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LEADERSHIP AND ITS ROLE IN INTELLECTUAL MIGRATION AND CREATIVITY DEVELOPMENT

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Abstract. The study aims to investigate the role of leadership in creativity development, including opportunities arising from the attractiveness of countries for intellectual migrants. Using the authors' approach for assessing leadership development in the European Union, it is found that the leading positions belong to Finland with an integral index value of 0.85, Denmark (0.83), and the Netherlands (0.76). To test hypotheses about the significant influence of leadership on the attractiveness of countries for intellectual migrants and creativity development, correlation analysis was used. Creativity development was analysed based on the most frequently used indicators of creative economics dynamics. Besides, it was considered that the most obvious result of creative thinking is the innovation development of the countries. The resulting pairwise correlation coefficients for the European Union show a strong relationship between the level of leadership and a country's ability to attract (0.73) and retain talent (0.80). A positive impact of leadership on creativity development is confirmed by the links with the overall value of the Global Innovation Index (0.79), the growth of innovative companies (0.81), creative outputs (0.58), and cultural employment (0.68). The obtained results prove the need for the development of leadership competencies as an important driver of creativity, talent attraction and generation of innovative solutions.

Keywords: creativity, creativity development, European Union, innovation, intellectual migration, leadership, talents.

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1. Introduction

The development of creativity, talents and skills of innovative thinking is today an important source of competitive advantages at all levels – from the organization to regions and countries, which is proven in many works (Carayannis, 2020; Mellander & Florida, 2014; Oliinyk et al., 2021; Samoliuk et al., 2021). Therefore, the development of creativity of employees to transform ideas into new products and services, stay ahead of competitors and ensure sustainable development requires a constant search for factors that strengthen innovative trends. Leadership is considered to be one such intangible influence factor. In the conditions

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of instability of the business environment, high competition on international and national markets, changes in labour markets under the influence of migration, digital transformations and other factors, the achievement of the goals of organizations and countries depends on the effectiveness of leaders of various levels of influence. The mechanism of influence of leadership on creative development is manifested to the greatest extent through the ability of leaders to attract, manage and retain talented employees. In particular, according to the results of a study by Russell Reynolds Associates (2023), issues of shortage of key talent and skills, along with economic uncertainty in the current business environment, are the most common threats to the effective operation of the organization during the next 12–18 months. The availability of key talents and knowledge leads the rating of the top 10 external threats for organizations in France (69%), Germany (70%), and the Netherlands (68%). By industry differentiation, the most critical problem of attracting and retaining talent is for healthcare (73%), manufacturing (63%), and technology (74%) (Russell Reynolds Associates, 2023). At the same time, the question of researching the skills and competencies that talented employees should possess is becoming particularly relevant. Analytical and creative thinking remained the most important skills for employees in 2023 (World Economic Forum, 2020), and 73.2% of surveyed organizations ranked creative thinking as the top skill expected to be most important during 2023–2027 (Statista, 2023).

In this regard, it is important to comprehensively assess the level of leadership in the country, its impact on the attraction and retention of highly qualified employees to stimulate creativity and innovation. Concomitantly, current comprehensive assessments of leadership are not widespread enough even at the level of organizations, and are practically absent at the level of countries. In macroeconomic analysis, such studies are particularly important, as they illustrate the quality of the environment for the development of creativity, innovative ideas and solutions that determine the economic and social success of countries. Given this, the study aims to investigate the role of leadership in creativity development, including opportunities arising from the attractiveness of countries for intellectual migrants.

2. Literature review

In the modern scientific environment, the paradigm of leadership is becoming increasingly relevant: a leader who develops, engages and inspires followers, with the explicit understanding how to influence others to activate openness to the new, *i.e.* to creative ideas in order to develop and implement innovations. The results of scientific research (Alblooshi et al., 2021; Łucjan et al., 2023; Benchea & Ilie, 2023) prove that different leadership styles directly or indirectly have a positive effect on organizational innovation, influencing the climate in the team, the behaviour of employees and managers, other organizational variables such as learning and knowledge sharing. Scientists justify (Sani Supriyanto et al., 2023; Prokop et al., 2021) that for a modern organization, organizational innovation is an integral component of effective activity and ensuring sustainable competitiveness, which is the ability to generate and adopt new ideas or models of behaviour, because they increase productivity and business efficiency. Organizational innovation is not possible without knowledge sharing, *i.e.* a mechanism that promotes individual creative thinking and increases employee creativity (Jia-Jia et al., 2022;

Zhang et al., 2023). Therefore, leaders promote the practice of knowledge sharing, generating new useful ideas and inspiring followers to be innovative and creative.

