SBE
DOI 10.2478/sbe-2026-0003
Studies in Business and Economics: no. 21(1) 2026

HOFSTEDE'S CULTURAL DIMENSIONS AS PREDICTORS OF INTERNATIONAL COMPETITIVENESS

Carolina ȚÎMBALARI
Lucian Blaga University of Sibiu, Romania

Mihaela HERCIU
Lucian Blaga University of Sibiu, Romania

Abstract:

In an increasingly volatile global environment, national culture has emerged as a decisive determinant of international competitiveness. This study investigates the relationship between Hofstede's six cultural dimensions (6D) and the Global Competitiveness Index (GCI) within the EU-25 cluster, exploring how deeply rooted societal values shape modern economic performance. A multi-phase quantitative approach was employed, integrating Pearson Correlation, Multiple Linear Regression (MLR), and Automatic Linear Modeling (ALM). This methodological triangulation allows for the assessment of both direct bivariate relationships and complex multivariate predictive effects across 25 European Union member states using IMD data from 2021–2025. The results consistently identify Power Distance (PDI) as the most influential constraint of competitiveness, suggesting that hierarchical rigidity acts as a structural barrier to economic performance. Conversely, Indulgence (IND) emerges as a significant positive, highlighting the role of societal well-being and creative freedom in driving modern performance. Notably, the final ALM model achieved a predictive accuracy of 78.8%, isolating a significant 4D subset (PDI, IND, MAS, and UAI) as the primary cultural drivers of European competitiveness. This study advances the literature by delivering updated empirical insights for the EU-25 and by demonstrating the higher diagnostic performance of Automatic Linear Modeling over traditional regression techniques in analyzing culture–competitiveness relationships.

Key words: *Hofstede's cultural dimensions; international competitiveness; power distance; EU-25, Automatic Linear Modeling (ALM)*

1. Introduction

Globalization continues to reshape the competitive landscape of nations, intensifying economic interdependencies and redefining the drivers of performance (Gygli et al., 2019; World Economic Forum, 2020). In this increasingly interconnected environment, international competitiveness is no longer determined only by traditional economic factors such as capital, labor, or technology, but also by deeper structural elements that influence how economies function and evolve. As countries seek to enhance

productivity, innovation, and long-term resilience, understanding the broader determinants of competitiveness has become both relevant and necessary.

Recent research highlights that economic performance is embedded within broader socio-cultural contexts, where values, norms, and collective behaviors shape institutional quality, decision-making processes, and strategic orientations (Herciu & Ogrean, 2011; Beugelsdijk et al., 2018). Within this perspective, national culture emerges as a fundamental factor influencing how societies respond to uncertainty, foster innovation, and organize economic activity. Understanding the role of culture is therefore essential for explaining cross-country differences in competitiveness and for designing effective economic and institutional policies (Tabellini, 2010). Among the existing approaches, Hofstede's cultural dimensions framework remains one of the most widely used models for capturing cross-national differences, offering a structured lens through dimensions such as power distance (PDI), individualism (INV), motivation towards achievement and success (MAS), uncertainty avoidance (UAI), long-term orientation (LTO), and indulgence (IND) (Hofstede et al., 2010; Hofstede, 2025). Several studies suggest that cultural dimensions are closely linked to key determinants of competitiveness, including innovation capacity, governance quality, and institutional development (Herciu, 2006; 2007; Fernández, 2011; Büschgens et al., 2013; Tian et al., 2018; Lam et al., 2021; Cahyadi et al., 2024; Nicolo et al., 2025). For example, individualism is associated with enhanced creativity (Shane, 1993), low power distance supports institutional efficiency (Cheung & Chan, 2010) and long-term orientation encourages sustainable economic strategies (Memili et al., 2018). Similarly, long-term orientation facilitates the adoption of sustainable economic strategies and strengthens resilience to global disruptions (Halkos & Tzeremes, 2013). Together, these patterns underscore the role of culture as a fundamental, yet often implicit, driver of competitive performance.

Despite these advances, the relationship between Hofstede's cultural dimensions and international competitiveness remains insufficiently examined from an integrated perspective (Beugelsdijk & Welzel, 2018; Țîmbalari & Herciu, 2023). Existing research predominantly focuses on indirect relationships, such as the influence of culture on innovation or other socio-economic outcomes (Hayton et al., 2002; Alesina & Giuliano, 2015; Mornah & MacDermott, 2016; Andrijauskienė & Dumčiuvienė, 2017; Siddiqi & Shafiq, 2017; Diamastuti et al., 2020; Agag et al. 2024; Vizmonte & Ligot, 2024; Ma & Gooi, 2025). Although some studies address the direct relationship (Mihaela et al., 2011; Apsalone & Šumilo, 2015; Chen, et.al. 2021; Servi, 2024) they remain limited in number. More research tends to embed competitiveness within broader frameworks, such as sustainable competitiveness or entrepreneurial dynamics, rather than analyzing it explicitly (Lee & Peterson, 2000; Cahyadi et al., 2024; Poulova et al., 2024; Treacy et al., 2025). This gap is particularly evident in the context of the European Union, where cultural diversity coexists with deep economic integration (Gordon, 2007; Berkes, 2025).

Therefore, the main objective of this research is to examine the impact of national cultural dimensions on international competitiveness, with a particular focus on EU-25 countries. The study aims to identify the extent to which specific cultural traits influence competitiveness outcomes.

Addressing this gap, the present study adopts an integrative perspective that combines cultural and competitiveness frameworks. Specifically, it relies on Hofstede's model (6D) to measure national cultural profiles and on the Global Competitiveness Index

(GCI) provided by the Institute for Management Development (IMD) to assess economic performance (IMD, 2025). Through a quantitative approach, the study contributes by providing a direct and systematic analysis of the relationship between cultural dimensions and international competitiveness within the European context.

The study is organized as follows sections. The next section provides a comprehensive review of the extant literature and establishes the conceptual framework and research hypotheses. This is followed by a description of the methodology and the data sources employed for the EU-25 analysis. The empirical results are then presented and provides a comparative discussion. Finally section, offers concluding remarks, addressing theoretical contributions, managerial implications, research limitations and future research directions.

2. Literature review and hypotheses

2.1. Hofstede's cultural dimensions theory

Culture is conceptualized as a multifaceted and heterogeneous construct, originating from the Latin colere "to cultivate" (Hofstede et al., 2012). Beyond its etymological roots, it has evolved into a sophisticated framework through which societies generate the values, norms, and beliefs that shape social and economic outcomes (Moon & Choi, 2001; Baldwin et al., 2006; Țîmbalari, 2019). Within this context, national culture emerges as a fundamental determinant of cross-country differences, explaining why nations do not respond uniformly to competitive pressures (Cheung & Chan, 2010). In this regard, Hofstede's (1980; 2010; 2011) definition of culture as the "collective programming of the mind" provides a bridge between individual values and societal outcomes. This "software" is deeply embedded and relatively stable over time, influencing not only social behavior but also the effectiveness of institutions and the strategic organization of economic activity (Gorodnichenko & Roland, 2011; Beugelsdijk et al., 2017; Valverde-Moreno, 2021). While the field of cross-cultural research offers various frameworks such as Schwartz's (1992; 2012) value orientations, the GLOBE model (House et al., 2004), the Trompenaars' framework (Trompenaars & Hampden-Turner, 2011; 2025), or Inglehart and Welzel's (2005; 2023) cultural map, Hofstede's model remains the most widely applied in economic and business contexts (Taras et al., 2009; Beugelsdijk et al., 2017; Huang et al., 2024). Its enduring relevance stems from its conceptual clarity, empirical robustness, and unique capacity to quantify cultural differences into dimensions that directly correlate with international performance indicators (Sunny et al., 2019). The updated Hofstede framework (2025) provides a systematic approach to the analysis of national culture through a six-dimensional (6D) model reflecting core differences in societal values and behaviors. These dimensions offer a comprehensive basis for understanding how nations structure social relations, manage uncertainty, and pursue economic goals, making the model particularly suitable for cross-country competitiveness analyses.

2.2. Competitiveness as a multidimensional concept

The concept of competitiveness has evolved considerably over time, reflecting the increasing complexity of global economic systems. Its origins can be traced back to

classical economic theory, particularly to Adam Smith's (1776), who emphasized productivity and division of labor as fundamental sources of economic advantage. In contemporary economic thought, competitiveness has been further developed into a multidimensional construct. Michael Porter (1990) highlighted productivity and innovation as key drivers of national competitive advantage, while subsequent contributions have expanded the concept to include institutional quality, policy frameworks, and broader socio-economic outcomes (Garelli, 2006; OECD, 2011; Aiginger & Vogel, 2015; WEF, 2016; 2020).

Several studies increasingly conceptualize competitiveness as a complex and dynamic phenomenon that encompasses not only economic efficiency but also social well-being and long-term development (Herciu, 2007; Ogrean & Herciu, 2010; Anca, 2012; Kolluru & Suresh, 2020; Vîrjan et al., 2023). From this perspective, competitiveness extends beyond the ability to succeed in international markets, incorporating the capacity of economies to generate sustainable value, enhance living standards, and ensure long-term prosperity.

Reflecting its multidimensional nature, competitiveness is measured through several internationally recognized frameworks developed by organizations such as the OECD (2025), the European Commission (2019), the World Economic Forum (WEF, 2025), and the Institute for Management Development (IMD, 2025). These frameworks enable standardized cross-country comparisons of economic performance and long-term development. Among them, the IMD framework is particularly suitable for comparative analyses, as it provides a coherent and comprehensive dataset (Walenia, 2022) that integrates economic performance, institutional efficiency, and business environment indicators, supported by a high degree of data availability even throughout the pandemic period (IMD, 2025).

