight operations are considered on the same day, the impact of the operational success of aviation companies on the success of the organization seems important. Effective decision-making in all processes, accurate evaluations, ability to act in harmony, continuity of safe flight operations are often hidden in the effective communication that sub-units, which are composed of teams, share information. Indeed, Nevile (2006) suggests that information sharing and thus effective decision-making in aviation is possible through communication between the members of a team.

The practical result of this study is that the most important effect of sharing information in operational units in aviation on team communication is hidden in ensuring coordination, which is a management function. Coordination activity stands out as a criterion in supporting organizational success. At this point, a cycle has been determined in the success of aviation organizations. This cycle highlights the coordination relationship between organizational success and operational success, and a process structure that supports effective decision-making is formed. Because the efficiency of the decision mechanism is the basis of coordination.

However, aviation operations are very intense and continuous. Therefore, some question marks may arise about the continuity of this cycle. At this point, another practical result of the study points to the premise of harmony in information sharing and team communication activity. One of the hidden information of the study is that the relationship of compliance with activity is seen as important in the continuity of this cycle. A general evaluation of results; The effect of information sharing in aviation on team communication is that continuity in operational success supports organizational success with coordination efficiency in the long term.

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EXPLORING THE IMPACT OF ETHNOCENTRISM ON COUNTRY AND BRAND IMAGE: THE CASE OF PEUGEOT

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To cite this document

ABSTRACT

Purpose – It is important to determine the ethnocentric tendencies of Turkish consumers and to reveal the effects of these tendencies on a foreign country and its brand. The aim of this paper is to explore the impact of ethnocentric tendencies of individuals trained in Turkish culture affect the image of a foreign country and its products. For this purpose, research has been carried out on the Peugeot brand of France origin, which is one of the best-selling automobile brands in Turkey.

Methodology - Data was collected from 400 people by face to face in the city center of Eskisehir. As the research was conducted only in one city, it does not cover all Turkish consumers. In terms of measurement, country image scale, country product image scale and the CETSCALE were used. In this study Structural Equation Modeling (SEM), t test and ANOVA were performed.

Findings- The ethnocentric tendency of Turkish consumers and other relationships were tested with the hypotheses H1, H2, H3a, H3b, H4, H5a, H5b, H6a and H6b. According to the findings, H1, H4, H5b, H6a, H6b were supported but, H2, H3a, H3b and H5a were not supported.

Conclusion- The ethnocentric tendency of customers affects only the image of the country of origin, in this case, it negatively affects the image of France. However, it doesn't affect the general image of French products and brand image statistically. Also, general image of country products and France's image positively and significantly affects brand image.

Keywords: Country image, product image, brand image, ethnocentrism, Peugeot, France.
JEL Codes: M30, M31

1. INTRODUCTION

With the increase of international trade, competition between domestic and foreign products in the country's markets has increased. Initially it has been seen that in the flow of trade the consumers were affected by the country image and preferred the goods of developed countries (Schooler, 1965; Nagashima, 1970; Wang and Lamb, 1983; Han, 1990). In this aspect, the research on the preference of imported products have focused on the image of the country of origin and the product image. As a result of these studies, it has been determined that country of origin has a strong effect on the product image and changes the quality perception of the product (Roth and Diamantopoulos, 2009; Ahmed et al. 2002). Although the developed countries have a positive image, it is known that they cannot reflect this positive image to all of their products. Countries are more likely to have a positive effect on the products in the categories they are gifted; but in the categories in which, they are not gifted even the developed countries have not been able to influence their products' images positively (Rothand and Romeo, 1992; Koubaa, 2008). Therefore, the image of the country's product category has begun to come to the forefront much more than the level of the development of the country. In this aspect, an undeveloped country can have a very good image in a specific product category. While the researches are concentrating on country and product image in the undeveloped and developing countries, the concept of ethnocentrism has begun to appear in developed countries. Because even in the developed countries such as USA, the consumers

prefer imported products but it has also been reported that the number of customers who have an ethnocentric tendency have also been increased (Shimp and Sharma, 1987). With the entrance of Japanese automobiles in the market of America's advanced automobile industry, this situation has lost its effectiveness and damaged the American automobile industry (Wang and Lamb, 1983).

Therefore, since the developed countries have their alternatives to imported products, the main variable that affects the consumers' preference has been largely ethnocentrism than the image. In the places where ethnocentrism is dominant, the image of the trading country and the images of its products remain on the second place. Because the customers who have ethnocentric tendency find it more appropriate to choose their own products due to various concerns (economic reasons, job loss, etc.) (Shimp and Sharma, 1987).