Concomitantly, the relationship between not only leadership and innovation, but also the creative and innovative activity of the leader's followers has been proven. Some authors (Lee et al., 2020) studied 13 leadership variables (transformational, transactional, ethical, humble, exchange leader, benevolent, authoritarian, entrepreneurial, authentic, serving, empowering, supportive, and destructive), and conclusively proved that transactional and supportive leadership is the most relevant to ensure innovative performance. Results (Alrowwad et al., 2020) demonstrate that leadership is positively related to organizational performance. At the same time, it is innovations that play a mediating role between leadership and organizational effectiveness. Leaders play a critical role in the success or failure of their organizations. Leaders can be effective in implementing change, developing their organization's capabilities, and improving its performance, or conversely, they can be ineffective (al Amiri et al., 2020).

Scientific research proves the importance of leadership for the development of creativity and innovation offered by employees (Ali et al., 2020; Puccio et al., 2020; Mumford et al., 2023; Khaddam et al., 2023). The greatest influence on the creativity of employees turns out to be exerted by leaders with in-depth professional training, because they are perceived as significantly more effective compared to others.

The results (Shafi et al., 2020) also confirm the positive and significant moderating effect of leadership for creativity and innovation. Based on collected data from 164 supervisor-employee dyads, the authors prove that leadership management style can stimulate employee creativity through the interactive effect of intrinsic motivation, inspiring employees to think outside the box, which leads to the development and implementation of innovations within the organization.

The use of the sociological survey method of leader–follower dyads is quite common in the study of the influence of leadership on the creativity of employees. Thus, the authors (Ribeiro et al., 2020) used this method based on 177 leader–follower dyads from 26 private, small- and medium-sized enterprises. Followers reported their level of emotional commitment and perceptions of leadership, and leaders rated each follower's level of creativity. The results show that leadership has a positive effect on employees' emotional commitment and creativity. Moreover, affective commitment fully mediates the relationship between perceived authentic leadership and individual creativity. Thus, organizations can increase the emotional commitment and creativity of employees by encouraging managers to implement a leadership style of management.

Therefore, leadership is an important predictor of both individual (Baidybekova et al., 2023; Widyanti et al., 2021) and organizational creativity (Rózsa et al., 2023; Capolupo et al., 2022). At the individual level, the results of multilevel modelling prove the presence of a positive relationship between leadership and employee creativity. In addition, leadership influences employee creativity through knowledge sharing and psychological empowerment. At the organizational level, leadership is directly related to organizational innovation (Shafique et al., 2020).

Having an important effect on the development of organizations, and provided that innovative processes are supported by the government, leadership allows obtaining a synergistic

effect and fully implement national development strategies at the national level. The analysis of the research findings proves that leadership is an important tool in promoting creativity and innovation at different hierarchical levels. At the same time, the value of leadership behaviour is heterogeneous in different countries of the world (Crede et al., 2019), which affects the level of attractiveness of the country for talented workers and highly qualified migrants. Therefore, an important task is to determine the level of leadership in the country and assess its impact on attracting and retaining talent. After all, leadership that creates a positive environment for personal and professional growth, encourages talent, has a significant impact on the attraction and retention of highly qualified employees.

Despite the importance of leadership in the processes of ensuring economic development and its well-studied impact at the micro-level, much less attention is paid to such studies in macroeconomic analysis, and the methods of integral assessment of leadership at the national level are practically absent. Taking this into account, our study developed a method of integral assessment of leadership, which is suitable for assessing its impact on creative development at the level of a national economy.