2.3. Linking national culture and international competitiveness

The link between culture and competitiveness continues to be a subject of interest and discussion (Herciu & Ogrean, 2008; Handoyo, 2018; Țîmbalari & Herciu, 2023). Existing research suggests that culture influences competitiveness through both direct mechanisms, by shaping attitudes toward performance, long-term orientation, and adaptability, and indirect mechanisms, particularly via its impact on innovation, institutional quality, and organizational practices (Gorodnichenko & Roland, 2011; Beugelsdijk et al., 2015; Apsalone & Šumilo, 2015; Cahyadi et al., 2024; Poulova et al., 2024). This dual pathway underscores the complexity of the relationship between cultural factors and competitive performance. In this context, Hofstede's framework provides a relevant and widely applied analytical lens for examining how national cultural configurations influence international competitiveness. Building on existing theoretical and empirical contributions (Hofstede, 2001; Beugelsdijk et al., 2018), this study conceptualizes competitiveness as a function of national cultural dimensions, operationalized through Hofstede's 6D model and measured using the Global Competitiveness Index (GCI). Grounded in prior research, the following hypotheses are formulated:

Power distance reflects the extent to which hierarchical structures and inequalities are accepted within a society (Hofstede, 2011). Higher levels of power distance are

generally associated with centralized authority and lower institutional efficiency, which may inhibit innovation and reduce competitiveness (Licht et al., 2007; Herciu & Ogrean, 2008; Beugelsdijk et al., 2015).

H1. Power distance is negatively and significantly associated with international competitiveness.

Individualism captures the degree to which individuals prioritize autonomy over collective interests. Societies characterized by higher individualism tend to promote initiative, creativity, and entrepreneurial activity, thereby supporting economic performance (Herciu & Ogrean, 2008; Hofstede, 2011). Therefore:

H2. Individualism is positively and significantly associated with international competitiveness.

Motivation towards Achievement and Success, reflects a society's orientation against competition, performance, and material success. These characteristics are associated with higher productivity and performance orientation, which may enhance competitiveness (Hofstede, 2011; House et al., 2004). Hence:

H3. Motivation towards Achievement and Success is positively and significantly associated with international competitiveness.

Uncertainty avoidance refers to the degree to which societies attempt to reduce uncertainty through formal rules and structured environments. High levels of uncertainty avoidance are associated with rigidity and resistance to change, which may limit innovation and adaptability (Herciu & Ogrean, 2008; Hofstede, 2011). Thus:

H4. Uncertainty avoidance exerts a negative and statistically significant effect on competitiveness.

Long-term orientation captures the extent to which societies prioritize future-oriented values such as planning, perseverance, and adaptation. These characteristics support sustainable development and long-term competitiveness (Beugelsdijk et al., 2015; Cahyadi et al., 2024). Accordingly:

H5. Long-term orientation is positively and significantly associated with international competitiveness.

Indulgence reflects the degree to which societies allow the fulfillment of human needs and enjoyment of life. Hence, empirical evidence is less consistent, studies suggest that indulgence may be associated with creativity, optimism, and well-being, which can support economic performance (Hofstede, 2011; Minkov, 2011; Huang et al., 2024).

H6. Indulgence is positively associated with international competitiveness.

Beyond individual effects, cultural dimensions may also operate as an integrated system influencing competitiveness (Beugelsdijk et al., 2015). Therefore:

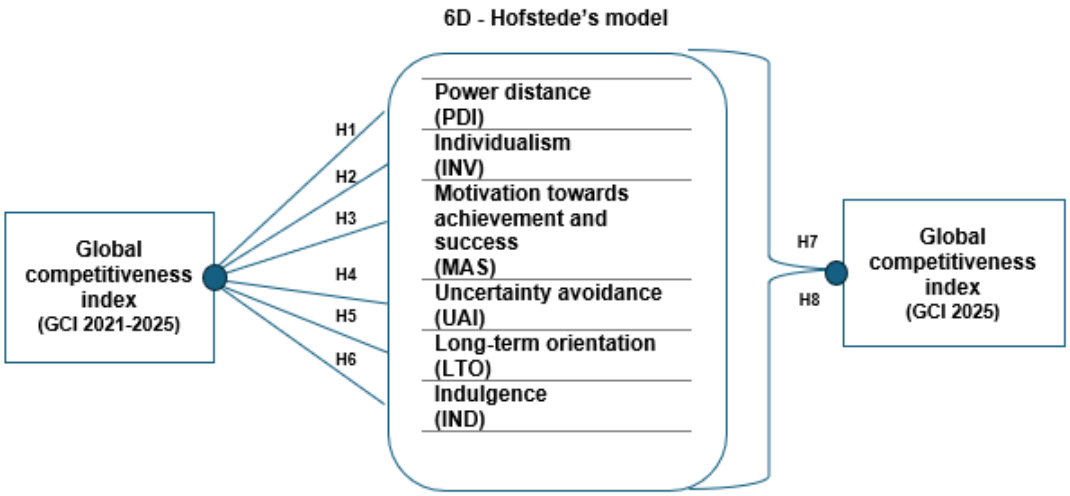
H7: Hofstede's cultural dimensions jointly have a statistically significant effect on international competitiveness (GCI 2025).

Finally, considering the multidimensional structure of culture, the magnitude of these relationships is likely to differ across dimensions. The ALM approach is applied to overcome the limitations of traditional regression by automatically identifying the most influential cultural predictors through an optimized algorithmic selection (Hair et al., 2019). Therefore, the following hypothesis is formulated:

H8: Within the ALM modeling framework, at least two of the six cultural dimensions (6D) are statistically significant predictors of international competitiveness, as measured by the GCI 2025.

Figure 1 illustrates the proposed research model, conceptualizing the multifaceted relationship between national culture and international competitiveness.

Figure 1. The proposed research model



Source: authors' own elaboration

3. Methodology and data

The present study is based on a quantitative research design that combines cross-sectional and longitudinal dimensions in order to assess the cultural factors influencing international competitiveness. The analysis is built upon a dual-source dataset covering the period 2021–2025.

Cultural dimensions (Independent Variables), data for the six cultural dimensions (Power Distance (PDI), Individualism (IDV), Motivation towards Achievement and Success (MAS), Uncertainty Avoidance (UAI), Long-Term Orientation (LTO), and Indulgence (IND)) were retrieved from the Hofstede Insights database (Hofstede, 2025). Scores are standardized on a scale of 0 to 100 (Huang et al., 2024). International Competitiveness (Dependent Variable) viewed as an expression of economic performance (Antonakakis et al., 2025) is captured by the Global Competitiveness Index (GCI), sourced from the IMD World Competitiveness Yearbook (IMD, 2025).

The study focuses on 25 European Union member states. To ensure data consistency and statistical reliability, Malta and Cyprus were excluded due to incomplete longitudinal data. This regional focus is theoretically justified by the european paradox: while these nations share a high degree of institutional and regulatory convergence, they maintain significant cultural heterogeneity, providing a "quasi-experimental" setting to isolate cultural effects from purely institutional ones (Genç & Mendeş, 2024). The dataset is structured as a balanced panel. The primary dependent variable is the GCI score for

2025, representing the most recent competitive standing. The independent variables consist of the six stable cultural pillars. To ensure the robustness of the findings, the analysis also considers the evolution of GCI across the 2021–2025 timeframe to capture post-pandemic recovery trends.

The empirical analysis was conducted using IBM SPSS (Version 26), following a multi-stage quantitative approach designed to ensure a robust and nuanced evaluation of the research hypotheses. The statistical workflow was executed in three sequential phases: Phase I involved a Bivariate Pearson Correlation to establish the preliminary strength and the direction of the relationships between the 6D cultural dimensions and the GCI (H1-H6). Building on these initial insights, using Multiple Linear Regression (MLR), Phase II assessed the collective predictive validity of the cultural framework (H7) and isolated individual dimensional effects by controlling for extraneous variables. Finally, to address the inherent risk of multicollinearity in cross-cultural datasets, Phase III utilized Automatic Linear Modeling (ALM). By leveraging automated forward-stepwise variable selection and boosting techniques, the ALM procedure transcends the limitations of traditional regression, providing a precise calculation of "Predictor Importance" allowing for an objective ranking of cultural dimensions based on their relative impact on international competitiveness (H8).

The adopted research design ensures a systematic, comparative analysis of the relationship between national culture and competitiveness. By employing a three-phase statistical approach, the study establishes a reliable empirical basis for testing the proposed hypotheses and providing a comprehensive interpretation of cultural impacts on the EU-25 competitive landscape.

