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Experience and Education of Local Government Leaders as a Prerequisite for Supporting Human Capital Development in Inter-Municipal Cooperation Structures

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Abstract: *The study responds to the ongoing transformation processes in Slovak public administration and focuses on human capital as a significant determinant of successful intermunicipal cooperation. The aim of the study was to identify and evaluate the professional and educational profile of local government leaders as a determinant of their attitudes towards the development of human capital and to analyse their perception of managerial competences in the structures of intermunicipal cooperation. The research was based on a questionnaire survey conducted among municipal and city mayors operating in the Slovak Republic. Ordinal logistic regression and the Wilcoxon signed-rank test were used to verify the hypotheses. The results of the regression analysis showed that a higher level of education achieved by leaders is associated with a more positive perception of investments in human capital. Local government leaders who have been in office for longer perceived partnerships' investments in the development of key personnel more positively than newly elected leaders, but age had the opposite effect. Older leaders were more critical of the evaluation of partnerships' investment activities. In the area of perception of the level of managerial competencies, a statistically significant difference was revealed to the detriment of collaborative and negotiation skills, which, under the influence of the high level of bureaucratization of processes in public administration, are often pushed into the background to the detriment of hard, project and analytical skills. The research results have a practical benefit for local governments themselves, for which the study offers interesting findings that can become the basis for the systemic strengthening of the investment capacities of municipalities, the introduction of targeted educational programs for collaborative management or the creation of platforms for sharing best practices among leaders.*

Keywords: human capital, local government, intermunicipal cooperation, local government leaders.

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Introduction

The effective functioning of public administration institutions does not depend only on existing legislative rules and the economic situation, but to an increasing extent also on the human factor. The dynamic, constantly changing environment shows that currently local governments can no longer operate in isolation, and their success is closely linked to the development of key personnel and the building of inter-municipal partnerships. The management of these structures places specific demands on their leadership, which must have a wide range of hard professional and soft interpersonal skills. The ability to respond to unexpected situations and strategically decide on investments in personnel training are becoming key prerequisites for local development in the 21st century.

Although the issue of local governments and their development have been the subject of much research in recent years, existing studies often focus on partial aspects of this issue. Some authors examine the broader management of local governments (Jankelová et al., 2021; Carreri & Payson, 2024), while neglecting the specific position of the local government leader himself (mayor). While some works point to the importance of personal and demographic characteristics of local government leaders, such as their education, experience or professional background, these factors are often examined in relation to the general functioning of local governments rather than their impact on decision-making on human capital development and building inter-municipal partnerships (Cichocki, 2022; Huang & Villadsen, 2023; Mattioli et al., 2025). Other research focuses on the importance of human capital in local government (Dudová & Matúšová, 2022; Cloete, 2023; Pileček, 2011), the importance of inter-municipal cooperation (Meltzer & Weichselberger, 2026; Petkovšek & Pevcin, 2021) or the competencies of public managers (Malíková, 2023), but mostly without considering how the personal and professional characteristics of leaders shape their attitudes towards investments in human capital and the development of partnership relationships. Furthermore, although many studies emphasize the importance of soft, interpersonal skills (Liptáková, 2015; Sancino et al., 2022; Župová, 2019) or hard, professional and technical skills (Galvasová et al., 2007; Krpálek et al., 2021; OECD, 2021) for intermunicipal cooperation, there is no research that would evaluate the direct contrast in how local government leaders, under the pressure of administrative burden resulting from complex bureaucratic processes, comparatively evaluate the importance of hard competencies versus soft skills. This study addresses the above-mentioned shortcomings and sets the goal of identifying and evaluating the professional and educational profile of local government leaders as a determinant of their attitudes towards human capital development and analysing their perception of managerial competencies in intermunicipal cooperation structures. In order to achieve this goal, a questionnaire survey was conducted among municipal and city mayors in the Slovak Republic. Respondents' attitudes were measured on a 5-point Likert scale. To evaluate the established hypotheses, an ordinal logistic regression model was used, which tested the influence of education and length of service in office on leaders'

attitudes towards investments in human capital (H1 and H2). In the second part of the study, a non-parametric Wilcoxon signed-rank test was used to compare the assessment of hard and soft skills of partnership management (H3). Thanks to this comprehensive approach, the study connects areas that have so far been mainly studied in isolation, such as demographic and professional characteristics of leaders, human capital development and inter-municipal cooperation, into a single analytical framework. By identifying the established causal and comparative connections, it fills the existing research gap in the literature.

The study is divided into six logical units. The introduction is followed by a review of the existing literature, which forms the conceptual framework of the entire research. The following section specifies the research set and the methodology used, which is followed by a chapter dedicated to the interpretation of the results. In the discussion section, our findings are confronted with relevant domestic and foreign studies. Finally, the conclusion summarizes the most important findings and formulates specific recommendations for improving the functioning of local governments and the quality of human capital in them.

1. Literature review

Nowadays, in the conditions of modern economy and social development and rapid digital transformation, human capital is becoming the most important strategic asset of every institution. Nevertheless, this concept is not uniformly defined in the professional literature. Yehorova & Drozd (2024) interpret human capital primarily through its economic benefit as a set of all knowledge, skills, abilities and experience acquired during a person's life, which can subsequently be used in the process of creating further economic value. Harper (2025) also characterizes it in a similar spirit, according to which human capital is understood as a set of characteristics and abilities of an individual, including knowledge, talent, skills, intelligence and education. A more detailed and comprehensive description of human capital is offered in his study by Evanoff (2021) and characterizes it as a set of habits, knowledge, social and personal qualities, including creativity, which integrate the ability to perform work and generate new economic value. In addition, it also reminds us of its dynamic nature – human capital consists of knowledge, skills and health, in which people invest and accumulate throughout their lives to fulfil their potential as productive members of society.

Following this holistic view, Liepe (2016), referring to the opinions of the cited authors, presents a systemic approach to the assessment of human capital, which emphasizes knowledge and skills, qualifications and competencies, education, job training, innate abilities, health, motivation, investment in education, informal education, innovation and work experience. This list of characteristics is supplemented by Rađenović & Krstić (2017), who characterize human capital in a more comprehensive way. In addition to individual components, such as qualifications, skills, work habits, professional training, motivation or loyalty of employees, they also add a collective dimension. According to them, human capital

also includes collective (organizational) experience and internal know-how of employees within a particular organization.