The case of ethnocentric tendency is also valid for developing countries. In these countries, the customers mainly prefer their own products (Erdogan and Uzkurt, 2010; Han and Wang, 2014), domestic products against foreign products; and if there is no alternative domestic product, they prefer the products of the countries which are close to their own culture. (Watson and Wright, 2000). The customers are taking a positive attitude towards domestic products which are alternative to foreign products or for the products from countries with which they are culturally close, they have taken a negative attitude towards foreign products (Watson and Wright, 2000). The poor quality of domestic products versus foreign products can sometimes change this attitude in the opposite direction (Wang and Chen, 2004). However, products that fall into heavy industry category like automobiles seem far away for developing countries. Therefore developing countries have to choose brands from the developed countries even though they are not culturally close to them. From this point view, it's important to determine how ethnocentric tendency in developing countries influences the country of origin, product and brand image for the products such as automobiles that don't have a domestic alternative.

This research has been directed towards developing countries which is one of the limited areas in the literature. In this context, Turkey which attempts to produce domestic automobile has been selected as a research country. Thus in case of Turkey's domestic automobile production, the other imported automobile market how will be affected by ethnocentric tendencies has also emerged. The research provides significant contributions both literature and practitioners.

With this research, it is aimed to determine the effect of the ethnocentric tendencies of consumers towards one of the most preferred foreign automobile brands in Turkey as a developing country. In this context, the Peugeot brand, one of the most preferred automobile brands, has been selected to determine the effect of ethnocentrism on the brand image, country of origin and general product image of the country of origin.

The paper is structured as follows. Firstly, a review of literature on Ethnocentrism, Product Country Image and Brand Image will be conducted, then Data and Methodology, Findings, Conclusion and Managerial Implications will be presented.

2. LITERATURE REVIEW

2.1. Ethnocentrism

The concept of ethnocentrism is based on the fact that it sees its own groups in the center of the universe, interprets other social units in terms of their groups (Erdoğan and Uzkurt, 2010; Özçelik and Torlak, 2011) and defined as an attitude that evaluates other cultures according to their own cultural standards (Thomas and Hill, 1999). From a functional point of view, ethnocentrism allows the person to understand the acceptance or inadmissibility of purchasing behavior in the group in which the person is present (Shimp and Sharma, 1987). From the ethnocentric point of view, the purchase of imported goods is wrong because according to them, this causes damage to the local economy, causes job losses, contradicts patriotism and constitutes a sign of disrespect for the excessively ethnocentric consumers (Shimp and Sharma, 1987).

There are several reasons why consumers have ethnocentric considerations. These include: family, opinion leaders, friends circle and media (Shimp, 1984); the past events of the country: wars, trade borders, economical-political events (Herche, 1994) and sense of losing business due to foreign products (Usunier, 1996, pp. 285). Ethnocentric tendencies have a strong relationship with the demographic characteristics of consumers (Erdoğan and Uzkurt, 2010). Watson and Wright (2000) stated that women, old people, the people who have low education levels and low income levels are more ethnocentric than other individuals. Also, non-demographic factors such as belief, person's social environment and intentions affect the customer's ethnocentric tendencies (Martinez et al., 2000).

In general, consumers tend to prefer products produced in their own countries. In his study, Reierson (1966) asked American students about their thoughts on Swiss, German, Italian, American, French, Japanese and British products and the result of his

research showed that American students prefer American products in comparison to the other countries' products. However, it is known that this situation differs for consumers in developed and developing countries. For example, while studies of American, French, and Scandinavian consumers have shown that consumers prefer their products instead of other countries' products. On the other hand it has emerged that Iranian consumers have positively evaluated and preferred products when there is a foreign label involved (Usunier, 1996). It's stated that there is a similar situation for customers in Puerto Rico (Bilkey and Nes, 1982). However, regardless of how advanced the countries are, imported products can also be preferred depending on the product type. Losing effectiveness and the damage to the American automobile industy by the Japanese automobiles entries to America's advanced automobile industy may be an example of this situation (Wang and Lamb, 1983). It is also known that in countries where there are no local alternatives, consumers tend to prefer foreign products (Morello, 1983).