Given the existing work on the analysis of leadership as a driver of the development of creative thinking and innovation (Ali et al., 2020; Khaddam et al., 2023; Lee et al., 2020; Mumford et al., 2023; Prokop et al., 2021; Puccio et al., 2020; Rózsa et al., 2023; Shafi et al., 2020; Sani Supriyanto et al., 2023), we proceed in our work from the assumption that leadership at the macroeconomic level should be manifested with a synergistic effect. In the meantime, creative development is characterized not only by the development of industries that are traditionally classified as sectors of the creative economy – advertising, architecture, arts and crafts, design, fashion, film, video, photography, music, performing arts, publishing, electronic publishing, research and development, software, computer games, and television, and radio (Tokbaeva, 2023; Kacerauskas, 2020). The generalised result of the development of creativity is innovation, and the source of creative innovative ideas is talent. Under current circumstances, efforts to create comfortable conditions for intellectual migrants cannot be ignored, including efforts to attract and retain them. We also agree that there is a saturation point to immigration, so that increasing immigration past this point no longer increases creativity (Kačerauskas, 2018). As modern economic trends reveal, such a saturation point is not yet characteristic of the European Union (EU) countries exemplifying the study.

Based on this, we test the following hypotheses in our study:

H1: the level of leadership in the country has a significant impact on the attraction of intellectual migrants;

H2: the level of leadership largely determines the innovative development of countries;

H3: the level of leadership is an important factor in the development of the creative economy.

3. Methodology

The basis of hypothesis testing is the author's method of integral assessment of the level of leadership. Its justification takes into account the findings of many researchers, which specify the essence, components and competencies of modern leadership (Sani Supriyanto et al.,

2023; Hahang et al., 2022; Garner et al., 2021; Sriadmitum et al., 2023; Juhana et al., 2020; Ince, 2023; Akdere & Egan, 2020; Dachner et al., 2021; Saputra, 2021; Fonsén & Soukainen, 2020; Odgers Berndtson & Forrester, 2022; Kuráth et al., 2023; Khalid et al., 2021). Transforming the components of leadership to the macroeconomic level, we collected data on partial indicators characterizing the development of leadership at the national level. To reach this goal, the most suitable data source is the Global Talent Competitiveness Index (GTCI) (Lanvin & Monteiro, 2023). Its partial indicators corresponding to modern trends of leadership analysis are shown in Table 1.

Table 1. Components of leadership and indicators for assessing the level of leadership in a country (source: created by authors on the basis of *The Global Talent Competitiveness Index 2023: What a Difference Ten Years Make*, *What to Expect for the Next Decade* (Lanvin & Monteiro, 2023)

Component of leadership	Indicator	Characteristics	Unit of measurement	Relative figure
▪ Encourage collaboration; ▪ Participating in decision-making; ▪ Informing employees about regulations; ▪ Interacting with the team members; ▪ Partnership between the employer and employee.	Labor–employer cooperation	Average response to the question: In your country, how would you characterize the labour relations with the employer? [1 = generally confrontational; 7 = generally cooperative]	score	X_1
▪ The ability to motivate; ▪ Communication ability; ▪ Implement the right leadership style; ▪ Make the right decision; ▪ Performance and organizational effectiveness.	Professional management	Average response to the question: In your country, who holds the highest management positions in companies? [1 = usually relatives or friends, regardless of merit; 7 = mostly professional managers chosen on merit and qualifications]	score	X_2
▪ Embrace diversity and inclusion; ▪ A diverse and inclusive organizational culture; ▪ Ethnic diversity.	Tolerance of minorities	Discrimination and violence against minorities. Its dimensions include post-conflict response, equality, conflict and intercommunal violence; measured on a 10-point scale from 0 (low pressure) to 10 (very high pressure)	score	X_3
▪ Embrace diversity and inclusion; ▪ A diverse and inclusive organizational culture; ▪ Gender diversity.	Leadership opportunities for women	Average response to the question: To what extent do companies in your country offer women the same opportunities as men to hold managerial positions? [1 = not at all; 7 = to a great extent]	score	X_4