From the point of view of the formation and development of human capital, the field of education is considered its absolute foundation. As Garanin (2022) states, education forms the very foundation of human capital, because it is embodied in the knowledge, skills and abilities that are a direct result of education. The importance of education in the process of human capital development is also pointed out by Cerron et al. (2026), according to whom strengthening human capital through education supports the formation of more qualified, innovative and productive individuals, which is subsequently positively reflected in economic performance. The importance of this process in practice is underlined by Naros & Simionescu (2019), who recall that education plays an important role in the adaptation of human resources to the constantly changing and dynamic demands of the labour market, while providing individuals with broader opportunities in choosing a better job. Education is therefore an integral part of improving human potential and represents the primary form of investment in human capital. As Bukovová (2019) explains, it is a strategic process where people invest their money and time in their own education with the rational expectation that this investment will increase their productivity and subsequently their income in the future.

Moreover, the need to diversify these investments and link them to new social trends is currently accelerating. Roszko-Wójtowicz et al. (2024) emphasize that in connection with the development of the digital economy, the importance of human capital is constantly growing, especially when it comes to the development of specific digital skills and adaptable education. Several contemporary authors therefore link the importance of education for the growth of human capital not only with traditional sectors such as healthcare, but increasingly associate it with the development of innovation, research and digital transformation. This relationship is also confirmed by Bambi & Pea-Assounga (2025), who identified strong positive associations between R&D spending, education level, human capital development and technological innovation. According to their findings, education and improving the quality of human capital play a key role in strengthening innovation capacity, with higher levels of education being associated with better innovation outcomes. In this regard, Patel and Annapoorna (2019) argue that the growing dependence of industry on sophisticated capacities has significantly increased the pressure on the availability of high-quality human capital. The product of an educated mind is social and global progress, which in the 21st century increasingly depends on research, new inventions, innovations and the ability to quickly adapt. As already mentioned, human capital is an important factor in the success of any institution, and its importance in public administration is also indisputable. In the local government environment, this importance is even more pronounced, because it is precisely the quality, knowledge and approach of employees that directly determines how effectively a municipality or city can serve its citizens and ensure the development of its territory. Local government plays an irreplaceable role in the structure of public authority, because it represents the level of management that is in the closest and

most direct contact with citizens. For this reason, it is primarily responsible for providing basic administrative, social and community services, on which the quality of life in municipalities and regions depends. In this regard, the professional literature clearly agrees that the extent to which local government bodies can fulfil their mission and satisfy the needs of the population is absolutely conditioned by the quality of their staffing. The importance of high-quality human capital for territorial development is also confirmed by Knapińska & Siński (2022), who, using the example of a Polish municipality, demonstrated that the quality of human capital is among the factors with a significant impact on the level of local development (Androniceanu, 2025). Their findings indicate that investments in the development of knowledge, skills and competencies of employees can represent an important prerequisite for the effective functioning of local government and the long-term development of local communities.

The issue of the quality of human capital in public administration and local government is therefore currently an integral part of several scientific research and studies. In their study, Dudová & Matúšová (2022) analysed the development trends of human resources in public administration in Slovakia with a view to 2030, finding that human potential in this sector can no longer be assessed solely on the basis of quantitative indicators, such as the number of employees, but primarily through qualitative aspects, which include the level of education, organizational culture, morale and the quality of interpersonal relationships. The authors concluded in their research that any innovative and modernizing changes in public authority structures are strictly conditioned by the professionalization and constant deepening of the qualifications of officials, which confirms the necessity of perceiving employee spending as strategic investments in the long-term development of the administered territory.

In order for local governments to effectively fulfil their mission, which is to ensure the needs of the state and provide quality services directly to citizens in the public interest, they must comprehensively develop not only the professional competence of their employees, but also the overall philosophy of investing in people. Of particular importance in this regard are psychological and moral aspects, such as personal attitudes towards work, internal motivation, ethical attitude and, above all, loyalty to the organization and the public interest. The results of the study conducted by Islam & Amin (2022) showed that all these personality and attitudinal characteristics are closely and inextricably linked to the physical health and psychological well-being of officials. The authors concluded that an organization could invest in professional training in any way, but if it does not pay attention to the overall well-being of its people, employees will not be able to fully and effectively use their knowledge and skills for the benefit of the institution. In the context of local government, this means that officials' positive attitudes and loyalty to serving citizens are as important a component of human capital as their knowledge of legislation or ability to master digital systems.

The development of human capital in local government can no longer be understood only as an internal administrative obligation of the human resources department, but as

the highest strategic priority. Only through the process of systematic intellectualization of its employees can a local government transform passive human potential into active value. The real importance of this quality for practice is confirmed by Pileček (2011), who in his research focused on assessing the development potential of the territory states that the quality of human capital among representatives of local government bodies plays a key role in overall local development. It is this internal capacity of personnel that allows local governments to overcome regional disparities, innovate work processes and deliver modern services to citizens.

In addition to the development of the territory itself, the level of human capital also has a direct impact on the internal functioning of offices and employee satisfaction. In this regard, Jankelová et al. (2021) focused their research on identifying the management skills of a municipal manager and proved that the level of these competencies among leaders directly leads to higher job satisfaction among employees of local and city governments themselves. It thus appears that the quality of human capital in local government acts synergistically – educated and competent management not only manages development processes more effectively externally, but also creates a stable and motivating internal environment, which is a basic prerequisite for the modernization of local public administration. This conclusion is also supported by Masuku et al. (2025), according to whom effective leadership, investment in professional development and the creation of a quality work environment significantly contribute to higher employee engagement and satisfaction. In the local government environment, these factors are subsequently reflected in higher employee retention, better work performance and stronger organizational commitment of employees.

When examining the factors that determine the success of local development, the personality of the highest representative of the local government comes to the fore. Schmidt (2010) emphasizes in this context that the current key task is to find good leaders. In the conditions of the Central European area, this exceptional position is confirmed by Malíková (2023), according to whom mayors of municipalities and city mayors have the exclusive position of leaders of local governments. This role in modern management requires specific attitudes, such as the ability to accept the opinions of others, build the quality of interpersonal relationships and show trust in colleagues without permanent control. The importance of leaders in public organizations goes beyond the framework of everyday management. Huang & Villadsen (2023) conclude, based on a systematic review of research, that top managers represent key actors who, through their decisions, competencies and interactions, fundamentally influence the processes and performance of public organizations. Therefore, not only the efficiency of the functioning of the local government, but also the success of fulfilling its development goals, depends to a significant extent on their personality and abilities.

