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CHARACTERISTICS OF BUSINESS GROUPS: A COMPARISON BETWEEN GROUP AFFILIATED AND UNAFFILIATED FIRMS*

Özlem ÖZEN**

Abstract

The present study examines whether business group affiliates engage in social capital and knowledge sharing relations with firms within their groups more than they do with peers outside the group. In addition, this study compares group affiliated and independent firms in terms of performance and innovation. Using survey data from 128 Turkish business group affiliated and independent manufacturing firms, findings indicate that while group firms' relations within and outside the group show significant differences in terms of tacit, explicit knowledge sharing and social capital in the form of trust, affiliated and independent firms do not differ in terms of performance, innovation and other characteristics, such as institutional support, organizational capital and absorptive capacity. This study contributes to the business group research by examining whether affiliation creates value for firms in an emerging economy.

Keywords: *Business group affiliation, Knowledge sharing, Social capital, Performance, Innovation.*

İŞLETME GRUPLARININ ÖZELLİKLERİ: GRUPLARA BAĞLI VE BAĞIMSIZ FİRMALARIN KARŞILAŞTIRILMASI

Öz

Bu çalışma, işletme grubuna bağlı firmaların grup içindeki diğer firmalarla bilgi paylaşımı ve sosyal ilişkilerini grup dışındaki firmalarla ilişkileri ile karşılaştırmaktadır. Ayrıca bu çalışma, bir gruba bağlı ve bağımsız firmaları performans ve inovasyonları bakımından karşılaştırmaktadır. Türk işletme gruplarına bağlı ve bağımsız 128 firmadan elde edilen anket verisi incelendiğinde, gruba bağlı firmaların örtük, açık bilgi paylaşımı ve güven ilişkilerinin grup içi ve dışında farklılaştığı görülmektedir. Gruba bağlı ve bağımsız firmaların performans, inovasyon ile kurumsal destek, örgütsel sermaye ve özümseme kapasitesinin farklı olmadığı görülmektedir. Bu çalışma, gelişmekte olan bir ekonomide gruba bağlılığın firmalar için değer yaratma durumunu incelemesi bakımından işletme grupları yazınına katkı sağlamaktadır.

Anahtar kelimeler: *İşletme grubuna bağlılık, Bilgi paylaşımı, Sosyal sermaye, Performans, İnovasyon*

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1. INTRODUCTION

Business groups are prevalent forms of organizations in emerging economies. Business group literature is rich in terms of the impact of group affiliation on performance (Bucheli, Salvaj & Kim, 2019; Carney, van Essen, Estrin & Shapiro, 2018; Khanna & Palepu, 2000a; 2000b; Khanna & Rivkin, 2001) and innovation (Belenzon & Berkovitz, 2010; Castellacci, 2015; Chang, Chung & Mahmood, 2006; Hsieh, Yeh & Chen, 2010; Min, Liao & Chen, 2022). Several studies also examine the impact of group affiliation on competition (Kumar & Manikandan, 2022), entrepreneurial orientation (Purkayastha & Gupta, 2022), internationalization (Saiyed, Eryaysoy, Mondal & Dhandapani, 2023), environmental violations (Shahab, Hussain, Wang & Zhong & Kumar, 2023) and corruption (Changwony & Kyiu, 2023). These studies compare business group affiliated firms with independent (interchangeably, referred to as unaffiliated) ones in terms of performance, innovation other strategies, such as competitiveness, entrepreneurship and internationalization. However, knowledge sharing (Lee, Choo & Yoon, 2016; Lee & MacMillan, 2008; Lee, MacMillan & Choe, 2010; Lee, Lee & Gaur, 2017) and social capital (Yiu, Hoskisson & Lu, 2003) impacts of affiliation have been examined to a lesser extent. Several studies focus on business group affiliated firms; however, they do not make a distinction between within group and outside group relations of affiliates (Kang & Lee, 2017; Lee, Yang & Park, 2020; Wang, Heugens & Wijen, 2023).

