

INVESTMENT IN EDUCATION, SOCIO-CULTURAL CONTEXT, AND LEADERSHIP QUALITIES OF SCHOOL PRINCIPALS

Received: 27. 08. 2024.

Accepted: 07. 11. 2024.

DOI <https://doi.org/10.30924/mjcmi.30.1.1>

Original scientific paper

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ABSTRACT

This study examines how public investment in education and the country socio-cultural context are related to the instructional leadership of school principals. In this study, we conducted an analysis using a cluster-country dataset (3 clusters) based on the evaluation of investment in education. The data were derived from the responses to the questionnaire for school principals in the OECD TALIS 2018 survey. To operationalize socio-cultural context, we utilize Hofstede's societal cultural values. The analysis showed that the countries' societal cultural values predicted instructional leadership of principals, as shown in the OECD TALIS 2018 results. The results also showed a significant but negative relationship between school principals' instructional leadership and the countries' investment in education in those countries with the greatest investment in education. The study did not confirm a linear relationship between investment in education and outcomes. In our case, a higher investment does not mean that school principals achieve better results in instructional leadership than in the OECD TALIS survey. By analysing the data, this study aims to provide a detailed overview of how public investment in education and the societal cultural context in each country can promote or hinder instructional leadership, thereby enriching the discussion on promoting excellence and equity in education worldwide.

KEYWORDS: *investment, societal culture, school principal, leadership, TALIS, Hofstede's model.*

1. INTRODUCTION

The leadership role of school principals is widely recognised as a key factor in the quality of education and the overall performance of schools (Hallinger & Heck, 1998; Leithwood et al., 2004). In recent decades, educational policy makers and researchers alike have addressed the issue of instructional leadership. Scientific research shows that school principals have an indirect influence on student achievement and over-

all guide teachers and students towards academic excellence (Heck & Hallinger, 2005). As the phenomenon of leadership itself is contextual, instructional leadership is closely intertwined with broader contextual factors. There is evidence (Hallinger, 2011) that the instructional leadership of school principals depends on the school context, the personal characteristics of the school principal, and the community context. However, we believe that not only this context but also the general socio-cultural context of the

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country is important when analysing the leadership qualities of school principals. Cultural values, which include collective beliefs, norms and practices, influence attitudes towards leadership styles (Hofstede, 2001). Recently, there has been an increasing number of studies analysing international research data (e.g., OECD PISA, OECD TALIS) in relation to the socio-cultural values/context of the country in question. For example, Vizmonte and Ligot (2024) analysed how a country's societal-cultural values affect student performance in the OECD PISA surveys based on Hofstede's 6-D model. Meanwhile, Hu, Leung and Teng (2018) examined the relationship between national culture (based on Hofstede's model) and students' mathematics performance by analysing data from 51 countries. Benoliel and Berkovich (2018) also investigated how Schwartz's cultural dimensions relate to student performance in the OECD PISA study at the national level. All of the above research shows that the socio-cultural context plays a significant role in explaining academic performance in international surveys. It is evident that there is a relationship between the socio-cultural context and students' sense of belonging to the school (Cortina et al., 2017), school principals' authority base (Ólafsson & Hansen, 2022) or teachers' self-efficacy in terms of student engagement, teaching and classroom management (Fackler et al., 2020) using OECD-PISA or TALIS data.

In addition to societal cultural values as a context variable, economic growth or the prosperity of the country is another. Public investment in education, which includes funding for school infrastructure, teacher salaries and educational resources, is a critical factor that affects the operational capacity of schools and the ability of principals to exercise effective instructional leadership (Hanushek & Woessmann, 2011). The importance of the size of investment in education at the national level was recognised by UNESCO, which in 2015, at the 38th UNESCO General Conference formally adopted and launched the Education 2030 Framework for Action with a commitment to increase government spending on education as a percentage of GDP at the national level. The goal is for all countries to spend more than 4% of GDP on education. However, the relationship between investment in education and student achievement is not clear. It is recognised that this relationship is weaker in the most economically developed countries (European Commission, 2023). Similar results are seen when analysing aspects of school autonomy and principals' leadership. Several studies (Minelgaite et al., 2023) have also shown that the more economically developed countries are, the school principals score lower in leadership skills in the OECD's international PISA and TALIS surveys. Therefore, the article aims to

investigate the intricate relationship between public investment in education, societal cultural values, and the instructional leadership of school principals.

2. LITERATURE REVIEW

2.1. The relationship between investment in education and the quality of education

Investment in education is considered as essential arrangements that express the purpose and priorities of education at a particular stage of the country's development, as well as the principles on which the strategies for the development of various relationships in the education system must be based. There are two schools of thought in the academic literature on the relationship between investment in education and the quality of education. On the one hand, it is argued that a country's economic growth depends on education and its quality (Hanushek & Woessmann, 2007; 2010). On the other hand, it is analysed how national prosperity and the level of investment in education at the national level (GDP per capita) affect different areas of education (Hanushek, Link, & Woessmann 2013). The argument that education is a driver of national economic growth has been extensively studied by economists and is generally recognised. Against this background, human capital theory emerged, which assumes that both individuals and societies benefit economically from investments in education. Studies by Lutz, Crespo Cuaresma and Sandersom (2012) or Patrinos and Psacharopoulos (2013) confirm that each additional year of education is associated with a higher share of GDP (18%, 13% and 35%, respectively). Deming (2022) emphasises the positive return on investment in education and states that one third of income variation is due to education. He goes on to emphasise the importance of investing not only in young children but also in young adults. Therefore, the main argument is that educated people contribute to economic growth through increased productivity, innovation, etc. However, when we talk about investing in education, we also need to talk about the returns. As Psacharopoulos and Patrinos (2004) note in their comprehensive review of returns to education in different countries, the private rate of return on investment in education is high, especially in higher education. The authors also recognise that the return on investment in education is only one of the indicators that can be used to measure the productivity of education. The social return on educational investment is associated with improved health outcomes, reduced crime rates, increased civic participation, social cohesion, gender equality, and environmental awareness (Littleton et al., 2023). Investing in education not only

drives economic growth, but also fosters a more equitable, cohesive, and sustainable society.