Ethnocentric tendencies can also affect consumers' perceptions of a foreign country and its products (Sharma, Shimp and Shin, 1995; Watson and Wright, 2000; Kaynak and Kara, 2002; Moon and Jain, 2002; Erdogan and Uzkurt, 2010; Fakharmanesh and Miyandehi, 2012). Especially in countries where there are no domestic alternatives, the ethnocentric tendency has been identified as an opportunity for countries and products with cultural similarities (Watson and Wright, 2000). According to Erdogan and Uzkurt (2010), consumers with a high ethnocentric tendency perceive foreign products negatively while perceiving domestic products positively. But if the people are open to different cultures, this situation reduces the ethnocentric tendency (Sharma, Shimp and Shin, 1995). The quality issue related to the product also reduces the effect of ethnocentrism. Especially the quality of domestic products is also very influential in the preference over foreign products. When domestic products are perceived as of poor quality, consumers may prefer imported products (Elliott and Cameron, 1994). The quality perception of the consumers may vary according to the level of need, product and country of origin (Huddleston and Stoel, 2001).

There are many variables affect consumer preferences and attitudes in international markets and it is known that image of country, product and brand are the most important of those. But ethnocentrism reduces the positive effects of these variables. Ethnocentric tendencies can be more effective than country image, product and brand image. People believe that ethnocentric considerations may refuse to use imported products regardless of the origin of the products and the brand image (Herche, 1994). This situation may occur for consumers both in developed and developing countries. While intensive researches conducted on ethnocentric tendencies of consumers in developed countries but others countries' consumers neglected. Thus there are some gaps in the literature about developing countries. In this respect, this study aimed to determine the effects of ethnocentric tendencies by focusing on the consumers of a developing country. Thus Turkey as a research country and an auto brand Peugeot which is originally French was selected for the study. The following hypotheses determined how the brand, country of origin and general product image are affected by ethnocentric tendencies.

Therefore, the following hypotheses have been developed to determine how Peugeot, a French brand, imported in Turkey, is influenced by ethnocentric tendencies:

H1: Ethnocentrism negatively affects France's image,

H2: Ethnocentrism negatively affects the general image of French products,

H3: Ethnocentrism negatively affects the Peugeot brand image.

2.2. Product Country Image (PCI)

It is known that the product and country image are used by consumers and affect consumers in various forms. Numerous studies have been carried out in this area in past and still researchers are deeply interested in exploring the related area more. According to studies carried out by (Nagashima, 1970; Han, 1990; Lee and Tse, 1993; Parameswaran and Pisharodi, 1994; Essoussi and Merunka, 2007; Maher and Carter, 2011) its stated that the consumers affect the product image (Schooler, 1965; Nagashima, 1970; Roth and Romeo, 1992; Parameswaran and Pisharodi, 1994; Dinnie, 2003; Felzensztein and Dinnie, 2005; Lin and Chen, 2006; Roth and Diamantopoulos, 2009) and brand image (Lee and Tse, 1993; Lee and Ganesh, 1999; Essoussi and Merunka, 2007; Koubaa, 2008). Therefore, products and brands can affect the country image positively or negatively as the image of the country affects the product image and brand image.

The country image can be considered by consumers before any product (or brand) is preferred (Huddleston et al., 2001; Baker and Ballington, 2002; Hinner, 2010). It's stated that the consumers use the country image either as a halo effect or summary construct (Bruning, 1997). In the context of the cues, consumers use the country image as a single cue or multiple cues in product evaluations. In the case of single cue, the only information source that consumers have in product evaluations is where the product is produced. In the researches in which multiple cues are used, other information is shared with consumers along with country of

origin (Bilkey nd Nes, 1982). Hence, it's stated that the country of origin effect is greater in the single cue research than multiple cues research (Bilkey and Nes, 1982; Peterson and Jolibert, 1995). However, adding other cues such as brand name, demographic items, and familiarity with the product, decrease the country of origin effect (Maronick, 1995). The country of origin effect used as a halo effect and summary construct (Han, 1989; Han, 1990; Martin and Eroglu, 1993; Al-Sulaiti and Baker, 1998; Lampert and Jaffe, 1998; Ahmed et al. 2002; Insch et al., 2015). According to Han (1990), consumers use the country image as a clue when they are not familiar with country's products as a quality sign and they generalize this knowledge to other products of the country when they know the country and its products. In other words, as a result of consumer experience the halo effect on the goods and services linked to the country become a summary construct (Nebenzahl et al., 1997). According to Lampert et al. (1998), the consistency of product images of a country and brand images similarity results in image crystallization leading to summary effect. Thus, there is a common image of the products produced in the country and the country image is perceived in the same way (Lampert, et al., 1998). Also, when the summarization effect is used, sensitivity to the country of origin is also evident (Johansson, 1989). Initially country image was measured by the product image on product country image researches but later it's stated that two concepts are different from each other (Papadopoulos and Heslop, 1993; Martin and Eroglu, 1993). When the first studies which were evaluating the product examined, the country image was reflected by its products and therefore, the quality of the products is seen as a country image (Schooler, 1965; Reierson, 1966; Nagashima, 1970; Nagashima, 1977). Thus, the products of economically developed countries are perceived as better quality products than the products of the developing countries Huddleston et al., 2001). However later on, the country image was started to be evaluated depending on the product groups regardless of how advanced the country economically was (Wang and Lamb, 1983; Roth and Romeo, 1992; Lampert and Jaffe, 1998; Koubaa, 2008). In addition, acculturation level and the country of origin also positively affects the evaluation of the country and its products (Suh, Hur ve Davis, 2016). Thus, considering the above discussions it is understood that the image of the country can also affect the product image positively or negatively. As a result, the following hypothesis determined to test how France affects products of origin.

