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THE IMPACT OF SOCIAL CAPITAL ON INNOVATIVE BEHAVIOUR AS A REFLECTION OF CREATIVITY: THE CASE OF EDUCATION SECTOR

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Abstract. Social capital enables sharing, trust, solidarity, proper norms and respectful behaviours, and organisational participative management. Employee innovative behaviour is vital for organisations as it provides a competitive advantage. This study aims to determine the impact of social capital and its sub-dimensions, friendly acceptance, norms of behaviour, trusting/reciprocity, and governance on innovative behaviour and its sub-dimensions, participative leadership, external work contacts, and innovative output on innovative behaviour. The data were gathered from 264 school administrators and teachers through a questionnaire. The *SPSS Statistics 25.0* program was used to test the research hypotheses. Reliability and validity analysis results are sufficient. The results showed that social capital (overall) and its all-sub-dimensions, except trusting/reciprocity, significantly and positively impact innovative behaviour. However, most of the sub-dimensions of social capital have no significant impact on the sub-dimensions of innovative behaviour.

Keywords: external work contacts, friendly acceptance, governance, innovative behaviour, innovative output, participative leadership, social capital, trusting/reciprocity.

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1. Introduction

In organisations with high levels of social capital, creativity and more effective information sharing are the sources of innovative behaviours (Kogut & Zander, 1996, p. 503; Liu, 2013; Sözbilir, 2018). There have also been approaches that consider social capital as an investment in social relations with the expectation of return when necessary or as capital stored for future use (Robison et al., 2000). Social capital develops in the process of social interaction. Social capital, which also represents the strength of communities and the ties between them, is a factor that organisations gain a competitive advantage in their activities in the form of trust, cooperation, and solidarity in terms of knowledge sharing (Göksel et al., 2010; Işık et al., 2021), intellectual capital (Chen et al., 2009), and financial aspects (Nahapiet & Ghoshal, 1998; Bourdieu, 2005, p. 194; Gedajlovic et al., 2013). Social capital inspires resource sharing among individuals and units within the network, voluntarily sharing tasks and creating value, such as product innovation as a goal (Tsai & Ghoshal, 1998, p. 465).

Innovation is essential because it creates organisational value (Hitt et al., 1996, p. 1085). In this respect, to innovate, it is essential to use the resources in the organisation in the most efficient way possible, integrate different resources at an ideal level, and rearrange the resource allocation when necessary (Tsai & Ghoshal, 1998, p. 467). According to Farr and

Ford (1990), innovative behaviour is the behaviour of an individual who aims to pioneer and willingly communicate new and valuable ideas, processes, products, or procedures. On the other hand, Amabile (1988) similarly defined creativity as generating new and useful ideas. However, innovative behaviour differs from creativity because it also includes implementing ideas. Nevertheless, creativity is an essential component of innovative behaviour (de Jong & den Hartog, 2010, p. 24; Shin et al., 2017). Innovative behaviour also refers to the tendency to discover and benefit from a new product, service, or process (Strobl et al., 2020, p. 813). Some authors (Pylypenko et al., 2021) argued that social capital researchers need to pay more attention to the different levels and modes of influence of social capital, which have different potential to enhance innovation in the research process. Social capital and its role in the innovation process attracts attention. Index of innovative social capital, a complementary indicator to measure social capital in terms of its ability to improve innovation, is based on a combination of three key components: close cooperation between universities and research and development, information and communications technology, and social capital. Employees of electronic information enterprises in high technology zone software park were surveyed, and the results showed that social capital has a significant impact on employees' innovation behaviour, and trust plays a fully mediating role between the cognitive dimension and employees' innovation behaviour (Dexiang et al., 2017). Zhao et al. (2022) also revealed that internal social capital has positive impact on innovative behaviour. Fountain (1998) argued that social capital is a necessary, even if not enough, element for effective public–private partnerships, the devolution of some science and technology responsibilities to governments, and a new, more collaborative style of government policy. While observers at the forefront of this area have noted the fundamental importance of social capital for innovation and, hence, for science and technology policy, it has yet to be assimilated by policymakers and captured in the design of policy instruments. The development and utilization of informational capital can be significantly strengthened by the presence of social capital. Trustworthy relationships contribute to enhancing the flow of information and enriching its meaning. Human capital, which consists of intangible values such as knowledge, intelligence, creativity, experience, ability, and skills and is extremely necessary for innovative behaviour, can positively affect innovation processes by circulating more with social capital (Baumane-Vītoliņa et al., 2019; Chandra, 2022; Purnamawati et al., 2022; Efe, 2023; Rabelo Neto et al., 2024; Runiewicz-Wardyn, 2020; Sattayathamrongthian & Vanpetch, 2023). Social capital (Kassahun, 2005; Rocco & Suhrcke, 2012; Kim et al., 2017), which is the catalyst of key factors for organisational success such as commitment, identification, loyalty and teamwork in the organisational context, on innovative behaviour. Innovative work behaviour is affected by personal, inter-team, teamwork, and organisational factors, especially in public organisations (Işık et al., 2021; Puspitasari Srirahayu et al., 2023). Although it is such an important issue, the impact of social capital on innovative behaviours was not studied sufficiently in the literature in terms of education sector employees. The education sector differs from other sectors in that it requires selective attention, rational approaches, creative and innovative thinking qualities of the teachers and managers who are the employees of the sector due to the pedagogical specificity of the educational environment (Sipovskaya, 2019). This study aims to determine whether it is possible to develop innovative behaviours by ensuring the distribution and sharing of many