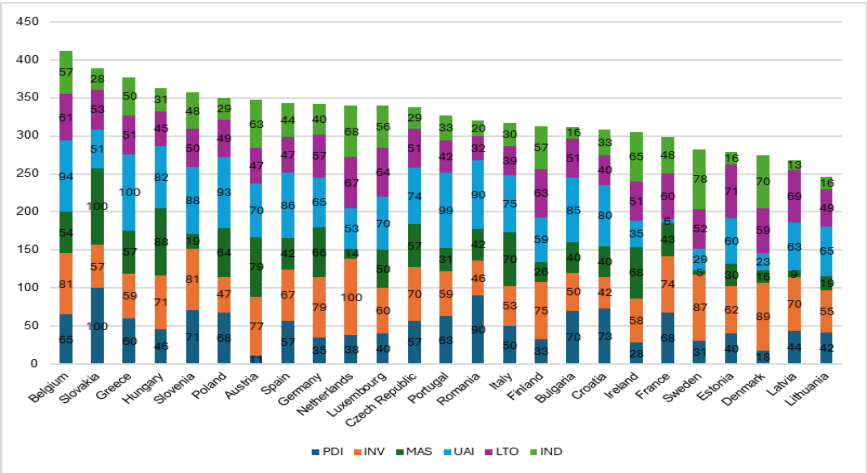
4. Empirical Results

The descriptive analysis reveals substantial cross-country variation among the 25 EU member states, highlighting the cultural diversity that persists despite high levels of economic integration. As illustrated in Figure 2, the cultural profiles within the sample exhibit significant heterogeneity, reflecting a diverse landscape of values rather than a singular, uniform European identity. Countries such as Belgium, Slovakia, and Greece record significantly higher scores in Power Distance (PDI) and Uncertainty Avoidance (UAI) (Hofstede, 2025). These results suggest a prevalence of hierarchical societal structures and a collective preference for formal rules and institutional stability. Significant variation is observed in Individualism (IDV) and Motivation towards Achievement and Success (MAS).

The descriptive analysis of competitiveness reveals significant performance gaps across the EU-25. As illustrated in Figure 3, these rankings remained remarkably stable throughout the 2021–2025 period. Countries such as Denmark, Sweden, and the Netherlands consistently rank in the top tier. Denmark emerges as the benchmark for the sample, recording the highest average score over the five-year period followed by Sweden (93.36) and the Netherlands (92.58). Ireland and Finland also maintain strong competitive

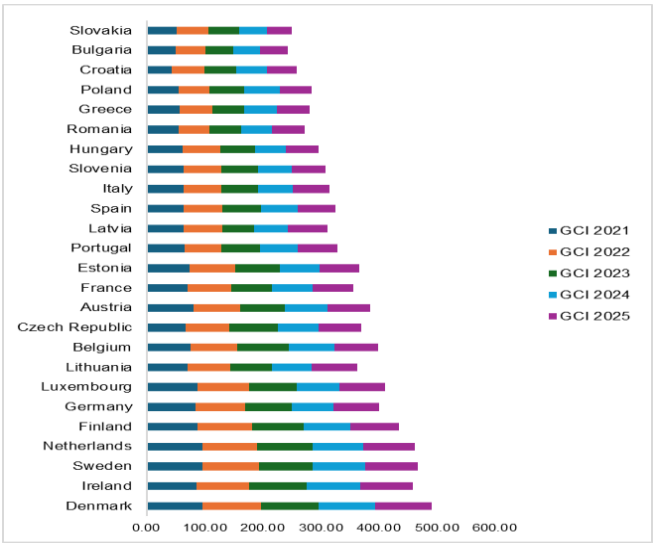
positions; however, they exhibit slightly greater annual fluctuations, likely reflecting their sensitivity to global trade shifts and post-pandemic recovery cycles.

Figure 2. Hofstede's Cultural Dimensions (6D) across EU-25 Countries



Source: authors' own calculations based on data from Hofstede Insights, available at: https://www.theculturefactor.com/country-comparison-tool

Figure 3. Comparative Analysis of GCI across EU-25 Countries



Source: authors' own calculations based on IMD - GCI (2021–2025)

Overall, the results indicate a concentration of competitiveness among a relatively stable group of top-performing economies (Table 1). The descriptive statistics, computed via IBM SPSS (2019), reveal a pattern of structural consistency and resilience across the 2021–2025 period. This lack of significant volatility in the rankings, particularly the

sustained leadership of Denmark suggests that these nations possess deeply embedded competitive advantages that transcend short-term market fluctuations.

Table 1. Descriptive Statistics for 6D and GCI (EU-25)

	Range	Min	Max	Mean		Std. Deviation	Variance	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
PDI	89	11	100	51.92	4.278	21.391	457.577	-.088	.902
INV	58	42	100	66.76	2.953	14.766	218.023	-.454	.902
MAS	95	5	100	45.16	5.047	25.235	636.807	-.527	.902
UAI	94	6	100	67.80	4.898	24.491	599.833	.415	.902
LTO	39	32	71	52.80	1.950	9.751	95.083	-.306	.902
IND	65	13	78	41.52	3.835	19.175	367.677	-1.088	.902
GCI2021	53.59	43.12	96.71	70.8528	3.09205	15.46027	239.020	-.913	.902
GCI2022	48.64	51.36	100.00	73.2348	3.01058	15.05290	226.590	-1.107	.902
GCI2023	53.17	46.83	100.00	72.4276	3.19409	15.97046	255.055	-1.152	.902
GCI2024	50.13	46.94	97.07	67.9376	2.76526	13.82632	191.167	-.440	.902
GCI2025	54.72	42.79	97.51	69.3956	2.90008	14.50041	210.262	-.678	.902
Valid N (listwise)	N= 25								

Source: authors' own calculations using IBM SPSS

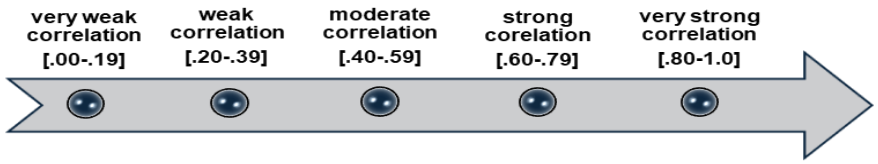
The descriptive statistics reveal moderate variation across the cultural dimensions, with the highest levels of dispersion observed in Motivation towards Achievement and Success (MAS) and Uncertainty Avoidance (UAI). In contrast, Long-Term Orientation (LTO) and Individualism (INV) exhibit more stable, concentrated patterns across the EU member states. Regarding competitiveness, the Global Competitiveness Index (GCI) exhibits comparatively limited dispersion, reflecting a certain degree of economic convergence within the European Union. However, the observed variability remains sufficient to support meaningful cross-country comparisons. These preliminary findings highlight differences in both cultural profiles and competitiveness levels across countries, providing an empirical basis for further investigation of the relationship between cultural dimensions and international competitiveness in the subsequent analysis.

4.1. Correlation analysis

To test the initial associations proposed in hypotheses H1–H6, a Pearson correlation analysis was applied. This method allows for a preliminary examination of both the strength and the directional nature of the relationships between Hofstede's 6D cultural dimensions and the Global Competitiveness Index (GCI). Statistical significance was rigorously assessed using p-values to determine the reliability of these associations.

As a standard mathematical property of the correlation matrix, each variable is perfectly correlated with itself (r = 1) along the principal diagonal (Field, 2013). To ensure an objective evaluation of the results, the interpretation of the correlation coefficients (r) is based on the classification framework proposed by Evans (1996), which categorizes the strength of the relationship (Figure 4).

Figure 4. Correlation strength classification



Source: authors' elaboration adapted from Evans (1996)

The results of the Pearson correlation analysis, detailing the bivariate relationships between the six cultural dimensions (6D) and the Global Competitiveness Index (GCI), are summarized in Table 2. To maintain the analytical rigor of this study, the reported coefficients are interpreted only when found to be statistically significant.

Table 2. Correlation Matrix between 6D and GCI

Correlations

		PDI	INV	MAS	UAI	LTO	IND	GCI 2021	GCI 2022	GCI 2023	GCI 2024	GCI 2025
PDI	Pearson Correlation		**-.520****	.223	.394	-.378	**-.515****	**-.783****	**-.797****	**-.693****	**-.734****	**-.793****
	Sig. (2-tailed)		.008	.284	.051	.062	.008	.000	.000	.000	.000	.000
INV	Pearson Correlation			-.337	-.427*	**.535****	**.663****	**.747****	**.736****	**.659****	**.639****	**.658****
	Sig. (2-tailed)			.099	.033	.006	.000	.000	.000	.000	.001	.000
MAS	Pearson Correlation				.205	-.336	-.128	-.332	-.349	-.237	-.368	-**.435***
	Sig. (2-tailed)				.324	.101	.543	.105	.087	.253	.070	.030
UAI	Pearson Correlation					-.428*	-.420*	**-.588****	**-.617****	**-.536****	**-.592****	**-.577****
	Sig. (2-tailed)					.033	.037	.002	.001	.006	.002	.003
LTO	Pearson Correlation						.216	**.542****	**.548****	**.451***	**.430***	**.447***
	Sig. (2-tailed)						.300	.005	.005	.024	.032	.025
IND	Pearson Correlation							**.744****	**.730****	**.741****	**.758****	**.671****
	Sig. (2-tailed)							.000	.000	.000	.000	.000
N= 25												

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: authors' own calculations using IBM SPSS

The correlation matrix indicates several significant interrelationships among the cultural dimensions, suggesting that cultural traits within the EU-25 function as interdependent systems rather than isolated variables. Furthermore, the analysis reveals consistent and statistically significant relationships between these dimensions and the Global Competitiveness Index (GCI) over the 2021–2025 period. The persistence of these

coefficients over time indicates that the influence of culture on competitiveness reflects a systematic structural pattern rather than a transient or random occurrence.

Power Distance (PDI) demonstrates the most substantial negative relationship with competitiveness, yielding high and statistically significant coefficients across all analyzed years (e.g., $r = -0.793$ for 2025; $p < 0.01$). According to the Evans (1996) classification, this represents a strong-to-very-strong negative correlation, confirming H1. The results indicate that societies with higher levels of power concentration and hierarchical organization tend to exhibit lower competitiveness, which may be linked to reduced adaptability, limited individual initiative, and diminished innovation potential.

