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Predicción del capital intelectual basada en componentes del liderazgo del conocimiento desde la perspectiva de los docentes escolares

Natalia Chepeleva¹, Maryna Smulson², Svitlana Rudnytska³, Olena Shylovska⁴,
Kyrylo Hutsol⁵

¹G.S. Kostiyk Institute of Psychology of the NAES of Ukraine, Ukraine.

E-mail: chepelevan@gmail.com; ORCID: <https://orcid.org/0000-0002-2085-4148>.

²G.S. Kostiyk Institute of Psychology of the NAES of Ukraine, Ukraine.

E-mail: smulson@ukr.net; ORCID: <http://orcid.org/0000-0002-9563-3390>.

³G.S. Kostiyk Institute of Psychology of the NAES of Ukraine, Ukraine.

E-mail: rudnsvit@gmail.com; ORCID: <http://orcid.org/0000-0002-0141-6337>.

⁴G.S. Kostiyk Institute of Psychology of the NAES of Ukraine, Ukraine.

E-mail: elenashilovska@gmail.com; ORCID: <http://orcid.org/0000-0002-7256-9365>.

⁵G.S. Kostiyk Institute of Psychology of the NAES of Ukraine, Ukraine.

E-mail: kvgutsol@gmail.com; ORCID: <http://orcid.org/0000-0002-2820-2590>.

Resumen. La presente investigación expone la relación entre el liderazgo del conocimiento y el capital intelectual en las escuelas. En cuanto a su finalidad es de tipo aplicada y descriptiva-correlacional. La población fueron todos los maestros de primaria de X, (n= 325 personas), de los cuales se seleccionó una muestra de 176 personas mediante un método de muestreo aleatorio simple basado en la tabla de tamaños de muestra de Morgan. Para medir la variable liderazgo en conocimiento se utilizó el cuestionario de Viitala (2004) y para el capital intelectual se utilizó el modelo de Bontis. La validez formal y de contenido de las herramientas se calculó mediante opiniones de expertos, y la confiabilidad obtenida mediante el método alfa de Cronbach para liderazgo en conocimiento y capital intelectual fue de 0,95 y 0,88, respectivamente. Para analizar los datos se utilizaron la prueba del coeficiente de correlación de Pearson, la T de una muestra y el análisis de regresión. Los resultados indican que el estado actual del liderazgo del conocimiento y el capital intelectual está por encima del promedio, y los componentes del liderazgo del conocimiento (tendencia a aprender, atmósfera de apoyo al aprendizaje y apoyo al proceso de aprendizaje individual y grupal) tienen un efecto positivo y significativo en relación con el capital intelectual; y entre los componentes del liderazgo en conocimiento, sólo el de tendencia a aprender es un predictor significativo del capital intelectual. Los resultados de esta investigación pueden utilizarse para desarrollar el capital humano de las organizaciones.

Palabras clave: liderazgo en conocimiento, capital intelectual, sistema educativo, escuelas, docentes escolares.

Prediction of intellectual capital based on knowledge leadership components from the perspective of school teachers

Abstract. The present research was conducted with the aim of investigating the relationship between knowledge leadership and intellectual capital in the schools. In terms of purpose, this research is of applied type, and descriptive correlation in terms of data collection method. The statistical population of this research is all the primary school teachers of X, (n= 325 people), from which a sample of 176 people was selected using a simple random sampling method based on Morgan's sample size table, and the required data was collected. Viitala questionnaire (Viitala, 2004) was used to measure the knowledge leadership variable, and the Bontis model was used for intellectual capital. The formal and content validity of the tools was calculated using experts' opinions, and the obtained reliability using Cronbach's alpha method for knowledge leadership and intellectual capital was 0.95 and 0.88, respectively. Pearson's correlation coefficient test, one-sample T, and regression analysis were used to analyze the data. The results of the research indicate that the current state of knowledge leadership and intellectual capital is above average, and the components of knowledge leadership (tendency to learn, supportive atmosphere of learning and support for the individual and group learning process) have a positive and significant relationship with intellectual capital; and among the components of knowledge leadership, only the component of tendency to learn is a significant predictor of intellectual capital. The results of this research can be used to develop the human capital of organizations.