essential factors directly or indirectly through social capital. Also, based on the results of the studies in the literature, this study aims to close the gap in the literature in the context of education sector employees by testing the hypothesis that social capital has a positive impact on innovative behaviours, potentially leading to significant advancements in the human resources and education sector.

2. Conceptual frame

2.1. Social capital

Although there is no generally accepted definition of social capital in the literature, it is understood that the typical emphasis of almost all definitions is trust, solidarity, resource sharing, and cooperation formed by good relationships and ties between individuals (Andrikopoulos & Economou, 2015, p. 54; Lancee, 2015, p. 351; Liang et al., 2015, pp. 52–53). According to Putnam (1993), social capital refers to "all kinds of characteristics of social organisation such as networks, norms and trust that facilitate coordination and cooperation for mutual interests". With the statement that our social ties are important and benefit us, Barbosa Neves and Fonseca (2015, p. 15) demonstrated the functional aspect of social networks and ties in sourcing. Barbosa Neves and Fonseca (2015, p. 15) defined social capital as "the resources that are embedded in our social networks and can be accessed and mobilised when needed". Social capital is formed and develops within the social environment (network) with the friendly acceptance of each other, behaviour by the norms of behaviour, trusting/reciprocity in each other and management together, also called *governance* (Forsell et al., 2020). Putnam (2000, p. 19) defined social capital as "connections among individuals-social networks and the norms of reciprocity and trustworthiness that arise from them". Establishing friendships in organisations with a robust and friendly acceptance approach is straightforward. The organisation brings people together and accepts employees regardless of their origins. Employees of different origins form close friendships with each other, and these friendships keep them there.

Similar to physical and human capital, social capital encompasses the features of social organisation that facilitate coordination and cooperation. Linking cooperation to capital signifies the investment potential of a group's collaborative ability. Well-functioning partnerships, consortia, and networks represent social capital, which is evident in the shared resources and relationships among institutions. For example, a group of employees collaborating on a project utilises their cooperative ability to take on larger, riskier research endeavours (Fountain, 1997).

An organisation with a friendly acceptance environment brings people together and accepts employees regardless of their origins. Employees of different origins make close friendships with each other, which keeps them together. Income and education level differences of people are ignored in the organisation (Forsell et al., 2020). Norms of behaviour are the rules of behaviour that employees and managers must follow in every organisation, and those who do not obey these rules are warned and even reprimanded according to circumstance, at the same time expected from each member of the organisation as the best behaviour

model. Norms of behaviour are also seen as a symbol of social cohesion (Delhey et al., 2018). While the perception of social cohesion develops with standard behavioural norms, social capital also gets stronger (Forsell et al., 2020). Within the framework of trusting/reciprocity, individuals help each other in networks by making them use their opportunities (Delhey et al., 2018; Forsell et al., 2020). For example, giving a reference to an acquaintance in the network to find a job by relieving an acquaintance in another network or lending money in economic problems, sometimes outright helping financially, providing support in social problems and this support is continued mutually when necessary (Field, 2003). Trusting/reciprocity also strengthens social capital by helping someone in the network buy a house or car by lending money and providing security to their family when they are away from home. Governance refers to a mutual management style in which employees participate in the organisation's decisions, where the management takes the employees' opinions, and where transparent and participatory management is displayed (Koçel, 2014, p. 11). Governance practice intensifies employees' perception of social capital by displaying management based on effective communication at the network/organisation, which is transparent, fair, accountable, and responsible (Borg et al., 2015; Górriz-Mifsud et al., 2016).

2.2. Innovative behaviour

Innovative behaviour is an important human capital that contributes to the company's intellectual capital when new and useful ideas are developed and successfully implemented thanks to the innovativeness of the employees (Michael et al., 2011, p. 258). Employees display innovative behaviours based on their suggestions or solutions to their complaints by communicating and interacting with the people to whom they provide products and/or services (Seligman & Csikszentmihalyi, 2000, p. 9). Innovative behaviour is not only the generation of new and useful ideas, emphasised in the definition of creativity (Amabile & Pratt, 2016) but also the implementation of these ideas in the workplace for innovation to occur (Scott & Bruce, 1994; Weinberger et al., 2018; Zhou & George, 2001). Carmeli et al. (2006, p. 78) defined innovative behaviour as

> "a multiple-stage process in which an individual recognises a problem for which she or he generates new (novel or adopted) ideas and solutions, works to promote and build support for them, and produces an applicable prototype or model for the use and benefit of the organisation or parts within it".