While human capital theory provides a solid foundation for understanding the benefits of investing in education, there are still “missing pieces to the puzzle”. According to the logic of human capital theory, the more we invest in education, the better the results/returns we achieve. This logic is undermined by the evidence that in economically strong countries with the highest investment in education, the level of investment in education does not correlate with higher student achievement (OECD, 2016). Similar tendencies can be seen in the aforementioned work by Psacharopoulos and Patrinos (2004) on returns to education. According to this work, these returns are observed in developing countries (e.g., in Latin America), and the highest returns on investment in higher education are in low-income and middle-income countries. In their later analysis, Psacharopoulos and Patrinos (2018) confirm that returns vary by country and income level. The study shows that the total return is lowest in high-income countries (8.2%). In low-income countries, the rate of return is 9.3%. Based on the previous studies, it can therefore be summarised that although countries and economies may have “similar levels of expenditure on education, but they can perform very differently” (OECD, 2016, p. 186).

Furthermore, it is not only the amount of resources that is important, but also how these resources are used (efficiency). As Psacharopoulos and Patrinos (2018) point out, simply increasing access to education without ensuring quality can lead to sub-optimal outcomes. Similarly, Deming (2022) notes that while school spending can lead to some degree of economic productivity, it is not necessarily indicative of optimal resource allocation. The effectiveness of school spending can be accompanied by inefficiency and misallocation. The country's investment in education and the quality of services thus depend largely on the efficiency of the management of educational institutions and the potential of their human resources.

We believe that there are more salient aspects related to investment in education and the quality of education. Studies (e.g. Fuchs, Wößmann, 2007; Hanushek et al., 2013; Nedzinskaite-Maciuniene & Jurgile, 2023) analysing OECD PISA or TALIS data show that school autonomy and the (distributed, instructional) leadership of principals depend on the economic prosperity of countries. For example, the results of the study by Hanushek et al. (2013) show that in the case of OECD PISA, autonomy in terms of teaching content, staffing and budgets has a positive effect on student achievement in developed countries, but

a negative effect in developing countries. The concentration of decision-making power in the role of the principal, particularly in economically developed countries, correlates with a higher level of academic performance. In developing countries, on the other hand, increased school autonomy and the concentration of decision-making power in the principal's role have a negative effect on student performance. Nedzinskaite-Maciuniene and Jurgile (2023) use data from OECD TALIS 2018 to show that there is a negative correlation between the principals' instructional leadership and national investment in education in Northern Europe. It can also be argued that investment in education is closely linked to the development of human resources in schools. According to the OECD (2019a), limited budgets can restrict staff training, cut support staff and increase the workload of existing staff, forcing principals to focus on administrative rather than instructional tasks. However, according to the data, 64% of public expenditure on education at the EU level goes towards staff costs (European Commission, 2023). In the area of teacher professional development, legal and administrative mechanisms aim to strengthen the personal and institutional motivation of staff to engage in continuous professional development, as well as to ensure the quality of professional development services and the targeted use of resources.

It is therefore recognised that the relationship between investment in education and learning outcomes is not linear and weakens as spending increases (European Commission, 2023). It is therefore important consider the socio-cultural context of countries when examining and analysing how investment affects the quality of education, economic growth, or social returns.

2.2. The relationship between socio-cultural context and leadership

There is a growing focus on the culture of society and its impact in different areas. As Dimmock and Walker (2000) argue, social and cultural differences between countries are more important than ever in a globalised world. It is evident that national context and national culture influence a leader's behaviour (Schein, 2004; House et al., 2004). According to the study by Hofstede et al. (1990), we know that national cultures differ fundamentally at the level of values, while organisational cultures differ at the level of more external practices: symbols, traditions, and norms.

There is ample evidence in the management literature of the relationship between societal culture and organisational outcomes (Konrad, 2000). Research (e.g., Belchetz & Leithwood, 2007) has shown that leadership is context-dependent. Konrad (2000)

argues that “culture affects the kinds of leader behaviours that are considered desirable and are accepted” (p. 346). Most leadership traits and/or behaviours are culture-specific, and their desirability is significantly related to the culture of the country in question (Dorfman et al., 2012). Alvesson (2011) points out that the relationship between leadership and societal culture in the organisation is complex, as leadership is influenced by societal culture, but at the same time manifests itself through and influences organisational culture. The societal culture in the organisation is gradually changed by leaders, who communicate new values to their employees, support new behavioural patterns, etc. (Murphy et al., 2009; Day & Sammons, 2013; etc.). Bottom-up initiatives also put pressure on leaders and can signal cultural and social challenges as well as changes in organisational culture (Woods et al., 2004). According to Schein (2004), leadership can be a critical variable in the success or failure of an organisation, and it is becoming increasingly important to examine how societal culture is defined and created, how and in what organisational culture leaders emerge, and how leaders create or recreate organisational culture. Alvesson (2011) claims that leadership influences societal culture and can change it. In this context, the researcher distinguishes between the following connections: leadership as the creation or change of societal culture in the organisation, leadership as the maintenance and reproduction of societal culture, and societal culture as the framing and shaping of leadership.