Key words: knowledge leadership, intellectual capital, education system schools, school teachers.

INTRODUCTION

The concept of capital is one of the richest explanatory frameworks in contemporary sociological, economic and managerial considerations. This category has undergone changes in recent decades, through which we witness the emergence of new theories of organizational, intellectual, human and cultural capital. In the last two decades, there has been a move towards an economy where investment in human resources, information technology, research and development, and advertising seems necessary to maintain the competitive position, and guarantee the growth and development of organizations, among which intellectual capital is the one that has attracted more and more attention. Because the business environment based on factors such as human resource knowledge and competence, innovation, customer relations, organizational culture, organizational system and structure, etc. (Lam et al., 2021). In today's leading organizations, the share of knowledge compared to other resources has been increasing day by day, so that today the continuity of activity and profitability of most organizations and companies is dependent on knowledge. Therefore, the more organizations and companies are rich in terms of intangible assets and intellectual capital, the better and faster they can achieve high levels of growth and development. Knowledge management helps organizations to identify and use their capabilities and abilities in order to achieve a knowledge-based economy (Stoilkova et al., 2022).

In the current era, which is called the knowledge revolution, knowledge has become more important compared to other factors of production such as land, and machines, and it is known as the most important factor of production; the movement of organizations towards knowledge-based organizations is defined as the basic necessity of today's organizations. Hence, intellectual capital is particularly important as knowledge that can be converted into value for organizations (Hamzah & Ismail, 2008). Knowledge sharing help employees to learn at work, therefore effects on development of the knowledge economy in organizations, and will be important to lifelong learning (Erdi, 2021). According to the abovementioned information, the current research seeks to answer this basic question: Is there a relationship between knowledge leadership and intellectual capital from the perspective of schoolteachers?

THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

Intellectual capital

In the knowledge-based economy, intellectual capital is used to create value for the organization, and in today's world, the success of any organizations depends on the ability to manage these assets. The decade to come is the decade of value creation through intellectual capital for organizations and countries. Therefore, paying attention to the issue of intellectual capital at the global and regional level and the novelty of this discussion can be considered as an advantage for any country. Intellectual capital or intellectual property is relevant at the level of society, industry and university, and their accumulation constitutes the country's intellectual property (Alkhateeb et al., 2018).

In the information age, organizations have intellectual capital and capital management, which is the key to success in a turbulent and challenging environment. Intellectual capital is related to acquired knowledge and ability created in employees. Intellectual capital is the knowledge stock of an organization that exists in it at a certain point in time (Oliveira et al., 2020). Intellectual capital includes all knowledge-based resources that generate value for organizations but are not included in financial statements (Pablos, 2002). For intellectual capital, Bontis mentioned three components (human capital, structural capital, relational capital) (Abdullah, 2012). Human capital is defined as individual knowledge and skills, abilities and experiences in the employees of an organization to create value and solve business problems (Bontis, 2000). Human capital refers to the cumulative value of investing in education and training the future capabilities of employees, which takes place in two forms (formal education and learning through others and experientially) (Bollen et al., 2005) and human capital as a source of strategic innovation and restructuring is important for organizations. Structural capital is defined as learning and knowledge in daily activities. This capital is considered the supporting infrastructure of human capital and includes all the non-human reserves of knowledge in organizations such as strategies, procedures, organizational culture, etc., which create value for the organization. Relational capital indicates the formal and informal relations of an organization with external stakeholders and their perceptions about the organization, as well as the exchange of information between the organization and them. Relational capital by connecting human capital and structural capital with other external stakeholders acts as an era of increasing value creation for organizations (Merino et al., 2014).

Various factors affect intellectual capital management in organizations. Knowledge leadership is one of the factors affecting intellectual capital in organizations (Kucharska, 2021).