H4. The France image affects the general image of French Products positively and significantly.

2.3. Brand Image

A brand consists of name, designation, symbol or design that is designed to distinguish the seller or seller's group. (Aaker, 1991; Kotler, 1991). The brand identifies and represents a specific product. But it contains a lot more meaning than a name. It reflects what consumers think and feel about the product. The image is defined as the sum of the beliefs, attitudes and impressions of individuals or groups about certain objects (Barich and Kotler, 1991). The image is defined as the sum of the beliefs, attitudes and impressions of individuals or groups about certain objects (Kapferer, 2008, s. 174). According to Erdoğan et al. (2015), the image of an object develops through the set of impressions that individuals have obtained directly or indirectly as a result of encountering that object.

The brand image is the perception that the consumer has in his mind as a result of various communications by a set of associations organized in a meaningful way. The brand image, which is settled in the consumer's mind, affects consumers' purchasing intentions, satisfaction degree of purchased product and also the degree of certainty of purchasing decisions (Akkaya, 1999, s. 108). Dobni and Zinkhan (1990) stated that, the concept of "brand image" which was first introduced by Levy in 1955 has changed in 35 years and by studying 28 studies, they have reached the following conclusions about the brand image.

- o Brand image is the concept of a brand that is held by the consumers.
- o Brand image is largely a subjective and perceptual phenomenon that is formed through consumer interpretation, whether reasoned or emotional.
- o Brand image is not inherent in the technical, functional or physical concerns of the product. Rather it is affected and molded by marketing activities, by context variables, and by the characteristics of the perceiver.
- o Where the brand image is concerned, the perception of reality is more important than the reality itself.

Researches shows that country and general product image have effects on brand image. According to Koubaa (2008) investigating the effects of country of origin knowledge on brand perception and brand image structure as well as brand origin having a strong influence on the brand perception. Moreover country image also has a strong influence on brand image. Similarly, Lee and Ganesh (1999) point out the relationship between country, product and brand image. Brand and country of origin congruity also have an important role on consumers' brand perception (Eng, Ozdemir and Michelson, 2016). In addition, economic development of the consumers' country and positive biases of consumers also have favourable effects on brand image (Kinra, 2006). Therefore, the fact that the country of consumption is a developing country and consumers have a positive attitude towards the brands of the developed countries provides an important advantage for brands. Thus, according to Ahmed et al. (2002), a strong country image

can compensate for a weak brand image. Furthermore, having a strong image in the product categories positively influence the attitude toward the brand (Diamantopoulos vd., 2011). Hence, the following hypotheses have been determined to test the relationship between product, country and brand in a different population.

H5. The France image affects the Peugeot brand image positively and significantly.

H6. The general image of French products affects the Peugeot brand image positively and significantly

3. DATA AND METHODOLOGY

3.1. Sample and Data Collection

The research data was collected from 400 people in the city center of Eskişehir which is one of the cosmopolitan cities in Turkey through questionnaires. Eskişehir is located in the middle of Turkey and is one of the most diverse cities regarding demographic, socio-economic and cultural characteristics. Convenience sampling was used in this research and the data was collected by the researchers face to face with 378 employees and 22 non-working people living in this city. Participants selected from volunteers and car ownership experience was not an obligation. Thus, both car ownership and potential car buyers included in the study. The questionnaire to collect the data was applied in two ways. To measure whether participants were affected by the order effect of the survey sections, the questionnaires were divided into two groups of 200 pieces. The sequence of questions in the first format of questionnaire was; demographic characteristics, Peugeot brand image, France image and the general image of French products and ethnocentrism. The sequence of questions in the second format of questionnaire was; Demographic characteristics, ethnocentrism Peugeot brand image, France image and general image of French products.

