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Krakow University of Economics
Centre for Strategic and International Entrepreneurship
Department of International Trade
ul. Rakowicka 27, 31-510 Kraków, Poland
phone +48 12 293 5929, -5376, -5307, -5381
e-mail: eber@uek.krakow.pl
www.eber.uek.krakow.pl

Secretariat and Editorial Office

Mrs. Anna Marcinek-Markowska
Building U, Room 300, phone +48 12 293 5929

Executive Team for this Issue

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Bowing to the inevitable? Unravelling the mediation effects of culture on the relationship between resignation and corrupt behaviour

Richard Kasa, Gabor Rethi, Csaba Kerekgyarto

ABSTRACT

Objective: This study aims to examine how cultural dimensions mediate the relationship between accepting corruption and engaging in corrupt behaviours. The study examines how cultural traits affect the normalisation of corruption in organisations and societies.

Research Design & Methods: The study uses a quantitative approach, sampling with a structured online questionnaire completed by 4222 valid respondents in Hungary. The survey integrates vignettes to measure acceptance and willingness regarding corrupt practices, alongside the CVSCALE to assess six cultural dimensions. The study applies Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modelling (SEM), and Sobel tests.

Findings: We found that cultural factors such as long-term orientation, motivation for success, power distance, and indulgence significantly influence the willingness to engage in corrupt behaviour. However, collectivism and uncertainty avoidance have little effect. The acceptance-willingness relationship is mediated by cultural factors like success motivation and power distance, which shape corrupt practices.

Implications & Recommendations: The study recommends targeted interventions to combat corruption, including reforming cultural norms that prioritise immediate gratification, tolerate hierarchical inequalities, or associate success with unethical practices. Collectivism and uncertainty avoidance interventions may have little effect, so resources should be allocated to predictive dimensions.

Contribution & Value Added: This study uncovers how cultural factors influence corruption-related behaviours, filling gaps in the literature on resignation, cultural traits, and corrupt practices. It shows policymakers how to develop culturally nuanced anti-corruption strategies using structural and value-based reforms.

Article type:	research article
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INTRODUCTION

In many of today's societies, corruption remains a persistent barrier, with broad implications for economic development, social cohesion, and public confidence (Agyenim *et al.*, 2020; Hira, 2016; Kakavand *et al.*, 2019; Klitgaard, 2017; Laver, 2014; Treviño *et al.*, 1999; Urban, 2019). As causes of corruption are very diverse (Rose-Ackerman & Palifka, 2016; Srirejeki, 2020), the role of cultural norms and values in shaping individual and institutional responses to corruption requires deeper investigation (Habtemichael & Cloete, 2010; Hooker, 2009; Shihata, 1997). Our research explores how cultural factors may mediate the relationship between accepting (or resisting) corruption as a norm and corrupt

behaviour (enforcing corruption), providing valuable insights that can contribute to the development of more sophisticated anti-corruption policies.

Corruption is a complicated issue that does not lend itself to simple explanations, according to the mainstream literature (Dupuy & Neset, 2018; Goel & Nelson, 2010; Park, 2003; Park *et al.*, 2015). Researchers highlighted the influence of individual and societal characteristics, including cultural norms and values, in shaping attitudes and behaviours towards corruption (Shihata, 1997; Vian, 2007). As noted by Shihata, 'Societies may differ in their views as to what constitutes corruption, although the concept finds universal manifestations' (Shihata, 1997, p. 12).

An important phenomenon associated with corruption is resignation, *i.e.*, the belief that corruption is inevitable and that individual measures cannot effectively address the problem (Findlay, 2007; Yeboah-Assiamah *et al.*, 2016). A sense of disengagement can create a self-fulfilling cycle in which individuals become increasingly disengaged from efforts to fight corruption and may even participate in or even be complicit in corrupt practices (Habtemichael & Cloete, 2010; Ledeneva, 2018; Stephenson, 2020). However, the extent to which the relationship between resignation and corrupt actions may be mediated by cultural factors has not been sufficiently investigated.

There is still a lack of research in the literature, where empirical evidence is provided to understand these dynamics in different cultural contexts to develop more effective anti-corruption policies and interventions. With the help of researchers, by recognising the role of cultural factors in mediating the relationship between resignation and corrupt behaviour, policymakers and practitioners can develop strategies that are more in line with the social norms and values of the communities they serve.

We investigated the question: To what extent do individual-level cultural dimensions mediate the relationship between the acceptance of corruption and the willingness to participate in corrupt activities? This is due to the complicated interplay between cultural values and corrupt behaviour. Previous research has examined cultural values and attitudes towards corruption independently However, there has been limited discourse on how culture can influence individuals' perceptions of acceptability and their desired actions. The article aims to identify the cultural factors that facilitate or hinder individuals' transition from perceiving corruption as inevitable to engaging in it actively. This includes examining this singular causal pathway. This mindset facilitates the development of anti-corruption strategies that are culturally attuned and transcend mere institutional reforms. They also consider the value systems that influence behaviour.

This study makes a significant advancement in the academic understanding of corruption by empirically elucidating the mediating mechanisms through which particular cultural dimensions, specifically, motivation for achievement and success, power distance, and indulgence, influence the pathway from the acceptance of corruption to the willingness to engage in corrupt acts. Unlike prior research, which has typically treated cultural values and corruption as parallel or loosely associated constructs, this research employs a rigorous structural equation modelling (SEM) framework to systematically test and quantify the mediating effects of these cultural traits within a large, heterogeneous Hungarian sample.

By integrating the CVSCALE instrument to operationalise six cultural dimensions and applying advanced mediation analysis (including the Sobel test), the study identifies that not all cultural traits exert equal influence. It demonstrates that motivation for achievement and success, power distance, and indulgence serve as statistically significant mediators, amplifying the translation of corruption acceptance into corrupt behaviour, while other dimensions, such as collectivism and uncertainty avoidance, do not exhibit meaningful mediation effects. This nuanced differentiation has been largely absent in the extant literature.

The methodological rigour combining exploratory and confirmatory factor analyses with SEM ensures the robustness and validity of the findings, providing a replicable analytical template for future research in diverse cultural contexts. Furthermore, the study's results have clear policy implications: they underscore the necessity of designing anti-corruption interventions that are sensitive to the cultural fabric of a society, prioritising reforms in areas where cultural values most strongly facilitate corrupt behaviour.

In conclusion, this study significantly advances the empirical understanding of the causal pathways connecting cultural values with corruption-related behaviours. Moreover, it provides a rigorously validated methodological framework alongside practical insights, thereby offering valuable guidance for scholars and policymakers aiming to develop culturally nuanced strategies to mitigate corruption.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Definition of Corruption

Broadly defined, corruption is the abuse or misuse of entrusted authority for personal or private benefit. However, its conceptualisation exhibits considerable variability across different sources, notably between international organisations and academic scholarship. While international bodies tend to focus on the detrimental impacts on the public interest and ethical violations, scholarly literature generally emphasises the measurement, normative considerations, and systemic dimensions of corruption, thereby reflecting its inherent complexity and dependence on contextual factors (Dobson Phillips *et al.*, 2025; Jancsics, 2014).

While a minority of studies offer explicit definitions of corruption, the conceptualisations vary considerably. Dobson Phillips *et al.* (2025) propose a comprehensive four-dimensional framework that includes entrusted power, its abuse, private gain, and the consequent harm to the public interest, thereby capturing both processual and outcome-related dimensions. Nichols (2017) provides a succinct definition, characterising corruption as the abuse or misuse of power or trust committed for self-interest. Similarly, Maciel *et al.* (2024) differentiate between corruption as a 'deviant process' and as a 'deviant outcome,' emphasising its multifaceted nature. Conversely, several studies approach the concept of corruption implicitly, framing it as a multidimensional and evolving phenomenon influenced by cultural, economic, institutional, and historical factors (Jancsics, 2014; Rothstein & Varriach, 2017).

The literature employs various dimensional frameworks to conceptualise corruption. Rational-actor models focus on individual incentives and decision-making (Jancsics, 2014), emphasising the role of personal motives in corrupt behaviour. Structural approaches, on the other hand, highlight the importance of social norms and institutional arrangements that shape corrupt practices (Heidenheimer & Johnston, 2002). Relational perspectives draw attention to the influence of social networks and collective dynamics in the propagation and sustainment of corruption (Jancsics, 2014; Pinto *et al.*, 2008). Moreover, some frameworks incorporate process and outcome integration to better understand corruption, as seen in the work of Dobson Phillips *et al.* (2025). Other approaches involve typologies that distinguish between sociotropic and egocentric measurement methods, as well as generic and specific approaches, to provide nuanced insights into corruption phenomena (Maciel *et al.*, 2024).

Contextual factors such as cultural, jurisdictional, and temporal variations are critical. What constitutes corruption in one society may be considered legitimate in another, and social norms play a pivotal role in shaping these perceptions (Jancsics, 2014; Heidenheimer & Johnston, 2002).