In contrast to the negative impact of hierarchy, Individualism (IDV) is positively and significantly associated with competitiveness ($r = 0.658$ for 2025; $p < 0.01$). Thus, H2 was validated. This strong positive correlation (Evans, 1996) suggests that societies promoting individual autonomy, personal responsibility, and decentralization achieve superior economic performance. The results emphasize the relevance of initiative, entrepreneurial orientation, and performance-driven behavior as factors associated with higher competitiveness.

Interestingly, Motivation towards Achievement and Success (MAS) shows a weak to moderate and inconsistent relationship with competitiveness. While some years show a negative trend ($r = -0.435$ for 2025), the significance is not uniform across the 2021–2025 period. Hence, H3 is rejected. This suggests that a singular focus on material success and aggressive competition is not the primary driver of modern European competitiveness. Instead, the data implies that top-tier economies may rely on balanced and cooperative value systems (lower MAS) that prioritize social cohesion and quality of life alongside economic output.

Uncertainty Avoidance (UAI) demonstrates a moderate-to-strong negative relationship with competitiveness ($r = -0.577$ for 2025; $p < 0.01$), H4 is accepted. This suggests that societies with a high preference for strict rules, predictability, and the avoidance of ambiguity tend to be less competitive. In the context of a rapidly evolving global economy, high UAI may manifest as institutional rigidity and a collective resistance to change, which ultimately constrains a nation's innovation and adaptability.

Long-Term Orientation (LTO) is positively and moderately correlated with competitiveness ($r = 0.447$ for 2025; $p < 0.05$), confirming H5. This finding supports the notion that future-oriented values such as strategic planning, perseverance, and long-cycle investment contribute to sustained economic performance. Countries that prioritize future gains over immediate tradition appear better positioned to navigate long-term structural shifts.

Finally, Indulgence (IND) displays a strong positive relationship with competitiveness ($r = 0.671$ for 2025; $p < 0.01$), H6 is strongly accepted. This result indicates that societies characterized by openness, a high value on subjective well-being, and freedom of expression. This cultural flexibility likely facilitates the flow of ideas and the attraction of global talent, both of which are central to modern international competitiveness.

In summary, the correlation analysis provides initial evidence that cultural environments prioritizing flexibility, autonomy, and a future-oriented strategic outlook are

significantly more likely to foster sustained economic performance. These findings confirm that international competitiveness is not merely a product of fiscal policy or infrastructure, but is deeply embedded in the "collective programming" of a nation's people.

4.2. Multiple linear regression analysis

To examine the joint effect of cultural dimensions on international competitiveness, a Multiple Linear Regression (MLR) model was conducted. In this model, the Global Competitiveness Index (GCI 2025) serves as the dependent variable, while Hofstede's six cultural dimensions are treated as the independent predictors. This multivariate approach is essential for identifying which specific cultural dimensions remain significant drivers of competitiveness when the influence of other variables is simultaneously controlled. According to Field (2013), the model provides critical data on: determined by the standardized Beta coefficients, indicating how a one-unit change in a cultural dimension affects the GCI; measured by the Coefficient of Determination (R^2) which quantifies the proportion of variance in competitiveness explained by the cultural framework and he overall statistical significance of the model was validated using ANOVA (F-test).

- **Coefficient of Determination (R^2)**

The coefficient of determination (R^2) serves as the primary metric for evaluating the strength of the multiple regression model. As defined by Field (2013), it quantifies the proportion of variance in the dependent variable the Global Competitiveness Index (GCI) that can be predicted from the linear combination of the six cultural independent variables.

Table 3. Coefficient of Determination (R^2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908[a]	.825	.767	7.00523

a. Predictors: (Constant), IND, MAS, LTO, UAI, PDI, INV

Source: authors' own calculations using IBM SPSS

The regression model summary (Table 3) reveals a highly significant relationship between the collective cultural dimensions and the competitiveness index. The multiple correlation coefficient (R = 0.908) indicates a very strong linear association between the observed and predicted values of international competitiveness. The coefficient of determination (R^2 = 0.825) demonstrates that approximately 82.5% of the variance in the Global Competitiveness Index (GCI 2025) is explained by the six cultural dimensions included in the model. After accounting for the number of predictors relative to the sample size (N=25), the Adjusted R^2 value (0.767) remains exceptionally high. This confirms that the model is robust and that the cultural framework possesses substantial predictive impact, even when penalized for complexity. The remaining 17.5% of the variation in competitiveness is not captured by the current model. This unexplained variance likely reflects the influence of exogenous factors such as fiscal policy, physical infrastructure,

geopolitical positioning, or immediate institutional reforms that operate independently of deep-seated cultural values. In general, these results indicate a superior model fit. They provide strong empirical support for the premise that national culture is a key driver of international competitiveness within the European Union, rather than a secondary or contextual influence.

- **ANOVA analysis**

To determine the statistical validity of the regression model, an Analysis of Variance (ANOVA) test was applied. As noted by Field (2013), the primary purpose of this test is to determine whether the six cultural independent variables, when analyzed collectively, significantly explain the variation in the dependent variable (GCI 2025).

Table 4. ANOVA results for the Regression Model

ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4162.965	6	693.828	14.139	.000[b]
	Residual	883.318	18	49.073		
	Total	5046.283	24			

a. Dependent Variable: GCI2025
b. Predictors: (Constant), IND, MAS, LTO, UAI, PDI, INV

Source: authors' own calculations using IBM SPSS

The ANOVA results, as detailed in Table 4, confirm that the regression model is statistically significant at the highest level ($F = 14.139$; $p < 0.001$). The relatively high F-value reflects a reliable ratio between the explained variance (the regression sum of squares) and the unexplained variance (the residual sum of squares). This indicates that the model provides a superior fit to the observed data (Luigi et al., 2012). In practical terms, the set of independent variables comprising Hofstede's 6D framework offers a significantly accurate prediction of the Global Competitiveness Index (GCI 2025). These findings validate the structural relevance of the chosen cultural parameters, confirming that the cultural architecture of the EU-25 is a statistically significant predictor of a nation's ability to compete in the global marketplace.

- **Coefficient significance tests**

The significance coefficients are the definitive metrics for determining whether the relationships identified within the multivariate framework are statistically meaningful (Field, 2013). By analyzing the p-values associated with each cultural dimension, we can isolate which independent variables exert a unique and statistically significant effect on the Global Competitiveness Index (GCI 2025), while holding all other factors constant.

Table 5. Regression Coefficients and Significance Tests

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	87.350	15.748		5.547	.000	54.265	120.434
	PDI	-.335	.084	-.494	-3.999	.001	-.511	-.159
	INV	.060	.158	.061	.377	.710	-.272	.391
	MAS	-.131	.062	-.227	-2.112	.049	-.261	-.001
	UAI	-.115	.070	-.194	-1.636	.119	-.262	.033
	LTO	.016	.192	.011	.085	.933	-.387	.420
	IND	.200	.111	.264	1.798	.089	-.034	.433

a. Dependent Variable: GCI2025

Source: authors' own calculations using IBM SPSS

According to the regression coefficients in Table 5, the t-values represent the results of the Student's t-test, providing a standardized measure of both the magnitude and statistical significance of the estimated effects (Dumitrescu et al., 2012). Following the established criteria in international business research, a predictor is considered statistically significant only if its p-value is below the 0.05 threshold, indicating a meaningful unique contribution to the model (Malhotra et al., 2017).

Power Distance (PDI) emerges as the most influencial and statistically significant predictor of competitiveness. It exhibits a strong negative effect (β = -0.494, p = 0.001), confirming that within the EU-25, higher levels of social hierarchy and centralized authority are aggressively associated with lower competitiveness scores (e.g. Slovakia, Bulgaria, Croatia). Motivation towards Achievement and Success (MAS) shows a negative and marginally significant effect (β = -0.227, p = 0.049). This suggests that a singular, aggressive focus on material success may actually hinder competitiveness in the modern European context, perhaps by undermining the collaborative social capital necessary for innovation. Interestingly, Individualism (IDV), Uncertainty Avoidance (UAI), Long-Term Orientation (LTO), and Indulgence (IND) do not retain statistically significant effects within the multivariate model (p > 0.05).

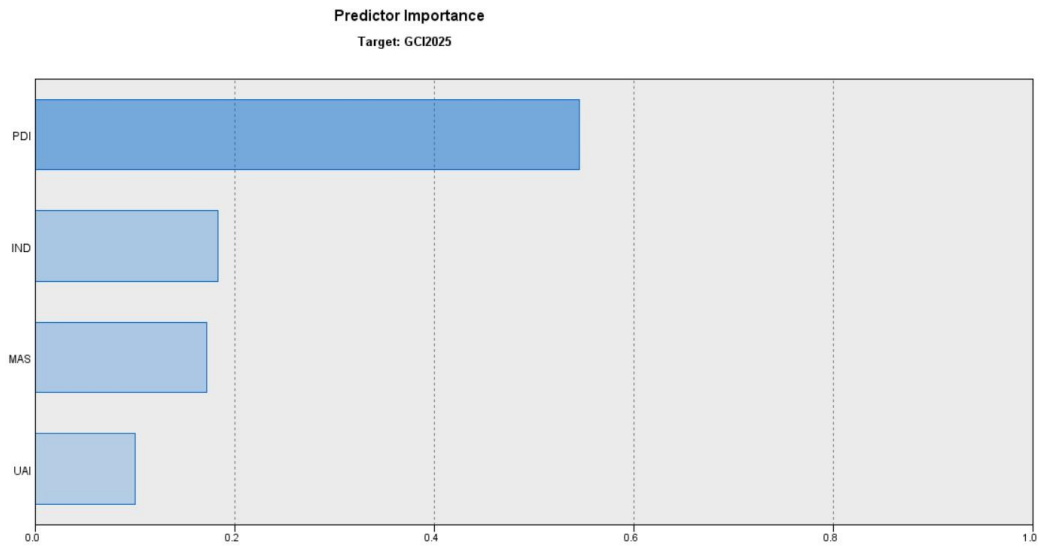
The regression results highlight a critical distinction in cultural impact. While dimensions like Individualism and Indulgence showed strong bivariate correlations with the GCI, their unique explanatory power diminishes in the multivariate context. This suggests that their influence is likely absorbed by the stronger structural effect of Power Distance. In other words, in the EU-25, once you account for how hierarchical a society is, its level of indulgence or long-term planning becomes a secondary consideration for its overall competitive standing. The model's high explanatory power (R^2 = 0.825) confirms H7 that national culture is not a background variable but a primary driver of competitiveness. The joint effect is remarkably strong, indicating that the 6D framework captures the vast majority (over ~80%) of the socio-cultural variance influencing the GCI 2025.