3.2. Measures

The survey used in the research consists of 4 parts. These parts are: statements containing demographic characteristic, brand image scale to measure the perceptions of consumers (Koubaa, 2008), country image scale and country product image scale (Lee and Ganesh, 1999) and the CETSCALE scale, which has been used in a wide variety of sources in the literature (Shimp and Sharma, 1987; Good and Huddleston, 1995; Erdoğan and Uzkurt, 2010; Asil and Kaya, 2013) to measure consumer attitudes towards nationalistic values and has proven its reliability. CETSCALE was previously translated into Turkish by Erdoğan and Uzkurt (2010) and Asil and Kaya (2013), so no translation was needed. However, other scales were translated into Turkish by a group of experts in English and Turkish languages. All scales which took part of this study were used before and have proven their validity and reliability.

The research investigated the effects of ethnocentric tendencies on the Peugeot brand, one of the best-selling automobile brands in Turkey, and the country of origin, France and General image of French Products. For the evaluation of attitudes of consumers 5 Likert- type measurement "I certainly do not agree- I strongly agree" was used.

The model for the study was designed as follows.

Figure 1. Research Design
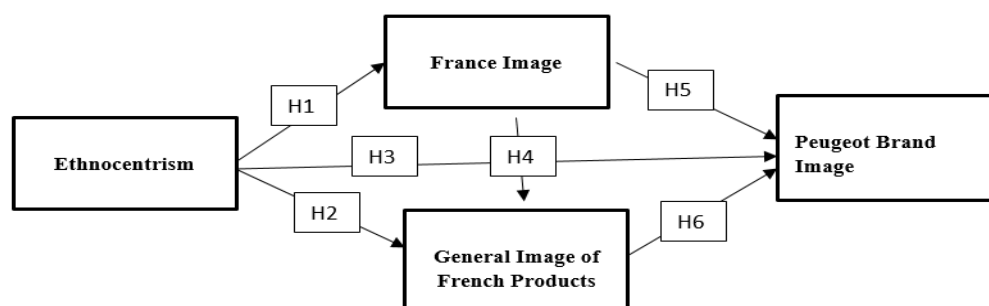
3.3. Analysis

In the research, for construct validity, Exploratory Factor Analysis and Confirmatory Factor Analysis were used with the help of SPSS and AMOS. Descriptive statistics (frequency, mean etc.) were calculated and to test the hypothese Structural Equation Modeling was used. It is known that SEM is frequently applied to the relationship between endogenous and exogenous variables in social sciences. For normality test the values of "Skewness" and "Kurtosis" were checked. For normality values between +1.5

and -1.5 are accepted as normal (Tabachnick and Fidell, 2011), values between +2 and -2 are also accepted (Darren and Mallery, 2003).

4. FINDINGS

4.1. Profile of the Respondents

The descriptive statistics of the participants are presented in Table 1 below. It appears that the vast majority of participants consisted of employees who have at least bachelor's degree and were identified as white-collar employees. In the research, the participants were questioned about the brands of the automobiles they own with the help of open-ended questions. According to the answers given, the automobile brands and the automobile numbers are given in Table 2.

Table 1: Sample Characteristics

Characteristics		Frequency	Percentage
Gender			
	Male	187	46,8
	Female	213	53,3
Age			
	19-25	64	16,0
	26-30	115	28,8
	31-35	70	17,5
	36-40	57	14,3
	41-45	40	10,0
	46-50	21	5,3
	51-73	33	8,3
Marital Status			
	Single	169	42,3
	Married	231	57,8
Education Level			
	Primary	23	5,8
	Secondary	118	29,5
	University, Postgraduate	259	64,8
Occupation			
	Doesn't work	20	5,0
	Retired	22	5,5
	Working	358	89,5
Working Place			
	White Collar	222	55,5
	Blue Collar	99	24,8
	Entrepreneur	39	9,8
Car Ownership			
	No	190	47,5
	Yes	210	52,5
Monthly Income			
	Less than1500 TL	95	23,8
	1500-3000 TL	158	39,5
	3001-4500 TL	95	23,8
	4500 TL or more	52	13,0

As it is seen in Table 2, the most preferred brand by consumers is Ford. The Peugeot brand, which is main concern in this survey, has been preferred by only 17 of the car-owners among the participants. Considering that Peugeot and Citroën are brands of the same group, a total of 36 people chose the two brands. When French car brands Peugeot, Citroën and Renault are considered, it is observed that 53 participants have chosen the French car brands.