The results of Kok's research (2007) indicate that the status of knowledge leadership and intellectual capital management in the university is above the average level. Also, Pearson's correlation coefficient showed that there is a positive and significant relationship between knowledge leadership and intellectual capital management, and the results of multiple regression analysis indicate that among the components of knowledge leadership, the component of supporting the individual and group learning process has the greatest impact in predicting intellectual capital management. The results of Kucharska's research (2021) showed that knowledge leadership, intellectual capital and social capital of human resources of the studied organization are at the optimal level. There is a significant relationship between social capital and knowledge leadership, intellectual capital and knowledge leadership, intellectual capital and social capital, and knowledge leadership and intellectual capital and social capital. The results of Asiaei et al.'s research (2018) indicate that there is a difference between the amount of intellectual capital in public and private universities, and while the score of human capital in private universities is lower than the average, the structural capital is at a suitable level; in public universities, on the other hand, the score of human capital and relationship (customer) has been above average. The results of Mishra and Pandey research (2019) showed that the effects of knowledge-based leadership on professional development, knowledge sharing and teamwork were positive and significant, and the effects of teamwork and knowledge sharing on professional development were also positive and significant. Moreover, knowledge sharing and teamwork have a significant moderating role in the impact of knowledge-based leadership on professional development. The results of Kucharska's research (2021) aimed at investigating the relationship between knowledge leadership and intellectual capital management among teachers indicate that there is a positive and significant relationship between all components of knowledge leadership and intellectual capital management. The research results of Jiang et al. (2023) show that spiritual leadership has a significant positive effect on mental health. Mental health has a positive effect on knowledge sharing and knowledge sharing has a positive effect on intellectual capital. In addition, mental health has a mediating and moderating role between spiritual leadership and knowledge sharing. In their study Ibarra et al. (2023) show that organizational culture and leadership significantly affect the knowledge management process. In addition, the knowledge management process significantly affects intellectual capital and innovation.

The research results of Prastio et al. (2024) showed that transformational leadership has no effect on organizational learning and organizational agility. But intellectual capital affects organizational learning and organizational agility, and organizational learning plays a mediating role in the impact of intellectual capital on organizational agility. The results of Khan et al.'s research (2024) showed that two dimensions of intellectual capital, i.e. human capital at the individual level and relational capital at the individual level, moderate the relationship between servant leadership and innovative work behavior, while structural capital at the individual level of the relationship does not mediate the two variables. According to the abovementioned information and in line with the main question, the following sub-questions can be asked:

- a) What is the current state of intellectual capital in the schools?
- b) Is there a significant relationship between knowledge leadership and intellectual capital in the schools?

Knowledge leadership

In management literature, leadership has been examined in four approaches, which are: leadership characteristics approach, behavioral approach, contingent approach, and charismatic and transformational approach. The leadership characteristics approach introduces knowledge as one of the important characteristics of effective leaders and considers the knowledge acquired by leaders as one of the important components of leadership. The behavioral and contingency approach suggests that leadership should search for information, then obtain and use it. The role of knowledge and information in the effectiveness of the organization is emphasized in behavioral approach. Charismatic and transformational approach involves the acquisition and analysis of information that is important for the development of insight in organizations (Mittal, 2015). Studies show that information and knowledge management is effective on leadership performance, and it has been emphasized in different leadership approaches that knowledge management and knowledge acquired by leaders is important for realizing the functions of the organization (Lakshman & Parenti, 2008).