However, the acceptance of modern management approaches and the willingness to participate in development activities are not accidental; a set of scientific studies indicates that the key prerequisite for effective management are the formal and professional characteristics of the leader – primarily his/her educational attainment.

The influence of education on the investment behaviour of municipalities is illustrated by the so-called cognitive resource theory, which was applied in the local government environment by Hamidou et al. (2024). This theory assumes that more intelligent and competent municipal leaders plan, decide and act more effectively than their less competent colleagues. The authors empirically proved that the level of education of the mayor has a direct, positive impact on municipal investments. This assumption is also confirmed by another foreign research. For example, Gallina et al. (2019) verified the impact of formal education on the management of local governments and highlighted the importance of intelligence, motivation and overall competencies of the manager. Mitra (2025) provides a more detailed look at the allocation of these investments and finds that educated mayors purposefully increase public investments after elections without jeopardizing the fiscal stability of municipalities. They primarily focus their investment efforts on building human capital in the territory, specifically on school infrastructure, such as kindergartens and primary education facilities.

Moreover, the importance of education and cognitive skills of leaders proves to be critical in times of instability. As Mattioli et al. (2025) state, the characteristics and education of mayors were most important in times of high uncertainty and limited centralized leadership. The authors found that mayors with a university education were able to significantly reduce the excess mortality rate thanks to their decisions during the first wave of the COVID-19 pandemic.

In addition to the level of education achieved, the second essential characteristic of a leader is the length of service (political and managerial experience). The experience gained through repeated mandates transforms theoretical assumptions into real managerial skills. Siwińska-Gorzelak & Bukowska (2026) have shown in their research that fiscal policies led by experienced mayors serving a third or longer-term exhibit different qualitative characteristics. Their research showed that these experienced leaders achieve a higher level of financing from EU funds compared to newly elected colleagues. This subsequently affects the fact that their management of the municipality is associated with increased investment spending and overall higher fiscal balances.

It can therefore be summarized that demographic and professional characteristics, such as educational attainment and length of experience in office, directly shape the cognitive capacity of a leader. A higher level of these characteristics leads to proactive attitudes towards development activities and strategic investments, which creates an optimal prerequisite for these leaders to be able to successfully cooperate in broader structures of inter-municipal cooperation.

The complexity of the tasks currently assigned to local governments often exceeds the personnel and financial capacities of individual municipalities, especially in the case of smaller settlements. Partnerships of local governments therefore enable the joint management of demanding tasks that individual actors cannot solve on their own. According to Galvasová et al. (2007), the cooperation mechanism itself includes a complex set of relationships, activities and means, such as fulfilled ties between entities, whether they take place within the framework of routine

administrative processes or occasional development projects and strategic documents. To effectively perform these functions, Petkovšek & Pevcin (2021) add that local governments must respond with intelligent management approaches, while inter-municipal cooperation can be the basis for achieving greater economies of scale, eliminating duplicate efforts and maximizing available resources.

However, the implementation of such approaches in practice brings various pitfalls. As Galli et al. state (2025), cooperation may not immediately translate into lower spending, especially in the early stages. Moreover, the success of a partnership often clashes with different local interests. Meltzer & Weichselberger (2026) therefore argue that the sustainability of intermunicipal cooperation does not depend on the complete elimination of tension, but on the permanent maintenance of a functional balance between these competing interests. Achieving this balance places the leader himself in a key position. Valach et al. (2019), in explaining the complexity of cooperation, draw attention to the necessity of functional management of cooperation and leaders who can bring together different actors and motivate them to joint efforts. In a similar vein, Falťan et al. (2011) consider the quality of local government management to be one of the essential endogenous factors of municipal development, with the manager of intermunicipal cooperation acting as an important coordinator in connecting interest groups and seeking consensus. Therefore, equipped human resources are key to the successful functioning of such structures, who can effectively utilize the synergistic effects of cooperation in the daily agenda.

For local government representatives to be able to meet these goals, they must have a set of specific hard and soft skills. In the area of hard skills, the issue of professionalism and expertise comes to the fore in connection with the introduction of new management approaches to local government. According to Galvasová et al. (2007) and other experts, the necessary hard skills include thorough knowledge of the relevant legislation and the specific character of the region, project management including the ability to monitor current challenges, process and submit a development project and subsequently manage a project team, advanced digital, technological and language skills necessary for modern communication, and last but not least, knowledge of management and economics, which allows the application of best practices in organizational management to achieve goals.

Interpersonal competencies play an equally important, if not more important, role in intermunicipal structures. In her research, Župová (2015, 2017, 2018, 2019) highlights the social competencies of a leader, especially the ability to create and use a network of contacts and build sustainable partnerships. Other essential soft skills identified by Hajšová (2014), Liptáková (2015) and Čerkala & Čerkalová (2012) include developed communication, organizational and coordination skills, flexibility, awareness and the ability to respond quickly to dynamic changes in society, independence, responsibility, purposefulness and decisiveness in solving problems. The ability to manage and constructively resolve conflicts between partners, as well as psychological, moral and ethical competence, which helps to build clear and transparent interpersonal relationships between cooperating parties, cannot be overlooked.

A good mayor or manager in the structures of intermunicipal cooperation must therefore act as an imaginary "engine" of development, which, thanks to the synthesis of its professional knowledge and soft skills, can actively encourage, coordinate and successfully lead municipalities to the implementation of common development goals.

The literature review shows that local government can no longer function in isolation. Its development depends on two main factors - the quality of human capital and the ability to effectively cooperate in intermunicipal structures. The personality of the local government leader plays a key role in this process, whose characteristics fundamentally shape his attitude to investments, willingness to innovate an approach to managing partnerships. At the same time, however, each leader is influenced by the external environment characterized by a high administrative burden and the complexity of legislative processes, which places specific demands on the balance between hard professional competencies and soft interpersonal skills. These facts create space for a deeper empirical investigation of how specific demographic and professional characteristics of local government leaders, together with the pressure of the bureaucratic environment, influence their strategic decision-making and the perspective from which they evaluate the development of partnerships. To examine these connections, we set the following hypotheses for our research:

H1: Local government leaders with a higher level of education show a higher level of agreement with the statement that investments in human capital development increase the quality of intermunicipal cooperation.