Table 2: Participants' Car Brands and Country of Origin

Country of Origin	Brand	Frequency	Percentage	General Frequency	General Percentage
USA	Ford	35	16,43	38	17,8
	Cherokee Jeep	1	0,47		
	Chevrolet	1	0,47		
	Chrysler	1	0,47		
France	Citroën	17	8	53	25
	Renault	17	8		
	Peugeot	19	9		
Germany	Volkswagen	18	8,4	52	24
	Opel	16	7,5		
	BMW	7	3,3		
	Audi	4	1,8		
	Mercedes	4	1,8		
	Skoda	3	1,4		
Italy	Fiat	19	9	22	10
	Alfa Romeo	1	0,47		
	Tofaş	2	0,9		
Japan	Honda	14	6,5	27	12,5
	Toyota	7	3,3		
	Nissan	3	1,4		
	Mazda	2	0,9		
	Daihatsu	1	0,47		
South Korea	Hyundai	10	4,7	14	6,5
	Kia	4	1,8		
Spain	Seat	6	2,9	6	4,7
India	Tata	1	0,47	1	0,47

4.2. Measurement Analysis

Firstly, for the validity of scales in terms of structure Exploratory Factor Analysis was conducted. Once it is determined that the data set is suitable for factor analysis (Creation of correlation matrix, Barlett test and Kaiser-Meyer-Olkin (KMO) tests) (Kalaycı, 2006; Büyüköztürk, 2012) and as a result of factor analysis of the Promax Rotation key components on the data set, 5 factors above the value of 1 are determined. The brand image is divided into two factors in itself. According to Koubaa (2008), brand image is a multi-dimensional structure and brand image structures may differ according to brands and origin countries. In this study, the image of Peugeot brand has come out in two dimensions. The five factors included in the research model, their statistical values and factor analysis results are shown in the table 3 below.

Table 3: Factors and Values

Factors		Mean	Std. Dev.	Cronbach's Alpha	Variance Exp.	KMO	Chi-square	Sig. p
Peugeot Brand Image	Quality and Style	3,036	0,978	0,91	49,95	0,917	2480,53	0,001
	Market Place	3,527	0,893	0,66	11,41	0,917	2480,53	0,001
France Image		3,463	0,98	0,67	59	0,619	187,97	0,001
General Image of French Products		2,866	1,04	0,91	73,80	0,877	1341,89	0,001
Ethnocentrism		3,079	1,246	0,94	63,98	0,946	4952,71	0,001

Another process for the validity of the structure was the Confirmatory Factor Analysis (CFA) in AMOS. Since the load values of the expressions in the DFA analysis are expected to be close to 0.60 (Kline, 2005, p.178), the items with low load values (s9, s48, s16, s62) were recycled one by one. As a result the following values obtained were supported by the literature (Cole, 1987; Kline, 2005; Uğurlu, 2014; Meydan and Şeşen, 2015).

Table 4: CFA Compliance Values

Indices	Acceptable fit	Value
Cmin/DF	$\chi^2 \leq 3$	2,561
CFI	$0,90 \leq CFI \leq 0,97$	0,913
NFI	$0,80 \leq NFI \leq 0,95$	0,865
GFI	$0,80 \leq GFI \leq 0,95$	0,828
SRMR	$0,08 \geq SRMR \geq 0,05$	0,052
Rmsea	$0,08 \geq Rmsea \geq 0,05$	0,063

As a result of the Confirmatory Factor Analysis, the path was continued with an acceptable structure of 5 factors and 33 expressions.

4.3. Tests of Hypotheses

Hypotheses were constructed with AMOS in Structural Equation Modeling. As a result of the analysis made on data collected from a total of 400 respondents, the compliance values of the model are found as follows: $\chi2/df$ =2,743, CFI= 0,902, NFI=0,855, GFI= 0,820, SRMR= 0,065, RMSEA= 0,066. According to Kline (2005), RMSEA, SRMR, CFI, NFI and Cmin / DF ratios must be at an acceptable level. NFI and GFI have relatively low compliance values, although they are acceptable. H1, H4, H5b, H6a, H6b were supported according to the findings in the hypotheses analysis results; H2, H3a, H3b and H5a were not supported. Especially H3a and H3b, although statistically significant, do not meet the negative expectations of the hypotheses and do not support the hypotheses because they have a positive effect. Moreover, although it was not hypothesized in the research, it was also found that the image of France and France's general product image were also examined but not mediated.