DeMarco (2018) acknowledges the relationship between leadership and societal culture, but does not analyse its impact in more detail. His research confirms the inseparability of these phenomena, with societal culture in the organisation and leadership being selected as the link that influences the quality of organisational performance and outcomes, such as teacher’s self-efficacy (DeMarco, 2018), organisational learning (Hosseini et al., 2020), job satisfaction and commitment (Lok & Crawford, 2004; Liu et al., 2021), and performance quality (Amtu et al., 2021). Bolden (2011) notes that each of the leadership structures defined by Gronn (2002), Leithwood et al. (2006), MacBeath and Townsend (2011), and Spillane and Camburn (2006) refer to the degree to which leadership is institutionalised in work practice as part of the overall organisational culture and can be consciously coordinated by leaders to some extent. Researchers believe that leaders can achieve the highest level of leadership visible in the societal culture through organisational structure. Woods et al. (2004) point out that the more participative the management structures in an organisation are, the more leadership can be exercised and shared. The structural elements of

shared leadership also influence changes in organisational culture. Researchers (e.g., Harris, 2008; Murphy et al., 2009; Hallinger, 2018) identify societal culture (which often refers to the social context) as a contextual factor that determines the implementation of leadership (which can help or hinder the process, especially in the case of top-down leadership). Day and Sammons (2013) point out that it is the organisational structure, culture and micro-politics that can undermine leadership practice. According to Harris (2004), leadership gains greater influence over organisational development when these organisational barriers are removed. In practice, exercising leadership means overcoming structural and cultural boundaries (Harris, 2008). Meanwhile, Murphy et al. (2009) note that leaders often need to change their attitudes towards three cultural norms: teachers’ job is to teach, and leaders’ job is to lead; teachers must perform tasks from the top-down and working outside the classroom is beyond their competence.

Many researchers relate leadership to societal and organisational culture not only from the perspective of leadership, but also from the perspective of organisational culture research. For example, researchers who study organisational culture point out that it is not static and can be changed (Cameron & Quinn, 2006; Dimitrov, 2012). According to Alvesson and Sveningsson (2008; 2016), change in an organisation’s societal culture can take place as a realignment of everyday life. As the authors note, the change in culture, the routine of daily life, is a change in attitude towards leadership. Alvesson and Sveningsson (2008; 2016) highlight that the most common driver of such change is the leader. According to Schein (2004), the role of the leader in managing the change of societal culture in the organisation is different in the different stages of organisational development, as the societal culture in the organisation fulfils different functions in each stage. In the formative stage, culture is usually a positive growth force that needs to be refined, developed, and enunciated. In the middle stage, culture becomes more diverse as many subcultures form, and leaders have more opportunities to change the underlying assumptions by focusing on different subcultures and thus influencing the direction of development of the organisational culture. In the stages of maturity and decline, the culture often becomes partially dysfunctional and can only be replaced by more drastic processes (scandals, turnarounds). The change in societal culture in the organisation is particularly promoted when people with different values and experiences join the organisation. Changes in people’s attitudes and beliefs then lead to changes in their behaviour. According to Schein (2004), new members are one of the most subtle but effective

ways of embedding and establishing the leader's preferred assumptions in the organisation.

The importance of the societal cultural context of the country has also been emphasised in international research on student achievement. The inclusion of societal culture as a factor in studies addressing issues such as the curriculum, teaching and learning, leadership, and school management is seen as essential for the future development of comparative education (Dimmock & Walker, 2000).

In the literature, we find that there are differences between "cultural clusters" and leadership styles (House, Hanges, Javidan, Dorfman, & Gupta, 2004). For example, the results of the GLOBE project show that leadership styles in Eastern Europe differ the most from those in the Nordic countries. Liu's (2020) study found that Anglo-Saxon countries value individualism, while Germanic and Nordic countries value power distance. Based on this data, we can assume that this leads to shared leadership in schools in the Germanic and Nordic countries. According to Møller and Schratz (2009), leadership is culturally embedded and socially constructed, and the difference is even greater when the countries do not share a common linguistic and cultural heritage.

To summarise, it can be said that leadership depends on the context. Another important finding is that it is possible to analyse the interaction between leadership and context on the basis of national and cultural clusters.

2.3. Instructional leadership of school principals in OECD TALIS

Since 2008, OECD TALIS has been the first international survey to focus on the working conditions of teachers and the learning environment in schools (OECD, 2016). Since the first international survey in 2008, school leadership has therefore been one of the main topics, with a focus on instructional leadership. Taking a closer look, instructional leadership was measured in the first survey using Hallinger's Principal Instructional Management Rating Scale (PIMRS). The Instructional Leadership Index was defined as a combination of three of the school management indices made up of 14 items (OECD, 2010). According to the last study, an examination of the ranking of the individual topics revealed that "high priority placed on those relating to school leadership and teachers' instructional practices and beliefs" (OECD, 2014, p. 34). The scale for classroom management was therefore redefined in a 2013 survey. The statements were formulated to include direct and indirect instructional leadership activities. Five items were created for the Direct Instructional Leadership Scale (PINSLEADS). After research, two items (I have observed classroom

teaching; I have informed parents or guardians about the school and students' performance) were not included in the scale (OECD, 2014). It is important to note that this scale did not include statements that indicate the school principal's direct instructional leadership role (collaborating with teachers to resolve classroom discipline problems; working on a school professional development plan; providing feedback to teachers based on the principal's observations; observing classroom instruction). The Instructional Leadership Scale from TALIS 2013 represents the School Leadership Scale (T3PLEADS) in the last TALIS survey in 2018 (OECD, 2019). In addition, data on instructional leadership was collected from both supervisors and teachers as part of OECD TALIS.