Business group affiliates not only conduct knowledge sharing and social capital relations with member firms, but also have these relations with their partner firms outside their groups. Such relations create two different conditions for affiliated firms, such as within and outside group. Thus, their social capital and knowledge sharing can differ when they conduct business within and outside the group. Moreover, affiliated firms' performance and innovation may differ from independent firms' behavior (Carney, Gedajlovic, Heugens, van Essen & van Oosterhout, 2011; Lamin, 2013; Wang, Yi, Kafouros & Yan, 2015). Therefore, in order to enhance our understanding of business group affiliates' behavior within and outside the group, this paper compares affiliates' relations with other affiliates within the group and relations with firms outside the group in terms of knowledge sharing and social capital. In addition, based on the discussion of the performance and innovation impact of affiliation, a comparison between business group affiliated and unaffiliated firms is provided in terms of both performance and innovation in the context of an emerging economy, namely Turkey. This comparison is further detailed though an investigation of institutional support, organizational capital and absorptive capacity, which relate to both performance and innovation.

This study contributes to the business group literature in two ways. First, a comparison between affiliated firms' relations with other affiliates within the group and relations with firms outside the group regarding social capital (social interaction, trust) and knowledge sharing (explicit and tacit) deliver understanding of the foundations of knowledge sharing and social capital in different contexts (Inkpen & Tsang, 2016). Hence, this paper addresses a gap in the business group literature by examining affiliates' within and outside group social capital and knowledge sharing relations, which has not been sufficiently addressed in the literature. Second, it compares group affiliated and independent firms in terms of performance and innovation as well as institutional support, absorptive capacity and organizational capital, which can be associated with both performance and innovation (Cohen & Levinthal, 1990; Tomlinson & Jackson, 2013). This examination enhances the existing literature which exhibits inconclusive results in terms of performance and innovation impacts of group affiliation.

The results of the present study show that affiliated and unaffiliated firms do not differ in terms of innovation and performance, however, for affiliated firms, knowledge sharing and social capital relations differ according to the distinction between within group and outside group. In general, group affiliates engage in explicit and tacit knowledge sharing and have trustworthy relations with other affiliated ones more than they have with companies outside their groups. These findings suggest that the innovation and performance differences between affiliated and unaffiliated firms are still controversial, however, there is a business group impact in that affiliated firms refer to peer firms in social relations within the group before having relations with firms outside the group. The remainder of this paper is organized as follows. In the second section, social capital, knowledge sharing, performance and innovation are reviewed by considering business group affiliation. In section three, research methodology is explained. In section four, results and discussion are presented. In the fifth section, conclusions, implications, limitations and further research avenues are considered.

2. CONCEPTUAL BACKGROUND

2.1. Business Groups, Social Capital and Knowledge Sharing

In emerging economies, business groups have arisen due to the inefficiencies in the labor, product and financial markets and information asymmetries. Business groups serve as internal markets, where there are no well-developed markets to rely on (Chang & Choi, 1988; Khanna & Palepu, 2000a; 2000b). They differ from other organizations in terms of social structure and solidarity. The common social ties among affiliated firms create an identity which is rooted in the families in governance and the social structure enables mutual understanding and trust among affiliates (Granovetter, 1995; 2005). Business groups are regarded as the examples of social organizations, where social capital is observed with high levels of closure and interaction among affiliated firms (Holmes, Hoskisson, Kim, Wan & Holcomb, 2018; Yiu et al., 2003). In this regard, affiliates may draw upon their social capital that group creates to increase interactions within the group, thereby advancing the sharing of knowledge (Hearn, Oxelheim & Randoy, 2018; Ray & Chaudhuri, 2018). Moreover, affiliates can rely not just on the internal market groups provide, but also on various relationships their affiliates have with independent firms, such as suppliers, buyers and other organizations. Affiliated firms can utilize social capital that groups have already established to have interactions with other partners.