4.3. Automatic linear modelling

To further refine the predictive framework and address the interdependencies identified in the previous stages, Automatic Linear Modeling (ALM) was adopted. This advanced technique enhances the robustness of the results by utilizing an automated, data-driven approach to variable selection and model optimization (Yang, 2013). Unlike traditional OLS regression, ALM focuses on Predictive Accuracy and Relative Importance, effectively handling potential multicollinearity and improving the overall stability of the model. The six cultural dimensions (6D) were entered as predictors of the GCI 2025 at a 95% confidence level. The model utilized the Forward Stepwise method, which iteratively selects only the most significant predictors to optimize the model fit (Vinerean et al., 2013). This ensures that the final model is efficient including only the variables that truly drive the result. The ALM achieved a Predictive Accuracy of 78.8% (IBM, 2019). This value, representing the Adjusted R^2 as a percentage, confirms that the cultural architecture of these nations is an exceptionally reliable predictor of their international competitiveness.

As illustrated in Figure 4, the ALM identifies the specific hierarchy of influence among the cultural dimensions. The Importance values are normalized to sum to 1.0, representing each predictor's unique contribution to the model's explanatory capacity (IBM, 2019). This visualization is critical because it highlights that even if a variable (like Indulgence) was not significant in the standard regression due to overlap with Power Distance, it may still hold significant importance in the automated selection process.

Figure 4. Predictor Importance based on ALM



Source: authors' own calculations using IBM SPSS

Following the analysis, although six predictors were initially included, the Automatic Linear Modeling (ALM) procedure retained a reduced set of four cultural dimensions based on their relative importance. Specifically, Power Distance (PDI: 0.55),

Indulgence (IND: 0.18), Masculinity (MAS: 0.17), and Uncertainty Avoidance (UAI: 0.10) emerged as the most influential predictors, as illustrated in Figure 4.

Table 6 presents the results of the final ALM specification, highlighting the effects of the statistically significant predictors on international competitiveness (GCI 2025). Only variables that meet the required significance threshold, as determined by the F-test, are included in the model, while non-significant predictors are excluded.

Table 6. Predictor Effects in ALM

Effects

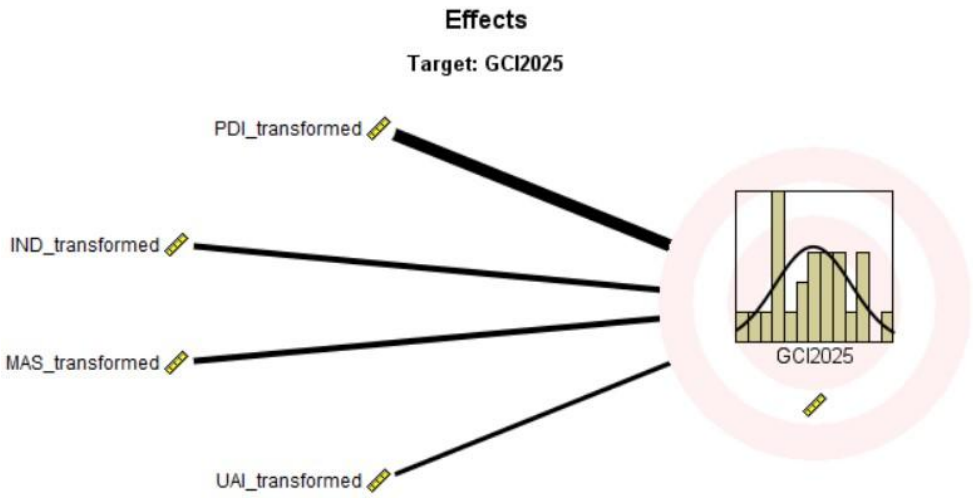
Target: GCI2025

Source	Sum of Squares	df	Mean Square	F	Sig.	Importance
Corrected Model ▼	4,152.750	4	1,038.187	23.238	.000	
PDI_transformed	881.318	1	881.318	19.727	.000	0.546
IND_transformed	295.617	1	295.617	6.617	.018	0.183
MAS_transformed	277.616	1	277.616	6.214	.022	0.172
UAI_transformed	160.925	1	160.925	3.602	.072	0.100
Residual	893.533	20	44.677			
Corrected Total	5,046.283	24				

Source: authors' own calculations using IBM SPSS

Figure 5 provides a visual representation of the ANOVA results, where predictors are ranked according to their relative importance, offering a clear hierarchy of the cultural traits that define the EU-25 economic landscape. The thickness of the connecting lines captures both the strength and statistical significance of their effects on competitiveness, defined as the target variable.

Figure 5. Visual Analysis of Predictor Effects



Source: authors' own calculations using IBM SPSS

Table 7 presents the estimated coefficients of the finalized Automatic Linear Modeling (ALM), highlighting the specific cultural dimensions that maintain a unique and statistically significant influence on the Global Competitiveness Index (GCI 2025).

Power Distance remains the cornerstone of the model (Importance = 0.546). Its strong negative effect ($p < 0.001$) confirms that hierarchical rigidity is the single greatest cultural barrier to competitiveness in the EU25. Indulgence emerges as a secondary but vital predictor (Importance = 0.183; $p = 0.018$). This reinforces the Indulgence - Competitiveness link, suggesting that societies which prioritize well-being and freedom of expression create the necessary fertile ground for innovation. Motivation towards Achievement and Success exhibits a moderate negative effect (Importance = 0.172; $p = 0.022$). This counter-intuitive finding implies that in the modern European knowledge economy, collaborative and quality-of-life-oriented values (low MAS) are more effective than aggressive, material-success-driven competition. While retained in the visualization, Uncertainty Avoidance (UAI) did not reach the threshold of statistical significance ($p = 0.072$). This indicates that its contribution to competitiveness is largely redundant once the structural impacts of PDI and MAS are controlled for.

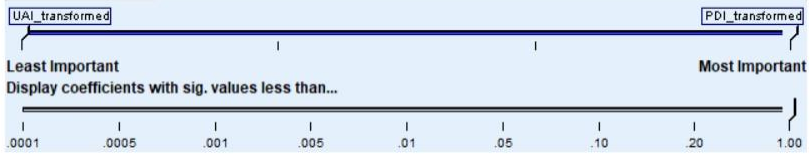
The empirical findings from this three-phase analysis provide robust evidence for the profound influence of national culture on international competitiveness within the EU25. The results confirm that culture is not a monolithic background variable, but a dynamic system of drivers and inhibitors (Table 7).

Table 7. ALM Coefficients and Predictor Importance

Coefficients

Target: GCI2025

Model Term	Coefficient ▼	Std.Error	t	Sig.	95% Confidence Interval		Importance
					Lower	Upper	
Intercept	92.526	7.931	11.666	.000	75.982	109.069	
PDI_transformed	-0.344	0.077	-4.441	.000	-0.505	-0.182	0.546
IND_transformed	0.222	0.086	2.572	.018	0.042	0.402	0.183
MAS_transformed	-0.140	0.056	-2.493	.022	-0.256	-0.023	0.172
UAI_transformed	-0.121	0.064	-1.898	.072	-0.254	0.012	0.100



Source: authors' own calculations using IBM SPSS

This confirms that the model's predictive accuracy (78.8%) is not reliant on a single outlier variable but is built on a multi-dimensional cultural foundation. The retention of three distinct predictors (PDI, IND, MAS) proves that competitiveness is influenced by a complex interplay of hierarchy, social well-being, and collaborative values. Thus, H8 was supported.

5. Discussions

This study contributes to addressing the gap identified by Țîmbalari and Herciu (2023) by advancing empirical evidence on the cultural determinants of national performance. By applying a multi-phase methodology to the EU-25 cluster, this study confirms that international competitiveness is deeply embedded in broader socio-cultural contexts (Moon & Choi, 2001), extending years of inquiry into the cultural foundations of business environments (Herciu, 2014).

The findings of this study offer substantial support for the role of cultural dimensions in shaping international competitiveness, confirming the fundamental premise that economic performance is interrelated embedded in broader socio-cultural contexts (Moon & Choi, 2001; Le & Wejrot, 2016). Across the analyses, the results are broadly consistent with prior research (Mihaela et al., 2011; Chen et al., 2021; Servi, 2024), while providing a more specific understanding through the integration of all 6D Hofstede dimensions and the application of multi-phase statistical techniques.