As can be understood from the above definitions, innovative business behaviour emerges in a multi-stage manner. These are problem recognition, generating ideas or solutions, providing support for ideas and implementing the adopted ideas. Therefore, innovative work behaviour is an important part of innovation process (Canbek & İpek, 2021). Employees are individuals with behaviours critical to the organisation by creating and implementing innovative solutions (Purc & Laguna, 2019). Innovative behaviour focuses more on process innovation than product innovation (Montag et al., 2012). The success achieved in process innovation is also reflected in product innovation, so the contribution of innovative behaviour to innovations is ensured (Shin et al., 2017; Weinberger et al., 2018). Innovative behaviour takes place in three stages. In the first stage, the individual determines the problem or need

and produces an idea as a solution. In the second stage, employee searches and works to find sponsors or support to realise the developed idea. In the third stage, individuals concrete their innovative behaviour by producing a prototype or model of ideas that they developed, and mass production is started (Carmeli et al., 2006; Scott & Bruce, 1994, pp. 581–582; Weinberger et al., 2018, p. 4). Employees' innovative behaviours are very important for increasing organisational effectiveness, ensuring the long-term survival of organisations, and gaining competitive advantage (Nederveen Pieterse et al., 2010, p. 609; Nasifoglu Elidemir et al., 2020; Garrido-Moreno et al., 2024).

3. Hypothesis development: the impact of social capital on innovative behaviour

In essence, social capital affects individuals' behaviour with the savings it deposits. Philanthropy and volunteering (Lin, 2021), environmental responsibility (Atshan et al., 2020), altruism and courtesy (Wahyu Ariani, 2012), and knowledge sharing (Akhavan & Hosseini, 2016; Ganguly et al., 2019; Kim et al., 2013; Sözbilir & Yeşil, 2015; Styhre, 2008) were determined as behaviour that social capital affected. On the other hand, it is a fact identified in previous research that human capital (Dakhli & de Clercq, 2004), organisational commitment (Çevik Tekin & Akgemci, 2019), and cultural capital (Kim et al., 2020) significantly influences innovative behaviour. Some authors (Wang et al., 2024) analysed data on 59 798 pharmaceutical patents registered in the United States between 1975 and 2014 and found that there is a significant relationship between external knowledge sharing and innovation on an individual basis, both quantitatively and qualitatively. Individuals' depth of knowledge plays a moderating role between their perceptions of external knowledge sharing and innovation. Canbek and İpek (2021), in their study on 412 teachers in Turkey, found that job commitment and psychological empowerment affect innovative work behaviour. Other authors (Işık et al., 2021) surveyed managers of 4–5 star hotels in Turkey, and they determined that tacit knowledge sharing and team culture positively related to innovative work behaviour.

Dakhli and de Clercq (2004) concluded that there is a positive relationship between social capital and innovativeness in their study, based on data collected from 59 countries, with 600 to 3000 people participating. Yazdanifar (2018) also determined that social capital positively impacts organisational innovation in his study. Hartmann and Arata (2011) surveyed farmers working in the agricultural sector in the South of Peru and found that there is a relationship between social capital and individual innovation. Casanueva and Gallego (2010) studied university students in Spain, and their research showed that social capital affects innovation. In their study by some authors (Fatemi et al., 2022) on 310 personnel working in the energy sector in Iran, they concluded that social capital and its moderated knowledge-sharing behaviour affect innovative behaviour.

Similarly, other authors (Heliawaty et al., 2020) revealed that social capital positively affects innovative behaviour in their field study on farmers operating in the Bantaeng Regency in Indonesia. The research conducted in 26 countries determined a strong relationship between the index of innovative social capital and gross domestic product *per capita* (Pylypenko et al., 2021). The results of the analysis of the data collected through 443 questionnaires from the

employees of electronic information enterprises located in Chengdu high technology zone software park in China showed that social capital has a significant impact on employees' innovation behaviour; at the same time, trust plays a fully mediating role between the cognitive dimension and employees' innovation behaviour (Dexiang et al., 2017). Similarly, Zhao et al. (2022) analysed the data obtained from a survey of 284 people working in different sectors in different cities in China. They found that internal social capital positively impacts employees' innovative behaviour. In Turkey, a study was conducted on 398 staff in 4 hospitals (2 public and two private) by Turgut and Beğenirbaş (2013), and they determined that only relational social capital affects innovative behaviour. Cao and Zhang (2020) conducted research on 500 Master of Business Administration students from Chinese universities and they determined that there is a significant and positive relationship between workplace friendship and innovative behaviour. Also, Zhao et al. (2022) surveyed 284 employees in China, and they found that internal social capital and workplace friendship have a significant and positive impact on employee innovative behaviour. Some studies (Purc & Laguna, 2019; Sousa & Coelho, 2011) determined that personal values significantly and positively impact innovative behaviour. As conceptual content, personal values are similar to norms of behaviour (Buffalo & Rodgers, 1971; Mathwick, 2002). Another study (Jamshidi et al., 2020) examined the relationship between organisational governance and innovative behaviour. They found that organisational governance related to innovative behaviour significantly and positively.