The presence of social relations is one of the aspects that differentiates a business group from other organizational forms, such as a multinational firm in that social ties are more essential in the groups' operations (Gaur, Pattnaik, Singh & Lee, 2019; Mahmood, Zhu & Zaheer, 2017; Yiu, Lu, Bruton & Hoskisson, 2007). Social interaction ties among group affiliates allow them to coordinate their activities and share resources (Tsai & Ghoshal, 1998; Yiu et al., 2007). In addition, a trustworthy environment in groups provides affiliates with reliable knowledge sharing without feeling the concern of seeking new partners and various norms within a business group decrease the risk of opportunism (Lamin, 2013; Yiu et al., 2003). In particular, trust is an important characteristic in business groups' formation and affiliates' transactions (Granovetter, 1995; Leff, 1978). Inkpen and Tsang (2005), conceptualizing an intracorporate network as an interorganizational form, argue that some degree of trust exists between members of such networks. In addition, affiliated firms are more likely to have various business relations with sister affiliates than with ones outside the group (Kim, Hoskisson & Wan, 2004). Also, their reputation and scale advantages attract peers outside the group, thus being able to form and maintain relationships with independent firms outside group boundaries (Bucheli et al., 2019; Mahmood & Mitchell, 2004; Mukherjee, Makarius & Stevens, 2018). Consequently, group firms are expected to have social interaction and trustworthy relations with other members more compared to the relations they have with firms outside their boundaries.

It is difficult to share tacit knowledge. Also, such knowledge is more embedded in close knit relations and sharing such knowledge requires frequent and active involvement by firms (Becerra, Lunnan & Huemer, 2008; Dhanaraj, Lyles, Steensma & Tihanyi, 2004; Simonin, 1999). A business group is an example of organization which provides this sharing through ties among affiliated firms (Borda, Geleilate, Newburry & Kundu, 2017; Lee, Choi, Ghauri & Park, 2021; Lee et al., 2016). Affiliated firms' exchange of tacit knowledge may occur more with sister affiliates than with independent firms outside group because of their dense relations and affiliated firms may be more volunteer to share such knowledge. On the other hand, explicit knowledge is codified, easier to share and more related to standardized procedures (Dhanaraj et al., 2004), however, this sharing requires communication capacity and procedures (Fey & Fru, 2008), which can exist more between affiliated firms in a group than with unaffiliated ones because of affiliates' convenience of communication (Lee et al., 2020). Therefore, these characteristics of explicit and tacit knowledge and the dense relations among affiliated firms in such groups (Lamin, 2013) make the examination of such types of knowledge sharing relevant by considering the distinction between within and outside group. In this regard, group firms are expected to share knowledge with other members more compared to the knowledge they share with independent firms.

2.2. Business Group Affiliation, Firm Performance and Innovation

It has been argued that group affiliates perform better, because groups' internal capital markets provide firms with all the essential resources when external capital markets are inefficient in emerging economies (Khanna & Palepu, 2000a; 2000b). However, research on business groups depicts conflicting results, i.e., negative and positive impacts, regarding the performance effects of group affiliation (Carney et al., 2018; Purkayastha, Kumar & Lu, 2017). For instance, Khanna and Palepu (2000a), comparing the performance of affiliates and independent firms in India, reveal that members of the most diversified groups have larger Tobin's *q* than those unaffiliated. (Tobin's *q,* which is used as a measure of performance, is defined as the ratio of the market value of capital to its replacement cost (Tobin, 1969; Wernerfelt & Montgomery, 1988). Khanna and Palepu (2000b), examining business groups in Chile between 1988 and 1996, show that affiliation has a favorable impact on return on assets when group diversification is controlled for in the early periods. Ferris, Kim and Kitsabunnarat (2003), investigating Korean chaebols between 1990-1995, find that affiliates underperform compared to unaffiliated ones, between 1992 and 1995. Bamiatzi, Cavusgil, Jabbour and Sinkovics (2014), examining the business group affiliation effect on growth of sales in the U.K., find a favorable effect of affiliation in declining industries. Another study by Ma, Yao and Xi (2006) on Chinese firms reveals a negative influence of affiliation on performance. Zattoni, Pedersen and Kumar (2009), investigating the impact of business group affiliation in India between 1990 and 2006, depict a favorable effect of affiliation in the early periods of institutional transition, but not in the late periods. Tajeddin and Carney (2018) find that affiliates have better export performance than independent ones in Africa. Wu, Wei and Wang (2021) show a positive influence of group affiliation on export performance in Chinese firms. Gonenc, Kan and Karadagli (2007) show that affiliates perform better than the unaffiliated regarding return on assets, but not in terms of Tobin's *q* in Turkey. Gunduz and Tatoglu (2003) find that Turkish business group affiliates do not differ significantly from independent ones in terms of accounting and stock market performance. Khanna and Rivkin (2001), examining the performance effect of affiliation in 14 emerging economies, reveal that group effect is positive in three countries (i.e., India, Indonesia, Taiwan) and this impact is negative for Argentina and a similar, however weak impact is observed in Philippines and Chile. The findings for Mexico, Brazil, Thailand, Korea and Turkey suggest a balance between the benefits and costs of group affiliation. Examining Chinese and Indian firms, Singh and Gaur (2009) show that member firms have worse performance than unaffiliated ones. However, since affiliated firms benefit from internal product, capital and labor markets, it is expected that they perform better than the independent ones (Gaur et al., 2019).