H2: The assessment of the partnership's investment activity in staff training depends on the length of time the local government leader has been in office, with local government leaders with longer tenure being more critical than newly elected mayors, who evaluate the partnership's investment in key staff training more positively.

H3: Under the influence of the high level of bureaucratization and administrative complexity of processes in local government, local government leaders evaluate analytical and project skills (hard skills) of partnership management at a statistically significantly higher level than collaborative and negotiation skills (soft skills).

2. Methodology

The aim of the study is to identify and evaluate the professional and educational profile of local government leaders as a determinant of their attitudes towards human capital development and to analyse their perception of managerial competences in inter-municipal cooperation structures.

The study is based on primary data obtained from a questionnaire survey conducted among municipal and city mayors (local government leaders) in the Slovak Republic. The questionnaire was created using the Google Forms platform. Responses to the questionnaire items were measured using a five-point Likert scale, where respondents expressed their level of agreement or disagreement with individual statements from 1 (strongly disagree) to 5 (strongly agree). Before the actual data collection, a pilot survey was conducted on a sample of 7 respondents,

based on which the questionnaire was slightly modified. To determine the minimum acceptable size of the research sample, the required sample size calculator available in LimeSurvey (2025) was used. At an assumed confidence level of 95%, the minimum required sample size was set at 340 respondents. Potential respondents were contacted electronically via e-mail address, and the questionnaire was anonymous. A total of 2,902 respondents were contacted between November 2025 and January 2026, of whom 535 completed the questionnaire, representing a return rate of 18.44%. The achieved sample size thus exceeded the required methodological minimum and provided a sufficient basis for statistical calculations. Since some respondents did not complete all demographic data (age, education, etc.), the total number of responses varies slightly in individual categories. The final sample structure is shown in Table 1.

Table 1. Characteristics of the research sample

Variable	Category	n	%
Age		***535***	
	under 30 years old	5	0.93
	31 - 40 years old	52	9.72
	41 - 50 years old	142	26.54
	51 - 60 years old	192	35.89
	over 60 years old	144	26.92
Level of education achieved		***532***	
	secondary education	205	38.53
	higher professional education	37	6.95
	first degree university education	34	6.39
	second degree university education	239	44.92
	third degree university education	17	3.2
Length of service in office		***533***	
	less than 5 years	134	25.14
	5 - 10 years	133	24.95
	11 - 20 years	199	37.34
	more than 20 years	67	12.57
Size of municipality (population)		***535***	
	up to 500	230	42.99
	501 - 1 000	146	27.29
	1 001 - 2 000	83	15.51
	2 001 - 5 000	50	9.35
	more than 5 000	26	4.86

Source: Authors' contribution, 2026

In terms of age structure, respondents aged 51-60 had the highest representation, representing 35.89% of all respondents. Respondents aged under 30 had the lowest representation (0.93%). In terms of highest education, respondents with a second-level university education dominated, representing 44.92% of all respondents. Respondents with a third-level university education had the lowest representation (3.2%). In terms of length of service in office, most respondents reported service in the range of 11-20 years (37.34%). The smallest group consisted of respondents with more than 20 years of experience (12.57%). In terms of the size of the local government, small municipalities with a population of up to 500 prevailed (42.99%). Other categories had lower representation.

To ensure high methodological accuracy of the data, the normality of their distribution was verified using the Shapiro-Wilk test before the data analysis itself.

In accordance with the goal, the empirical part of the research is divided into two interconnected analytical parts. The first part focuses on identifying the determinants of the attitudes of local government leaders towards human capital development, while examining the impact of the level of education and length of service in office on their perception of the importance of investments in human capital development. Hypotheses H1 and H2 were verified through ordinal logistic regression analysis, which was chosen due to the ordinal nature of the analysed variables and the absence of the assumption of normal data distribution.

The second part of the research is focused on the assessment of managerial competencies within the structures of intermunicipal cooperation, as these competencies represent an important prerequisite for the effective functioning and development of human capital in practice. Hypothesis H3 was verified by Wilcoxon signed-rank test, as it was a comparison of the assessment of two types of skills and the assumption of normal data distribution was also absent. All calculations were performed in the statistical software Jamovi (v. 2.7.3).

3. Results and analysis

Before testing the research hypotheses, a basic descriptive analysis of the respondents' responses was conducted. The aim was to assess how local government leaders generally perceive individual aspects of human capital development and the level of partnership management competencies on a 5-point Likert scale.

Table 2. Descriptive statistics

	N	Missing	Mean	Median	SD	Min.	Max.
The contribution of investments in human capital to increasing the quality of intermunicipal cooperation	532	3	4	4	0.911	1	5
Partnership investments in training and skills development of key personnel	531	4	3.28	3	1.058	1	5
Analytical and project competencies (hard skills) of partnership management	531	4	3.7	4	0.962	1	5
Collaborative and negotiation skills (soft skills) of partnership management	531	4	3.56	4	0.99	1	5

Source: Authors' contribution, 2026, based on outputs from the statistical software Jamovi (v. 2.7.3)

Descriptive statistics (see Table 2) show that the highest level of agreement is shown by local government leaders for the variable "benefit of investments in human capital for increasing the quality of intermunicipal cooperation" (mean = 4; median = 4). The low value of the standard deviation (0.911) for this variable also indicates a high level of agreement among respondents. Even though respondents used the entire rating scale from 1 to 5, the low standard deviation shows that most responses were concentrated in the positive spectrum of the scale. On the contrary, the lowest mean value (mean = 3.28; median = 3) and at the same time the highest dispersion in responses (SD = 1.058) was recorded for the variable "partnership investments in education and skills development of key personnel". Thus, not all respondents evaluated partnerships' investments in skills development of key personnel positively. Rather, they were more cautious in their assessment or expressed a sceptical view. Hypothesis No. 2 will therefore investigate whether these differences in opinions may be related to the length of time they have been in the position of local government leader. When assessing management skills in intermunicipal cooperation structures, local government leaders generally have positive attitudes. For "hard analytical and project competences in partnership management", the average reached 3.70, and the median 4, with a standard deviation of 0.962, which indicates a relatively stable distribution of responses with a lower degree of variability. For "soft collaborative and negotiation skills", the overall average was slightly lower, at 3.56, with the median remaining at 4 and the standard deviation reaching 0.990. As with the remaining variables, in this case, respondents used the entire rating scale from 1 to 5, which indicates that they perceive the quality of partnership management differently, which creates the basis for testing hypothesis no. 3.