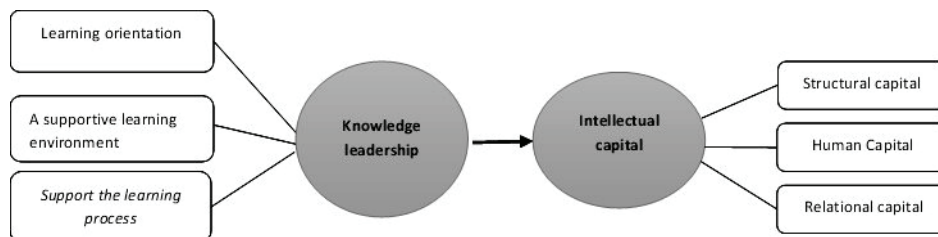
Educational and research organizations in today's era, which is known as the era of information and knowledge explosion, should choose to move towards knowledge-centeredness and use the knowledge management system as their main approach. Of course, considering that knowledge and information are scattered throughout the organization and cannot be recognized by everyone, it is necessary to pay attention to the urgent need of employees for this knowledge and information to make progress; moreover, it is important in development and managing knowledge in the organization, which is more important and vital than the knowledge itself; on the other hand, it emphasize the design and implementation of knowledge management, which aims to produce, share and expand knowledge in the organization and maintain its dynamics (Loyer, 2012). Knowledge leadership is one of the knowledge management skills. Knowledge leadership is a social process in which leaders support organization members in the learning processes needed to achieve the organization's goals. This leads to the improvement of group thinking and joint activities (López, 2013). In other words, any attitude or action (group or individual, objective and implicit) that stimulates new knowledge in ways that cause collective thinking and consequences to create, share and use knowledge, is called knowledge leadership (Manzoor, 2011). Sarabia (2007) mentioned four components for knowledge leadership: leadership, knowledge, culture and learning. Alzghoul (2023) have mentioned five dimensions: tendency to learn, supportive atmosphere of learning, knowledge perspective, strategic emphasis and search for knowledge leadership. As a result of his studies, Viitala (2004) has mentioned three components for knowledge leadership: learning orientation, supportive learning atmosphere, supporting the learning process at the individual and group level (Kok, 2007). In the direction of learning, leaders determine the need for knowledge and abilities needed in the future and try to identify the vision and goals of the organization and work units, customer feedback and needs, tools and quality indicators, and determine the direction of employees' learning. Awada emphasized on knowledge management and the importance of knowledge transfer on organizational effectiveness (Awada, 2019). The supportive dimension of learning includes the activities that leaders try to develop a supportive atmosphere in their work environment with prior knowledge and intention. This includes trust in the work environment, and leaders deal with employees' possible mistakes with a positive attitude. In this dimension, the ability and willingness of leaders to receive feedback from subordinates is very important, and leaders must listen and respect the thoughts and opinions of subordinates.

The dimension of supporting learning processes refers to the active role of the leader as a supporter of learning processes (both individual-oriented and group-oriented). This leadership role is similar to that of a coach or teacher, and leaders, with the help of subordinates, write the plan to develop their knowledge and capabilities. In this dimension, leaders emphasize the importance of continuous learning and monitoring progress and giving positive feedback. Increasing the self-confidence of subordinates in this dimension is the key task of leadership (Viitala, 2004), as well as concern for their professional well-being (Voitenko et al., 2024). The results of López's research (2013) showed that the current state of knowledge leadership in the studied universities is above average. The results of Cheng's research (2015) showed that the current state of knowledge leadership and intellectual capital in the studied schools is higher than the average; and there is a positive and significant relationship between the components of knowledge leadership (supportive atmosphere for learning, tendency to learn, and support for the individual and group learning process) and intellectual capital. In research on employee knowledge leadership, Depoo and Urbancova (2015) concluded that managers in the Czech Republic have knowledge leadership techniques and skills and manage scholarly employees. In their research entitled "the study of the relationship between knowledge leadership of principals and the competitive advantage of primary schools" Chang et al. (2010) indicates that principals with knowledge leadership are of high competitive advantage, and knowledge leadership has a positive and significant correlation with competitive advantage and predicts competitive advantage significantly. In research entitled "the role of leadership in the transfer of knowledge in a creative organization", Lina and Asta (2012) came to the conclusion that leadership has an effect in transferring knowledge in a creative organization. In addition, transformational leadership, informally, has a greater effect on knowledge transfer, while exchange leadership has little effect on knowledge transfer in the organization. Banmairuroy et al. (2021) conducted research entitled the effect of knowledge-based leadership and human resource development on sustainable competitive advantage through organizational innovation component factors: evidence from Thailand's new industries. The results showed that knowledge-based leadership directly affects sustainable competitive advantage, while human resource development does not have a significant direct impact on sustainable competitive advantage.