Despite definitional diversity, certain elements recur across the literature:

- Abuse or misuse of entrusted power or trust for private or personal gain is the central element.
- The distinction between public and private interest is variably emphasised, with some frameworks explicitly including harm to the public interest (Dobson Phillips *et al.*, 2025).
- Institutional and systemic dimensions are increasingly recognised, moving beyond the focus on individual acts to encompass broader organisational and societal structures (Jancsics, 2014).
- Multidimensionality and evolution are highlighted, acknowledging that corruption is not static but adapts to changing social, economic, and political contexts (Rothstein & Varraich, 2017).

The analysis reveals that while the core of corruption definitions centres on the abuse of entrusted power for private gain, significant variation exists regarding the integration of public harm, normative critique, and contextual influences. International organisations typically stress public harm and ethical betrayal, whereas scholarly literature is more varied, often focusing on measure-

ment, normative, and systemic aspects. The field is evolving toward more nuanced, multidimensional, and context-sensitive frameworks that bridge individual, organisational, and systemic levels of analysis (Dobson Phillips *et al.*, 2025; Jancsics, 2014; Maciel *et al.*, 2024).

Corruption and its Multifaceted Characteristics

The issue of corruption is multifaceted and influenced by a variety of factors, including cultural norms, legal enforcement, and societal constructs. Husted (1999) researched the relationship between wealth, culture, and corruption, emphasising the impact of cultural dimensions like collectivism and uncertainty avoidance on corrupt practices. Fisman and Miguel (2007) explored the role of norms and legal enforcement in combating corruption, underscoring the necessity of effective measures to deter corrupt behaviour. Meanwhile, Park (2003) proposed that a comprehensive, interdisciplinary approach that considers a range of factors beyond traditional economic and legal perspectives is necessary for understanding corruption.

Cultures can be broadly categorised as either rule-based, where behaviour is primarily regulated by adherence to formal rules, or relationship-based, where authority figures and informal networks play a more dominant role in shaping norms and expectations (Hooker, 2009).

In rule-based cultures, resignation towards corruption may be more likely to translate into a sense of individual powerlessness and a greater acceptance of corrupt practices (Akbar & Vujić, 2014; Jackson & Köbis, 2018; Srirejeki, 2020). In contrast, in relationship-based cultures, resignation may be tempered by a stronger reliance on personal connections and a perceived ability to navigate the system through informal channels, potentially minimising the impact of resignation on actual corrupt behaviour (Gorsira *et al.*, 2018; Nekovee & Pinto, 2017; Zibenberg, 2017).

Cultural factors, such as 'collectivity culture,' 'culture of gift-giving and acceptance,' 'extended family system,' and 'ethnic loyalty,' have been identified as potentially mediating the relationship between resignation and corrupt behaviour (Charman & Bennett, 2021; Man, 2019; Yeboah-Assiamah *et al.*, 2016). These cultural norms may create ethical dilemmas for public officials, leading them to prioritise social obligations over professional standards.

To unpack these dynamics, we adopted the mediation-effect framework, examining how cultural dimensions, as outlined in the institutional theory perspective (Pillay & Dorasamy, 2010), can shape the relationship between resignation and corrupt behaviour.

In this study, we examined the behaviour of more than 4000 Hungarian citizens, with a focus on uncovering the nuanced interplay between cultural factors, resignation, and corrupt practices. Corruption in Hungary, whether in the public sector, private sector, or among citizens, is a significant issue that has been subject to various studies and analyses.

Restorative justice has shown immense promise in dealing with minor corruption cases, as evidenced by Prestiwi *et al.* (2022). This approach integrates restorative justice principles, which provide a thorough and expedient method of addressing corrupt behaviour. Furthermore, anti-corruption education, as explored by Suyadi *et al.* (2021), plays a vital role in shaping individuals' perceptions of corruption, particularly in academic settings where corrupt practices may be commonplace.

Lytvyn *et al.* (2023) underscore the importance of implementing administrative and legal measures to combat corruption. To bolster anti-corruption strategies, they provide recommendations based on global best practices. Meanwhile, Domracheva *et al.* (2018) suggest conducting economic security audits as a preventive measure against corrupt practices, particularly in industries that are vulnerable to such activities.

Kurniawati and Achjari (2022) showed that implementing international accounting and auditing standards can positively influence the perception of corruption. By adopting global standards, countries can enhance transparency and accountability, ultimately decreasing the likelihood of corrupt practices. Furthermore, Köbis *et al.* (2022) highlighted the role of descriptive norms in shaping corrupt behaviour, suggesting that societal norms can either discourage or perpetuate corruption.

Borlea *et al.* (2019) suggest that cultural factors, including religiosity and happiness, are influential in determining corruption. To effectively combat corruption, we must comprehend how cultural values im-

pact corrupt behaviour. Meanwhile, Zulaikha *et al.* (2021) have investigated social constructs and underscored the significance of addressing economic disparities that may drive individuals towards corrupt practices. Their research offers valuable perspectives into the behavioural aspects of corruption.

Researchers have looked at how cultural values affect moral development, making moral choices, and buying intentions in a variety of settings (Ho & Lin, 2008). This shows how culture has a big effect on how people act and behave. Studies have shown that cultural values can act as a bridge between caring about the environment and how people act as consumers. This shows the complex ways that culture affects our thoughts and actions (Grover *et al.*, 2024). Organisational culture, which is made up of shared values and beliefs, also has a big impact on how employees act and behave, which shows how important it is to think about cultural dynamics at work (Yang *et al.*, 2017; Zhang & Guo, 2023).

In conclusion, the literature review highlights the multidimensional nature of corruption and the critical role of culture, legal frameworks, education, and societal norms in influencing corrupt behaviour. By integrating findings from these studies, policymakers and practitioners can devise more effective strategies to combat corruption and uphold integrity in governance.

RESEARCH METHODOLOGY

Our analysis of corruption literature indicated a potential research gap in thoroughly assessing the relationship between the acceptance and expediency of corruption regarding the mediating effect of culture. Although current studies investigate cultural impacts on corruption (Agnihotri & Bhattacharya, 2019; Gelbrich *et al.*, 2016; Wang *et al.*, 2022), a more thorough analysis of how cultural values and practices moderate the connection between the acceptance and expediency of corruption appears necessary. We addressed the following research gaps:

- How cultural dimensions (*e.g.*, individualism/collectivism, power distance, uncertainty avoidance) influence the dealing with corruption situations. For example, do cultural backgrounds with high power distance exhibit greater acceptance of corruption due to normalised hierarchical benefits? Some literature (Gelbrich *et al.*, 2016) touches upon cultural discrepancies and their relation to corruption, but further investigation is needed.
- Do certain cultures view corruption as a necessary evil or a pragmatic solution in specific circumstances? What is the role of cultural norms in shaping perceptions of corruption's expediency? Cameron *et al*. (2009) discuss propensities to engage in and punish corrupt behaviour across cultures, hinting at this aspect, but do not fully address the expediency question.
- The interplay between cultural values, institutional structures, and individual motivations in driving both acceptance and expediency of corruption. Antunez *et al.* (2024) mention the role of leadership in preventing unethical behaviour, but a broader analysis incorporating cultural context and institutional factors would be needed.

To cover these gaps, we developed the following research questions:

- Direct relationships:
  - How does the acceptance of a corruption situation influence the willingness to engage in corrupt practices?
  - How do cultural dimensions influence the willingness to engage in corrupt practices?
- Mediating effect:
  - What is the role of cultural dimensions in mediating the relationship between the acceptance of corruption and willingness to engage?

Based on the research questions, we elaborated the following hypotheses:

- Acceptance and willingness: The acceptance of a corruption situation positively influences the willingness to engage in corrupt practices.
- Cultural dimensions and willingness: Cultural dimensions positively influence the willingness to engage in corrupt practices.

– Mediating effect: Cultural dimensions mediate the relationship between acceptance of corruption and willingness to engage, strengthening this relationship.

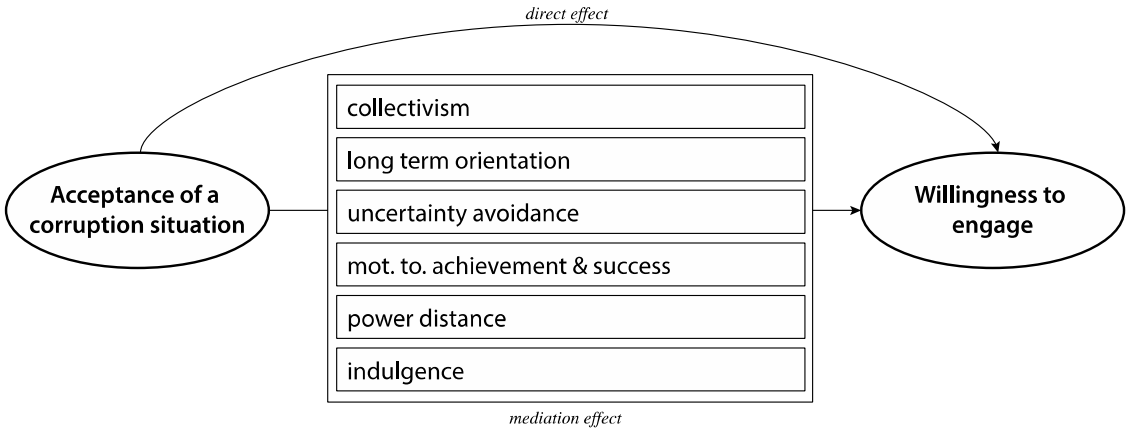

Figure 1. Research framework
Source: own elaboration.