Table 3. Shapiro-Wilk test

Observed variable	Statistics (W)	p-value	Distribution result
Education	0.749	< 0.001	Non-normal distribution
Length of service in office	0.864	< 0.001	Non-normal distribution
The contribution of investments in human capital to increasing the quality of intermunicipal cooperation	0.841	< 0.001	Non-normal distribution
Partnership investments in training and skills development of key personnel	0.908	< 0.001	Non-normal distribution
Analytical and project competencies (hard skills) of partnership management	0.879	< 0.001	Non-normal distribution
Collaborative and negotiation skills (soft skills) of partnership management	0.894	< 0.001	Non-normal distribution

Source: Authors' contribution, 2026, based on outputs from the statistical software Jamovi (v. 2.7.3)

Before testing the hypotheses, the assumption of normal distribution of the data was checked using the Shapiro-Wilk normality test (see Table 3). For all variables, the p-value was < 0.001, which indicates that the data are not normally distributed. Therefore, non-parametric statistical methods that do not require the assumption of normal distribution of the data were used for hypothesis testing.

Table 4. Ordinal logistic regression for testing hypothesis H1

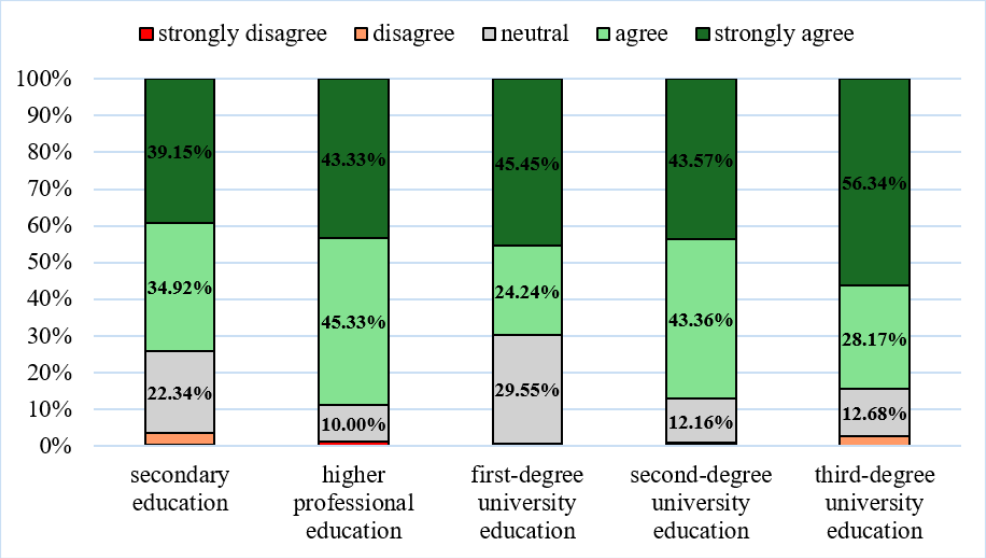
		95% Confidence Interval					
Predictor	**Estimate**	**Lower**	**Upper**	**SE**	**Z**	**p**	**Odds ratio**
Education	0.1338	0.0192	0.249	0.0585	2.285	0.022	1.143
Length of service in office	0.1592	-0.02	0.339	0.0915	1.74	0.082	1.173
Size of municipality	0.1219	-0.0188	0.263	0.0719	1.695	0.09	1.13
Age	-0.0446	-0.2265	0.137	0.0926	-0.481	0.63	0.956
Model Fit Measures							
Model	Deviance	AIC	R^2_{McF}				
1	1297	1313	0.0108				

Source: Authors' contribution, 2026 based on outputs from the statistical software Jamovi (v. 2.7.3)

Given the ordinal nature of the variables under study, an ordinal logistic regression model was used to test hypothesis 1 (see Table 4). In addition to education, three other control variables were included (age, length of service in office, and size of local government). We assumed that even after adjusting for the influence of these control variables, local government leaders with a higher level of education would show a higher level of agreement with the statement that investments in human capital development increase the quality of intermunicipal cooperation. The analysis was conducted at a significance level of $\alpha = 0.05$. The quality and suitability of the selected regression model are confirmed by its basic indicators (Deviance = 1297; AIC = 1313, $R^2_{McF} = 0.0108$). The main predictor examined, education, turned out to be a statistically significant positive determinant of the leader's attitude towards investments in human capital development for increasing the quality of intermunicipal cooperation ($\beta = 0.1338$; p-value = 0.022). Hypothesis H1 was confirmed. Based on the Odds ratio = 1.143, we can conclude that with a higher achieved level of education of the local government leader, the chance of achieving a higher level of agreement with the importance of investments in human capital increases by 14.3%. However, although the relationship found can be considered statistically significant, its strength is low ($R^2_{McF} =0.0108$). For the other variables included in the model, the p-value was > 0.05, which means that they are statistically insignificant. The achieved level of education thus has a dominant influence on the perception of the importance of investments in human capital.

For a deeper interpretation of the distribution of responses according to the level of education of the local government leader, figure no. 1 was created, which visually captures the positive trend revealed by the ordinal logistic regression model. When comparing respondents with secondary education and higher education of the third level, the level of agreement with the statement that "investments in human capital development increase the quality of intermunicipal cooperation" increased. While 39.15% of respondents with secondary education chose the option "I completely agree", with higher education of the third level this share increased to 56.34%. At the same time, a decrease in neutral responses can be observed in this group of respondents, which amounted to only 12.68%. Among respondents with secondary education, a neutral attitude was expressed by up to 22.34% of them. Negative responses at all levels of education represent only a small proportion of the total number of responses, which indicates that local government leaders are aware of the importance of human capital development. The differences between individual educational groups are therefore reflected primarily in the intensity of agreement with the above statement. Respondents with a higher level of education more often expressed clear agreement, while respondents with a lower level of education more often indicated the option "I tend to agree", or took a neutral position. The above shares in individual educational categories thus support the results of the regression analysis, which pointed to the existence of a statistically significant, but in terms of overall strength, weaker positive relationship between the level of education of the local government leader and his perception of the benefit of investments in human capital for increasing the quality of intermunicipal cooperation.