The quantitative and qualitative growth of the education system of the countries, the content of the courses, the complexity of school organizational issues, the professional growth of teachers, and the expectations of other institutions and parents from the education system, have made it necessary to pay attention to effective management and leadership. In the educational system of our country, it is necessary to study and examine the components of intellectual capital, including human capital (knowledge and skills and professional expertise of teachers), communication capital (students, parents,...) and structural capital (hardware and software knowledge in the structure) schools) (Kelly et al., 2004), and on the other hand, the importance of knowledge and its leadership is felt in the age of information and knowledge-based economy; hence, by directing knowledge effectively in the organization and using the potential of the intellectual capital of schools and the educational system, we can pave the way for effective leadership and management of this system. Pointing to the serious lack of research related to the Asian context in the field of leadership, researchers point out that more work should be done in Asia (Park et al., 2019). According to the abovementioned information and in line with this main question, the following sub-questions can be asked:

- a) What is the current state of knowledge leadership in the schools?
- b) Do knowledge leadership components predict intellectual capital?

In this way, the conceptual framework of the research is as follows:



RESEARCH METHODOLOGY

In terms of purpose, this research is of applied type, and descriptive-correlation in terms of data collection method; while it is a quantitative research based on the nature of the data. The statistical population of this research is all the teachers of the schools, (n= 325). A sample of 176 people was selected from this statistical population by simple random sampling and based on Morgan’s sample size table to collect the required data. The number of statistical population and sample is shown in the following table separately:

TABLE 1. Number of community and statistical sample

Row	Employees	Statistical population	Sample
1	Male	190	103
2	Female	135	73
Total	2	325	176

To collect the required data and information, first the theoretical foundations of the research were collected using various printed and electronic books and articles. Then the required field data was collected using two questionnaires. The characteristics of the two questionnaire tools used are as follows:

The knowledge leadership questionnaire is from the Viitala (2004) questionnaire, which has 26 questions and three components (tendency to learn, supportive atmosphere for learning, support for the individual and group learning process) and 5 point Likert scale (strongly disagree, disagree, neither disagree nor agree, agree, strongly agree) are used in the questionnaire.

Intellectual capital evaluation questionnaire, which was created by Bontis (2000) and has 38 closed-ended questions with three components of human capital, structural capital and relational capital (customer). The response range to the questionnaire items was based on a five-point Likert scale (very high, high, medium, low, very low) (Maditinos, 2010).

The face and content validity of both tools were confirmed using the opinions of professors and experts. Cronbach’s alpha coefficient was used to calculate reliability. The reliability of the questionnaires in this research is shown in the table below, which was calculated using SPSS software version 21.

TABLE 2. Reliability of variables

Row	Variables	Cronbach's alpha coefficient
1	Knowledge leadership	94/0
2	Intellectual capital	91/0

The collected data were analyzed using SPSS software. First, the normality of the distribution of the collected data was tested through the Kolmogorov-Smirnov test, and after determining the normality of the data distribution, parametric tests such as Pearson's correlation coefficient, one-sample T, and regression were used to analyze the data and respond to research questions. Regarding the observance of ethical principles in the present research, it should be mentioned that the respondents to the questionnaire voluntarily completed the questionnaire. Also, in data collection and analysis, the researcher has entered all the data into the software in accordance with the principle of accuracy and honesty and has analyzed the data with the utmost precision.