Table 5: Tests of Hypothesis

Structural path	Estimates	S.E.	P	Hypotheses Results
H1.Ethnocentrism → France image	-0,19	0,05	***	Supported
H2. Ethnocentrism → General image of French products	0,02	0,04	0,58	Not supported
H3a. Ethnocentrism → The Quality and Style of Peugeot Brand	0,09	0,02	***	Not supported
H3b. Ethnocentrism → The Market Place of Peugeot Brand	0,07	0,03	0,03	Not supported
H4. France image → General image of French products	0,40	0,07	***	Supported
H5a. France image → The Quality and Style of Peugeot Brand	0,03	0,04	0,43	Not supported
H5b. France image → The Market Place of Peugeot Brand	0,27	0,06	***	Supported
H6a. General image of French products → The Quality and Style of Peugeot Brand	0,38	0,04	***	Supported

H6b. General image of French products → The Market Place of Peugeot Brand	0,18	0,05	***	Supported

***p <0,001

5. CONCLUSION

The aim of this research was to determine how the ethnocentric tendencies of individuals trained in Turkish culture affect the image of a foreign country and its products. For this purpose, research has been carried out on the Peugeot brand of France origin, which is one of the best-selling automobile brands in Turkey (for more details, Appendix 1). The appropriate scales in the literature have been determined for the study and the validity and reliability of these scales have been tested. Once the validity and reliability of these scales were determined and found to be acceptable, hypotheses testing was undertaken. Hypotheses were tested with AMOS and the following results were obtained. The ethnocentric tendency of Turkish consumers on France, French products and Peugeot brand image has been tested with the hypotheses H1, H2, H3a and H3b. As a result, H1 (β = -. 19, p <0.05) was supported and H2 (β = .02, p> 0.05) was not supported. In addition, H3a (β = .09, p <0.05) and H3b (β = .07, p <0.05) were found to be positive instead of negative and statistically significant. Therefore even though H3a and H3b found to be significant statistically they do not support hypotheses because they do not have a negative effect. According to He and Wang (2014), the negative effect of consumer ethnocentrism decreases when the value and prestige of imported brand is high. Like the fact that the Peugeot brand is not affected negatively by the ethnocentric tendencies of Turkish consumers, it's estimated that could be a reflection of its brand value. It is known that the perceived quality of the brand reduces the negative effect of ethnocentrism (Elliott and Cameron, 1994). It can be a sign why it is one of the most preferred automobile brands, especially in Turkey. Also the fact that Turkey does not produce its own automobiles, it could also affect this situation. According to research by Kaynak and Kara (2000) on Turkish consumers, Turkish consumers have a very positive perception of products from Japan, USA and Western European countries. The fact that the Peugeot brand belongs to France, one of the western European countries, is likely to have produced such a result. Therefore, according to the results of this research, consumer ethnocentrism generally affects the country image in general and France image negatively in particular. On the contrary, consumer ethnocentrism has a positive and significant effect on the Peugeot image, a French brand, instead of a negative. According to the result of the research ethnocentric barriers may point to France but it is not toward to Peugout auto brand. One of the probabilities of these results is that most of the activities that Porter (1985) mentioned in the value chain model carried out in Turkey. In other words, some French cars manufacturing in Turkey is an indicator for value sharing. Through value sharing, while the business could make profit economically they also socially benefits to the country and the community. According to findings, ethnocentrism has no significant effect on the overall image of French products.

The effect of the image of France as a country of origin on general products and on the brand has been tested with H4, H5a and H5b. H4a (β = .40, p <0.05) and H5b (β = .03, p <0.05) were supported, while H5a (β = .03, p> 0.05) was not statistically significant. The results (Schooler, 1965; Nagashima, 1970; Roth and Romeo, 1992; Parameswaran and Pisharodi, 1994; Lee and Ganesh, 1999; Huddleston et al., 2001; Dinnie, 2003; Felzensztein and Dinnie, 2005; Lin and Chen, 2006; Koubaa, 2008; Roth and Diamantopoulos, 2009) are also parallel to the literature. So, in accordance to that, the image of France as the image of the country of origin affects the general image of French products and the image of the market position of its own brand Peugeot positively and meaningfully; it does not affect the image of the Peugeot brand's product statistically.