Figure 1. Structure of distribution of responses regarding the perception of the benefits of investments in human capital development depending on the achieved level of education



Source: Authors' contribution, 2026

Also to verify hypothesis no. 2, an ordinal logistic regression model was used with respect to ordinal variables (see Table 5).

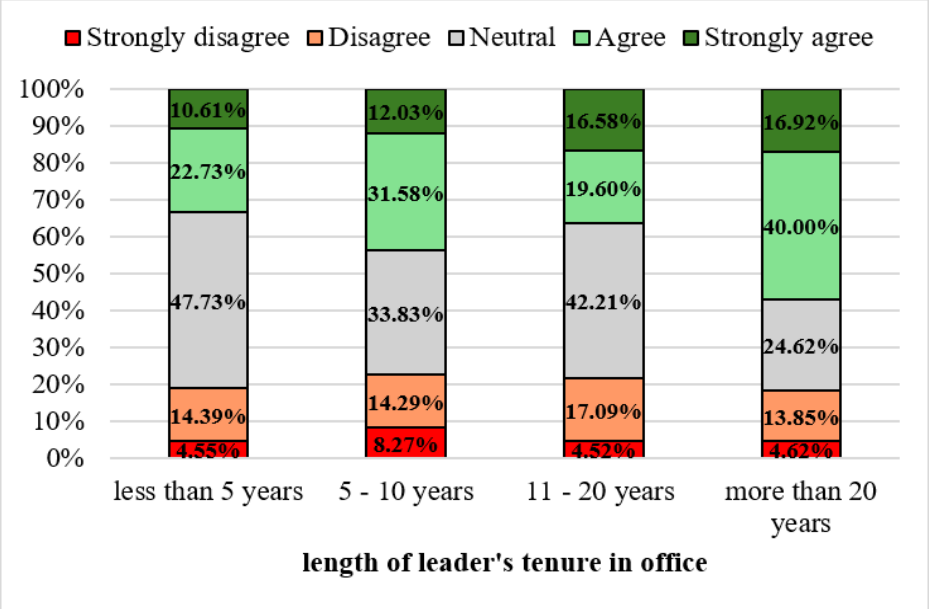
Table 5. Ordinal logistic regression for testing hypothesis H2

		95% Confidence Interval					
Predictor	**Estimate**	**Lower**	**Upper**	**SE**	**Z**	**p**	**Odds ratio**
Length of service in office	0.219	0.041	0.3977	0.0909	2.408	0.016	1.245
Size of municipality	-0.0313	-0.1698	0.107	0.0706	-0.443	0.658	0.969
Age	-0.2043	-0.382	-0.0277	0.0903	-2.261	0.024	0.815
Education	-0.0516	-0.1638	0.0604	0.0572	-0.903	0.367	0.95
Model Fit Measures							
Model	Deviance	AIC	R^2_{McF}				
	1507	1523	0.00575				

Source: Authors' contribution, 2026 based on outputs from the statistical software Jamovi (v. 2.7.3)

We assumed that senior leaders of local governments would be more critical in assessing the partnership's investment activity in the education of key personnel than newly elected leaders. In addition to the length of service in office, three additional control variables (age, education, and size of local government) were included in the model. The analysis was performed at a significance level of $\alpha = 0.05$. In terms of overall quality, the model used exhibits good properties given the nature of the data, as evidenced by the achieved criteria values (Deviance = 1507; AIC = 1523, R^2_{McF} = 0.00575). The main predictor examined, length of tenure, showed a statistically significant effect on how local government leaders perceive partnership investments in education and skills development of key personnel ($\beta = 0.219$; p-value = 0.016). However, hypothesis H2 was not confirmed, as the direction of the effect is opposite to what we expected. Local government leaders with shorter tenure perceive investments in partnerships more critically than leaders with longer tenure. The achieved Odds ratio = 1.245 shows that with longer tenure, the chance of a more positive assessment of investments in partnerships increases by 24.5%. The model also revealed a statistically significant effect of age on the perception of investment activity of partnerships ($\beta = -0.2043$; p-value = 0.024). The achieved Odds ratio value = 0.815 indicates that with increasing age of the local government leader, the chance of a positive assessment of investments in partnerships decreases by 18.5%. The remaining two variables included in the model (local government size, education) showed a p-value > 0.05, so they appear to be statistically insignificant.

Figure 2. Structure of distribution of responses regarding perception of partnership investment activity depending on length of service in office



Source: Authors' contribution, 2026

For a more detailed breakdown of the structure of responses by the length of time the local government leader has been in office, figure no. 2 was created, which captures the positive trend revealed by the ordinal logistic regression analysis model. When comparing respondents who have been in office for less than 5 years and more than 20 years, the level of agreement with the evaluation of the partnership's investment activity in the education and development of key personnel has visibly increased. While in the group of leaders who have been in office for less than 5 years, only 10.61% chose the option "strongly agree", among leaders with over 20 years of experience, 16.92% of respondents chose this option and 40% chose the option "agree", which is significantly more compared to 22.73% in the category of leaders who have been in office for less than 5 years. At the same time, a significant decrease in neutral responses can be observed in the group of longest-serving leaders, where they constituted 24.62%, while among newly elected leaders with less than 5 years of experience, up to 47.73% of them expressed a neutral attitude. The negative responses "strongly disagree" and "disagree" represent only a small share of the total number of responses in all categories of length of service. The stated shares in the individual categories in terms of length of service are thus in line with the results of the regression analysis, which showed that with increasing length of service in the position, the chance of a more positive assessment of investments in personnel development in partnerships increases.