In emerging economies, business groups facilitate affiliates' innovative activities through providing an internal capital and labor market for various resources, such as knowledge, technology, finance and trained labor due to the lack of efficient markets and well-functioning institutions (Castellacci, 2015; Dou, Li &, Luo, 2021; Hobday & Colpan, 2010; Mahmood & Mitchell, 2004). Moreover, knowledge spillovers from member firms' research activities in a group make affiliates more innovative than unaffiliated ones (Belenzon & Berkovitz, 2010; Guzzini & Iacobucci, 2014a; Hsieh et al., 2010). The research on business groups generally shows a favorable relationship between group affiliation and activities regarding R&D which can be considered as manifestations of innovation (Filatotchev, Piga & Dyomina, 2003; Guzzini & Iacobucci, 2014b). Castellacci (2015), comparing the innovation of affiliates and unaffiliated ones in Latin American countries, elicits that affiliates are more innovative than unaffiliated firms. Hsieh et al. (2010) reveal that affiliated firms innovate more than unaffiliated ones in Taiwan. Choi, Lee and Williams (2011), investigating Chinese companies, depict a positive impact of affiliation upon innovation. Belenzon and Berkovitz (2010) show that affiliates perform better in terms of innovation in European firms. Wang et al. (2015) reveal a positive impact of affiliation upon innovation in China. Lodh, Nandy and Chen (2014) assert that affiliation enhances the effect of family ownership on innovation in India. Komera, Lukose and Sasidharan (2018) reveal a favorable effect of group affiliation on R&D in Indian firms; however, this effect decreases with the improvements in regulatory and institutional mechanisms. However, dense relations can also inhibit innovative activities by creating redundancy in resources owing to the utilization of existing knowledge (Kandel, Kosenko, Morck & Yafeh, 2019; Pattnaik, Lu & Gaur, 2018). That is, affiliates can focus on search within the group from sister affiliates instead of obtaining novel knowledge from independent firms and this existing knowledge may not enhance innovation (Mahmood, Chung & Mitchell, 2013). For instance, Chang et al. (2006), examining the impact of business group affiliation on innovation in Taiwanese and South Korean firms, reveal

a positive effect of affiliation upon innovation in Korean firms, but not in firms in Taiwan. In a different study, Mahmood and Mitchell (2004) show a curvilinear impact of business groups' share in an industry on innovation in Korean and Taiwanese groups. Mahmood et al. (2013), examining Taiwanese groups, show that supplier-buyer density has a curvilinear impact upon innovation.

Business group affiliates and unaffiliated firms may also differ in terms of institutional support, absorptive capacity and organizational capital. Absorptive capacity refers to the ability to utilize external knowledge for innovative activities (Cohen & Levinthal, 1990). It has been suggested that absorptive capacity affects a firm's innovative activities and other various outcomes (Zahra & George, 2002). Institutions, such as research institutes, universities as well as professional and trade associations can provide firms with necessary knowledge that facilitates activities regarding innovation (Molina-Morales & Martinez-Fernandez, 2004; Tomlinson & Jackson, 2013). The assets, specifically knowledge and information that firms accumulate, create a base for organizational capital and influence firms' efficiency (Prescott & Visscher, 1980). Based on these general discussions on affiliation, it could be suggested that groups provide members with necessary resources for innovation, which are available less to independent firms; therefore, affiliates are expected to innovate better than independent ones.