Mechanisms Linking Acceptance to Willingness and the Mediating Role of Specific Cultural Dimensions

We posit that **acceptance** operates as a descriptive-norm signal: perceiving corruption as 'normal/necessary' reduces moral resistance and increases behavioural readiness (norm internalisation). Cultural values then shape the translation of acceptance into action:

– **Power distance** legitimises inequality and authority privileges, lowering the perceived moral/penal cost of corrupt exchange across hierarchies.
– **Achievement/success motivation** (instrumental achievement orientation) frames ends-justify-means trade-offs, licensing shortcuts under performance pressure.
– **Indulgence** increases present-bias and preference for immediate gains, weakening restraint.
– **Uncertainty avoidance, collectivism**, and **long-term orientation** may counter or complicate this translation through rule adherence, in-group moral constraints, or intertemporal risk calculus, but effects are expected to be weaker or context-dependent. (See our prior citations on norms and culture-ethics links; details in the Results corroborate these patterns.)

Considering our research questions and research framework, we developed the following hypothesis:

H1: The more acceptable one finds corruption situations, the more willing one is to engage in similar corrupt behaviour.

H2: The more an individual is characterised by certain cultural value dimensions (*e.g.*, high-power distance, strong success orientation, high hedonism), the more he/she is prone to corrupt behaviour.

H3: The more acceptable one considers corruption to be, the more cultural dimensions influence one's propensity to engage in corrupt behaviour, *i.e.*, cultural dimensions mediate the relationship between acceptance and participation.

Our team developed an experiment-based research software. This online tool is based on 20 simple situations (vignettes) describing corrupt or closely related actions. In each situation, we can measure many different variables, due to its hidden aspects like the nature of the advantage promised, the generally perceived roughness of corruption activity, the scene of corruption, and so on. In this article, we are focusing on the questions we formed for each situation: accepting the behaviour of the corrupt person and judging the likelihood that the respondent would act in the same way in a similar situation as the corrupt person. These 1-9 scales are intended to measure the acceptance of corruption situations (*i.e.*, the extent to which the respondent accepts that these situations occur in life) and the extent to which he or she considers it likely that he or she would act in the same way in a similar situation. To

develop single measures of each case, we aggregated the responses of the 20 vignettes by calculating the means. Thus, each respondent has a cumulated value of acceptance (TT_A) and willingness (TT_W).

For measuring cultural values on an individual level, we used the widely used and accepted (Prasongsukarn, 2009; Yoo & Shin, 2017) CVScale based on Hofstede's dimensions (Hofstede, 1991, 1998; Yoo *et al.*, 2011). The assessment instrument consisted of 30 measured variables (questions) in six thematic groups (collectivism, long-term orientation, uncertainty avoidance, motivation towards achievement and success, power distance, and indulgence). To produce these six attributes (factors), we performed an explorative factor analysis (EFA), and to validate the factor model, we created a confirmatory factor model (CFA). For the EFA, we follow the usual protocol (Hair *et al.*, 1998; Thompson, 2004) with Kaiser normalisation and varimax rotation. We evaluated reliability by the Kaiser-Mayer-Olkin test and the Bartlett's test, such as the image and anti-image matrices. We expected standard factor loadings to exceed 0.6 and the total variance explained (TVE) to exceed 60%. For validity, we checked convergent validity, discriminant validity, and fit test.

Once we had the cultural factors, we could build a causality and produce a structural equation model (SEM) where we measured two different kinds of effects:

- The direct effect of acceptance on willingness and
- The indirect mediating effect of culture on the above

We hypothesised three primary forms of mediation (Baron & Kenny, 1986): partial, full, and indirect. However, current works indicate that mediation is less intricate than previously thought (Streiner, 2020; Ubale, 2018). In conclusion, if there is a substantial indirect effect, then mediation can be concluded (VanderWeele, 2016).

To test the effect size of this mediation, we used the Sobel test, which works well on large samples (Preacher & Hayes, 2004; 2008).

Table 1. Overview of methodological procedures used for cultural mediation analysis in corruption-related behaviour

METHOD	AIM	RESULT	TEST
Aggregation of measured variables in vignettes	To develop single measures for the model	cumulated value of acceptance (TT_A) and willingness (TT_W)	Reliability (Cronbach's α, standard deviation)
Exploratory factor analysis (EFA)	To find the latent structure of cultural variables of the CVSCALE	6 cultural factors based on Hofstede's dimensions	Reliability (Cronbach's α, KMO, Bartlett, TVE)
Confirmatory factor analysis (CFA)	To confirm the model of EFA and build a more valid and significant model	Best fit model with factors	Convergent validity (CR, AVE, range of loadings) Discriminant validity (AVE, MSV, ASV) Model fit (absolute, incremental, parsimonious)
Structural equation modelling (SEM)	To find mediation effects between acceptance (TT_A) and willingness (TT_W)	Influence map with direct and indirect causalities	Regression weights and significances, standard error, critical ratio, and squared multiple correlation
Sobel test	To test the effect size of this mediation	Highlighting the most important mediating cultural factors	Sobel-*z* value and standard error

Note: KMO: Kaiser-Meyer-Olkin test; TVE: Total Variance Expressed; CR: Composite Reliability; AVE: Average Variance Expressed; MSV: Maximum Shared Variance; ASV: Average Shared Variance.
Source: own study.

The use of CFA is very common in literature to validate the latent structure of the six cultural dimensions derived from the CVSCALE. While EFA provided the initial factor structure, CFA allowed us to test the model's fit and ensure that the measurement model met the required statistical

standards. This two-step approach (EFA and CFA) complied with established methodological practices for scale validation in cross-cultural research.

The application of SEM was justified by the study's objective: to examine both direct and indirect (mediated) effects between latent constructs (acceptance, cultural dimensions, willingness). SEM enabled simultaneous estimation of multiple relationships, measurement errors, and mediating pathways, which would not be feasible using traditional regression techniques alone.

Table 2. Operationalisation of constructs and psychometrics

Construct	Operational definition	Instrument/source	# items	Response scale	Aggregation/scoring	Psychometrics (CR/AVE)	Example item/domain
TT_A (Acceptance of corruption)	Perceived acceptability of the actor's behaviour across corruption-related vignettes.	Vignettes (20 scenarios).	20	1-9 (acceptability).	Mean across 20 scenarios (higher = more acceptance).	–	Facilitation payment to expedite a permit; nepotistic hiring; small gift for faster service.
TT_W (Willingness to engage)	Self-reported likelihood of behaving like the actor in the vignette.	Vignettes (20 scenarios).	20	1-9 (likelihood).	Mean across 20 scenarios (higher = more willingness).	–	Offering a gift to speed up administration; influencing procurement; bypassing a rule for a favour.
CO (Collectivism)	Preference for in-group loyalty and interdependence.	CVSCALE (individual-level).	6	Likert-type agreement.	Latent factor score in SEM.	CR = 0.818; AVE = 0.532	'Group welfare should come before individual rewards.'
LT (Long-Term Orientation)	Orientation to long-range goals and delayed gratification.	CVSCALE (individual-level).	5	Likert-type agreement.	Latent factor score in SEM.	CR = 0.772; AVE = 0.507	'I plan for the long-term rather than seek quick results.'
UN (Uncertainty Avoidance)	Preference for rules, predictability, and risk aversion.	CVSCALE (individual-level).	5	Likert-type agreement.	Latent factor score in SEM.	CR = 0.771; AVE = 0.509	'I prefer structured routines over ambiguous situations.'
MA (Achievement & Success)	Value placed on competition, achievement, and success.	CVSCALE (individual-level).	4	Likert-type agreement.	Latent factor score in SEM.	CR = 0.718; AVE = 0.539	'Winning is more important than simply participating.'
PO (Power Distance)	Acceptance of unequal power and status privileges.	CVSCALE (individual-level).	3	Likert-type agreement.	Latent factor score in SEM.	CR = 0.711; AVE = 0.554	'Subordinates should not question superiors' decisions.'
IN (Indulgence)	Preference for enjoyment and immediate gratification.	CVSCALE (individual-level).	4	Likert-type agreement.	Latent factor score in SEM.	CR = 0.719; AVE = 0.529	'I sometimes choose immediate enjoyment even if it conflicts with rules.'

Source: own study.

We used the Sobel test to statistically assess the significance and strength of the mediating effects of cultural dimensions. Given the large sample size (n = 4.222), the Sobel test was considered appropriate due to its known robustness under such conditions.