In previous studies (Fatemi et al., 2022; Heliawaty et al., 2020; Turgut & Beğenirbaş, 2013), the effect of social capital on innovative behaviour was examined in the various sector employees such as health, energy, and agriculture sectors. However, research numbers are insufficient in the education sector in the literature. This study, conducted in a different sector (education) with the sub-dimensions of social capital and innovative behaviour factors, will close the gap in this field in the literature. Therefore, in this study, the following hypotheses were developed to test whether the sub-dimensions of social capital (friendly acceptance, norms of behaviour, trusting/reciprocity, and governance) affect the sub-dimensions of innovative behaviour (participative leadership, external work contacts, and innovative output):

H1: Social capital has a positive and significant impact on innovative behaviour;

H2: The friendly acceptance dimension of social capital has a positive and significant impact on innovative behaviour;

H3: The norms of behaviour dimension of social capital have a positive and significant impact on innovative behaviour;

H4: The trusting/reciprocity dimension of social capital has a positive and significant impact on innovative behaviour;

H5: The governance dimension of social capital has a positive and significant impact on innovative behaviour;

H6: The dimensions of social capital – friendly acceptance (H6a), norms of behaviour (H6b), trusting/reciprocity (H6c), and governance (H6d) have a positive and significant impact on the participative leadership dimension of innovative behaviour;

H7: The dimensions of social capital – friendly acceptance (H7a), norms of behaviour (H7b), trusting/reciprocity (H7c), and governance (H7d) have a positive and significant impact on the external work contacts dimension of innovative behaviour;

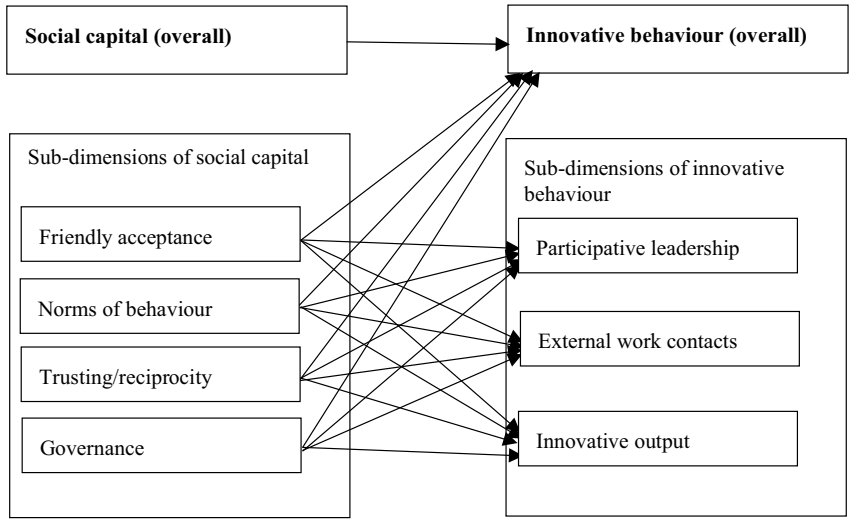

Figure 1. Research model (source: created by author)

H8: The dimensions of social capital – friendly acceptance (H8a), norms of behaviour (H8b), trusting/reciprocity (H8c), and governance (H8d) have a positive and significant impact on the innovative output dimension of innovative behaviour.

The research model created in line with the hypotheses is illustrated in Figure 1.

4. Methodology

In the study, the validity and reliability of the data collected using social capital and innovative work behaviour scales were analysed. Correlation analysis was conducted to determine the relationship between the variables used in the study. At the same time, regression analyses were performed to determine the effect of social capital and its sub-dimensions on innovative work behaviour and its sub-dimensions.

4.1. Sample

The universe of the study includes school administrators and teachers in the province of Artvin, Turkey, and its districts. The research questionnaire was ethically approved by the Artvin Çoruh University, Turkey, Scientific Research and Publication Ethics Committee and the Artvin Provincial Directorate of National Education, Turkey, before being distributed to participants. Visits to schools were conducted using a random sampling method in February, 2023. During these visits or telephone conversations, the importance of administrator and teacher participation in the survey was emphasized, and the questionnaire was provided in either physical form or as an online link. It was determined as the population that a total of 500 administrators (school principals and vice-principals) and teachers worked in schools where questionnaires were distributed. Ultimately, 264 employees participated in the survey, resulting in a 52.8% response rate.

4.2. Measurement and data collection

In the study, the 20-item and four-dimension dimensions (friendly acceptance, norms of behaviour, trusting/reciprocity, and governance) social capital scale developed by Forsell et al. (2020) was applied to the participants. The other scale was used in the study by modifying the innovative work behaviour scale, which consisted of 17 items and three dimensions (participative leadership, external work contacts, and innovative output) and was developed by de Jong and den Hartog (2010). Both scales are Likert-style and were measured from 1 to 5. The social capital scale ranges from 1 = strongly disagree to 5 = strongly agree, and the innovative work behaviour scale ranges from 1 = never to 5 = always.