End of Table 1

Component of leadership	Indicator	Characteristics	Unit of measurement	Relative figure
▪ Promote continuous learning; ▪ Encouraging employee learning; ▪ Organizational human resource development culture; ▪ Employee-driven development; ▪ Knowledge management.	Employee development	Average response to the question: To what extent do companies in your country invest in training and employee development? [1 = not at all; 7 = to a great extent]	score	X_5
▪ Delegation of authority; ▪ Clear division of tasks; ▪ Implementation of the decentralization; ▪ Structure of the organization.	Delegation of authority	Average response to the question: To what extent does senior management delegate authority to subordinates in your country? [1 = not at all; 7 = to a great extent]	score	X_6
▪ Becoming a role model; ▪ Professional knowledge; ▪ Leadership of self; ▪ High professional status; ▪ Organization's professionalism.	Professionals	The share of professionals from the total workforce. This includes specialists in physical, mathematical, and engineering sciences; professionals in the field of life science and health care; pedagogical specialists, and other professionals (business, lawyers, archivists, librarians, social scientists, religious professionals, as well as writers or artists)	score	X_7

Taking into account the totality of the indicators above, it is proposed to determine the level of leadership on the basis of an aggregate index. The formula for calculating the integral index (I_l):

$$I_i = \frac{I_1 + ... + I_n}{n}, \tag{1}$$

where I_i is the level of leadership in the country; I_1, ..., I_n are partial indicators of leadership in the country; n is the number of partial indicators.

To calculate partial indicators ($I_1 - I_n$), the most relevant approach is to use the maximum value of a specific assessment component as a standard, since all indicators are stimulants, *i.e.* have a positive impact on the level of leadership in a country:

$$I_i = \frac{Q_{fi} - Q_{\text{mini}}}{Q_{\text{maxi}} - Q_{\text{mini}}}, \tag{2}$$

where Q_{fi} is actual values of individual component partial indices; Q_{mini} is minimum values of individual component partial indices; Q_{maxi} is maximum values of individual component partial indices.

The approbation of this approach was carried out in this study on the example of EU countries. This group of countries has been selected as they share numerous common features that determine their interaction. Thus, the EU countries strive for significant economic integration, including the free movement of goods, services, capital and labour between them. This is determined by the common internal market and the customs union. Besides, EU countries share common values such as democracy, human rights, the rule of law and social protection, which, among other things, make them attractive to intellectual migrants (Oliinyk et al., 2022).

An important result of using the methodology itself is the ability to rank countries and develop effective regulatory measures for leadership development. We consider the assessment of the impact of leadership on creative development to be a more important possibility of applied application of this technique, which involves testing the hypotheses we have substantiated.

The evaluation of the relationships of factors was carried out based on Pearson correlation coefficient values using *Microsoft Excel* software:

$$r = \frac{n(\sum xy) - \left(\sum x\right)(\sum y)}{\sqrt{\left[n\sum x^2 - (\sum x)^2\right]\left[n\sum y^2 - (\sum y)^2\right]}}. \quad (3)$$

The interpretation of the values of correlation coefficients is based on the Cheddock scale criteria. According to this approach, depending on the values of the correlation coefficient, the relationship of the factors is interpreted as follows: 0–0.1 – none; 0.1–0.3 – weak; 0.3–0.5 – moderate; 0.5–0.7 – noticeable; 0.7–0.9 – close; 0.9–0.99 – strong; 0.99–1 – functional (Turan, 2020).

The Student's *t*-test formula was used to check the statistical significance of the correlation coefficients:

$$t = r\sqrt{\frac{n-2}{1-r^2}}, \quad (4)$$

where r is the value of the correlation coefficient; n is the total number of observations.

To test hypothesis H1, the authors used the method of correlation analysis between the calculated level of leadership in EU countries (I_l) and indicators:

$У_1$ – "brain gain" value (average response to the question: To what extent does your country attract talented people from abroad? [1 = not at all; 7 = country largely attracts the best and brightest talent from around the world]);

$У_2$ – "brain retention" value (average response to the question: How well does your country retain talented people? [1 = not at all – the best and brightest leave to seek opportunities abroad; 7 = to a great extent – the best and brightest seek opportunities at home]).

The values of indicators $У_1$ – $У_2$ are selected from the *The Global Talent Competitiveness Index 2023: What a Difference Ten Years Make, What to Expect for the Next Decade* (2023) report.