The most notable finding of this study is the dominant negative influence of Power Distance (PDI), which emerged as the strongest predictor of competitiveness (H1 supported). This aligns with Herciu & Ogrean (2008), Cheung & Chan (2010) and Mihaela

et al. (2011), reinforcing the theory that hierarchical rigidity acts as a structural brake. These findings are consistent with North's (1990) institutional framework, suggesting that high power distance is linked to the development of restrictive rather than inclusive institutional structures. In line with this perspective, Cahyadi et al. (2024) argue that high-PDI environments constrain the individual initiative essential for a knowledge-based economy.

In contrast, the positive association of Individualism (IDV) with knowledge creation and innovation-driven growth (H2 supported) matches the findings of Shane (1993), Andrijauskienė & Dumčiuvienė (2017), Cahyadi et al., 2024 and Obalade & Maharaj (2026) who argued that individualistic societies provide the psychological safety required for radical innovation.

The rejection of Hypothesis H3 the negative or weak relationship of Motivation towards Achievement and Success (MAS) is a significant academic nuance. While traditional economic models (such as Porter's Diamond) emphasize aggressive competition, our findings support Handoyo (2018) and Hofstede's (2011) observation that in advanced, integrated economies like the EU-25, values such as cooperation and quality of life may be more vital for long-term stability and sustainable competitiveness than raw material success.

The negative impact of Uncertainty Avoidance (UAI) (H4 supported) confirms the resistance to change model identified by Johnson & Lenartowicz (1998) and Cheung & Chan (2010). At the same time, the reduced significance of this dimension in the ALM model suggests that its influence may be mediated by other cultural or institutional factors (Varblane et al., 2007; Hofstede, 2011).

Regarding Long-Term Orientation (LTO), the moderate positive link (H5 partially supported) indicates that while future-oriented values like thrift and perseverance contribute to performance (Minkov, 2018), their impact in the EU may be attenuated by institutional convergence (Taras et al., 2011), where EU-wide regulations harmonize strategic planning across borders.

A major contribution of this study is the robust support for Indulgence (IND) as a significant predictor (H6 supported). While Hofstede's newest dimension is often overlooked in classical literature, our ALM results suggest that traits related to well-being and freedom of expression are becoming hard economic assets. This aligns with Florida's (2002) Creative Class theory, suggesting that open and indulgent societies attract the talent necessary for 2026-era competitiveness.

At a systemic level, the support for H7 and H8 confirms that cultural configurations are essential to international competitiveness. The Significant 4D identified by the ALM (PDI, IND, MAS, and UAI) suggests that a parsimonious cultural model can explain nearly 78.8 % of competitiveness variance.

However, as Hofstede (2011) and Williamson (2000) caution, culture does not act in a vacuum. These relationships are part of a complex, triadic interaction between cultural values, institutional quality, and economic history. Competitiveness, therefore, is not a product of culture alone, but of a culture that is successfully aligned with modern economic requirements Taken together, these findings reinforce the foundational view that cultural configurations are a core component of international competitiveness, influencing not only individual behavioral patterns but also institutional effectiveness and macroeconomic outcomes (Moon & Choi, 2001; Le & Wejrot, 2016). However, in alignment with Hofstede

(2011), these relationships must be interpreted with academic caution. Because cultural dimensions such as Power Distance and Individualism are often historically intertwined with levels of economic development, the cultural effect should be viewed as part of a complex, triadic interaction between cultural values, institutional quality, and economic history. Competitiveness, therefore, is not a product of culture alone, but of a culture that is a predictor, a successfully aligned with modern institutional and economic requirements.

6. Conclusions

6.1. Theoretical Contributions

This research provides a dual contribution to the fields of cross-cultural management and international economics by bridging the gap between behavioral sociology and macroeconomic performance indicators. This study contributes to the literature on national culture by integrating the Hofstede 6D framework into the analysis of international competitiveness, addressing a critical gap often overlooked in traditional, purely econometric models. The findings confirm that despite the rapid digital and economic convergence of the EU-25, national culture remains a stable, deeply rooted determinant of performance. This suggests that culture matters as much in 2026 as it did when the dimensions were first conceptualized, providing a consistent explanatory framework for persistent gaps in European economic performance. By validating Indulgence and Power Distance as primary drivers, this research shifts the theoretical focus away from traditional hard drivers (like raw material success) toward soft institutional drivers (like psychological safety and creative freedom) as the modern pillars of the Global Competitiveness Index (GCI 2025).

From a methodological perspective, this study moves beyond the limitations of single-model analysis by employing a triangulated statistical approach. This combined approach demonstrates that while a variable might appear secondary in a standard regression, its Importance in an automated, predictive framework can be substantial, offering a more holistic view of how cultural configurations collectively shape a nation's competitive advantage.

6.2. Practical and Managerial Implications

The empirical evidence derived from the EU-25 cluster provides a strategic roadmap for both public policymakers and private-sector leaders. By identifying the specific cultural levers that drive or inhibit competitiveness, this study offers the following actionable insights: the dominant influence of Power Distance (PDI) and Uncertainty Avoidance (UAI) suggests that institutional reforms must prioritize the reduction of hierarchical and bureaucratic barriers. International competitiveness strategies should focus on shifting from centralized command-and-control governance to more participatory, transparent, and merit-based systems. This is particularly critical for high-PDI nations in the Eastern and Southern EU blocks. The significance of Indulgence (H6) suggests that policymakers should view investments in quality of life, work–life balance, and creative freedom not merely as social expenditures, but as core components of a high-

performance, innovation-driven economy, as reflected in leading EU-25 economies such as Denmark, Sweden, and Ireland. The findings highlight the necessity for differentiated policy approaches. Given that cultural configurations remain diverse across the EU-25, the European Commission should support context-sensitive competitiveness frameworks that respect national cultural rather than imposing a uniform institutional model.

From a managerial perspective, the results emphasize that organizational effectiveness is contingent upon a cultural-structural fit. In the modern European business environment, managers should transition toward leadership styles that emphasize employee empowerment and flat communication (Low PDI). This reduces the innovation tax created by rigid hierarchies and allows for the rapid adaptation required in a volatile global market. Given the negative impact of Uncertainty Avoidance (UAI) on competitiveness, managers must cultivate organizational cultures that reward risk-taking and view failure as a learning mechanism. This is essential for maintaining a competitive edge in high-tech and creative industries. For multinational corporations operating across the EU-25, these findings provide a cultural diagnostic tool. Managers can use the Significant 4D (PDI, IND, MAS, UAI) to adapt their HR practices and operational strategies when moving between different European cultural clusters (e.g., from a Nordic to a Mediterranean context).

6.3. Limitations and Future Research Perspectives

Despite the robust predictive power of the current model (78.8% accuracy), several limitations must be acknowledged to provide a balanced context for the findings. The primary limitation of this study is its focus on the EU-25 cluster. While this provides a cohesive regulatory and economic framework for analysis, it restricts the broader applicability of the results to the entire European continent (comprising approximately 44 nations). The exclusion of high-performing non-EU economies such as Norway, Switzerland, Iceland, and the United Kingdom may omit critical variations in the relationship between culture and competitiveness. Consequently, the external validity of the findings is bounded by the institutional specificities of the European Union, and results should be generalized to non-Member States with caution. The current analysis treats the EU-25 as a singular entity to identify broad cultural drivers. However, it does not explicitly account for sub-regional clusters (e.g., Nordic, Baltic, Mediterranean, or Central-Eastern European). Future research should employ Cluster Analysis to explore how cultural influence manifests within these specific geographical and economic groupings. This would provide deeper insights into whether the impact of Indulgence (IND) or Power Distance (PDI) operates differently across different European stages of development.

Finally, the study utilized a relatively concise timeframe (2021–2025). While this captures the post-pandemic recovery and modern digital shift, it may not fully account for long-term structural cultural shifts, which typically evolve over decades. Future studies should adopt longitudinal or panel data analysis to track the co-evolution of cultural values and competitiveness scores over a 10 year horizon. This would allow researchers to track cultural shifts and determine if the increasing importance of Indulgence is a permanent structural change in the global economy or a temporary post-pandemic trend.

7. References

Agag, G., Durrani, B. A., Abdelmoety, Z. H., Daher, M. M., & Eid, R. (2024). Understanding the link between net promoter score and e-WOM behaviour on social media: The role of national culture. Journal of Business Research, 170, 114303. https://doi.org/10.1016/j.jbusres.2023.114303

Aiginger, K., & Vogel, J. (2015). Competitiveness: from a misleading concept to a strategy supporting Beyond GDP goals. Competitiveness Review, 25(5), 497-523. https://doi.org/10.1108/CR-06-2015-0052

Alesina, A., & Giuliano, P. (2015). Culture and institutions. Journal of economic literature, 53(4), 898-944. https://doi.org/10.1257/jel.53.4.898

Anca, H. D. (2012). Literature review of the evolution of competitiveness concept. Annals of the University of Oradea, Economic Science Series, 21(1), 41-46.

Andrijauskienė, M., & Dumčiuvienė, D. (2017, October). Hofstede's cultural dimensions and national innovation level. In DIEM: Dubrovnik International Economic Meeting (Vol. 3, No. 1, pp. 189-205). Sveučilište u Dubrovniku.