The results of the earlier TALIS 2008 and TALIS 2013 studies, as well as other studies indicate that principals' instructional leadership has a major influence on teachers' work. For example, Ham et al. (2015), analysing TALIS 2008 results from four OECD countries in the broader Asia-Pacific region, found that teacher self-efficacy is more strongly promoted and maintained in schools where teachers perceive their principals as effective instructional leaders, and the principals also see themselves as instructional leaders.

A series of studies conducted by a group of researchers (Bellibaş et al., 2021) on the effects of instructional leadership on teachers' work based on TALIS 2013 data showed interesting results. First, Bellibaş and Liu's (2018) analysis of TALIS 2013 results showed that a school principal's instructional leadership, along with distributed leadership, predicted a positive school climate. More specifically, mutual respect, trust, collegiality, and esteem among staff. In another study, Bellibaş et al. (2021) analysed the TALIS results of the same year and found that principals' instructional leadership has a direct effect on teachers' instructional quality, while distributed leadership has an indirect effect. Liu et al. (2021) also investigated the effects of the principals' instructional and distributed leadership on teachers' job satisfaction and self-efficacy. Their findings revealed that "instructional leadership is indirectly associated with teacher's job satisfaction through the mediation effects of supportive school culture and teacher's collaboration" (p. 443). Bellibaş et al. (2021) argued that principals' instructional leadership practices "may foster collaboration among teachers and improve their perceptions of job satisfaction, likely contributing to improved instructional quality" (p. 402). Gümüş and Bellibaş (2016) found in their study that "the more principals take part in contemporary professional development activities such as professional networking, mentoring, and research activities, the more often they en-

gage in instructional leadership practices" (p. 287). In addition, the present study also found that "among all controlling variables, gender and school SES level were significant predictors of principals' perceived instructional leadership, suggesting that female principals and those working at high SES schools are more likely to engage in instructional leadership practices" (p. 297). Interesting research results were revealed in the study by Pietsch et al. (2023). The authors used OECD PISA data from 2009, 2012 and 2015 to analyse the relationship between instructional leadership and student performance. In particular, an additional component – the context – was included in this interface. The authors conclude that instructional leadership and student achievement "are not positively correlated per se, and their relationship varies greatly depending on the context of whether a school leader's focus on teaching and instruction resonates with students" (p. 23).

Based on previous survey results and findings from the literature, TALIS 2018 placed a stronger focus on the principals' instructional leadership (TALIS 2018 Conceptual Framework, 2018). As can be seen, from the very beginning, instructional leadership has had a great impact on OECD TALIS surveys. The emphasis on instructional leadership is also evident in early childhood education and care (OECD, 2019). Overall, the interest of school principals' instructional leadership remains high in the 2024 surveys.

3. MATERIALS AND METHODS

The following research questions were formulated to answer the main question of this study:

- RQ1: *To what extent do societal cultural dimensions predict school principals' instructional leadership?*
 RQ2: *How is public investment in education related to school principals' instructional leadership?*
 RQ3: *Are there any differences in the relationship between societal cultural dimensions and school principals' instructional leadership based on the investment in education?*

3.1. Data and Sample

The secondary data analysis was carried out using various sources. Hofstede's 6-D model was chosen to analyse the social cultural background of the countries, i.e., Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-term Orientation, and Indulgence (Hofstede, 2001). The quantitative measurement of national cultures was taken from Hofstede's country comparison tool (<https://www.hofstede-insights.com/country-comparison/>). The six societal cultural dimensions are on a scale from

0 to 100.

Data from the OECD TALIS 2018 was used for the analyses presented in this article. The principals' instructional leadership (T3PLEADS), from the questionnaire for school principals, was chosen as the dependent variable. T3PLEADS stands for a school principal's indirect instructional leadership activities (actions to support collaboration between teachers in developing new teaching practices; actions to ensure that teachers take responsibility for improving their teaching practices; and actions to ensure that teachers feel accountable for their students' learning outcomes).

Government expenditure on education (current and capital expenditure) as a percentage of Gross Domestic Product (GDP) in the 2018 financial year was selected (COFOG). The 2018 investment year was chosen as the data basis for the study, as the analysis is based on the OECD's TALIS data for 2018. The data was taken from the World Bank database.

Based on the availability of data (with the exception of those countries for which no data was available) from various sources, a total of 23 European countries were finally included in the final analysis.

3.2. Analyses

Cluster country datasets (3 clusters) were used in this study. The clusters (see Table 1) were delineated on the basis of the investments of the individual countries for 2018, using the benchmark (4.0–6.0 %) defined in the Education 2030 Framework for Action (2015).