RESEARCH FINDINGS

Descriptive findings:

From the total number of respondents, 56.6% are women and 43.4% are men. In terms of age, 25.3 percent are between 25 and 35 years old; 49.3% aged between 35 and 45 years; 25.4% are over 45 years old. In terms of education, 11.6% have an associate degree, 74.7% have a bachelor's degree and 11% have a postgraduate degree or higher. In terms of service history, 38.1% have 1 to 10 years of experience; 49.4% have experience of 11 to 20 years; and 12.5% have experience of 20 to 30 years.

Inferential findings:

Before analyzing the data and answering the research questions, the Kolmogorov-Smirnov test was used to check the normality of the distribution of the collected data, the results of which are shown in the following table:

TABLE 3. Kolmogorov-Smirnov test results to determine the normality of the research data distribution

Statistics	Intellectual capital	Knowledge leadership
Average	42/3	58/3
Standard deviation	48/0	84/0
Kolmogorov-Smirnov z value	726/0	964/0
Significant level	721/0	342/0

According to the table above and since the significance level of the test error for the confidence level of 0.95 is more than 0.05, it can be said that the distribution of the collected data is normal, and parametric tests can be used to analyze the data.

First question: What is the current state of intellectual capital in the primary schools?

TABLE 4. One sample t-test results of intellectual capital (N=176)

	Mean	Std	value of the T-statistic	significance level
Structural capital	45/3	56/0	61/8	00/0
Human capital	34/3	55/0	70/7	00/0
Relational capital	48/3	54/0	91/9	00/0
Total intellectual capital	42/3	48/0	71/9	00/0

The data in the above table shows that the current state of intellectual capital components is higher than the theoretical average (3 out of 5) and the result of the single group t-test also shows that this difference is significant.

Second question: What is the current state of knowledge leadership in elementary schools?

TABLE 5. One sample t-test results of knowledge leadership (N=176)

	Mean	Std	t	Sig.
Tendency to learn	56/3	84/0	89/7	00/0
Supportive learning atmosphere	69/3	86/0	06/9	00/0
Individual and group learning process	48/3	89/0	39/6	00/0
Total knowledge leadership	58/3	84/0	34/8	00/0

According to the results of the above table, the mean of knowledge leadership is 3.58. Moreover, the above table shows that the current status of knowledge leadership components is higher than the theoretical average (3 out of 5) and the result of the single group t-test also shows that this difference is significant.

Third question: Is there a significant relationship between knowledge leadership and intellectual capital components in the elementary schools?

TABLE 6. Pearson correlation coefficient results between knowledge leadership and intellectual capital components

Variables	Mean	SD	1	2	3	4
1. Structural capital	45/3	56/0	-			
2. Human capital	34/3	55/0	**597/0	-		
3. Relational capital	48/3	54/0	**685/0	**738/0	-	
4. Total intellectual capital	42/3	48/0	**638/0	**674/0	**682/0	-
5. Knowledge leadership	3/58	84/0	**713/0	**738/0	**734/0	**731/0

Correlation is significant at the 0.01 level (2-tail).

The data in the above table shows that there is a positive and significant relationship between knowledge leadership and its components with intellectual capital from the point of view of primary school teachers in city x with confidence of 99%; and among the components of intellectual capital, human capital has the highest correlation with the leadership.

Fourth question: Does knowledge leadership predict the components of intellectual capital?

TABLE 7
Significance test of the linear relationship of the effect of knowledge leadership components on intellectual capital

Variable	model	sum of squares	df	mean of squares	F value	Sig.
intellectual capital	Regression	93/17	4	49/4	59/37	
	Remainder	54/15	131	121/0		000/0
	Total	47/33	175			

F-test was used to check the existence of a linear relationship between the criterion variable and the predictor variables. Given that the significance level of the F-test is 0.00, hence, there is a significant linear relationship between the criterion variable and the predictor variables, and the knowledge leadership components are capable of predicting intellectual capital. The regression results are shown in the following table:

TABLE 8. Summary of intellectual capital regression model based on knowledge leadership components

Components of knowledge leadership	B	T	Sig
Tendency to learn	28/0	65/2	006/0
Supportive atmosphere	004/0-	061/0-	89/0
Learning process	009/0-	14/0-	74/0
Total knowledge leadership	163/0	81/0	29/0

The results of above regression analysis show that only the component of tendency to learn is a significant predictor of intellectual capital and the other components of knowledge leadership are not significant predictors.