Table 2 summarises each construct's operational definition, instrument/source, items and scaling, scoring/aggregation, and psychometrics (CR, AVE), complementing the EFA/CFA results reported below.

We took our research sample in Hungary in 2024. Our total sample held 5 020 fully filled questionnaire. However, we performed a validity check: those subjects who finished the form too early (under 12 minutes) or had a very low standard deviation of their answers (under 1.2) were filtered and eliminated. Thus, 4 222 valid respondents form the sample. Data were collected using an online questionnaire distributed through randomised outreach; hence, the sample approximates random sampling. Since we were not trying to describe domestic patterns but to explore the relationship between phenomena, a representative sample was not necessary, and a more robust, larger, and more heterogeneous sample was more beneficial. Table 3 displays a breakdown of the sample by demographic variables. Most of the sample was from the Z-generation, constituting 55.0% of the total, followed by the Y-generation at 31.5%. Gen-X had a 9.8% share while the baby boom or older generation accounts for 3.7%, respectively. Age ranged from 18 to 84 with a 28.41 average and a 10.968 standard deviation. Regarding gender distribution, women constituted the majority at 56.9%, while men accounted for 43.1%. The residence category showed that a significant portion of the population resided in the capital, comprising 50.8%. Smaller towns and cities had populations of 25.7% and 23.5%, respectively.

Regarding work status, most of the population, 76.0%, was employed. Meanwhile, 21.4% had employment experience but were currently unemployed (studying, for example), and 2.6% have not been employed yet.

Table 3. Demographic distributions

Variable	category	n	%
age	baby boom or older	157	3.7
	X-generation	413	9.8
	Y- generation	1332	31.5
	Z- generation	2320	55.0
gender	male	1819	43.1
	female	2403	56.9
residence	capital	2144	50.8
	city	992	23.5
	smaller town	1086	25.7
work status	have not been employed yet	111	2.6
	were employed but are unemployed now	903	21.4
	currently employed	3208	76.0

Source: own study.

We subjected the measured variables of the CVSCALE to EFA. Since all variables were fitted to a single factor model, we had reliability indicators for this single model. This model kept 27 measured variables of the original 30 (3 had to be eliminated due to misfit or low communalities). However, the resulting model was a robust one: KMO = 0.853, which was good (Kaiser, 1974); Bartlett χ^2 = 28 141.490, *p*=0.000 which was also good (Snedecor & Cochran, 1989), the total explained variance was 65.095% which is desirably high, and all factor loadings exceed 0.6. Internal consistency was satisfactory, as even the lowest Cronbach's α (0.824) exceeded the commonly accepted criterion (Cronbach, 1951). Hence, the construct demonstrated strong reliability.

Validity And Model Fit Metrics

For convergent validity, we followed Fornell and Larcker (1981) recommendations and achieved convergent validity as CR for all constructs exceeding 0.70 and AVE > 0.50; while we also reached discriminant validity as AVE > MSV and AVE > ASV for all constructs and AVE of a latent variable should be higher than the squared correlations between the latent variable (Malhotra & Dash, 2011) and all other

variables and square roots of AVE were greater than the inter-construct correlations, explains the adequacy of discriminant validity (Hair *et al.*, 2010).

Table 4. Results of EFA and CFA: Measures of reliability

Factor	Measured variables	EFA		CFA			
		Factor loadings	Cronbach's α	Estimates	SE	CR	P
collectivism (CO)	CO4	0.805	0.826	0.941	0.030	30.910	***
	CO1	0.748	0.825	0.904	0.041	21.843	***
	CO3	0.731	0.828	0.747	0.046	16.187	***
	CO5	0.706	0.825	0.914	0.043	21.340	***
	CO6	0.660	0.824	1.000			
	CO2	0.634	0.825	0.850	0.031	27.802	***
long-term orientation (LT)	LT2	0.721	0.826	1.101	0.036	30.335	***
	LT6	0.709	0.826	1.000			
	LT4	0.699	0.826	1.090	0.037	29.093	***
	LT1	0.636	0.826	1.064	0.038	27.736	***
	LT5	0.610	0.828	0.822	0.031	26.599	***
uncertainty avoidance (UN)	UN3	0.741	0.826	1.183	0.035	34.056	***
	UN2	0.719	0.824	1.241	0.036	34.397	***
	UN5	0.674	0.825	1.000			
	UN1	0.654	0.827	1.030	0.041	24.847	***
	UN4	0.506	0.827	0.762	0.031	24.218	***
motivation towards achievement & success (MA)	MA2	0.758	0.828	1.019	0.040	25.555	***
	MA3	0.745	0.827	1.001	0.039	25.969	***
	MA1	0.707	0.830	0.858	0.036	23.896	***
	MA4	0.647	0.829	1.000			
power distance (PO)	PO1	0.786	0.831	1.163	0.044	26.299	***
	PO2	0.716	0.831	1.170	0.044	26.295	***
	PO4	0.687	0.828	1.000			
indulgence (IN)	IR2	0.768	0.831	0.683	0.040	17.057	***
	IR4	0.705	0.829	1.000			
	IR1	0.655	0.832	0.582	0.036	16.258	***
	IR3	0.645	0.835	0.402	0.032	15.634	***

Source: own study.

Moreover, MSV and ASV values suggest that the constructions had greater variation with their indicators than with other constructions, since they were all less than their corresponding AVE values. This points to good discriminant validity.

The square root of AVE for each construct was greater than its correlations with any other construct, supporting discriminant validity. The correlation coefficients between the constructs ranged from -0.051 (Indulgence and Power Distance) to 0.689 (Long-term Orientation and Uncertainty Avoidance), showing varied relationships among the constructs. Long-term orientation (LT) shows the strongest link with ambiguity Avoidance (0.689), implying that those who have a long-term orientation also usually avoid ambiguity.

Uncertainty Avoidance (UN): Suggesting a general impact on other cultural dimensions, positively correlated with all constructs except Power Distance. Motivation towards Achievement and Success (MA): Correlated strongly with all constructions, especially with Power Distance (0.403), showing that larger power distance was linked with increased motivation towards achievers. Power Distance (PO) indicated its unique character within the cultural dimensions by showing weaker links with other constructs. Indulgence (IN) had a distinct pattern with a combination of positive and negative relationships, including a notable positive association with Long-term Orientation (0.419).

The constructions were consistent, and the interactions among them were unique but meaningful. The methods applied were suitable and strong for investigating the mediation role of culture on the relationship between resignation and corrupt behaviour.

Table 5. Convergent and discriminant validity

Variable	CR	AVE	MSV	MaxR(H)	CO	LT	UN	MA	PO	IN
CO	0.818	0.532	0.161	0.827	(*0.729*)					
LT	0.772	0.507	0.475	0.782	0.312***	(*0.712*)				
UN	0.771	0.509	0.475	0.796	0.401***	0.689***	(*0.713*)			
MA	0.718	0.539	0.162	0.726	0.314***	0.217***	0.199***	(*0.734*)		
PO	0.711	0.554	0.162	0.727	0.289***	-0.004	0.149***	0.403***	(*0.744*)	
IN	0.719	0.529	0.176	0.846	0.098***	0.419***	0.268***	0.097***	-0.051*	(*0.727*)

Note: CR = composite reliability; AVE = average variance extracted; MSV = maximum shared variance; ASV = average squared shared variance; MaxR(H) = maximum redundancy; (*Square roots of AVE*)
Source: own study.

The heterotrait-monotrait (HTMT) ratio of correlations serves to assess discriminant validity between constructs in a structural equation model. It showed that none of the HTMT criteria was higher than the criterion of 0.85 (Henseler *et al.*, 2014). This suggests that the constructions showed excellent discriminant validity, so they were rather different from one another. This helps the model to be robust in precisely differentiating between several cultural characteristics and their effects on corruption and resignation.

Table 6. HTMT ratios of cultural dimensions

Variable	CO	LT	UN	MA	PO	IN
CO						
LT	0.332					
UN	0.394	0.694				
MA	0.308	0.234	0.227			
PO	0.295	0.025	0.187	0.426		
IN	0.127	0.376	0.268	0.199	0.008	

Source: own study.

Determining whether the current model offers the optimal choice among the available options was important. For this purpose, we conducted fit tests (Fornell & Larcker, 1981). We present the three kinds of model fit (absolute fit, incremental fit and parsimonious fit) for our data in table below using

Table 7. Model fit indices for the cultural factors

Statistic	Value	Threshold	Result
Absolute fit			
χ2/df	2.815	≤ 3	good
GFI	0.969	> 0.8	good
RMR	0.014	< 0.08	good
RMSEA	0.036	< 0.1	good
Incremental fit			
TLI	0.939	> 0.9	good
IFI	0.954	> 0.9	good
CFI	0.954	> 0.9	good
Parsimonious fit			
PGFI	0.687	> 0.5	good
PCFI	0.728	> 0.5	good
PNFI	0.721	> 0.5	good

Source: own study.

the threshold reference recommendations of the relevant literature (Mulaik *et al.*, 1989; Schreiber *et al.*, 2006; Tabachnick & Fidell, 2007; Wheaton *et al.*, 1977). The results of all tests met the acceptable levels (Toth *et al.*, 2023).