Descriptive (i.e., mean, standard deviation, skewness, kurtosis, and effect size) (see Table 2) and inferential (i.e., multiple linear regression and one-way ANOVA) statistics were used for the cluster analysis. In addition, the normality of the variables was confirmed by the skewness and kurtosis of the distribution. Parametric statistics were calculated for variables with skewness <-1 or >1 and kurtosis <-3 or >3 . The analysis of the research data confirmed that all variables corresponded to a normal distribution. Prior to conducting multiple regression analysis, the correlation matrix and variance inflation factor (VIF) were used to assess multicollinearity. Multicollinearity was indicated by high correlation values (greater than $+0.8$) and $VIF > 4$. In addition, the Durbin-Watson test was used to analyse the autocorrelation in the residuals of a linear regression model. The test statistic is between 0 and 4. A value close to 2 means that there is no autocorrelation (Hair et al., 2019). The beta loadings in the regression analysis provide information about on the effect size of the predictor variables. The size provides the following guidelines for the evaluation of the effect: 0–0.1 weak effect, 0.1–0.3

TABLE 1. Descriptive Statistics

Variables*	N	Min	Max	Mean	SD	Kurtosis	skewness
ILEAD	23	10.13	11.30	10.95	0,27	3,740	-1,864
PDI	23	11	100	51.70	21,739	0,291	0,291
IDV	23	27	89	59.13	18,604	-0,726	-0,557
MAS	23	5	100	41.09	26,325	-0,276	0,625
UAI	23	23	99	69.26	21,623	-0,407	-0,646
LTO	23	28	82	58.00	15,615	-0,695	-0,124
IND	23	13	78	42.96	20,583	-1,373	0,082

*ILEAD – Instructional Leadership; PDI – Power Distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty Avoidance; LTO – Long-term Orientation; IND – Indulgence; COFOG – Government expenditure on education as a percentage of gross domestic product.

TABLE 2. Cluster of countries

Cluster	Value	Countries
1	< 4.0%	Croatia, Lithuania, Romania
2	4.0–6.0%	Austria, Bulgaria, Czech Republic, Estonia, France, Hungary, Italy, Latvia, Netherlands, Malta, Portugal, Slovak Republic, Slovenia, Spain, United Kingdom
3	> 6.0%	Belgium, Denmark, Finland, Norway, Sweden

modest effect, 0.3–0.5 moderate effect, and > 0.5 high effect (Cohen et al., 2018). For the ANOVA analysis, the Brown-Forsythe (B-F) test was conducted to check the equality of variances (homogeneity of variances) between the variables. The partial Eta-squared (η^2) was determined in the ANOVA analysis. The calculated η^2 values of 0.01, 0.06, and 0.17 indicated minor, moderate, and significant effects, respectively (Lakens, 2013).

For all analyses, the statistical significance level was set at a p-value of 0.05, and the statistical analysis was performed using IBM Statistical Package for the Social Sciences (IBM SPSS), version 23.0.

4. RESULTS

Before testing the hypothesis, the descriptive statistics of the variables (min-max, mean, and standard deviation) and the correlations were analysed. Table 3 shows the statistical values of the mean and standard deviation for the variables of the three clusters (cluster profiles). Cluster 1 (countries with the lowest (less than 4%) investment in education) represents high Power Distance ($68.33 \pm 24,338$), Collectivistic ($41.00 \pm 16,523$), Restraint ($23.00 \pm 8,888$), and Feminine ($33.67 \pm 12,741$) societies with the highest value for

Uncertainty Avoidance ($78.33 \pm 12,583$). Meanwhile, Cluster 2 with high scores in Power Distance ($53.73 \pm 20,356$), Individualism ($59.00 \pm 19,559$), Uncertainty Avoidance ($73.53 \pm 18,126$), and low values in Indulgence ($40.13 \pm 19,548$) consists of countries whose investment in education corresponds to the benchmark (4.0–6.0%) recommended by the Education 2030 Framework for Action (2015).

The last Cluster (Cluster 3) is characterised by low Power Distance ($35.60 \pm 17,487$), Individualistic ($70.40 \pm 4,775$), Feminine ($21.80 \pm 19,753$) societies with medium values for Uncertainty Avoidance ($51.00 \pm 28,205$), and Long-term Orientation ($48.60 \pm 20,107$). This Cluster has a high score on Indulgence dimension ($63.40 \pm 10,114$).

The statistical values of the mean and standard deviation for the variable “instructional leadership” are also as follows: ILEADCluster1 = 11.07 ± 0.16 ; ILEADCluster2 = 11.00 ± 0.16 ; ILEADCluster3 = 10.73 ± 0.44 .

As shown in Table 4, the correlations between dependent and independent variables vary. The analysis revealed a significant correlation between instructional leadership and the societal cultural values of several countries. More specifically, it was found that there is a significant positive correlation between the principals’ instructional leadership and Long-term

TABLE 3. Descriptive Statistics

Variables*	Cluster 1 (< 4.0%)		Cluster 2 (4.0–6.0 %)		Cluster 3 (> 6.0 %)	
	Mean	Std dev.	Mean	Std dev.	Mean	Std dev.
ILEAD	11.07	0.16	11.00	0.16	10.73	0.44
PDI	68.33	24.338	53.73	20.356	35.60	17.487
IDV	41.00	16.523	59.00	19.559	70.40	4.775
MAS	33.67	12.741	49.00	27.250	21.80	19.753
UAI	78.33	12.583	73.53	18.126	51.00	28.205
LTO	64.00	15.875	59.93	13.724	48.60	20.107
IND	23.00	8.888	40.13	19.548	63.40	10.114

*ILEAD – Instructional Leadership; PDI – Power Distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty Avoidance; LTO – Long-term Orientation; IND – Indulgence; COFOG – Government expenditure on education as a percentage of gross domestic product.