The effect on the brand image of the country's general product image was tested with H6a and H6b. According to the results, H6a (β = .38, p <0.05) and H6b (β = .18, p <0.05) both hypotheses have a meaningful and positive effect. Accordingly, the general image of French products affects positively and significantly both Peugeot's quality and style image and Peugeot's market position image. Considering that Turkish consumers have a positive attitude towards Western European products (Kaynak and Kara, 2000), we can see that this positive attitude is also reflected in the Peugeot brand, a brand belonging to this region. This is also known as halo effect in the literature (Han, 1989; Han, 1990; Lampert and Jaffe, 1998). Therefore, it is possible to say that the general product image belonging to France has a halo effect on the brand image.

5.1. Managerial Implications

Ethnocentrism for international firms is an important variable that needs to be tackled. Most of the consumers don't want to buy imported products, instead they prefer to choose their own products. In this respect, they are more likely to prefer local products and brands by exhibiting a negative attitude towards imported products and brands. Automobile brands were also facing such a situation in the international market. But in developing countries like Turkey, the situation can be different. Because of the absence of the domestic automobile brand in countries that do not produce their own automobiles creates an opportunity for

imported brands. The findings of this research show that an imported brand such as Peugeot is not much affected by consumer ethnocentrism in Turkey. It is estimated that this is due to both the lack of the domestic automobile brand and the other features of the brand. Therefore, automobiles with high quality and prestige perception have a high chance of success in markets such as Turkey without being significantly affected by ethnocentrism.

According to the results of the survey, the Peugeot brand was also influenced by the general product image of the country and country of origin. In order to be preferred by more consumers and to have a larger market share, it may be positive for the brand to carry out their work in such a way that Peugeot marketing team takes into account the country image, the general product image of the country and the effects of ethnocentrism. Research similar to this can be useful for the target markets of Peugeot Brand. It will be useful to brand to carry out such researches in markets that are already in existence to assist in correct positioning. This type of research which shows how consumers perceive Peugeot and France, also contributes to the future plans of the brand.

Acknowledgment

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APPENDIX 1

Passenger car and light commercial vehicle market in Turkey			
Brand Name	**Years**		
	2018	**2019**	**2020**	**Total**
ALFA ROMEO	203	253	214	670
ASTON MARTIN	16	18	17	51
AUDI	13.295	10.024	18.168	41.487
BENTLEY	10	9	11	30
BMW	12.728	9.583	14.270	36.581
CITROEN	**12.302**	**12.033**	**27.480**	**51.815**
DACIA	**29.918**	**20.006**	**30.800**	**80.724**
DS	236	269	694	1.199
FERRARI	18	20	21	59
FIAT	70.058	76.251	137.325	283.634
FORD	65.428	47.107	92.487	205.022
HONDA	28.661	20.354	22.222	71.237
HYUNDAI	33.502	23.900	28.531	85.933
INFINITI	18	0	0	18
ISUZU	2.238	925	545	3.708
IVECO	1.598	1.326	1.851	4.775
JAGUAR	220	244	265	729
JEEP	2.430	2.123	4.369	8.922
KARSAN	960	511	404	1.875
KIA	9.641	6.342	15.442	31.425
LAMBORGHINI	3	9	19	31
LAND ROVER	1.248	1.371	2.010	4.629
LEXUS	56	85	143	284
MASERATI	55	45	47	147
MAZDA	1.005	417	156	1.578
MERCEDES-BENZ	22.438	14.936	20.792	58.166
MINI	1.373	1.254	1.395	4.022
MITSUBISHI	4.159	2.627	5.866	12.652
NISSAN	26.346	13.067	13.261	52.674
OPEL	20.960	18.059	34.296	73.315
PEUGEOT	**30.152**	**28.861**	**43.674**	**102.687**
PORSCHE	565	361	619	1.545
RENAULT	**85.839**	**64.977**	**101.534**	**252.350**
SEAT	10.383	5.914	11.551	27.848
SKODA	21.340	15.369	24.175	60.884

SMART	35	44	49	128
SSANGYONG	396	371	1.084	1.851
SUBARU	1.471	662	673	2.806
SUZUKI	2.878	2.381	2.977	8.236
TOYOTA	33.978	24.301	40.375	98.654
VOLKSWAGEN	66.834	48.496	64.776	180.106
VOLVO	5.943	4.155	8.200	18.298
Total	620.937	479.060	772.788	1.872.785

http://www.odd.org.tr/web_2837_2/neuralnetwork.aspx?type=36