The verification of hypothesis H2 was carried out on the basis of the calculation of correlation coefficients between the calculated level of leadership in the EU countries (I_l) with the following indicators:

$У_3$ – Global Innovation Index (GII) in 2023, score;

$У_4$ – growth of innovative companies, value;

$У_5$ – entrepreneurial employee activity rate (rate of involvement of employees in entrepreneurial activities, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary), value.

The value of factor У3 is selected from the report *Global Innovation Index 2023: Innovation in the Face of Uncertainty* (Duta et al., 2023); $У_4$ and $У_5$ – from the report *Global Knowledge Index 2023* (United Nations Development Programme, Mohammed bin Rashid Al Maktoum Knowledge Foundation, 2023).

The verification of hypothesis H3 was carried out on the basis of the calculation of correlation coefficients between the calculated level of leadership in the EU countries (I_l) and the following indicators:

$У_6$ – sub-index "Creative outputs" in the GII, score; the indicator was chosen taking into account that intangible assets, creative goods and services, online creativity are considered in its calculation, and therefore this sub-index is the most generalised indicator of creative activities development, which according to the *Global Innovation Index 2023* (Duta et al., 2023) approach are also classified as innovative;

$У_7$ – cultural employment (percentage of total employment, %) – this indicator was chosen considering that it covers three types of situations: an employed person holds a cultural occupation and works in the cultural sector, an employed person holds a cultural occupation outside the cultural sector, an employed person holds a non-cultural occupation in the cultural sector. That is, such employment corresponds to one of the common directions of creative economy research.

The values of indicator $У_6$ are selected from the *Global Innovation Index 2023* (Duta et al., 2023), $У_7$ from Eurostat (2023).

The relations of the selected indicators are hypothesized following the theoretical justification of links between leadership and selected factors of creative development, talents attraction and innovativeness. Under the conditions of economic uncertainty, caused by war conflicts and other global and national threats, an assumption on the positive role of leadership needs constant testing to define the leaders' responsibility for making decisions, remaining a powerful driver for employees' engagement, development of their creativity and innovations implementation. Selection of data according to the main directions of the indicated international reports and databases allow testing these relations combining theoretical background of leadership studies and empirical data by the main manifestations of leaders' influence following the hypotheses of this research.

4. Results

Since the verification of each hypothesis involves the assessment of connections with a complex indicator of the development of leadership in the country, the first stage of our research is the calculation of such an indicator according to formulas 1–2.

The actual, maximum and minimum values of leadership indicators, as well as the calculation of partial indicators and the integral index of leadership in EU countries are shown in Table 2.

Table 2. Calculation of the integral index of leadership in European Union countries in 2023 (source: created by authors)