TABLE 4. Correlations between the variables

Variables	ILEAD	PDI	IDV	MAS	UAI	LTO	IND
ILEAD	1						
PDI	0.209	1					
IDV	0.134	-0.570**	1				
MAS	0.385	0.307	0.072	1			
UAI	0.360	0.563**	-0.543**	0.238	1		
LTO	0.467*	0.238	0.150	0.271	0.074	1	
IND	-0.484*	-0.494*	0.431*	-0.140	-0.402	-0.452*	1
COFOG	-0.488*	-0.595**	0.484*	-0.411	-0.525*	-0.354	0.740**
Cofog < 4%	0.168	0.303	-0.386*	-0.112	0.166	0.152	-0.384*
Cofog 4–6%	0.269	0.131	-0.010	0.421*	0.277	0.173	-0.192
Cofog > 6%	-0.447**	-0.399*	0.326	-0.395*	-0.455**	-0.324	0.535**

*ILEAD – Instructional Leadership; PDI – Power Distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty Avoidance; LTO – Long-term Orientation; IND – Indulgence; COFOG – Government expenditure on education as a percentage of gross domestic product

NOTES: *Correlation is significant at the 0.05 level (2-tailed).

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

Orientation ($r = 0.467, p < 0.05$), while Indulgence has a negative correlation with the principals' instructional leadership ($r = -0.484, p < 0.05$).

The data analysis also revealed a strong, significant negative relationship between instructional leadership and the country's investment in education, as measured by COFOG ($r = -0.488, p < 0.05$). More specifically, results show that this relationship exists in those countries with the highest investment in education ($> 6\%$). Furthermore, in this cluster, there is a

strong and significant negative relationship between investment and societal cultural dimensions such as Power Distance ($r = -0.399, p < 0.05$), Masculinity ($r = -0.395, p < 0.05$), and Uncertainty Avoidance ($r = -0.455, p < 0.01$), but a positive relationship with Indulgence ($r = 0.535, p < 0.01$). In countries with the lowest investments, the relationship with Indulgence is statistically significant but negative ($r = -0.384, p < 0.05$). Overall, these results provide evidence for RQ1, RQ2, and the preliminary answer to RQ3.

TABLE 5. Multicollinearity Test Results

Variables*	Model 1		Model 2		Model 3	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
(Constant)						
PDI	0.457	2.190	0.452	2.210	0.456	2.193
IDV	0.400	2.503	0.419	2.385	0.411	2.435
MAS	0.751	1.331	0.672	1.488	0.680	1.470
UAI	0.571	1.751	0.549	1.820	0.553	1.808
LTO	0.590	1.696	0.597	1.674	0.587	1.703
IND	0.509	1.964	0.518	1.930	0.476	2.100

* PDI – Power Distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty Avoidance; LTO – Long-term Orientation; IND – Indulgence; COFOG – Government expenditure on education as a percentage of gross domestic product.

A multiple linear regression analysis was carried out to answer RQ1. As can be seen from Table 5, all variables have a tolerance of more than 0.2 and a VIF of less than 5. Multicollinearity is therefore not to be feared in the regression analysis.

As can be seen from Table 6, all three models of the multiple regression analysis show that the societal cultural values of a country are predictors of the instructional leadership of school principals. Model 1 shows that in countries where investment in education is below 4%, societal cultural dimensions explain 58.5% of the variance ($R^2 = 0.585$; $F = 3.025$, $p = 0.034$; $d = 1.893$). Individualism was found to be a predictor of a principal’s instructional leadership ($\beta = 0.574$, $p < 0.05$), and the effect size is strong.

In Model 2, we investigated whether the societal cultural dimensions in countries with a COFOG of 4.0–6.0% have the same predictive power for the leadership qualities of a school principal. The multiple regression analysis shows a significant relationship between the societal cultural dimensions and instructional leadership, with the six predictors explaining 56.4% of the variance ($R^2 = 0.564$; $F = 2.774$, $p = 0.046$; $d = 1.833$). The results indicate that only Indulgence is a significant predictor with a moderate impact on instructional leadership of school principals ($\beta = -0.499$, $p < 0.05$). It should be noted that Indulgence has a significant, but negative relationship with instructional leadership.

The final model (Model 3) was created to examine which societal cultural dimensions predict instructional leadership the school principals in countries with the highest investment (more than 6%) in education. The multiple regression analysis revealed

that societal culture domains of the country were predictors and explained 57.5% of the variance ($R^2 = 0.575$; $F = 2.908$, $p = 0.039$; $d = 1.901$). The results indicate that Individualism ($\beta = 0.549$, $p < 0.05$) is a significant predictor of instructional leadership. Furthermore, this predictor has a strong positive effect on the instructional leadership of school principals.

In order to test whether societal cultural dimensions differed statistically significantly between the three clusters, one-way ANOVAs with a subsequent Tukey post-hoc test were used. The analysis carried out showed that there was only a significant difference in the Indulgence dimension ($F = 5.753$, $p < 0.01$, $\eta_p^2 = 0.365$), between country’s investment in education, and the effect sizes are large ($\eta_p^2 > 0.17$). The Tukey post-hoc analysis revealed a significantly higher level of Indulgence in countries with the highest investment in education ($IND_{Cluster3} = 63.40 \pm 10.11$ compared to vs. $IND_{Cluster1} = 23.00 \pm 8.88$ and $IND_{Cluster2} = 40.13 \pm 19.55$, $p < 0.01$). No difference was found between the clusters in the following societal cultural domains: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, and Long-term Orientation ($p > 0.05$).