3. METHODOLOGY

3.1. Data

This research is carried out in the context of Turkish business group affiliated and unaffiliated (independent) firms. For the present study, the sampling frame is drawn from Turkey's 1000 largest manufacturing firms using records provided by the Istanbul Chamber of Industry (ICI). The data is collected through an administered online survey. The targeted respondents are middle/ senior managers and senior executives. Respondents are assured of anonymity to increase the likelihood of reliable responses and mitigate common method variance (CMV) bias (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). A pilot survey is initially issued to test question clarity and ensure the face and content validity of the measures being captured. There was a total of 131 responses, with 128 having complete data for the current study, with a response rate of 19%, similar to previous studies (Jiang & Li, 2009; Ray & Chaudhuri, 2018). The number of usable responses for affiliated and unaffiliated firms was equal (N=64) across several industries (textile (25%), food (15%), fabricated metal product (17%), basic metal (15%), chemicals (9%), wood products (6%), coal mining (5%), paper products (4%) and non-metallic products (4%)). In the questionnaire, there are two different sections to capture the social capital and knowledge sharing activities of affiliated firms with other group affiliates within the group and independent firms outside the group.

3.2. Variables

Business Group Affiliation: This is measured with a dummy variable with 1 representing affiliated firms and 0 representing unaffiliated firms.

Tacit and Explicit Knowledge Sharing: Tacit knowledge sharing variable is measured by 'sharing managerial techniques, management systems and practices, market trends and opportunities'. Explicit knowledge sharing variable is operationalized by knowledge associated with 'manufacturing and process designs, product designs and the technical aspects of products' (Becerra et al., 2008; Dhanaraj et al., 2004; Gupta & Govindarajan, 2000).

Social Interaction and Trust: Social interaction is operationalized through the items 'having intensive network, spending a considerable amount of time on business related events and spending a considerable amount of time on social events', following Laursen, Masciarelli & Prencipe (2012) and Molina-Morales and Martinez-Fernandez (2009). Trust is measured through the items 'cover everything with detailed contracts, remain cautious in relationships, get a better impression with the longer the relationships and feel being misled in business relationships', following Gaur, Mukherjee, Gaur and Schmid (2011). Respondents are asked to assess their knowledge sharing and social capital relations with suppliers and buyers during the past five years on a Likert scale (1= Strongly disagree 5= Strongly agree). For group affiliated firms, composite measures for within and outside group explicit, tacit knowledge sharing, social interaction and trust variables are generated based on the average of all the relevant items for buyers and suppliers. The Cronbach's alpha values of the tacit, explicit knowledge sharing, social interaction and trust variables are 0.91, 0.93, 0.88 and 0.86, respectively.

Performance: Performance is operationalized by six items: 'sales growth, return on investment, return on sales, market share growth, return on assets, profit growth,', following Acquaah (2012) and De Clercq, Dimov & Thongpapanl (2010). Respondents are asked to evaluate their firms' performance relative to that of peer firms in their sector during the past two years on a Likert scale (1= Much Worse 5= Much Better). A construct for performance variable is generated based upon the average of the relevant items (Cronbach's alpha: 0.94).

Innovation: Two types of innovation are used to measure this variable. Product innovation variable is operationalized by the items 'improvements to existing product lines and introduction of new product lines'. Process innovation variable is measured though 'introduction of organizational changes, new equipment and new input materials in the production process', following Tomlinson (2010) and Molina-Morales and Martinez-Fernandez (2009). Respondents are asked to rate their firms' innovative activities during the past three years on a Likert scale (1= Not at all 5= A great extent). A composite measure for innovation variable is generated based on the average of the items related to both types of innovation (Cronbach's alpha: 0.86).

R&D: R&D is measured by a question that asks firms' turnover spent on R&D activities between 2008-2013 (Tomlinson 2010).

Absorptive Capacity: Absorptive capacity is operationalized by the items 'exploit the new integrated knowledge, integrate existing knowledge, import external knowledge', following Ettlie and Pavlou (2006). Respondents are asked to evaluate it on a Likert scale (1= Strongly disagree 5= Strongly agree). A measure for the variable is generated based on the average of the relevant items (Cronbach's alpha: 0.79).

Institutional Support: This variable is measured by the items 'benefits from research activities, support for R&D activities, specific training from other institutions', following Molina-Morales and Martinez-Fernandez (2004). Respondents are asked to state this on a Likert scale (1= Strongly disagree 5= Strongly agree). A construct for the variable is generated based on the average of the relevant items (Cronbach's alpha: 0.74).