Based on the above, we concluded that the resulting factor model was suitable and reliable for further analysis. The inclusion of all six cultural dimensions as mediators may have increased cognitive load and model saturation, but for the purposes of this article, it was necessary to treat them simultaneously in the model. However, the model's fit indices (*e.g.*, RMSEA = 0.036, CFI = 0.954) indicated that the model was statistically sound. Nevertheless, as part of future research, we were considering a parsimonious alternative model that retains only the significant mediators (*e.g.*, motivation toward achievement, power distance, indulgence), based on the results of the Sobel test and standardised coefficients. This simplification would allow for clearer theoretical interpretation and improved practical utility.

Operationalising Culture and Corruption: Rationale, Alternatives, and Validation

We measured *acceptance of corruption and willingness to engage* using 20 vignette-based scenarios that cover common forms of everyday and organisational corruption. Each vignette elicited (a) acceptance of the actor's behaviour and (b) the respondent's likelihood of doing the same (1-9 scales). We aggregated items across vignettes to form two robust indices: **TT_A** (acceptance) and **TT_W** (willingness). Vignettes allow context-rich, behaviour-proximal measurement while mitigating social desirability through indirect framing, and they explicitly map to our causal chain from perceived normality → behavioural inclination. Reliability and aggregation details are provided in the Research Methodology section.

We assessed individual cultural orientations with **CVSCALE**, the most frequently validated individual-level instrument derived from Hofstede's cultural dimensions (collectivism, long-term orientation, uncertainty avoidance, achievement/success motivation, power distance, indulgence). The choice reflects three considerations: (1) **level-of-analysis fit** (our model is individual-level; country-level indices such as national Hofstede or GLOBE scores would be misaligned), (2) **psychometric tractability** with EFA/CFA and multi-construct SEM mediation, and (3) **comparability** to a large literature on culture-ethics relationships. EFA/CFA, reliability, and model-fit statistics for our six-factor structure are reported and meet accepted thresholds (*e.g.*, RMSEA=0.036; CFI=0.954)

We considered Schwartz PVQ and GLOBE practice/value scales. We prioritised CVSCALE because it (i) directly operationalises the six value dimensions theorised to condition ethical decision-making in hierarchical and instrumental contexts, including **power distance, achievement/success,** and **indulgence** – the mediators most relevant to corruption pathways in our theory – and (ii) is concise enough to pair with vignette batteries without respondent fatigue while maintaining excellent psychometrics in our data.

Following EFA and CFA, factor loadings exceeded 0.6; KMO=0.853; total explained variance=65.1%; convergent and discriminant validity criteria (CR, AVE, MSV/ASV, HTMT) and three families of fit indices (absolute, incremental, parsimonious) reached accepted levels – supporting the six-dimension measurement model we use in SEM.

RESULTS AND DISCUSSION

In the recursive SEM model, we investigate the extent to which the acceptance of corrupt situations (tolerance of others' corrupt behaviour) influences the subject's tendency to engage in corrupt behaviour. We investigate this causal effect directly, as a zero-order partial relationship, on the one hand, and on the other hand, we also investigate the mediating effect of the organisational culture, *i.e.*, how the cultural context influences and moderates this relationship. To analyse the mediating effect in this model, we needed to treat culture factors as both dependent and independent variables. While treating cultural values as dependents can provide valuable insights, it is important to be cautious about inferring causality. The relationship could be bidirectional or influenced by other factors not accounted for in the model (Markus & Kitayama, 2010). Research has shown that cultural values are dynamic and responsive to external influences, indicating that they are not static but undergo changes over time (Park *et al.*, 2015). Moreover, the bidirectional nature of cultural transmission across organisational

levels and generations emphasises the complexity of how values, beliefs, and practices are passed down and evolve over time (De Mol *et al.*, 2013).

Recognising the bidirectional nature of cultural influences and the potential impact of unaccounted variables is essential for developing a comprehensive understanding of how culture shapes individuals, organisations, thus structural equation modelling (SEM) and other advanced statistical techniques can help in understanding the complex relationships between acceptance of corruption and cultural values. These models can test direct and indirect effects, providing a comprehensive view of the relationships. In an organisational context, knowing that acceptance of corruption affects cultural values can help in designing ethical guidelines and training programs to foster a culture of integrity.

After running the model, let us look at the results. We had three estimation tables, each regarding different roles of cultural dimensions.

Table 7 shows the results of the first submodel, where the cultural dimensions were dependents of the model. Results showed that acceptance explained:

- only 0.01% of the variance in collectivism. The p-value (0.5015) was not statistically significant, indicating that acceptance does not significantly predict collectivism.
- 3.7% of the variance in long-term orientation. The p-value (0.0002) was statistically significant, suggesting a significant positive relationship between acceptance and long-term orientation.
- 0.0018% of uncertainty avoidance. However, the p-value (0.0103) was statistically significant, suggesting a significant negative relationship between acceptance and
- 5.03% of the variance in motivation towards achievement and success. The p -value (0.0000) was highly significant, indicating a strong positive relationship between acceptance and motivation towards achievement and success.
- 1.24% of the variance in power distance. The p-value (0.0000) was highly significant, suggesting a significant positive relationship between acceptance and power distance.
- 4.54% of the variance in indulgence. The p-value (0.0000) was highly significant, indicating a significant positive relationship between acceptance and indulgence.

The regression results showed that acceptance significantly predicted several cultural dimensions: long-term orientation, uncertainty avoidance, motivation towards achievement and success, power distance, and indulgence. The relationships were generally positive, except for uncertainty avoidance, which had a negative relationship with acceptance. However, collectivism is not significantly predicted by acceptance. These findings suggest that the acceptance of corrupt behaviours is associated with certain cultural dimensions, impacting how individuals perceive and engage in corrupt activities.

Table 8. Estimates of cultural dimensions as dependents

Cultural factors	x: acceptance; y: cultural dimensions				
	R^2	*p*-value*	St. Coeff	SE	*p*-value**
collectivism	0.0001	0.5015	-0.0111	0.0142	0.5015
long-term orientation	0.0370	0.0002	0.0606	0.0141	0.0002
uncertainty avoidance	0.0018	0.0103	-0.0424	0.0141	0.0103
mot.to. achievement & success	0.0503	0.0000	0.2244	0.0138	0.0000
power distance	0.0124	0.0000	0.1113	0.0141	0.0000
indulgence	0.0454	0.0000	0.2131	0.0138	0.0000

Note: *model p-value (F-test); ** coefficient's p-value.
Source: own study.

Table 8 shows the results of the second submodel, where cultural dimensions are considered as independents. The model is highly significant, as indicated by the F-statistic p-value (0.0000), suggesting that the cultural dimensions collectively had a significant effect on willingness to engage in corrupt behaviour. The high R^2 value indicated that 76.98% of the variance in willingness to engage in corrupt behaviour was explained by the cultural dimensions included in the model. Acceptance had a very strong and highly significant positive effect on willingness to engage in corrupt behaviour, suggesting that higher acceptance of corrupt behaviours significantly increases the likelihood of engaging in such behaviours.

Collectivism had a very weak and non-significant effect on willingness to engage in corrupt behaviour suggesting that collectivism might prioritise ethical standards within the group rather than enabling corrupt behaviour. Long-term orientation had a significant positive effect on willingness to engage in corrupt behaviour suggesting that individuals with a long-term orientation are more likely to engage in corrupt behaviours, possibly viewing them as means to achieve long-term goals. Uncertainty avoidance had a significant negative effect on willingness to engage in corrupt behaviour, indicating that individuals who prefer to avoid uncertainty are less likely to engage in corrupt practices. Motivation towards achievement and success had a strong and significant positive effect on willingness to engage in corrupt behaviour, suggesting that individuals highly motivated towards achievement and success may resort to corruption to achieve their goals. Power distance had a significant positive effect on willingness to engage in corrupt behaviour. This implies that in cultures with high power distance, individuals may feel more justified in engaging in corruption due to hierarchical norms. Indulgence had a strong and significant positive effect on willingness to engage in corrupt behaviour, indicating that individuals with higher indulgence are more likely to engage in corruption, possibly seeking immediate gratification.

The results of this submodel bring attention to how cultural aspects affect the inclination to participate in dishonest activities. The strongest predictor was acceptance of corruption, therefore greatly raising the probability of corrupt behaviour. Emphasising the complicated interaction between cultural values and corrupt behaviour, long-term orientation, drive toward achievement and success, power distance, and indulgence all favourably influence willingness to engage in corrupt behaviour. Conversely, avoiding uncertainty suggests that a taste for stability and predictability lowers the inclination for corrupt activity, therefore affecting this willingness. Collectivism shows that group-oriented ideals may not directly link with corrupt activities since it does not greatly affect the inclination to participate in corruption. These results can guide focused treatments aiming at reducing corruption by addressing particular cultural aspects.