5. Results

5.1. Demographic characteristics

Most of the participants (83.5%, N = 86) are male. As for age range, 36.9% (38) of the participants are between the 36 and 45. 38.8% (40) of the participants have more than 20 years of seniority in their workplaces. In terms of education levels, those with a bachelor's degree are in the majority, with 31.1% (32). The demographic characteristics of the participants in the study are shown in Table 1.

Table 1. The demographic characteristics of the participants in the study (source: created by author)

Gender	Number	Percent (%)	Monthly income	Number	Percent (%)
Female	126	47.7	Up to 22 500 Turkish liras (TRY) (750 dollars)	13	4.9
Male	138	52.3	22 500 – 40 000 TRY	147	55.7
Total	264	100.0	40 000 TRY +	104	39.4
			Total	264	100.0
Age	Number	Percent (%)	Years of seniority	Number	Percent (%)
18–25	24	9.1	1–5 years	82	31.1
26–35	119	45.1	6–10 years	62	23.5
36–45	74	28.0	11–15 years	38	14.4
46–55	38	14.4	16–20 years	29	11.0
56+	9	3.4	21+	53	20.1
Total	264	100.0	Total	264	100.0
Position	Number	Percent (%)	Educational level	Number	Percent (%)
Teacher	230	87.1	Graduate	236	89.4
Vice-principals	19	7.2	Master's degree	27	10.2
School principals	15	5.7	Doctorate degree	1	0.4
Total	264	100.0	Total	264	100.0

5.2. Validity and reliability analyses

The validity of the scales was tested by exploratory factor analysis. One item (diversity in our school makes it better) from the friendship acceptance dimension scale and one item (people behaving inappropriately are noticed) from the norms of behaviour dimension scale were removed from analyses of the social capital scale because of their low factor loading. It was determined that the factor loads of both (social capital and innovative work behaviour) scale variables are above 0.50, which is quite sufficient (Field, 2009). Kaiser–Meyer–Olkin test determined the adequacy and suitability of scales for factor analysis. Cronbach's alpha values (social capital = 0.898; innovative behaviour = 0.881) showed that the scales are highly reliable (Hair et al., 2014). The results of the factor and reliability analyses are shown in Table 2.

Table 2. The results of the factor and reliability analyses (source: created by author)

Scales	Cronbach's alpha	Factor loadings range	Kaiser–Meyer–Olkin test	Chi-squared test	Difference	Variance (%)	Significance (*p*-value)
Social capital	.898	.502–.714	.912	2424.831	153	65.845	.000
Friendly acceptance	.904	.755–.863	.921	1040.329	21	64.149	.000
Norms of behaviour	.633	.717–.808	.635	101.068	3	58.039	.000
Trusting/ reciprocity	.748	.608–.851	.752	283.164	6	59.095	.000
Governance	.898	.857–.897	.842	628.711	6	76.614	.000
Innovative work behaviour	.881	.411–.872	.881	2237.654	136	60.834	.000
Participative leadership	.912	.737–.879	.868	1091.887	15	69.736	.000
External work contacts	.733	.678–.711	.750	257.744	10	48.697	.000
Innovative output	.831	.670–.812	.830	539.277	15	54.415	.000

5.3. Correlation analysis

In the analysis, the highest correlation and significant and positive relationship is determined between innovative work behaviour and external work contacts (r = .909; p < .01). Also, a second high and significant correlation was revealed between the social capital and friendly acceptance (r = .862; p < .01). The correlation analysis showed that there is a medium level and significant relationship between the main variables of the research, social capital, and innovative behaviour (r = .455; p < .01). It was observed that all of the other variables in the analysis have different levels and significant relationships between them. The means, standard deviations and correlations of the variables are given in Table 3.

Table 3. Correlation analysis results (source: created by author)

Variables	Mean	Standard deviation	1	2	3	4	5	6	7	8	9
1 – social capital	4.0947	0.55870	1								
2 – friendly acceptance	4.1921	0.71952	.862**	1							
3 – norms of behaviour	3.7929	0.77239	.547**	.274**	1						
4 – trusting/ reciprocity	4.0644	0.69601	.782**	.555**	.350**	1					
5 – governance	4.1809	0.76875	.738**	.474**	.271**	.478**	1				
6 – innovative work behaviour	3.6919	0.55147	.455**	.379**	.269**	.328**	.368**	1			
7 – participative leadership	3.8087	0.85128	.453**	.317**	.211**	.238**	.588**	.686**	1		
8 – external work contacts	3.6282	0.63360	.373**	.301**	.212**	.305**	.293**	.909**	.546**	1	
9 – innovative output	3.6168	0.63696	.212**	.192**	.188**	.202**	0.054	.779**	.222**	.638**	1

*Note**: correlation significant at level 0.05 (2-tailed).
*Note***: correlation significant at level 0.01 (2-tailed).