Organizational Capital: Organizational capital is measured with the items 'knowledge is contained in databases, using patents and licenses, embedding knowledge in processes and organization's culture contains valuable ideas', following Subramaniam and Youndt (2005). Respondents are asked to evaluate this on a Likert scale (1= Strongly disagree 5= Strongly agree). An overall measure is generated based on the average of the relevant items (Cronbach's alpha: 0.68).

3.3. Validation of Measurement

A principal component factor (PCF) analysis is conducted to assess the validity of the measurement model through orthogonal (varimax) rotation in Stata (V14.2). Considering the sample size, the number of all variable items and the theoretical relevance of the variables, the PCF is conducted on the following variable combinations: a) innovation and performance, b) tacit and explicit knowledge sharing, c) social interaction and trust, d) absorptive capacity, institutional support and organizational capital. Following the theoretical foundations, the numbers of factors to be extracted are specified as two in the first, second, third analyses, and three in the fourth one (Hair, Black, Babin & Anderson, 2010). In the first PCF analysis, the factor loadings of items related to innovation and performance variables are above 0.7. The Kaiser-Meyer-Olkin (KMO) measure indicates a value of 0.87 which is above the acceptable level of 0.5 (Hair et al., 2010). The total variance explained by the two-factor solution is 72%, with performance contributing 51% and innovation contributing 21% (43% and 29% after rotation, respectively). In the second PCF analysis, the factor loadings of items related to tacit and explicit knowledge sharing variables are above 0.5. The Kaiser-Meyer-Olkin (KMO) measure indicates a value of 0.82. The total variance explained by the two-factor solution is 65%, with explicit knowledge contributing 51% and tacit knowledge contributing 14% (33% and 32% after rotation, respectively). In the third PCF analysis, the factor loadings of items related to social interaction and trust variables are above 0.5. The Kaiser-Meyer-Olkin (KMO) measure indicates a value of 0.59. The total variance explained by the two-factor solution is 53%, with trust contributing 35% and social interaction contributing 18% (30% and 23% after rotation, respectively). In the fourth PCF analysis, the factor loadings of items related to absorptive capacity, institutional support and organizational capital variables are above 0.5. The Kaiser-Meyer-Olkin (KMO) measure indicates a value of 0.69. The total variance explained by the three-

factor solution is 53%, with organizational capital contributing 30%, absorptive capacity contributing 18% and institutional support contributing 10% (21%, 21% and 16% after rotation, respectively). The Cronbach's alpha values, which are calculated after problematic item deletion, are given in section 3.2. Variables.

4. RESULTS AND DISCUSSION

4.1. Comparison between Affiliates' Within and Outside Business Group Relations

This part involves only the business group affiliates. To examine the affiliates' relations with sister affiliates within the group boundaries and with independent firms outside, social capital (social interaction and trust) and knowledge sharing (tacit and explicit) are compared. For group affiliated firms, the statistical significance of the difference between within and outside group means is calculated by a t test. Table 1 depicts the means for the within group and outside group activities in relation to knowledge sharing and social capital variables, with the differences being evaluated by t statistic in Stata (V14.2).

Table 1: Affiliates' Within and Outside Business Group Relations

Variables	Mean	t value
Within group **social interaction**	3.31 (0.82)	**0.69**
Outside group **social interaction**	3.24 (0.70)	
Within group **trust**	2.18 (0.97)	**2.65****
Outside group **trust**	1.80 (0.61)	
Within group **tacit** knowledge sharing	3.64 (0.80)	**4.51*****
Outside group **tacit** knowledge sharing	3.05 (0.79)	
Within group **explicit** knowledge sharing	3.48 (0.92)	**2.48****
Outside group **explicit** knowledge sharing	3.17 (0.87)	
Standard deviations in parentheses. Legend: * p<0.1; ** p<0.05; *** p<0.01. Two tailed tests.		