Table 9. Estimates of cultural dimensions as independents

Cultural factors	x: cultural dimensions; y: willingness to engage				
	R2	***p*-value***	**St. Coeff**	**SE**	***p*-value****
acceptance	0.7698	0.0000	0.8526	0.0095	0.0000
collectivism			-0.0113	0.0204	0.4670
long-term orientation			0.0716	0.0204	0.0000
uncertainty avoidance			-0.0315	0.0204	0.0421
mot.to. achievement & success			0.2268	0.0204	0.0000
power distance			0.1035	0.0204	0.0000
indulgence			0.2391	0.0204	0.0000

Note. *model *p*-value (*F*-test); **coefficient's *p*-value.
Source: own study.

Finally, let us draw our attention to the mediating effect of cultural dimensions, measured by Sobel-*z*. Despite the relatively low standard error, collectivism and uncertainty avoidance were not significant, suggesting that they have no mediating effects on the direct relationship between acceptance of corrupt situations and willingness to engage in them. Long-term orientation had the lowest significant mediating effect on this relationship. We found that motivation toward achievement and success, power distance, and indulgence had the highest mediation effect on the direct relationship. These dimensions play the most significant role in explaining how acceptance of corruption leads to actual engagement:

- individuals driven by personal or professional success might justify corrupt behaviour to achieve their goals.
- in societies with high power distance, corruption is more likely to be tolerated because people accept hierarchical inequalities and the abuse of power.
- a tendency to prioritise pleasure and immediate gratification may increase the likelihood of engaging in corrupt acts, as individuals might prioritise personal gains over ethical considerations.

Acceptance of a corruption situation and willingness to engage in such cases are unbreakable suggesting that the extent to which people rationalise or normalise corrupt practices is the most important factor in determining their willingness to engage in them. When corruption is accepted as 'normal' or 'necessary' people are much more likely to engage in it. Cultural dimensions serve as mediators, explaining how or why acceptance of corruption leads to actual behaviour. However, their impact varies greatly. Individuals motivated by personal success are more likely to justify corrupt actions to achieve their goals.

Table 10. Estimations of cultural dimensions as mediation variables

Cultural factors	Coefficient		Std. Error		Sobel test		
	A	B	s_a	s_b	z	Std. Error	*p*-value
collectivism	-0.0111	-0.0113	0.0142	0.0204	0.4510	0.0003	0.6520
long-term orientation	0.0606	0.0716	0.0141	0.0204	2.7206	0.0016	0.0065
uncertainty avoidance	-0.0424	-0.0315	0.0141	0.0204	1.3729	0.0010	0.1698
mot.to. achievement & success	0.2244	0.2268	0.0138	0.0204	9.1827	0.0055	0.0000
power distance	0.1113	0.1035	0.0141	0.0204	4.2717	0.0027	0.0000
indulgence	0.2131	0.2391	0.0138	0.0204	9.3402	0.0055	0.0000

Source: own study.

A focus on pleasure and immediate gratification (indulgence) promotes corrupt behaviour because people prioritise short-term gains over ethical considerations. In hierarchical cultures where inequality and authority are tolerated, corruption may be viewed as an unavoidable aspect of navigating such systems. This reinforces the normalisation of corrupt behaviour.

While people with a forward-thinking mindset (long-term orientation) may consider the risks of corruption, this factor has little influence on behaviour. This implies that ethical decision-making based on long-term objectives is limited in this context. The desire to avoid risk and uncertainty had little effect on corruption, implying that corrupt behaviour may be motivated by pragmatic or opportunistic thinking rather than risk aversion. Surprisingly, collectivism, which emphasises group loyalty and conformity, had little influence on corruption-related behaviour. This could imply that group dynamics in this context do not necessarily promote or discourage corruption. Figure 2 highlights these.

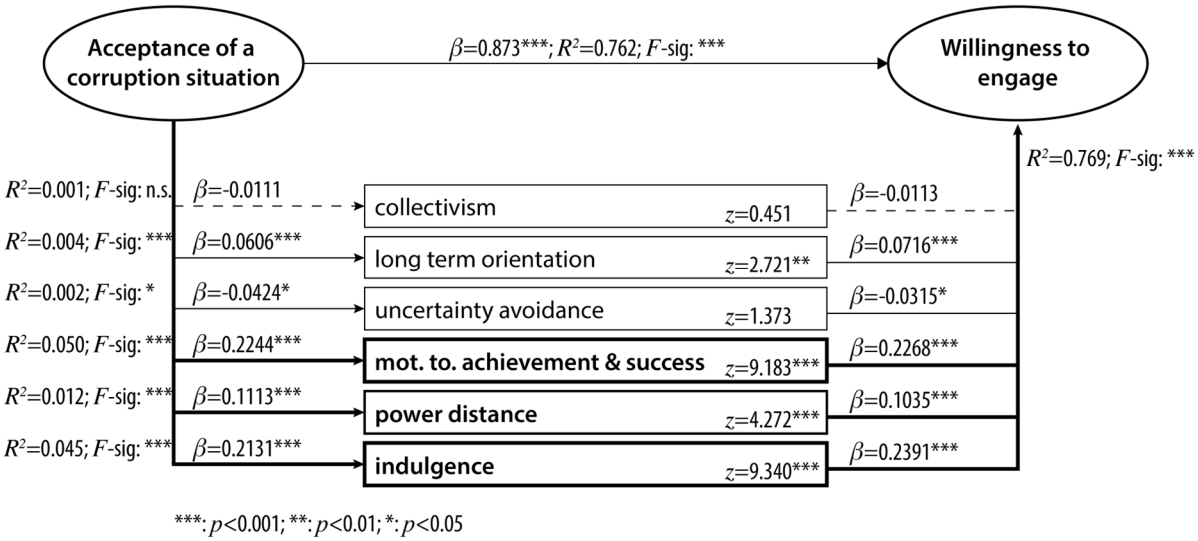

Figure 2. Structural model of direct and mediating effects
Source: own elaboration.

H1 (Direct effect). Acceptance of corruption (TT_A) positively predicts willingness to engage in corrupt behaviour (TT_W).

H2a-H2f (Main effects of cultural dimensions on TT_W).

H2a. **Power Distance (PO**) is positively associated with TT_W.
H2b. **Motivation toward Achievement & Success (MA)** is positively associated with TT_W.
H2c. **Indulgence (IN)** is positively associated with TT_W.
H2d. **Uncertainty Avoidance (UN)** is negatively associated with TT_W.
H2e. **Collectivism (CO)** has no meaningful association with TT_W (null effect).
H2f. **Long-Term Orientation (LT)** shows a weak association with TT_W (direction context-dependent).

H3a-H3f (Mediation of TT_A → TT_W via cultural dimensions).
H3a. **PO** partially mediates the relationship between TT_A and TT_W in a positive direction.
H3b. **MA** partially mediates the relationship between TT_A and TT_W in a positive direction.
H3c. **IN** partially mediates the relationship between TT_A and TT_W in a positive direction.
H3d. **LT** provides a small, positive mediation of the TT_A → TT_W rela\onship.
H3e. **CO** does not provide a significant mediation of the TT_A → TT_W rela\onship.
H3f. **UN** does not provide a significant mediation of the TT_A → TT_W rela\onship.

These results suggest that corruption is not just a mixed phenomenon of individual motivations and societal norms, but a complex behaviour shaped by cultural context. Corruption thrives in systems that reward achievement at any cost, allow for power abuse, and prioritise immediate gratification. Cultural traits such as collectivism and uncertainty avoidance, which are commonly thought to influence ethical behaviour, may be less relevant in some contexts or supressed by other factors.

These findings offer organisations and policymakers a road map for fighting corruption:

- Companies should Encourage cultures where success is tied to ethical behaviour, not shortcuts or unethical practices.
- Self-discipline, accountability and long-term thinking should be promoted over instant gratification.
- Flattening organisational or social hierarchies would be an important action to reduce nepotism and the normalisation of related corrupt practices.

However, the results indicate that interventions aimed at uncertainty avoidance or collectivism are unlikely to have a major effect, indicating that funds should be directed toward more effective tactics.

Overall, our research highlights that while corruption may be normalised in certain contexts, not all cultural traits contribute to the growth or persistence of corruption. To deal effectively with corruption, efforts should focus on transforming the strongest mediators, achievement-driven values, indulgence, and hierarchical tolerance, while recognising that some cultural dimensions are less influential in this process.

Our research shows that specific cultural dimensions play a crucial role in shaping both the acceptance of corruption and the willingness to engage in corrupt acts. Based on Hofstede's model and measured using the CVSCALE instrument, these dimensions help explain why corruption is more accepted or prevalent in some societies than others.

Dipierro and Rella (2024) investigated the relationship between Hofstede's cultural dimensions and corruption perceptions using data from 118 countries. Their findings show that higher levels of individualism and long-term orientation are associated with lower perceived corruption, while power distance, masculinity, and uncertainty avoidance are linked to higher perceived corruption levels. The study emphasises the importance of cultural values in shaping expectations and tolerance toward corrupt behaviour, suggesting that anti-corruption strategies should be culturally contextualised.