Antonakakis, N., Fisera, B., & Workie Tiruneh, M. (2025). Beyond competitiveness: is productivity everything?. Review of Development Economics, 29(3), 1522-1545. https://doi.org/10.1111/rode.13171

Apsalone, M., & Šumilo, Ērika. (2015). Socio-cultural factors and international competitiveness. Business, Management and Economics Engineering, 13(2), 276-291. https://doi.org/10.3846/bme.2015.302

Baldwin, J. R., Faulkner, S. L., Hecht, M. L., & Lindsley, S. L. (Eds.). (2006). Redefining culture: Perspectives across the disciplines. Routledge.

Berkes, L. (2025). Cultural Diversity and Identity Building for the European Union. https://doi.org/10.54237/profnet.2025.azsvlbffde_8

Beugelsdijk, S., Maseland, R., & Van Hoorn, A. (2015). Are scores on Hofstede's dimensions of national culture stable over time? A cohort analysis. Global Strategy Journal, 5(3), 223-240. https://doi.org/10.1002/gsj.1098

Beugelsdijk, S., Kostova, T., & Roth, K. (2017). An overview of Hofstede-inspired country-level culture research in international business since 2006. Journal of International business studies, 48(1), 30-47. https://doi.org/10.1057/s41267-016-0038-8

Beugelsdijk, S., & Welzel, C. (2018). Dimensions and dynamics of national culture: Synthesizing Hofstede with Inglehart. Journal of cross-cultural psychology, 49(10), 1469-1505. https://doi.org/10.1177/0022022211879850

Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational culture and innovation: A meta-analytic review. Journal of product innovation management, 30(4), 763-781. https://doi.org/10.1111/jpim.12021

Cahyadi, A., Marwa, T., Wahyudi, T., Muizzuddin, Sulastri, Maulana, A., & Szabó, K. (2024). Exploring the mediating role of innovation in the nexus between national culture and sustainable competitiveness. Administrative Sciences, 14(12), 310. https://doi.org/10.3390/admsci14120310

Chen, S., & Lin, N. (2021). Culture, productivity and competitiveness: disentangling the concepts. Cross Cultural & Strategic Management, 28(1), 52-75 https://doi.org/10.1108/CCSM-02-2020-0030

Cheung, H. Y., & Chan, A. W. H. (2010). Education and competitive economy: how do cultural dimensions fit in?. Higher Education, 59(5), 525-541. DOI https://doi.org/10.1007/s10734-009-9263-4

Diamastuti, E., Nastiti, T. A., & Khoirina, M. M. (2020). The influence of Hofstede' s cultural dimensions on corporate social responsibility implementation: a study on state-owned

companies in Java, Indonesia. The Indonesian Accounting Review, 10(2), 117-133. https://doi.org/10.14414/tiar.v10i2.1843

Dumitrescu, E. I., Hurlin, C., & Pham, V. (2012). Backtesting value-at-risk: from dynamic quantile to dynamic binary tests. Finance, 33(1), 79-112. https://doi.org/10.3917/fina.331.0079

Evans, J. D. (1996). Straightforward statistics for the behavioral sciences. Thomson Brooks/Cole Publishing Co

European Commission. (2019), Available at: https://ec.europa.eu/regional_policy/information-sources/publications/working-papers/2019/the-european-regional-competitiveness-index-2019_en, accessed in November 2025

Fernández, R. (2011). Does culture matter?. Handbook of social economics, 1, 481-510

Field, A. (2013) Discovering Statistics Using IBM SPSS Statistics: And Sex and Drugs and Rock "N" Roll, 4th Edition, Sage, Los Angeles, London, New Delhi.

Florida, R. (2002). The rise of the creative class: And how it's transforming work, leisure, community and everyday life. Basic Books.

Garelli, S. (2006). Top class competitors: how nations, firms, and individuals succeed in the new world of competitiveness. John Wiley & Sons.

Genç, S., & Mendeş, M. (2024). Multiple linear regression versus automatic linear modelling. *Arquivo Brasileiro de Medicina Veterinária e Zootecnia*, *76*, 131-136. https://doi.org/10.1590/1678-4162-13071

Gordon, C. (2007). Culture and the European Union in a global context. *The Journal of Arts Management, Law, and Society*, *37*(1), 11-30. https://doi.org/10.3200/JAML.37.1.11-30

Gorodnichenko, Yuriy, and Gerard Roland. (2011). "Which Dimensions of Culture Matter for Long-Run Growth?" American Economic Review 101 (3): 492–98. https://doi.org/10.1257/aer.101.3.492

Gygli, S., Haelg, F., Potrafke, N., & Sturm, J. E. (2019). The KOF globalisation index–revisited. The Review of International Organizations, 14(3), 543-574. https://doi.org/10.1007/s11558-019-09344-2

Hair Jr, J., Page, M., & Brunsveld, N. (2019). Essentials of business research methods. Routledge. https://doi.org/10.4324/9780429203374

Halkos, G. E., & Tzeremes, N. G. (2013). Modelling the effect of national culture on countries' innovation performances: A conditional full frontier approach. International review of applied economics, 27(5), 656-678. http://dx.doi.org/10.1080/02692171.2013.778819

Handoyo, S. (2018). Does national culture matter? An exploratory study on the relationship of national competitiveness and national culture. Indonesian Journal of Business and Entrepreneurship, 4(3), 249-249. http://dx.doi.org/10.17358/IJBE.4.3.249

Hayton, J. C., George, G., & Zahra, S. A. (2002). National culture and entrepreneurship: A review of behavioral research. Entrepreneurship theory and practice, 26(4), 33-52. https://doi.org/10.1177/104225870202600403

Herciu, M. (2006). The influence of culture on the economic freedom and the international business.

Herciu, M. (2007). Management comparat. Publishing House Lucian Blaga University of Sibiu.

Herciu, M. (2007). The Competitiveness of national economies in their struggle for power supremacy. Studies in Business and Economics, 2(2), 16-29.

Herciu, M., & Ogrean, C. (2008). Study regarding the correlation between cultural dimensions and competitiveness: Evidences for European Union. ISSN 1931-0285 CD ISSN 1941-9589 Online, 58.

Herciu, M., & Ogrean, C. (2011). Interrelations between economic freedom, knowledge economy and global competitiveness–comparative analysis Romania and EU average. Studies in Business and Economics, 6(2), 46-59.

Herciu, M. (2014). A synergistic approach of cross-cultural management and leadership style. Journal of International Studies, 7(2), 106-115. https://doi.org/10.14254/2071-8330.2014/7-2/9

Hofstede, G. (1980). Culture and organizations. International studies of management & organization, 10(4), 15-41.

Hofstede, G. (2001). Culture's recent consequences: Using dimension scores in theory and research. International Journal of cross cultural management, 1(1), 11-17.

Hofstede, G. (2010). Cultures and Organizations: Software of the Mind (3rd ed.). New York: McGraw-Hill.

Hoftede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and organizations: software of the mind: intercultural cooperation and its importance for survival. McGraw-Hill.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. Online readings in psychology and culture, 2(1), 8. https://doi.org/10.9707/2307-0919.1014

Hofstede, G. (2011). National Cultures, Organizational Cultures, and the Role of Management. Cultural Diversity, 7.

Hofstede, G., Hofstede, G.J., Michael Minkov. (2012). Culturi și organizații. Softul mental. Cooperarea interculturală și importanța ei pentru supraviețuire. Traducere din engleză Zografi Mihaela, Ed.Humanitas.

Hofstede, G. (2025). The Culture Factor Group. Hofstede country comparison tool. Available at: https://www.theculturefactor.com/country-comparison-tool (Accessed: November 2025).

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Eds.). (2004). Culture, leadership, and organizations: The GLOBE study of 62 societies. Sage Publications.

Huang, C. J., Liu, H. Y., Lin, T. L., & Lai, J. Y. (2024). Revisiting Hofstede's dimensions of national culture and environmental sustainability. Energy & Environment, 35(3), 1251-1269. https://doi.org/10.1177/0958305X221140579

IBM SPSS Statistics (2019). IBM SPSS Statistics for Windows (Version 26.0). IBM Corp., Armonk, NY, USA.

Institute for Management Development, IMD. (2025). World Competitiveness Yearbook 2023. Lausanne: International Institute for Management Development, accessed online on November 2025, https://www.imd.org/centers/wcc/world-competitiveness-center/rankings/world-competitiveness-ranking/

Inglehart, R., & Welzel, C. (2005). Modernization, cultural change, and democracy: The human development sequence (Vol. 333). Cambridge University Press.

Inglehart, R., & Welzel, C. (2023). The Inglehart-Welzel World Cultural Map - World Values Survey 7 (2023). Available at: http://www.worldvaluessurvey.org/ , accessed in November 2025

Johnson, J. P., & Lenartowicz, T. (1998). Culture, freedom and economic growth: do cultural values explain economic growth?. Journal of world business, 33(4), 332-356. https://doi.org/10.1016/S1090-9516(99)80079-0

Kolluru, M., & Suresh, V. (2020). A cluster analysis on sustained global competitiveness for European countries. ECONOMICS-Innovation and Economic Research, 8(01), 7-22. https://doi.org/10.2478/eoik-2020-000

Lam, L., Nguyen, P., Le, N., & Tran, K. (2021). The relation among organizational culture, knowledge management, and innovation capability: Its implication for open innovation. Journal of open innovation: technology, market, and complexity, 7(1), 66. https://doi.org/10.3390/joitmc7010066

Le, T., & Wejrot, L. B. P. (2016). Global competitiveness, human capital, and Hofstede's cultural dimensions: Does culture influence national competitiveness?