Affiliates have knowledge sharing activities and social capital relations with sister affiliates more than they have with firms outside group boundaries. In terms of firms' social capital, the results show that the mean of within group trust relations is higher than that of outside group. Regarding the social interaction construct, a statistical difference is not found between within and outside group relations. Regarding explicit and tacit knowledge sharing, the means of within group activities are higher than that of outside group, with statistically significant differences. These findings are in line with the previous literature, which suggests that affiliated firms refer to other affiliates for relationships before having business relations with other peers outside the group (Carney et al., 2011; Keister, 2001; Mahmood, Zhu & Zajac, 2011). Regarding social capital, trust has an important role in affiliates' relations. Ties between affiliated firms enhance trust, which is difficult to maintain with independent firms (Hsieh et al., 2010). While group firms have relations with other affiliates within the group, the finding for social interaction of member firms with other ones outside the group is expected, since group recognition and reputation allow affiliates to form strong relations with peers outside the group for their businesses (Castellacci, 2015). Particularly, tacit knowledge, which is related to more complex issues and production tasks, is exchanged more within the group (Chang et al., 2006; Grant, 1996). Explicit knowledge sharing can be difficult even though the facilitating factors exist, such as communication capacity, procedures and databases (Fey & Fru, 2008). In sum, similar to the results for tacit knowledge, explicit knowledge sharing may be smoother for group affiliated firms because dense ties within the group facilitate such interaction (Lamin, 2013).

4.2. Comparison between Business Group Affiliated and Unaffiliated Firms

In this section, in line with the discussion upon the performance effects of affiliation and innovation benefits argued in this paper, affiliated and unaffiliated firms are compared in terms of performance and innovation as well as organizational capital, absorptive capacity and institutional support. The statistical significance of difference of means is calculated by a t test. Table 2 presents the means for group affiliated and unaffiliated firms for innovation and performance variables. Differences are evaluated upon t statistic.

The findings show that affiliated and unaffiliated firms do not differ in terms of innovation, performance and R&D. In terms of the indicators of the performance variable, the means of ROI differs significantly between affiliated and unaffiliated firms, with the unaffiliated firms performing better than affiliated ones. Accordingly, these findings are similar to that of several studies that find no difference between affiliated and unaffiliated firms in terms of several performance measures (Gunduz & Tatoglu, 2003; Khanna & Palepu, 2000a). The results, however, contradict the studies where a significant difference between affiliated and unaffiliated firms regarding R&D, innovation and various performance measures have been found (Belenzon & Berkovitz, 2010; Ferris et al., 2003; Gonenc et al., 2007; Hsieh et al., 2010; Kim, Kim & Hoskisson, 2010; Min, Liao & Chen, 2022; Wang et al., 2015). Finally, no statistical difference is discovered between affiliated and unaffiliated firms in terms of R&D, while prior studies have revealed mixed findings (Kim et al., 2010).

Table 2: Performance and Innovation Comparison of Affiliated and Independent Firms

Variables and items	BG affiliated firms	Unaffiliated firms	t test value
Performance	**3.74 (0.92)**	**3.96 (0.77)**	**1.43**
ROS	3.98 (0.93)	4.08 (0.91)	**0.58**
ROA	3.79 (0.98)	3.89 (0.84)	**0.60**
ROI	3.61 (1.02)	4.12 (0.81)	**3.10*** **
Profit growth	3.63 (1.07)	3.85 (0.81)	**1.32**
Sales growth	3.82 (1.08)	3.95 (0.99)	**0.70**
Market share growth	3.64 (1.10)	3.82 (0.98)	**0.94**
Innovation	**3.33 (0.72)**	**3.26 (0.86)**	**-0.53**
Product innovation	**3.38 (0.81)**	**3.29 (0.90)**	**-0.59**
Process innovation	**3.28 (0.79)**	**3.24 (0.94)**	**-0.29**
R&D	**1.51 (0.86)**	**1.67 (0.94)**	**1.01**
N	64	64	
Standard deviations in parentheses. * p<0.1; ** p<0.05; *** p<0.01. Two tailed tests.			

In addition, organizational capital, absorptive capacity and institutional support differences between affiliated and unaffiliated firms are examined, since these are related to innovation and performance (Lane, Salk & Lyles, 2001; Reed, Lubatkin & Srinivasan, 2006; Subramaniam & Youndt, 2005; Tomlinson & Jackson, 2013; Zahra & George, 2002). Business group affiliates' relations among themselves may create a setting where an amount of knowledge is shared for innovative activities (Castellacci, 2015). Institutional support allows firms to obtain knowledge and enhances innovative performance, however, for affiliated firms, the advantage of group recognition and reputation may facilitate establishing more relations with institutions that provide them with knowledge on R&D and other activities (Hsieh et al., 2010; Lamin, 2013; Tomlinson & Jackson, 2013). Organizational capital is the knowledge that is stored in information systems of organizations (Reed et al., 2006). Firms' organizational capital allows for the repeated use of knowledge which may increase performance and innovative capabilities (Subramaniam & Youndt, 2005). Affiliates can utilize organizational capital created among members to enhance innovative performance (Yiu, Hoskisson, Bruton & Lu, 2014). Based on all arguments, affiliates are expected to have higher organizational capital, absorptive capacity and institutional support compared to unaffiliated ones.