Overall, the societal cultural dimensions of countries, measured using Hofstede’s 6-D model, were found to predict principals’ instructional leadership, as shown by the results of TALIS 2018. In particular, Individualism emerged as an important predictor within the country clusters that had both the lowest and highest percentage of investment in education. In the countries that have invested in education, the Indulgence dimension has reached a benchmark of 4.0–6.0%. In these countries, Indulgence is a signifi-

TABLE 6. Results of the Regression Analysis

Variables ^a	Model 1			Model 2			Model 3		
	Unstandardized Coefficients		Standardized Coefficients	Unstandardized Coefficients	Standardized Coefficients		Unstandardized Coefficients	Standardized Coefficients	
	B	SE	β	B	SE	β	B	SE	β
(Constant)	10.210	0.406		10.288	0.408		10.311	0.404	
PDI	-0.001	0.003	-0.072	-0.001	0.003	-0.058	0.000	0.003	-0.038
IDV	0.008*	0.004	0.574*	0.008	0.004	0.524	0.008*	0.004	0.549*
MAS	0.002	0.002	0.192	0.002	0.002	0.174	0.001	0.002	0.119
UAI	0.006	0.003	0.448	0.005	0.003	0.435	0.005	0.003	0.398
LTO	0.001	0.004	0.079	0.002	0.004	0.102	0.001	0.004	0.082
IND	-0.006	0.003	-0.460	-0.006*	0.003	-0.499*	-0.006	0.003	-0.447
F-Statistics	3.025**			2.774**			2.908**		
R ² Adjusted	0.585			0.564			0.575		

^aPDI – Power Distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty Avoidance; LTO – Long-term Orientation; IND – Indulgence; COFOG – Government expenditure on education as a percentage of gross domestic product.

NOTE:

*p<0.1;
**p<0.05;
***p<0.01.

cant negative predictor of school principals’ instructional leadership with a moderate effect size.

5. DISCUSSION AND CONCLUSIONS

Several important findings emerged from this study: I) societal cultural values of a country predict the instructional leadership of school principals and II) there is no linear relationship between public investment in education and higher principals’ instructional leadership scores in the OECD TALIS 2018 survey. We obtained these results by analysing data from 23 European countries that participated in the OECD TALIS 2018 survey. Our study is characterized by a unique approach; first, the countries mentioned were categorised into three clusters according to the country’s investment in education based on its gross domestic product. This clustering is underpinned by the argument of Eryilmaz and Sandoval Hernandez (2021) that the “Principal Instructional Leadership Scale” from the OECD’s TALIS 2018 survey cannot be compared between countries, but rather between groups.

The authors argue that the categorisation of countries into more homogeneous groups causes scale invariance. Furthermore, given the contextual nature of the phenomenon of leadership (Konrad, 2000; Hallinger, 2011), it is important to consider the context of the country when conducting international research (Woessmann, 2016; Minelgaite et al., 2018). Therefore, in this study, we included Hofstede’s framework of societal culture and looked for correlations with the instructional leadership of school principals in the OECD TALIS 2018 survey.

Based on the research data from the OECD TALIS 2018, an educational policy vision was formulated to improve the school principals’ instructional leadership and to achieve this goal: “Make the most of school leaders’ time to foster instructional leadership” (OECD, 2019, p. 37). However, this vision requires critical evaluation. First of all, it once again confirms the researchers’ notion that the meaning of this index is not easy to observe and interpret. Our research has shown that the most economically developed countries invest the most in education, but their leaders’ instructional leadership scale scores are the lowest.

This observation applies to Belgium, Denmark, Finland, Norway, and Sweden. In light of these findings, we suggest analysing other OECD TALIS statements that can be attributed to this direct instructional leadership, but are not been included in the index. For example, classroom instruction observation. According to the study, classroom instruction observation is almost unknown in countries such as Finland and Norway. The results show that the percentage of principals who have engaged in the following activities in their school “often” or “very often” in the 12 months prior to the survey is as follows: Finland 9.5%; Norway 7.2% (OECD TALIS 2018 Volume II). In Bulgaria and Romania, this percentage is 77.1% and 78.8%, respectively. It should be noted that the percentage of GDP spent on education in Romania in 2018 was the lowest (3.3%) of all the countries surveyed, according to Eurostat (2024).

The scale of principal’s instructional leadership has different characteristics in different countries (Eryilmaz & Sandoval Hernandez, 2021). As the instructional leadership model itself is changing (Townsend, 2019), it is likely that in some countries the classical version is associated with the power, inspection, and directness of the school principal. In other countries, however, it is more about the principal’s ability to create the organisational conditions, provide and allocate resources to teachers, guide and support teachers, and enable teachers to take individual and collective responsibility for improving teaching. Research shows that in the case of Romania we are still talking about the classical conception of instructional leadership. According to OECD (2024), school principals in Romania „play a limited role in leading instructional improvement”, and most of them “currently play a predominantly administrative role” (p. 10). In contrast, the Norwegian approach is more contemporary. These findings are supported by scientific research; for example, Aas and Brandmo (2016) claim that “Norwegian school leaders’ leadership preferences are rather complex and cross the traditional models of instructional leadership and transformational leadership” (p. 103). Furthermore, it is acknowledged that Norway has come a long way, over more than a decade, from an individual perspective based on a transformational/instructional perspective to a collaborative and team-orientated or distributed leadership perspective (Abrahamsen & Aas, 2016). Gunnulfson’s study (2023) also shows that successful school leadership in Norway is seen as a democratic, emotional, and interactive process.

A similar situation can be observed with school principals in Finland, where it is acknowledged that Finnish principals have a high level of autonomy (OECD, 2019). For example, Finnish principals are “re-

sponsible for the school’s use of human and financial resources, pedagogical leadership, and leading teachers’ professional development” (Jantunen et al., 2024, p. 220). It is noteworthy that the latter scholars use pedagogical leadership to refer to “all the actions taken to enhance the implementation of the curriculum” and has a broader meaning than what is meant by “instructional leadership”, which is a comparable concept in mainstream Anglo-American research. (Korva & Laine, 2024). Consequently, the same OECD achievement, namely improving /strengthening the instructional leadership of school leaders, is perceived differently in different socio-cultural contexts.