Lee, S. M., & Peterson, S. J. (2000). Culture, entrepreneurial orientation, and global competitiveness. Journal of world business, 35(4), 401-416. https://doi.org/10.1016/S1090-9516(00)00045-6

Licht, A. N., Goldschmidt, C., & Schwartz, S. H. (2007). Culture rules: The foundations of the rule of law and other norms of governance. Journal of comparative economics, 35(4), 659-688. https://doi.org/10.1016/j.jce.2007.09.001

Luigi, D., Oana, S., Mihai, T., & Simona, V. (2012). The use of regression analysis in marketing research. Studies in Business & Economics, 7(2).

Ma, X., & Gooi, L. M. (2025, May). Impact of Hofstede's Cultural Dimensions and Economic Indicators on Service Trade: an Empirical Analysis from ASEAN. In 2025 4th International Conference on Big Data Economy and Digital Management (BDEDM 2025) (pp. 4-17). Atlantis Press. https://doi.org/10.2991/978-94-6463-710-6_2

Malhotra, N. K., Nunan, D., & Birks, D. F. (2017). Marketing Research: An Applied Ap proach (5th ed.). Pearson Education.

Memili, E., Fang, H. C., Koc, B., Yildirim-Öktem, Ö., & Sonmez, S. (2018). Sustainability practices of family firms: The interplay between family ownership and long-term orientation. *Journal of Sustainable Tourism*, *26*(1), 9-28. https://doi.org/10.1080/09669582.2017.1308371

Mihaela, H., Claudia, O., & Lucian, B. (2011). Culture and national competitiveness.African Journal of Business Management, 5(8), 3056-3062. https://doi.org/10.5897/AJBM10.145

Minkov, M. (2011). Cultural differences in a globalizing world. Emerald Group Publishing.

Minkov, M. (2018). A revision of Hofstede's model of national culture: Old evidence and new data from 56 countries. Cross Cultural & Strategic Management, 25(2), 231-256. https://doi.org/10.1108/CCSM-03-2017-0033

Moon, H.-C., & Choi, E.-K. (2001). Cultural Impact on National Competitiveness. Journal of International and Area Studies, 8(2), 21–36.

Mornah, D., & MacDermott, R. (2016). Culture as a determinant of competitive advantage in trade. International Journal of Business and Economic Sciences Applied Research (IJBESAR), 9(1), 69-76.

Nicolo, G., Bryl, L., & Ferullo, D. (2025). The impact of national cultural dimensions on corporate environmental, social and governance disclosure: evidence from social media practices. Business Strategy and the Environment, 34(5), 6345-6362. https://doi.org/10.1002/bse.4304

North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

Obalade, G. O., & Maharaj, A. (2026). Impact of Hofstede Cultural Dimensions on the Global Innovation Index of African Nations.

Ogrean, C., & Herciu, M. (2010). Globalization and the dynamics of competitiveness–a multilevel bibliographical study. Studies in Business and Economics, 5(1), 126-138

OECD (2011) Guidelines for Multinational Enterprises, 2011 Edition, Available at: https://www.oecd.org/en/publications/ , accessed in November 2025

OECD (2025) Methodologies to Measure Market Competition, Available at: https://www.oecd.org/en/publications/methodologies-to-measure-market-competition_29bf31c1-en.html, accessed in January 2026

Smith, A. (1976). The wealth of nations [1776], Available at: https://www.adamsmith.org/blog/the-revolution-of-1776, accessed in November 2025

Porter Michael, E. (1990). The competitive advantage of nations. Harvard Business Review, 68(2), 73-93.

Poulova, P., Wang, H., Lin, S., Wu, X., Tehseen, S., & Liu, X. (2024). Impact of Hofstede's cultural dimensions on sustainable competitive advantage: The mediating role of entrepreneurial innovativeness among Malaysian ethnic https://doi.org/10.1016/j.actpsy.2024.104538

Servi, J. P. (2024). The Impact of Cultural Dimensions on Competitiveness: Insights for Nations and Organizations. International Journal of Global Business and Competitiveness, 19(2), 150-158. https://doi.org/10.1007/s42943-024-00102-9

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Advances in Experimental Social Psychology (Vol. 25, pp. 1-65). Academic Press.

Schwartz, S. H. (2012). An Overview of the Schwartz Theory of Basic Values. Online Readings in Psychology and Culture, 2(1). https://doi.org/10.9707/2307-0919.1116

Siddiqi, N., & Shafiq, M. (2017). Cultural value orientation and gender equity: a review. Social Psychology & Society, 8(3).https://doi.org/10.17759/sps.2017080304

Shane, S. (1993). Cultural influences on national rates of innovation. Journal of Business Venturing, 8(1), 59–73. https://doi.org/10.1016/0883-9026(93)90011-S

Sunny, S., Patrick, L., & Rob, L. (2019). Impact of cultural values on technology acceptance and technology readiness. International Journal of Hospitality Management, 77, 89-96. https://doi.org/10.1016/j.ijhm.2018.06.017

Tabellini, G. (2010). Culture and institutions: Economic development in the regions of Europe. Journal of the European Economic Association, 8(4), 677–716. https://doi.org/10.1111/j.1542-4774.2010.tb00537.x

Taras, V., Rowney, J., & Steel, P. (2009). Half a century of measuring culture: Review of approaches, challenges, and limitations based on the analysis of 121 instruments for quantifying culture. Journal of International Management, 15(4), 357-373. https://doi.org/10.1016/j.intman.2008.08.005

Taras, V., Steel, P., & Kirkman, B. L. (2011). Three decades of research on national culture in the workplace: do the differences still make a difference?. Organizational Dynamics, 40(3), 189-198. https://doi.org/10.1016/j.orgdyn.2011.04.006

Tian, M., Deng, P., Zhang, Y., & Salmador, M. P. (2018). How does culture influence innovation? A systematic literature review. Management decision, 56(5), 1088-1107. https://doi.org/10.1108/MD-05-2017-0462

Treacy, S., Brandt, T., Al-Kharusi, S., Bakhadirov, M., Ahmed, G., Militaru, A. M. G., ... & Dubickis, M. (2025). Cultural differences of needed qualities towards entrepreneurship. https://scientificia.com/index.php/JEBE/article/view/224

Trompenaars, F., & Hampden-Turner, C. (2011). Riding the waves of culture: Understanding diversity in global business. Nicholas Brealey International.

Trompenaars, F., & Hampden-Turner, C. (2025). Available at: https://www.thtconsulting.com/models/7-dimensions-of-culture/, accessed in November 2025

Țîmbalari, C. (2019). Dimensions of national culture–cross-cultural theories. Studies in Business and Economics, 14(3), 220-230. https://doi.org/10.2478/sbe-2019-0055

Țîmbalari, C., & Herciu, M. (2023). The synergy between culture and competitiveness: A bibliometric analysis. Studies in Business and Economics, 18(2), 303-319. https://doi.org/10.2478/sbe-2023-0039

Valverde-Moreno, M., Torres-Jiménez, M., Lucia-Casademunt, A. M., & Pacheco-Martínez, A. M. (2021). Do national values of culture and sustainability influence direct employee PDM levels and scope? The search for a European answer. Sustainability, 13(14), 8016. https://doi.org/10.3390/su13148016

Varblane, U., Dyker, D., Tamm, D., & von Tunzelmann, N. (2007). Can the national innovation systems of the new EU member states be improved?. Post-Communist Economies, 19(4), 399-416. https://doi.org/10.1080/14631370701680048

Vinerean, S., Cetina, I., Dumitrescu, L., & Tichindelean, M. (2013). The effects of social media marketing on online consumer behavior. International journal of business and management, 8(14), 66. . https://doi.org/10.5539/ijbm.v8n14p66

Vizmonte, Emily Jo and Ligot, Dominic Vincent, Analyzing the Relationship Between Cultural Dimensions and Educational Performance using Hofstede model and PISA Data (January 7, 2024). http://dx.doi.org/10.2139/ssrn.4686789

Vîrjan, D., Manole, A. M., Stanef-Puică, M. R., Chenic, A. S., Papuc, C. M., Huru, D., & Bănacu, C. S. (2023). Competitiveness—the engine that boosts economic growth and revives the economy. Frontiers in Environmental Science, 11, 1130173. https://doi.org/10.3389/fenvs.2023.1130173

Walenia, A. (2022). Competitiveness of the European Union Member States according to the Institute of Management Development index (IMD). VUZF Review, 7(2), 229. https://doi.org/10.38188/2534-9228.22.2.23

Williamson, O. E. (2000). The new institutional economics: Taking stock, looking ahead. Journal of Economic Literature, 38(3), 595–613. https://doi.org/10.1257/jel.38.3.595

World Competitiveness Ranking (2021; 2022; 2023; 2024; 2025) Available at: https://www.imd.org/centers/wcc/world-competitiveness-center/rankings/world-competitiveness-ranking/rankings/wcr-rankings/#_tab_List (Accessed: November 2025 & January 2026).

World Economic Forum, (2016) Available at: https://www.weforum.org/agenda/2016/09/what-is-competitiveness/, accessed in November 2025

World Economic Forum. (2020). The Global Competitiveness Report 2020. Geneva: World Economic Forum. Available at: https://www.weforum.org/publications/the-global-competitiveness-report-2020/ (Accessed: December 2025)

World Economic Forum. (2025). Global Economic Futures: Competitiveness in 2030, Available at: https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Competitiveness_in_2030_2025.pdf (Accessed: November 2025 & December, 2025).

Yang, H. (2013). The case for being automatic: introducing the automatic linear modeling (LINEAR) procedure in SPSS statistics. Multiple Linear Regression Viewpoints, 39(2), 27-37.