Table 6. Wilcoxon signed-rank test

			Statistic	**p**		**Effect Size**
Analytical & Project Skills (Hard skills)	Collaborative & Negotiation Skills (Soft skills)	Wilcoxon W	8319*	< 0.001	Rank biserial correlation	0.469
Note. H_a $\mu_{Measure\ 1 - Measure\ 2} \neq 0$						
* 381 pair(s) of values were tied						

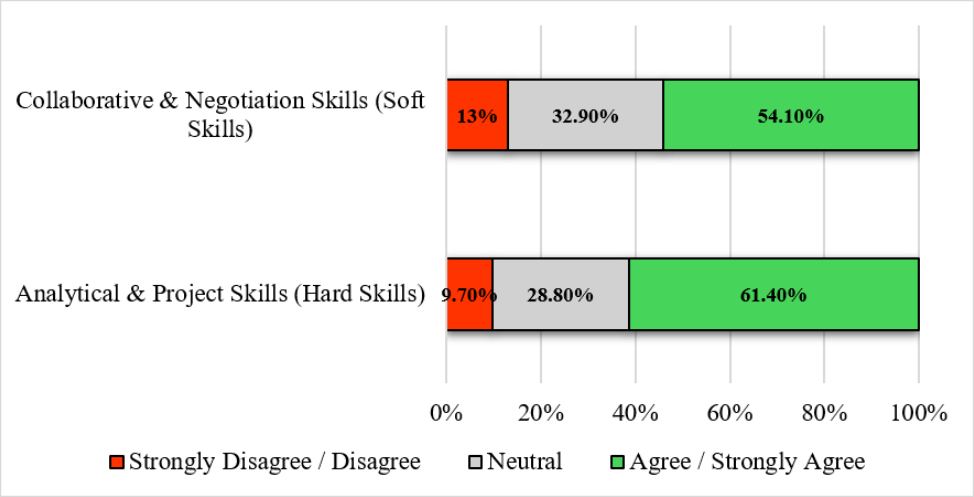
Descriptives

	N	Mean	Median	SD	SE
Analytical & Project Skills (Hard skills)	531	3.7	4	0.96	0.0418
Collaborative & Negotiation Skills (Soft skills)	531	3.56	4	0.99	0.043

Source: Authors' contribution, 2026 based on outputs from the statistical software Jamovi (v. 2.7.3)

Given the nature of the data, the Wilcoxon signed-rank test was used to verify hypothesis no. 3. We assumed that, under the influence of the high level of bureaucratization and administrative complexity of processes in local government, local government leaders would evaluate the analytical and project skills (hard skills) of partnership management at a statistically significantly higher level than their collaborative and negotiation skills (soft skills). The analysis was performed at a significance level of $\alpha = 0.05$. The Wilcoxon test criterion reached the value $W = 8319$, with a p-value of < 0.001. Since the determined p-value is lower than the established significance level of $\alpha = 0.05$, it can be stated that there is a statistically significant difference between the perceived level of analytical and project skills and collaborative and negotiation skills of partnership management from the perspective of local government leaders. Slovak local government leaders' rate analytical and project management skills of partnerships significantly higher (Mean = 3.7) compared to negotiation and collaborative skills (Mean = 3.56). Hypothesis No. 3 was confirmed. The calculations performed show that 381 respondents gave the same rating to analytical and project skills and collaborative and negotiation management skills. The fact that despite such a high number of identical ratings, the p-value was < 0.001 means that local government leaders who rated these two groups of skills differently significantly overestimated analytical and project competencies. For a comprehensive assessment of this finding, the effect size was evaluated using Rank biserial correlation. Its value reached the level of 0.469, which in the context of the confirmed hypothesis indicates a medium-sized effect.

Figure 3. Structure of distribution of respondents' answers to the assessment of hard skills and soft skills of partnership management



Source: Authors' contribution, 2026

For a more detailed interpretation of the answers, a figure was created to supplement the interpretation of hypothesis no. 3, which captures the distribution of respondents' answers to the assessment of hard skills and soft skills of partnership management. A graphic comparison of the Likert scale structure shows that partnership management received a higher share of cumulative agreement in hard analytical and project competencies, which reached 61.4% (sum of agree and strongly agree responses), while for soft collaborative and negotiation skills the share of cumulative agreement was 54.1%. On the contrary, in this category a higher share of neutral responses (32.9% compared to 28.8% for hard competencies) and negative responses (13% compared to 9.7% for hard competencies) was recorded. The above distribution of responses corresponds to the results of the Wilcoxon test. It can therefore be stated that even though hard analytical and project competencies, as well as soft collaborative and negotiation skills of partnership management, are rated above average from the perspective of local government leaders, the higher proportion of neutral and disagreeing statements regarding soft skills indicates that some respondents perceive some room for improvement in this area.

4. Discussions

The study provides some findings on how the professional and educational profile of local government leaders influences their attitudes towards human capital development and how these leaders assess hard and soft management skills in an environment of intermunicipal cooperation. The results of this study thus follow up on previous research on the importance of human capital for local development, as confirmed, for example, by Knapińska & Siński (2022), according to which the quality of human capital has proven to be a factor strongly influencing the level of local development in Poland. The importance of investments in this area is also emphasized by Shafuda & De (2020) and Bakhytgu et al. (2025), according to which investments in human capital help to increase labour productivity, improve the level of education and health of the population, as well as support innovative development and improve the quality of life. Within hypothesis no. 1, which focused on the educational profile of local government leaders, a statistically significant, but weaker relationship ($\beta = 0.1338$; p-value = 0.022; $R^2_{McF} = 0.0108$) was identified between the education level of the local government leader and his perception of the benefits of investments in human capital for the development of inter-municipal cooperation. Our results thus follow the findings of Hamidou et al. (2024), who proved that the level of education of local government leaders measured by degree positively affects the investments of municipalities, with municipalities led by leaders with a higher level of education investing in local investments more than municipalities led by leaders with a lower level of education. Bakoš et al. (2021), however, argue that leaders' perception of the benefits of intermunicipal cooperation and capacity development strongly depends on the size of the municipality, which was not confirmed in our case (p-value = 0.09), but also on its economic status, which may explain why the impact of the achieved level of education appears to be weaker.

Educated leaders thus probably theoretically understand the importance of investments in human capital, but low budgets of local governments limit them, which may be the cause of the identified weaker relationship.

Hypothesis No. 2 was not confirmed. The length of time spent as a local government leader has a statistically significant effect ($\beta = 0.219$; p-value = 0.016) on the evaluation of the partnership's investment activity in staff training, but in the opposite direction to what we expected, since with increasing length of time spent as a local government leader, the chance of a more positive evaluation of partnership investments increased by 24.5%. This finding contradicts Bjørnå & Mikalsen (2015), who state that experienced leaders often evaluate the functioning of cooperation more realistically and less idealistically than newly elected representatives. In the conditions of the Slovak Republic, however, a longer period of time spent as a local government leader does not make his view of the functioning of the partnership more critical, but on the contrary, increases his confidence in the benefits of partnerships, which Petrovsky (2016) explains by the fact that the environment rather than experience shapes attitudes. However, a very interesting finding is the fact that while political experience leads to a more positive perception of the investment activity of partnerships, the biological age of the local government leader itself has the opposite effect ($\beta = - 0.2043$; p-value = 0.024). With increasing age, the chance of a positive assessment of the partnership's investment in the development of key personnel decreases. This is in line with Huang & Villadsen (2023), who state that individual characteristics of leaders in public organizations, including age, can influence their willingness to support innovation, organizational change and new development initiatives, as older managers are often more risk-averse and less innovative.