Country	X_1	X_2	X_3	X_4	X_5	X_6	X_7	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_I
Belgium	60.45	67.18	62.77	55.92	77.86	63.7	61.35	0.54	0.52	0.55	0.54	0.77	0.49	0.41	0.55
Bulgaria	46.08	35.84	57.45	54.06	53.97	43.98	41.73	0.38	0.05	0.48	0.52	0.34	0.22	0.11	0.30
Czech Republic	53.29	74.55	57.45	69.29	65.27	63.07	42.64	0.46	0.62	0.48	0.71	0.54	0.48	0.12	0.49
Denmark	99.54	91.67	67.02	84.64	88.31	100	64.28	1.00	0.88	0.60	0.91	0.95	1.00	0.45	0.83
Germany	64.25	70.95	63.83	49.64	81.55	61.98	51.23	0.59	0.57	0.56	0.46	0.83	0.47	0.25	0.53
Estonia	75.76	81.99	27.66	82.77	71.13	67.26	56.32	0.72	0.73	0.12	0.89	0.65	0.54	0.33	0.57
Ireland	80.01	87.36	96.81	69.52	84.59	78.93	59.27	0.77	0.81	0.96	0.72	0.89	0.71	0.38	0.75
Greece	42.7	44.19	57.45	45.36	49.48	43.12	50.35	0.34	0.18	0.48	0.41	0.26	0.20	0.24	0.30
Spain	45.45	60.25	28.72	53.55	47.92	42	44.46	0.37	0.41	0.13	0.51	0.24	0.19	0.15	0.29
France	49.36	74.66	31.91	53.28	76.94	58.02	52.81	0.41	0.63	0.17	0.51	0.75	0.41	0.28	0.45
Croatia	13.79	32.18	54.26	13.3	34.53	28.51	40.6	0.00	0.00	0.44	0.00	0.00	0.00	0.09	0.08
Italy	40.47	48.48	60.64	36.96	63.86	55.04	34.68	0.31	0.24	0.52	0.30	0.52	0.37	0.00	0.32
Cyprus	54.01	34.07	52.13	45.4	57.69	44.66	48.69	0.47	0.03	0.42	0.41	0.41	0.23	0.21	0.31
Latvia	46.83	40.29	18.09	67.33	55.01	37.02	47.45	0.39	0.12	0.00	0.69	0.36	0.12	0.20	0.27
Lithuania	70.74	80.71	71.28	89.62	82.61	68.52	63.25	0.66	0.72	0.65	0.97	0.85	0.56	0.44	0.69
Luxembourg	82.5	70.83	84.04	68.19	80.05	58.06	100	0.80	0.57	0.81	0.70	0.80	0.41	1.00	0.73
Hungary	37.63	53.86	64.89	45.73	50.69	48.73	43.38	0.28	0.32	0.57	0.41	0.29	0.28	0.13	0.33
Malta	60.36	53.3	77.66	47.08	61.32	50.87	48.23	0.54	0.31	0.73	0.43	0.47	0.31	0.21	0.43
Netherlands	90.86	94.49	68.09	63.8	84.55	84.32	72.05	0.90	0.92	0.61	0.64	0.88	0.78	0.57	0.76
Austria	82.47	70.99	64.89	58.18	87.16	62.15	48.45	0.80	0.57	0.57	0.57	0.93	0.47	0.21	0.59
Poland	41.54	38.33	46.81	38.34	49.63	36.1	48.57	0.32	0.09	0.35	0.32	0.27	0.11	0.21	0.24
Portugal	50.31	52.1	92.55	55.42	59.78	39.31	55.03	0.43	0.29	0.91	0.54	0.45	0.15	0.31	0.44
Romania	34.41	37.48	42.55	56.83	49.03	38.38	41.93	0.24	0.08	0.30	0.55	0.26	0.14	0.11	0.24
Slovenia	48.03	54.89	68.09	70.28	68.66	49.47	62.02	0.40	0.33	0.61	0.73	0.60	0.29	0.42	0.48
Slovakia	38.79	37.68	45.74	46.47	41.95	41.36	36.42	0.29	0.08	0.34	0.42	0.13	0.18	0.03	0.21
Finland	76.34	100	100	91.79	91.09	87.57	60.62	0.73	1.00	1.00	1.00	1.00	0.83	0.40	0.85
Sweden	68.2	77.24	81.91	66.3	84.11	66.06	75.56	0.63	0.66	0.78	0.68	0.88	0.53	0.63	0.68
Minimum value	13.79	32.18	18.09	13.3	34.53	28.51	34.68	–	–	–	–	–	–	–	–
Maximum value	99.54	100	100	91.79	91.09	100	100	–	–	–	–	–	–	–	–

The obtained results of calculations of the level of leadership in the EU countries made it possible to form a rating led by Finland with an integral index value of 0.85. Experts noted professional skills as the biggest advantage of Finnish leadership. A large share of management continues to move up the career ladder from among rank-and-file employees. Finnish managers know how to interpret quantitative indicators and rely on business processes, which provides good conditions for sustainable profitability of the organization (Ministry of Economic Affairs and Employment, Regions and Growth Services Department, 2018). Denmark is in second place (0.83). The Danish approach to leadership, like Scandinavian practice in

a broader term, tends to be predominantly democratic with short relative power distances between employees. This leadership style is said to contrast with the more directional type of management practiced in Central and Southern Europe (Holm, 2023). The top three are closed by the Netherlands (0.76), which exceeds the value of the leadership level in Ireland by only 0.01. The Dutch leadership culture is one of consensus and equality, where the manager is a facilitator rather than a sole maker of management decisions (Stoop, 2023). As we can see from the results above, such leadership models are successful, since it is clear from the partial leadership indicators included in the integral index that a favourable environment for the development of talent and creativity has been created in the leading countries considering the rating.