DISCUSSION

Using a correlational descriptive method, the present research was conducted with the aim of investigating the relationship between knowledge leadership and intellectual capital from the perspective of elementary school teachers in X, and the results show that there is a positive and significant relationship between knowledge leadership and intellectual capital.

The finding of the first question of the research indicates that the current state of intellectual capital in schools is higher than the average, which is in line with the results of Kok (2007), Kucharska (2021) and Cheng (2015). The existence of appropriate intellectual capital in schools provides the basis for the growth and development of schools and managers can use this existing potential to improve the quality of school performance. Intellectual capital is vital and sensitive for the competitiveness of organizations with the advent of the industrial age into the information age and attributed to knowledge management (Ahangar, & Ardabili, 2017); furthermore, intellectual capital improves the level of competence of employees, the problem solving ability as well as the ability to solve problems caused by employees, and creates personal trust among employees (Ahmed et al., 2021); and it plays an essential role in empowering employees and realizing the organization's goals (Yasin et al., 2023).

The findings of the second research question show that the current state of knowledge leadership and its components is above average. This research finding is consistent with the research results of Kok (2007), López (2013), Banmairuoy et al. (2021). In their research, these researchers have come to the conclusion that knowledge leadership in organizations is in a good state. According to the information age, the existence of knowledge leadership can be considered a competitive advantage for today's organizations, because managers can use this existing potential to improve the productivity of their organizations. Moreover, considering the impact of knowledge leadership on organizational effectiveness (Mittal, 2015; Lakshman, 2009) and organizational learning (Alzghoul, 2023) and the capacity to absorb knowledge (Banmairuoy et al., 2021), school administrators can use this advantage of high knowledge leadership to provide the basis for improving the effectiveness and efficiency in schools and consequently achieve the goals of schools.

The findings of the third research question show that there is a positive and significant relationship between knowledge leadership and intellectual capital and its components. This finding is consistent with the research results of Kok (2007), Kucharska (2021), Asiaei et al. (2018), Kucharska (2021), Zia (2020), Mishra and Pandey (2019) and Ibarra et al. (2023). Based on this research finding, school administrators can pave the way for improving the intellectual capital status of teachers with appropriate leadership of knowledge in schools. For this purpose, it is suggested that the officials of the educational system plan and implement courses for school principals to learn about and apply knowledge leadership in schools, and in this way, provide opportunities to improve intellectual capital in schools.

The findings of the fourth question of the research indicate that knowledge leadership is not a significant predictor of intellectual capital and among the components of knowledge leadership, only the component of tendency to learn with a beta value of 0.29 is a significant predictor of intellectual capital and the rest of the knowledge leadership components are not significant predictors. This research finding is consistent with the research results of Cheng (2015) and Khan et al. (2024), but it is inconsistent with the research results of Kok (2007), and Kucharska (2021). One of the reasons for this disparity can be pointed to the difference of the statistical population studied in this research. Also, due to the fact that this research was conducted in schools and in a small area, another reason is the possibility of inconsistent results. According to this research finding, it is suggested that the current research be conducted in different schools and educational areas to increase the accuracy of the research findings. It is also suggested that the current research be conducted with qualitative methods and interview tools to obtain more accurate and deeper results. Based on the findings of the research, it is suggested that in-service courses under the title of intellectual capital and knowledge leadership be held in schools for managers to familiarize them with new management concepts and provide the basis for improving the current state of intellectual capital of their organization.

CONCLUSIONS

The results of the current research were associated with limitations that affect the results of the research. Among other things, this research was conducted only from the teachers' point of view, and also the current research is only limited to the schools and the generalization of its results to other schools has limitations; another limitation of the current research was the data collection tool, which is a self-report questionnaire, and it is possible that the responses were biased.

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