Another contribution to the achievement of the study objective is the confirmation of hypothesis no. 3, which compared the perception of analytical and project skills (hard skills) and collaborative and negotiation skills (soft skills) in intermunicipal cooperation structures. The Wilcoxon signed-rank test (p-value < 0.001) with a medium-sized effect (RBC = 0.469) revealed that there is a statistically significant difference between the perceived level of analytical and project skills and collaborative and negotiation skills of partnership management from the perspective of local government leaders in favour of a higher assessment of hard skills (average 3.70) compared to soft skills (average 3.56). This result directly confirms our assumption that the high level of bureaucratization and administrative complexity of processes in local government shapes the leaders' perspective in favour of hard competencies. The growing importance of digitalization, information systems, project management and working with subsidy schemes naturally strengthens the demand for professional and technical competencies of workers and management of public organizations (Krpálek et al., 2021). Contract management programs, complex drawing of EU funds and the associated administrative burden place emphasis primarily on formal contractual competencies, mainly on technical skills and secondarily on strategic skills, while interpersonal skills are of lesser importance in this environment (Brogaard et al., 2025). Given the identified deficit in soft skills (higher share of neutral 32.90% and negative 13.00% of responses in the graph for soft skills), partnership managements should reconsider their priorities.

Although collaborative management, at least in some cases, includes contracts, project management, financial aspects and other elements that require hard management skills, experience from intermunicipal cooperation suggests that it is the soft skills of management that have the greatest impact on whether opportunities for cooperation are identified and used (Morse, 2005). This perceived deficit of soft skills in the conditions of Slovak partnerships can negatively affect the overall functioning of local governments. As Jankelová et al. (2021) state, the one-sided orientation of managers to tasks and performance, to the detriment of interpersonal relationships, leads to lower availability of management to subordinates and reduces their overall job satisfaction, and conversely, the use of communication skills, the ability to argue and people management oriented to interpersonal relationships has a statistically significant positive effect. At least the fact that hard analytical and project competencies, as well as soft collaborative and negotiation skills of partnership management were rated above average by local government leaders can be seen as a positive, because according to Carreri & Payson (2024), developed management skills as such enable local officials to achieve their goals more effectively.

Although the study was conducted on a relatively robust sample and yielded some relevant findings, we consider it necessary to point out possible limitations. The main limitation is the fact that the questionnaire survey was based on the subjective assessment of individual items by local government leaders, which could introduce a certain degree of subjective distortion into the results. This is also pointed out by Podsakoff et al. (2024), according to whom questionnaire research can be subject to so-called common method bias, when the relationships between variables are influenced by the data collection method itself. It can also be considered a limitation that only the socio-demographic and functional characteristics of the respondents were captured, but their political preferences or ideological beliefs were not investigated, which could also have influenced their opinions to a certain extent. For this reason, we suggest that future research be supplemented with objective indicators of the investment activity of local governments, such as the volume of successfully drawn financial resources from EU funds, the real amount of investment in human capital development or the stability of key personnel. Focusing on real measurable investments in employee development is key, since investments in human capital are considered an important factor in modern local government that helps increase labour productivity, support innovative development and overall improve the quality of life of residents in the region (Bakhytgu et al., 2025). At the same time, following Whitley et al. (2020), according to whom mixed methods research, where quantitative and qualitative methods are integrated, is an ideal solution for a comprehensive understanding of complex problems, it could be beneficial in future research to supplement the questionnaire survey with qualitative interviews. These would allow for a more detailed study of how the professional and educational profile of leaders determines their attitudes towards human capital and would also help to understand more deeply the factors that influence their perception of managerial competencies in intermunicipal cooperation structures.

5. Conclusions

The aim of the study was to identify and assess the professional and educational profile of local government leaders as a determinant of their attitudes towards human capital development and to analyse their perception of managerial competences in intermunicipal cooperation structures. The set objective was achieved. It has been shown that a higher level of education of local government leaders is demonstrably associated with a more positive perception of investments in human capital development in the interest of increasing the quality of intermunicipal cooperation. Although theoretically more educated leaders are aware of the meaning of human capital development, the impact of the achieved level of education appears to be weaker because the real investment ability can be determined by many other factors that were not considered in our research, such as the budgetary possibilities of local governments. The assumption that local government leaders who have been in office for a longer period will be more critical of the partnership's investment activity in staff training was not confirmed. On the contrary, with a longer period in office, mayors perceived the partnership's investment activity more positively. Taking this into account, it was surprising that the age of the leader had the opposite effect, i.e. with increasing age, leaders rated investments in the development of key personnel more negatively. The assessment of management skills of intermunicipal partnerships shows a certain asymmetry. Although both soft and hard skills are rated above average, which may be a signal of the ability to effectively achieve goals, in analytical and project skills, management achieves a higher rating than in collaborative and negotiation skills. This situation reflects the reality of a high level of bureaucratization in local governments, where hard competencies are enforced by ongoing processes. Hard skills are a kind of necessity, which in practice leads to the fact that collaborative and negotiation skills of management are insufficiently developed.

The above findings lead to several suggestions for improving the functioning of local governments and the quality of human capital in them. Since positive attitudes of more educated leaders towards investments in human capital development exist, but their effect is weak, which is often related to the limited financial possibilities of municipalities, an important step could be the systematic strengthening of the investment capacities of local governments intended directly for the stabilization of key personnel. At the same time, it is necessary to supplement the current administrative and technical management of projects with targeted educational programs for management, which would develop the very collaborative and negotiation skills that are a prerequisite for establishing partnerships. Finally, since age and length of service in office affect how leaders perceive the investment activity of partner municipalities in personnel development, a solution could be more intensive sharing of experiences between them. Connecting leaders with longer experience in local government management, who have greater confidence in partnership investments, with junior or senior colleagues could help unify their

perspective on joint staff development and demonstrate the real benefits of investments in human capital in practice.

Conflict of Interest Statement

The authors declare no conflict of interest.

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