5.4. Regression analyses

Simple and multiple regression analysis was performed to test whether social capital and its sub-dimensions impact innovative behaviour and its sub-dimensions. Simple linear regression analysis results revealed that social capital (overall) has a significant and positive impact on innovative behaviour (overall). Accordingly, social capital predicted innovative behaviour, and social capital explains 20.7% of the innovative behaviour (R^2 = 0.207; p < 0.001). The beta coefficient included in the analysis results represents a direct comparison between coefficients as to their relative explanatory level of the dependent variable. In this study, the beta coefficient of social capital (overall) showed that a unit increase in the social capital led to a 0.455 increase in the innovative behaviour (overall) independent variable. The simple linear regression analysis results are shown in Tables 4a–4b and Table 9.

Table 4a. Simple regression results (source: created by author)

ANALYSIS OF VARIANCE[a]						
Model		Sum of squares	Difference	Mean square	*F*-test	Significance (*p*-value)
1	Regression	16.564	1	16.564	68.431	.000[b]
	Residual	63.419	262	.242		
	Total	79.983	263			

Note[a]: dependent variables – innovative behaviour (overall).
Note[b]: predictors – (constant), social capital (overall).

Table 4b. Simple regression results regarding the impact of social capital on innovative behaviours (source: created by author)

Variables	Beta coefficient	Standard error	Beta coefficient	*t*-statistic
Constant	1.853	.224		8.256
Social capital	.449	.054	.455	8.272

Note: r = .455; R^2 = .207; F = 322.413; p < .01.

At the same time, a multiple linear regression analysis was conducted to determine whether the sub-dimension of social capital (friendly acceptance, norms of behaviour, trusting/reciprocity, and governance) has a significant impact on innovative behaviour. The analysis showed that three sub-dimensions of social capital (friendly acceptance, norms of behaviour, and governance) significantly impact innovative behaviour. However, the trusting/reciprocity dimension has not impact on innovative behaviour. The results revealed that 21.1% of innovative behaviour is explained by the three dimensions of social capital, friendly acceptance, norms of behaviour, and governance (R^2 = 0.211; p < 0.001). Friendly acceptance has the highest beta coefficient (β = 0.209; p < 0.01) between sub-dimensions. The multiple linear regression results are given in Tables 5a–5b.

Table 5a. Multiple regression results (source: created by author)

ANALYSIS OF VARIANCE[a]						
Model		Sum of squares	Difference	Mean square	*F*-test	Significance (*p*-value)
1	Regression	16.905	4	4.226	17.354	.000[b]
	Residual	63.077	259	.244		
	Total	79.983	263			

Note[a]: dependent variables – innovative behaviour.
Note[b]: predictors – (constant), sub-dimensions of social capital.

Table 5b. Multiple regression results regarding the impact of sub-dimensions of social capital on innovative behaviour (source: created by author)

Variables	Beta coefficient	Standard error	Beta coefficient	*t*-statistic	Significance (*p*-value)	Durbin–Watson statistic
Constant	1.836	.228		8.050	.000	1.900
Friendly acceptance	.161	.053	.209	3.019	.003	
Norms of behaviour	.095	.043	.133	2.239	.026	
Trusting/reciprocity	.056	.056	.070	.988	.324	
Governance	.143	.047	.199	3.017	.003	

Notes: r = .460; R^2 = .211; F = 17.354; p < .01; dependent variables – innovative behaviour.

Additionally, three multiple linear regression analyses were conducted to test whether the sub-dimensions of social capital (friendly acceptance, norms of behaviour, trusting/reciprocity, and governance) significantly impact the sub-dimensions of innovative behaviour (participative leadership, external work contacts, and innovative output).

The first multiple linear regression analysis concluded that only one sub-dimension of social capital (governance) has a significant and positive impact on participative leadership (sub-dimension of innovative behaviour). However, the other sub-dimensions of social capital (friendly acceptance, norms of behaviour, and trusting/reciprocity) have not a significant impact on participative leadership. The results showed that governance explains 35.7% of the participative leadership ($R^2 = 0.357$; $p < 0.001$) and beta coefficient of governance ($\beta = 0.582$; $p < 0.001$) participative leadership means that a unit increase in the governance leads 0.582 increase in the participative leadership. The results of the first multiple linear regression analysis are shown in Tables 6a–6b.

Table 6a. Multiple regression results (source: created by author)

ANALYSIS OF VARIANCE[a]						
Model		Sum of squares	Difference	Mean square	*F*-test	Significance (*p*-value)
1	Regression	68.020	4	17.005	35.933	.000[b]
	Residual	122.570	259	.473		
	Total	190.590	263			

Note[a]: dependent variables – participative leadership.
Note[b]: predictors – (constant), sub-dimensions of social capital.

Table 6b. Multiple regression results regarding the impact of sub-dimensions of social capital on participative leadership (source: created by author)

Variables	Beta coefficient	Standard error	Beta coefficient	*t*-statistic	Significance (*p*-value)	Durbin–Watson statistic
Constant	.961	.318		3.022	.003	2.030
Friendly acceptance	.099	.074	.083	1.331	.184	
Norms of behaviour	.077	.059	.070	1.297	.196	
Trusting/ reciprocity	–.136	.078	–.111	–1.735	.084	
Governance	.645	.066	.582	9.788	.000	

Notes: $r = .597$; $R^2 = .357$; $F = 322.413$; $p < .01$; dependent variables – participative leadership.