Concomitantly, the lowest level of leadership among EU countries in 2023 is characteristic of Croatia (0.08). Croatian managers have (statistically) significantly different attitudes towards individual leadership styles. The difference between subordinates and management becomes more visible in Croatia. Croatian managers have a business-oriented culture, focus on career growth, and believe that acquaintances are more important than knowledge and education for managerial success (Bakotić & Bulog, 2021).

The results of hypothesis testing based on the calculation of correlation coefficients, as well as the assessment of their statistical significance, are shown in Table 3.

The obtained values of the pairwise correlation coefficients demonstrate a close relationship between the level of leadership and the country's ability to attract (0.73) and retain talent (0.80), as the calculated values exceed 0.7 and are statistically significant (the calculated values of the Student's *t*-test exceed the critical values). Talented employees seek opportunities for personal and professional growth. A leader that offers professional development, training, development and career development programs can provide an attractive environment for talent. The leader understands the individual needs of his employees, provides decent working conditions, flexible working hours, implements socially responsible initiatives (Veselovska, 2023), which is also an important component for attracting and retaining highly qualified employees both inside the country and abroad. The results of our study confirm the ones obtained by other scientists, who prove, in particular, that leadership has a positive effect not only on the level of country's attractiveness for talents, but also on the emotional intelligence of immigrants (Djofang & Fofack, 2022).

The authors also proved a close direct relationship between leadership and innovative development of the country, which confirms the calculated value of the correlation coefficient (0.79). Leadership has an even greater influence on the growth of innovative companies, as the value of the correlation coefficient is 0.81 and is statistically significant. The leader plays an important role in stimulating innovation and creativity in organizations, because he is the one who defines the corporate vision, mission and strategic development goals, creates boundaries and content for innovation. The leader unites innovators, employees with developed creative thinking, promotes the exchange of ideas and knowledge. Therefore, the influence of leadership on the results of creative activity (0.58) and the level of employment in creative sectors of the economy (0.68) has been proven within the framework of testing hypothesis H3. The creation of effective communication networks also promotes creativity, stimulating the introduction of innovations in the organization. Innovation and creative

Table 3. Calculation of correlation coefficients between the level of leadership and indicators of intellectual migration and creative development in European Union countries in 2023 (source: created by authors)

Country	I_l	y_1	y_2	y_3	y_4	y_5	y_6	y_7
Belgium	0.55	71.81	56.74	49.9	56.5	53.4	39.4	4.2
Bulgaria	0.3	21.98	19.84	39	48	3.1	38.2	2.7
Czech Republic	0.49	37.1	48.32	44.8	55	*	38.7	3.8
Denmark	0.83	65.52	71.4	58.7	57.6	100	55.9	4.5
Germany	0.53	67.1	82.4	58.8	52.7	33.5	58.2	4
Estonia	0.57	62.15	40.83	53.4	64	79.7	48.8	4.5
Ireland	0.75	74.03	71.83	50.4	55.6	59.2	44.1	3.3
Greece	0.3	16.48	14.84	37.5	40.6	22.1	33.7	3.5
Spain	0.29	42.73	37.17	45.9	45.1	25.4	43.0	3.6
France	0.45	55.77	40.32	56	51.1	32	58.2	4
Croatia	0.08	9.6	2.92	37.1	41.4	61.9	30.0	3.1
Italy	0.32	34.29	27.75	46.6	53	47.1	45.3	3.5
Cyprus	0.31	51.63	50.99	46.3	44.1	7	47.5	4
Latvia	0.27	41.57	27.32	39.7	38.9	40.6	39.4	4
Lithuania	0.69	44.59	21.88	42	58.8	44.2	33.5	4.1
Luxembourg	0.73	93.04	88.13	50.6	57	45.4	54.2	4.8
Hungary	0.33	28.4	21.04	41.3	44.1	30.7	34.1	3.5
Malta	0.43	78.74	63.15	49.1	48.5	*	59.2	4.4
Netherlands	0.76	80.15	84.75	60.4	62.3	31.5	56.3	5.4
Austria	0.59	59.33	60.32	53.2	46.9	61.1	48.9	4
Poland	0.24	28.29	33.71	37.7	48.9	8.9	37.6	3.4
Portugal	0.44	53.53	38.81	44.9	46.5	35.9	46.0	4
Romania	0.24	15.22	2.8	34.7	45.1	21.7	26.9	1.5
Slovenia	0.48	22.73	31.77	42.2	42.8	62.5	30.6	4.6
Slovakia	0.21	14.45	15.67	36.2	40.3	7.4	28.6	2.9
Finland	0.85	47.65	77.44	61.2	59.3	64.7	47.5	4.6
Sweden	0.68	58.12	78.46	64.2	64.4	49.3	57.3	4.9
Correlation coefficient	–	0.73	0.80	0.79	0.81	0.59	0.58	0.68
Estimated value of the Student's *t*-test	–	5.358	6.767	6.524	6.813	3.531	3.553	4.694
Critical value of the Student's *t*-test	–	2.0595	2.0595	2.0595	2.0595	2.0687	2.0595	2.0595
Statistical value α = 0.05	–	+	+	+	+	+	+	+