The fact that the socio-cultural context of the country is important in the interpretation of international research results has already been demonstrated in several studies (e.g., Hu et al., 2018; Fackler Sammons & Malmberg, 2020; Vizmonte & Ligot, 2024). The results of our study highlight the importance of the socio-cultural context of a country as a factor in analysing the results of international research and in informing education policy decisions at the national level. In particular, our study shows that different societal cultural values predict school principals’ instructional leadership, depending on investment in education. Let us analyse the two research clusters: cluster 1 (<4%) and cluster 3 (>6%), in more detail. It seems that these groups differ only by the amount of investment in education and the countries in them are united by the economic development of the country. However, these clusters also differ on a socio-cultural level. Cluster 1, representing countries such as Croatia, Lithuania, and Romania, is characterised as collectivist and restrained societies based on Hofstede’s framework. Of course, we have to acknowledge that Lithuania is already interpreted as an individualistic society, in Hofstede’s framework. However, the limit has only been crossed very slightly (IND 55 points). Conversely, the countries in Cluster 3 with the highest education funding are predominantly individualistic and indulgent societies that strongly emphasise values such as democracy and equality (Aas & Brandmo, 2016). Within the context of Hofstede’s framework, these countries are categorised as individualistic and indulgent societies. In particular, the most invested countries differ fundamentally from the other two clusters (1, 2) on the indulgence dimension. These are optimistic societies, and attention is focused on personal happiness and rest (Hofstede et al., 2010). In these societies, dialogue in decision-making, feedback, mentoring programmes, and work-life balance are highly valued at an organisational level. It is therefore only natural that the work of the school principal is perceived differently in these different societies: the demands placed on them, the

responsibilities they assumes, the focus on teachers' well-being, and so on. It therefore leads to unfounded fears. Research by Hanushek et al.'s (2013) has also shown that in the case of the OECD PISA study, autonomy over academic content, staffing, and budget has a positive impact on student achievements in developed countries, but a negative impact in countries that are still developing.

The results of this study reconfirm the importance of understanding the complexity of international research and the interpretation of its findings. Similar results were obtained in our previous study (Nedzinskaite-Maciuniene & Jurgile, 2023), in which we carried out an analysis at the European regional level. In an earlier study, we found that there was a negative correlation between instructional leadership and investment in the case of the Nordic countries. This time, a different grouping based on investment in education obtained a similar result. Thus, countries may differ in a variety of hard-to-observe ways, such as cultural characteristics, evaluation of performance, and other preferences related to both institutional choices and performance levels. Such unobserved country heterogeneity leads to omitted variable bias in cross-country analyses (Woessmann, 2016).

Finally, we would like to point out some limita-

tions that we encountered in this study. Firstly, the challenge was to select an appropriate financial year. The logic of the study was to take data from 2018, but it was difficult to assess when investments in education pay off, so the selection of financial indicators was not based on a detailed analysis. Similar challenges arose with regard to countries' societal cultural values based on the Hofstede framework. Although Hofstede's data was used during the research, it is important to note that the data in Hofstede's comparison tool was also constantly updated. Despite these limitations, we believe that this study contributes to the scientific evidence of the importance of considering the socio-cultural backgrounds of countries in large international studies. Furthermore, the results of this study have some implications for further research. We would suggest that a meta-analytic big data study design could be used to analyse the OECD TALIS data in relation to changes in investment levels. The new OECD TALIS results will be released at the end of 2024. Thus, the results of 4 research cycles could be analysed. In addition, we can use Eurostat data (2024) to identify changes in countries' investment in education. Today we know that only Romania has not reached the benchmark (4.0–6.0%) set in the Education 2030 Framework for Action (2015).

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ULAGANJE U OBRAZOVANJE, SOCIO-KULTURNI KONTEKST I LIDERSKE
KVALITETE RAVNATELJA ŠKOLA

SAŽETAK

Ovaj rad istražuje kako su javna ulaganja u obrazovanje i socio-kulturni kontekst zemlje povezani s instruktivnim vođenjem ravnatelja škola. U istraživanju smo proveli analizu koristeći skup podataka na razini klastera (3 klastera), temeljem procjene ulaganja u obrazovanje. Podaci su dobiveni iz odgovora na upitnik za ravnatelje škola u okviru OECD TALIS 2018 istraživanja. Za operacionalizaciju socio-kulturnog konteksta koristili smo Hofstedeove društvene kulturne vrijednosti. Analiza je pokazala da društvene kulturne vrijednosti zemalja predviđaju instruktivno vođenje ravnatelja škola, što je vidljivo u rezultatima OECD TALIS 2018 istraživanja. Rezultati su također pokazali značajnu, ali negativnu povezanost između instruktivnog vođenja ravnatelja škola i ulaganja u obrazovanje u zemljama s najvećim ulaganjima u obrazovanje. Studija nije potvrdila linearnu povezanost između ulaganja u obrazovanje i ishoda. U našem slučaju, veća ulaganja ne znače nužno da ravnatelj postigne bolje rezultate u instruktivnom vođenju nego što je prikazano u OECD TALIS istraživanju. Analizom podataka, ova studija nastoji pružiti detaljan pregled načina na koji javna ulaganja u obrazovanje i društveno-kulturni kontekst svake zemlje mogu potaknuti ili ograničiti instruktivno vođenje, obogaćujući time raspravu o promicanju izvrsnosti i jednakosti u obrazovanju na globalnoj razini.

KLJUČNE RIJEČI: *ulaganje, društvena kultura, ravnatelj škole, liderstvo, TALIS, Hofstedeov model.*