Second, multiple linear regression analysis also determined that only one sub-dimension of social capital (governance) has a significant and positive impact on external work contacts. The results showed that governance explains 14.1% of the participative leadership ($R^2 = 0.141$; $p < 0.001$). Governance's beta coefficient was calculated as 0.141 ($p < 0.001$), and this beta level represents an increase of 0.141 in external work contacts for each unit increase in governance. The results of the second multiple linear regression are displayed in Tables 7a–7b.

Table 7a. Multiple regression results (source: created by author)

ANALYSIS OF VARIANCE[a]						
Model		Sum of squares	Difference	Mean square	*F*-test	Significance (*p*-value)
1	Regression	14.920	4	3.730	10.656	.000[b]
	Residual	90.661	259	.350		
	Total	105.581	263			

Note[a]: dependent variables – external work contacts.
Note[b]: predictors – (constant), sub-dimensions of social capital.

Table 7b. Multiple regression results regarding the impact of sub-dimensions of social capital on external work contacts (source: created by author)

Variables	Beta coefficient	Standard error	Beta coefficient	*t*-statistic	Significance (*p*-value)	Durbin–Watson statistic
Constant	1.874	.273		6.853	.000	1.852
Friendly acceptance	.121	.064	.137	1.890	.060	
Norms of behaviour	.075	.051	.091	1.463	.145	
Trusting/reciprocity	.118	.067	.130	1.748	.082	
Governance	.117	.057	.141	2.057	.041	

Notes: r = .76; R2 = .141; F = 10.656; p < .01; dependent variable – external work contacts.

Third, multiple linear regression analysis also determined that only one sub-dimension of social capital (norms of behaviour) has a significant and positive impact on innovative output. The results showed that governance explains 7.2% of the participative leadership (R^2 = 0.072; p < 0.001). The norms of behaviour's beta coefficient were calculated as 0.135 (p < 0.001), and this value represents an increase of 0.141 in external business contacts for each unit increase in governance. Nevertheless, both R^2 and beta levels are at relatively low levels. The results of the third multiple linear regression are presented in Tables 8a–8b.

The statistical information about the test results, which are accepted as criteria for the acceptance or rejection of research hypotheses, are shown in Table 9.

Table 8a. Multiple regression results (source: created by author)

ANALYSIS OF VARIANCE[a]						
Model		Sum of squares	Diferrence	Mean square	*F*-test	Significance (*p*-value)
1	Regression	7.681	4	1.920	5.022	.000[b]
	Residual	99.024	259	.382		
	Total	106.704	263			

Note[a]: dependent variables – innovative output.
Note[b]: predictors – (constant), sub-dimensions of social capital.

Table 8b. Multiple regression results regarding the impact of sub-dimensions of social capital on innovative output (source: created by author)

Variables	Beta coefficient	Standard error	Beta coefficient	*t*-statistic	Significance (*p*-value)	Durbin–Watson statistic
Constant	2.583	.286		9.040	.000	1.777
Friendly acceptance	.117	.067	.133	1.761	.079	
Norms of behaviour	.111	.053	.135	2.089	.038	
Trusting/reciprocity	.122	.070	.133	1.733	.084	
Governance	–.090	.059	–.109	–1.522	.129	

Notes: $r = .268$; $R^2 = .072$; $F = 5.022$; $p < .01$; dependent variables – innovative output.

Table 9. Hypotheses test results (source: created by author)

Number	Hypotheses	Results
H1	Social capital has a positive and significant impact on innovative behaviour.	Accepted
H2	The friendly acceptance (dimension of social capital) has a positive and significant impact on innovative behaviour.	Accepted
H3	The norms of behaviour (dimension of social capital) have a positive and significant impact on innovative behaviour.	Accepted
H4	The trusting/reciprocity (dimension of social capital) has a positive and significant impact on innovative behaviour.	Rejected
H5	The governance (dimension of social capital) has a positive and significant impact on innovative behaviour.	Accepted
H6a	Friendly acceptance (dimension of social capital) capital has a positive and significant impact on participative leadership.	Rejected
H6b	Norms of behaviour (dimension of social capital) capital has a positive and significant impact on participative leadership.	Rejected
H6c	Trusting/reciprocity (dimension of social capital) has a positive and significant impact on participative leadership.	Rejected
H6d	Governance (dimension of social capital) has a positive and significant impact on participative leadership.	Accepted
H7a	Friendly acceptance (dimension of social capital) has a positive and significant impact on external work contacts.	Rejected
H7b	Norms of behaviour (dimension of social capital) has a positive and significant impact on external work contacts.	Rejected
H7c	Trusting/reciprocity (dimension of social capital) has a positive and significant impact on external work contacts.	Rejected
H7d	Governance (dimension of social capital) has a positive and significant impact on external work contacts.	Accepted
H8a	Friendly acceptance (dimension of social capital) has a positive and significant impact on innovative output.	Rejected
H8b	Norms of behaviour (dimension of social capital) has a positive and significant impact on innovative output.	Accepted
H8c	Trusting/reciprocity (dimension of social capital) has a positive and significant impact on innovative output.	Rejected
H8d	Governance (dimension of social capital) has a positive and significant impact on innovative output.	Rejected