*Note**: no data available.

thinking, which is the basis for innovation, are of great importance to modern organizations (Potjanajaruwit, 2023; Khalifa et al., 2023). Leaders should not only motivate creative work, but also actively promote creative problem solving both by involving followers in making management decisions at the team and corporate levels (Mumford et al., 2023), and by creating conditions for broad employee involvement in entrepreneurial activities, such as developing

or launching new products or services. After all, the calculated correlation coefficient between the level of leadership in the country correlates with the Entrepreneurial employee activity rate indicator (correlation coefficient value 0.59). A leader is able to stimulate entrepreneurial activity (Aparisi-Torrijo et al., 2023) because employees trace the connection between their innovative ideas and the achievement of the organization's strategic goals. In addition, the leadership, actively creating an innovative culture in the organization, gives employees the freedom to express and implement their creativity. At the same time, employees feel confident in their attempts to implement innovative ideas. This can encourage employees to engage in entrepreneurial activity and apply a creative approach to solving professional tasks.

5. Conclusions

Leadership, as can be seen from the results of our research, is an important factor in creating a comfortable environment in which the growth and retention of talents is ensured, including through external migrants, the stimulation of creativity with corresponding results in the form of employment in creative sectors and the general level of innovative development. Considering that such connections are empirically confirmed in the study and are important for the search for factors of economic development, we consider further research on leadership and its components to be important not only in the context of management strategies at the enterprise level, but also at the macro level. In our work, such an aggregate index was created on the basis of publicly available statistical data. For the purposes of our research, we believe that leadership at the macroeconomic level is a continuation and generalization of its manifestations at the level of enterprises and projects. Transforming known and actively used leadership indicators at the microeconomic level for the purposes of research at the level of national economies, we suggest considering in the integral index the values of factors evaluated in GTCI: labour-employer cooperation, tolerance of minorities, leadership opportunities for women, employee development, delegation of authority, and professionals. Of course, the set of factors can change and improve, as well as the calculation method (*i.e.*, taking into account weighting factors). In our research, we tried to take into account the existing partial factors and create an index that comprehensively characterizes the conditions created in the business environment of countries that characterize managerial skills in achieving goals.

Thus, the findings of this study are consistent with the findings of other researchers, who prove that leadership has a positive effect on innovative behaviour and creativity. Besides, our research provided evidence of the positive influence of leadership on the attractiveness of the country for intellectual migrants, the development of creativity, including activity in the implementation of innovations. Such results are important for countries seeking to strengthen their own competitiveness and economic performance. As can be seen from our research, such consequences can be achieved not only through traditional economic mechanisms, which require a large amount of investment and material resources. An intangible asset in the form of developed leadership potential and its proper implementation for the purposes of creative development can also be a very effective way of creating long-term prerequisites for economic growth by attracting talent and supporting innovative ideas.

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