Our results show the effects of the cultural dimensions below:

- Motivation for Achievement & Success: Societies that highly value achievement and success may normalise corrupt practices as acceptable means to reach goals, especially if ethical standards are seen as obstacles.
- Power Distance: In cultures with high power distance, hierarchical inequalities are accepted. This can foster environments where the abuse of power and corruption are tolerated as part of navigating authority structures.
- Indulgence: Societies that emphasise immediate gratification are more likely to see individuals prioritise personal gain over ethical considerations, increasing the likelihood of corrupt behaviour.

- Long-Term Orientation: While a long-term outlook can sometimes discourage corruption by focusing on future consequences, its influence is generally weaker and context-dependent.
- Uncertainty Avoidance: Cultures that dislike ambiguity may prefer to follow rules, which can reduce corrupt behaviour, but this effect is typically minor.
- Collectivism: The impact of collectivism is mixed; in some contexts, group loyalty may inhibit corruption, while in others it may facilitate it if group interests are at stake. Overall, its mediating effect is minimal.

The primary determinants of corrupt behaviour have been extensively studied and identified as the motivation for achievement, the degree of power distance within a society, and levels of indulgence. These factors play a significant role in shaping individuals' likelihood to engage in corrupt practices, as they influence attitudes towards authority, success, and gratification. Understanding these cultural dimensions is crucial for developing effective anti-corruption strategies that are culturally sensitive and context-specific.

It is recommended that anti-corruption interventions prioritise the modification of cultural values associated with success, hierarchical relationships, and gratification. Such strategies should aim to reshape underlying cultural norms that encourage or tolerate corruption, rather than focusing on less directly linked factors such as collectivism or uncertainty avoidance. Addressing the core cultural drivers creates a more sustainable impact on reducing corrupt behaviour.

A comprehensive understanding of these cultural dimensions and their influence on individual and institutional behaviour facilitates the formulation of more effective policies. These policies should be tailored to the specific cultural context to increase their efficacy and sustainability. Management implications include the necessity for leaders to foster organisational cultures that promote transparency, accountability, and ethical standards aligned with the targeted cultural values. Training programs should be designed to challenge existing norms and encourage ethical behaviour. Additionally, senior management must support the implementation of culturally sensitive policies and ensure consistent enforcement across organisational levels.

By integrating cultural insights into anti-corruption efforts, organisations can better address the root causes of corrupt practices, leading to more resilient and trustworthy institutions. This holistic approach not only enhances the effectiveness of anti-corruption measures but also promotes long-term organisational integrity and social trust.

In summary, not all cultural dimensions equally influence corruption. The most significant mediators are those that prioritise success, tolerate hierarchy, and seek immediate gratification, while others have limited or context-dependent effects. This nuanced understanding is essential for designing targeted and effective anti-corruption interventions.

Implications: Actionable Interventions Given Slow-moving Cultural Values

We focused on feasible, meso- and micro-level levers that reshape norms, incentives, and choice architecture in settings where achievement/success, power distance, and indulgence mediate acceptance → behaviour:

1. Achievement/success: Re-specify performance systems so integrity is a prerequisite for rewards (scorecards with non-substitutable compliance gates; promotion penalties for any integrity breach; celebrate 'clean wins').
2. Power distance: Reduce discretion asymmetries: rotate gatekeeping roles; two-signature rules on high-risk approvals; transparent, auditable criteria for procurement/promotion; open grievance channels with anti-retaliation guarantees.
3. Indulgence (present bias): Introduce frictions for risky acts (cooling-off periods, forced multi-step approvals), and delayed+probabilistic losses (randomised integrity audits) to counter immediate-gain appeal.
4. Descriptive-norm messaging: Systematically publicise non-corrupt majority behaviour and detection rates (normative nudges shown to reduce bribery by recalibrating what is 'normal').

5. Leader modeling: Require executives to disclose conflicts and recuse in public logs; tie bonuses to unit-level integrity metrics.
6. Capability building: Scenario-based ethics training using your 20 vignettes so employees rehearse exact local temptations and pre-commit to responses.
7. Targeting: Use CVSCALE short screens to identify high-risk units (high achievement/power distance/indulgence profiles) and prioritise oversight/interventions there.
8. Measurement: Pair interventions with pre-post TT_A / TT_W tracking and bootstrapped mediation re-tests to verify that acceptance decouples from behaviour over time.

These levers do not claim to 'change culture' broadly; they re-engineer contexts where our significant mediators operate, making corrupt behaviour costlier, less convenient, and less normatively acceptable, even in stable cultural environments.

CONCLUSIONS

This study provided empirical evidence that cultural dimensions significantly mediate the relationship between the acceptance of corruption and the willingness to engage in corrupt behaviour. Using large-sample SEM analysis, we found that motivation for achievement and success, power distance, and indulgence are the strongest mediators that amplify this link, while collectivism and uncertainty avoidance have little or no influence.

The findings highlight that corruption is not merely an institutional or individual problem but a culturally embedded behavioural process. Anti-corruption policies should therefore focus on reshaping value systems that legitimise hierarchy, immediate gratification, and achievement-at-any-cost mentalities.

Future research should extend this framework to cross-country comparisons and organisational-level analyses to examine whether similar mediation patterns hold in other cultural environments. Longitudinal data could also clarify whether cultural traits evolve alongside institutional reforms.

By identifying which cultural dimensions most strongly sustain corrupt practices, this study contributes both to the theoretical refinement of culture-based models of corruption and to the design of more effective, context-sensitive policy interventions.

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Authors

The contribution share of authors is equal and amounted to ⅓ for each of them.

Richard Kasa (corresponding author)
Associate Professor at the Department of Process Management, Budapest University of Economics and Business. His research interests include organisational culture, corruption studies, statistical modelling, and management sciences.
Correspondence to: Richard Kasa, Department of Process Management, Faculty of Management, Budapest University of Economics and Business. 1149 Budapest, Buzogány utca 10-12, Hungary. e-mail: kasa.richard@uni-bge.hu
ORCID https://orcid.org/0000-0002-2621-8396

Gabor Rethi
Associate Professor at the Department of Management, Budapest University of Economics and Business. His research interests include organisational culture, corruption studies, statistical modelling, and management sciences.
Correspondence to: Gabor Rethi, Department of Entrepreneurship, Faculty of Management, Budapest University of Economics and Business. 1149 Budapest, Buzogány utca 10-12, Hungary. e-mail: rethi.gabor@uni-bge.hu
ORCID https://orcid.org/0000-0002-6614-8898

Csaba Kerekgyarto
PhD student at the Doctoral School of Entrepreneurship and Business, Budapest University of Economics and Business. His research interests include organisational culture, corruption studies.
Correspondence to: Csaba Kerekgyarto, PLASTRADE Packaging Kft. H-1025 Budapest, Szépvölgyi út 52. Hungary, e-mail: csaboo.88@gmail.com
ORCID https://orcid.org/0009-0006-7356-3922

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Beyond profit: A phenomenological exploration of Generation Z's entrepreneurial motivations and the integration of financial and social value

Irwan Adimas Ganda Saputra, Siti Sri Wulandari, Dewie Tri Wijayati Wardoyo, Yoyok Soeatyo, Agung Listiadi

ABSTRACT

Objective: This study examines how Generation Z conceptualises profit and how these perceptions shape their entrepreneurial motivations and strategies. Traditional economic theories define profit as financial gain. However, Generation Z entrepreneurs integrate social impact, innovation, and personal fulfilment into their business models. Existing literature largely focuses on generational comparisons without deeply exploring how this cohort reconciles financial and non-financial objectives.

Research Design & Methods: Using a phenomenological approach, we conducted in-depth interviews to capture their lived experiences. The interpretivist paradigm enables a nuanced understanding of profit as both a motivational driver and a business goal.

Findings: The results revealed that profit for Generation Z is not merely materialistic but is intertwined with meaning, value creation, and social impact. Respondents expressed that profit must align with personal satisfaction, authenticity, and the desire to contribute positively to society. This indicates a shift from traditional economic views to a more holistic and value-driven understanding of entrepreneurial success.

Implications & Recommendations: The results indicate that entrepreneurial education, policy, and support programs must adapt to these changing perceptions by fostering business models that combine economic engines with social value creation. Identity, creativity, and meaning construction are important factors governing the entrepreneurial imagination of younger cohorts, and stakeholders need to appreciate this.

Contribution & Value Added: The present research is novel in its theoretical approach by integrating McClelland's achievement motivation theory with shared value theory and sustainable innovation theory to expand on entrepreneurial motivation theories by examining how Generation Z constructs profit as a multidimensional concept involving financial, psychological, and social facets. It also attempts to extend the profit function theory by positing profit as a form of purposive identity construction and social capital. As for practical implications, the study makes recommendations for educators, policymakers, and business practitioners who seek to advance entrepreneurial education and business models that resonate with the values of Generation Z, especially in the context of ethics, imagination, the creative economy, and the digital world.