6. Discussion

This study investigated the impact of social capital on innovative behaviour and the impact of sub-dimensions of social capital on the sub-dimensions of innovative behaviour. Social capital consists of friendly acceptance, norms of behaviour, trusting/reciprocity, and governance dimensions. Innovative behaviour comprises participative leadership, external work contacts, and innovative output dimensions. Firstly, the test results showed that social capital (overall) has a positive impact on innovative behaviour (overall) (H1) and increased it. It is understood that these factors should be concentrated within the organisation so that the employees can exhibit more innovative behaviours. This study supported previous studies (Fatemi et al., 2022; Heliawaty et al., 2020; Turgut & Beğenirbaş, 2013).

Secondly, this study examined whether the impact of sub-dimensions of social capital has on innovative behaviour and, therefore, regression analysis was performed. Study results revealed that friendly acceptance, norms of behaviour, and governance have significant and positive impacts on innovative behaviour. However, trusting/reciprocity has not a significant impact on innovative behaviour. Based on this, while the hypotheses of the research H2, H3, and H5 were accepted, the H4 hypothesis was rejected. Previous studies found a significant and positive relationship between workplace friendship and innovative behaviour (Cao & Zhang, 2020). Also, it was determined that workplace friendship has a significant and positive impact on innovative behaviour (Zhao et al., 2022). Their findings supported this study's results except for the H4 hypothesis test result.

Third, friendly acceptance, a sub-dimension of social capital, has not a significant impact on sub-dimensions of innovative behaviour: participative leadership (H6a), external work contacts (H7a), and innovative output (H8a). According to this result, friendly acceptance among employees and within the organisation will not significantly contribute to employees exhibiting more innovative behaviours. This result was not consistent with the result of previous studies (Cao & Zhang, 2020; Zhao et al., 2022).

Fourth, the analysis results revealed that norms of behaviour have a significant and positive impact on the sub-dimension of innovative behaviour and innovative output (H8b). On the other hand, norms of behaviour have not a significant impact on two sub-dimensions of innovative behaviour: participative leadership (H6b) and external work contacts (H7b). Depending on this conclusion, it was evaluated that the norms of behaviour improve innovative behaviour from an innovative output perspective. Norms of behaviour contributed significantly to innovative behaviour through certain principles and discipline. This situation requires specific rules regarding the appropriate and ideal behaviour that employees in the organisation are expected to exhibit and behaviours that are desired to be avoided.

Fifth, a regression analysis was performed to test the hypotheses and concluded that trusting/reciprocity has not a significant impact on sub-dimensions of innovative behaviour; participative leadership (H6c), external work contacts (H7c), and innovative output (H8c). Trusting/reciprocity is considered a trusting relationship where the employees in the organisation help each other outright (Dakhli & de Clercq, 2004), entrust their children when they go away and lend money in trust. In this context, trusting/reciprocity can be seen as solidarity, too. However, as can be understood from the analysis result, trusting/reciprocity has not impact on innovative behaviour both overall (H4) and its sub-dimensions.

Finally, it was determined that governance has a significant and positive impact on sub-dimensions of innovative behaviour: participative leadership (H6d) and external work contacts (H7d). These study results are consistent with the study of Jamshidi et al. (2020). However, governance has not a significant impact on innovative output (H8d). It was understood that governance fortified innovative behaviour through participative leadership and external work contacts. Some of the results of this research do not coincide with the results of previous studies, partly due to the specificity of education sector organizations.

7. Conclusions

The results revealed that social capital (overall) and its all-sub-dimensions, except trusting/reciprocity, significantly and positively impact innovative behaviour. However, most of the sub-dimensions of social capital (the trusting/reciprocity, friendly acceptance, and norms of behaviour have not significant impact on the sub-dimensions of innovative behaviour. However, it was determined that the governance dimension of social capital influences other dimensions of innovative behaviour except for the innovative output dimension. On the other hand, it was understood that the norms of behaviour dimension of social capital influence other dimensions of innovative behaviour except for the innovative output dimension.

Thus, it is recommended that executives adopt the management approach in which the management takes the employees' opinions on organisational activities. Also, they should enable the employees to participate in the decisions and the practices they oppose by persuading them (Forsell et al., 2020).

This study has some limitations. First, the data collection from schools coincided with the education period, reducing school administrators' and teachers' response rates. Second, the fact that this study covers only the education sector employees prevents the generalisation of the results. In this regard, future research should consider studying with more samples and various sectors. Moreover, future research should add to the model of social status as an independent or mediative variable together with social capital.

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