Table 3 presents the means for affiliated and unaffiliated firms for the organizational capital, absorptive capacity and institutional support. Differences are evaluated based on a t statistic. The findings show that affiliated and unaffiliated firms do not differ in terms of institutional support, absorptive capacity and organizational capital. Even though affiliated and unaffiliated firms do not differ, firms' absorptive capacity is important in innovative activities as discussed in the relevant literature (Chang, Gong & Peng, 2012; Cohen & Levinthal, 1990; Escribano, Fosfuri & Tribo, 2009; Lane et al., 2001).

Table 3: Comparison of Affiliated and Independent Firms in Relation to Innovation

Variables and items	BG affiliated firms	Independent firms	t test value
Absorptive capacity	**3.76 (0.58)**	**3.78 (0.82)**	**0.15**
Institutional support	**3.42 (0.82)**	**3.45 (0.91)**	**0.17**
Organizational capital	**4.07 (0.51)**	**3.89 (0.72)**	**-1.62**
N	64	64	
Standard deviations in parentheses. * p<0.1; ** p<0.05; *** p<0.01. Two tailed tests.			

The finding for institutional support variable is in line with the research carried out by Tomlinson and Jackson (2013) about the impact of cooperative firm ties and institutions upon innovation, by considering district affiliation. The researchers show that firms that belong to districts do not differ from firms that are not the members of districts regarding received institutional support. However, these findings contradict other studies that investigate the role of institutional support in districts (Molina-Morales & Martinez-Fernandez 2003; 2004). Molina-Morales and Martinez-Fernandez (2003) find that the participation of the local institutions in the industrial district firms' activities is significantly greater than that of non-member firms. In addition, Molina-Morales and Martinez-Fernandez (2004) show that participation of local institutions is significantly related to district membership. Organizational capital is utilized by both affiliated and unaffiliated firms; however, Reed et al. (2006) find a difference between the means of commercial and personal banks' organizational capital.

5. CONCLUSION

In this paper, an investigation has been provided on group affiliates knowledge sharing and social capital relations within and outside the group. In addition, a comparison between affiliated and unaffiliated firms in terms of innovation, performance and other factors, such as institutional support, absorptive capacity and organizational capital is provided. Whilst affiliates' relations within and outside the group boundaries depict significant differences regarding social capital in the form of trust, explicit and tacit knowledge sharing, both types of firms do not differ in terms of performance, innovation and other characteristics, such as organizational capital, absorptive capacity and institutional support.

This study contributes to the business group literature by scrutinizing affiliates' relations within and outside their groups. Affiliates benefit from social capital and knowledge sharing; however, we do not know much whether they conduct knowledge sharing and social capital relations with other affiliates more than they do with peers outside the group. Also, this study compares affiliated and unaffiliated firms in terms of performance, innovation and various characteristics, such as organizational capital, absorptive capacity and institutional support. Hence, this research aims to fill a gap in the business group literature, by enhancing the understanding of whether affiliation with a group creates value for firms.

The findings of this study provide insights into management of business groups. Their strategy in pursuing knowledge and social relations with sister affiliates represents a unique characteristic, since they operate under the control of a holding company (Yiu et al., 2007). However, group firms may not always perform and innovate better than independent peers. Therefore, policy makers in groups should be more effective in their strategies to overcome the possible negative effects of affiliation. This study has a number of limitations which can open several avenues for further research. In this study, knowledge sharing is conceptualized based on tacit and explicit categorization. Future research can consider other knowledge conceptualizations, such as exploration and exploitation (March, 1991; Rhee & Kim, 2019). This study is based on Turkish firms which may limit the generalizability of the findings to other emerging economies (Gu, Lu & Chung, 2019; Singh & Gaur, 2009; 2013). Therefore, the relations can be explored in other emerging economies.

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