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INTRODUCTION

Entrepreneurship has undergone significant evolution, particularly in the digital era. No longer limited to capital accumulation and risk-bearing, entrepreneurial activity now embraces creativity, technology-driven innovation, and socially oriented goals (Saeedikiya *et al.*, 2024). Notably, Generation Z, a cohort shaped by unprecedented access to information, digital ecosystems, and global interconnectivity, drives this transformation (Saeedikiya *et al.*, 2024; Twenge, 2023). Generation Z, typically defined as those born between 1996 and 2012 (Dimock, 2019), exhibits a strong entrepreneurial orientation. However, their motivations tend to diverge from previous generations. According to the Deloitte Global 2023 Generation Z and Millennial Survey, 46% of Generation Z respondents aspire to become entrepreneurs and 25% are already engaged in freelance or side work, driven not merely by financial gain but by a desire for better work-life balance (46%), a sense of purpose and meaning (39%), and alignment with their values (36%). Meanwhile, while 62% express concern about climate change and 53% about wealth inequality, reflecting a generational shift towards entrepreneurship that blends profit with purpose, thereby necessitating a redefinition of business success and the meaning of profit in this ethically conscious digital age (Deloitte, 2023). Such findings underscore a generational shift in the conceptualisation of entrepreneurship, in which profit intertwines with impact and identity. Consequently, the meaning of profit has also been reconceptualised. Generation Z entrepreneurs no longer view profit solely in monetary terms but as part of a broader achievement spectrum encompassing purpose, fulfilment, and social contribution (Arkorful *et al.*, 2022; Lopes *et al.*, 2024). This reflects a paradigmatic shift in which success is measured by income and the perceived impact and meaning derived from entrepreneurial endeavours.

Existing scholarship on generational entrepreneurial tendencies predominantly examines differences in business motivations between Generation Z and their predecessors, such as Generation X and Millennials (Arkorful *et al.*, 2022; Lopes *et al.*, 2024; Saeedikiya *et al.*, 2024). While numerous studies highlight Generation Z's inclination towards socially responsible entrepreneurship and sustainability-driven business models (Ucuzoglu, 2020), a fundamental research gap persists in understanding how this cohort conceptualises profit within the broader framework of their entrepreneurial aspirations. Much of the existing discourse on entrepreneurial motivations remains descriptive, lacking a robust theoretical foundation to explain how Generation Z constructs the meaning of profit beyond its traditional economic function (Lopes *et al.*, 2024; Prakash & Arora, 2024). Furthermore, research on profit perceptions tends to be fragmented, often failing to explore the socio-cultural and psychological dimensions that shape these interpretations across different contexts (Lopes *et al.*, 2024; Sharma *et al.*, 2025).

We sought to address these deficiencies by critically examining the diverse meanings attributed to profit by Generation Z entrepreneurs. Specifically, we wanted to (a) investigate the multifaceted conceptualisation of profit beyond financial metrics, (b) analyse how these interpretations shape entrepreneurial motivations and decision-making processes, and (c) situate these findings within broader academic debates on intergenerational entrepreneurship and value-driven business practices. Unlike previous studies that primarily focus on generational comparisons, we employed a phenomenological approach to capture the lived experiences and subjective meanings that Generation Z entrepreneurs associate with profit.

The striking methodological focus of this research was to apply a 'phenomenological' approach to the analysis of a deeply embedded economic construct such as profit. Classical economic literature often considers profit as a measurable indicator of business success, but understandings of it are always personal, shaped by one's experiences, culture, values, and socio-cultural context. The present investigation shows that Generation Z's conception of profit encompasses financial aspects along with aspirations about ethical business practices, social responsibility, and self-actualisation. Through an interpretive lens, we sought to understand how profit motivates individuals and shapes entrepreneurial intentions, thereby illustrating the complex balance between achieving monetary success and other non-financial goals.

Our research makes original contributions in two ways. First, it integrates conflicting theories of entrepreneurial motivation with the social value framework by holistically depicting profit as a construct comprising multidimensional financial, social, and psychological factors. Second, it builds on the literature on entrepreneurship by deepening our understanding of the reconciliation between the apparent contradictions of profit maximisation and the value-based business framework. Academically, policy-wise, and for business practitioners, the results offer value in designing policies, strategies, and curricula that focus on developing entrepreneurial traits that respond to the changing priorities of Generation Z.

This research liberates Generation Z entrepreneurs from the disparity and neglect of Global Z's entrepreneurship, which emphasises profits over social responsibility by illustrating the balancing act between surviving within the economic structure and addressing social considerations. It addresses the gap in the literature where financial profit is an outcome-based paradigm that dominates and overshadows the business purpose and entrepreneurial spirit as an achievement, social contribution, and self-actualisation. In addition to the neglected assignment of delineating what profit is today, this inquiry paves the way for guiding us through the innovation and evolutionary pathways Generation Z guides us through in the evolving social economy.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Entrepreneurial Motivation and Achievement Need Theory

According to Lopes *et al.* (2024), business success depends mainly on entrepreneurial motivation. Aryoko *et al.* (2024) suggested that people with intense achievement must seek challenging tasks, risk dangerous ventures, and create ambitious targets. Entrepreneurship represents an enterprise that uses profit measurement techniques yet includes additional motives for its participants beyond monetary gain (Lopes *et al.*, 2024). Research indicates that Generation Z approaches profit differently than past generations have done. Generation Z pursues profit for business sustainability and seeks its financial value through tools that support social innovation and monetary goals (Saeedikiya *et al.*, 2024). Research widely accepts McClelland's theory in entrepreneurial motivation studies, but lacks evidence about Generation Z's understanding of profit operationalisation in their business activities. There is a need to investigate this theory with a specific focus on how it shapes Generation Z entrepreneurs who aim to achieve both economic gain and alternative motivational rewards. The inquiry aims to enhance comprehension of techniques for analysing Generation Z entrepreneurial motivation based on this theory. According to Lopes *et al.* (2024), entrepreneurial motivation relies on both intrinsic and extrinsic motivations. According to this thinking, Generation Z business people merge their pursuit of monetary gains with achieving personal growth. Generation Z prioritises business ventures because they need meaningful goals and societal benefits, unlike the vintage generations, who focus solely on financial gain (Deloitte, 2023; Saeedikiya *et al.*, 2024). Future investigation of integrated motivational drivers must focus on the entrepreneurial framework to achieve a complete understanding of current business trends.

Social Value Theory and Social Motivation in Entrepreneurship

Social Value Theory and Social Motivation Theory provide the fundamental understanding of social impact creation purposes for people and organisations, according to Chatterjee *et al.* (2021). According to Grilo and Moreira (2022), social entrepreneurship follows entrepreneurship theories because businesses need to achieve equal profitability and social value. According to the shared value theory, business effectiveness occurs precisely when social value reaches levels equivalent to marketplace value, as explained by Grilo and Moreira (2022). The B Corporations of Generation Z social entrepreneurs merge profit-making opportunities with social advantages in their business operations (Lazarte-Aguirre, 2024). The research field lacks comprehensive knowledge about Generation Z's methods of applying social values to their business selection process. Social value pursuit is an imperative entrepreneurial force while entrepreneurs face obstacles in merging financial sustainability with social impact requirements (Becker *et al.*, 2023). The research analyses the social motivation-backing bond between Generation Z enterprise strategies by studying their changing social needs across economic and cultural contexts. The motivating factors behind social entrepreneurship emerge from cultural aspects

and economic development stages; necessity drives startup ventures in developing countries, but developed nations focus on ethical change and social challenges (Amini Sedeh *et al.*, 2023). The study aims to evaluate Generation Z business owners regarding the influence that cultural shifts and new technologies have on their adoption of social value practices in their operations.

Profit Function Theory in the Context of Generation Z

According to traditional market principles, profit is the primary motivational factor (Narayanan, 2022). Nandi *et al.* (2022) added social elements and sustainability practices to the modern definition of profit. Research by Deloitte (2023) showed that Generation Z approaches profit in a way that defines it as both an outcome producing positive social change and a tool that enables social impact at its core. The framework of strategic profit demonstrates that economic sustainability development creates connections between financial profitability (Guandalini, 2022; Lopes *et al.*, 2024). Research on Generation Z's business operations, which lack social value integration, has failed to link their profit-making methods with the profit concept. We investigated how Generation Z understands profit and establishes a connection between profitability and sustainable social responsibility. Generation Z entrepreneurs show an extended profit conception through their venture activities by focusing on enduring value development rather than instant financial benefits, according to Hall (2022). This preference for ethical business operations indicates they are moving beyond previous economic thinking norms, prioritising only profit maximisation. The practical manifestations of Lopes *et al.* (2024) shared value concept remain insufficiently studied regarding Generation Z entrepreneurs. Knowing how the new generation applies profit function theory to make decisions will give us a deeper understanding of modern entrepreneurial approaches.

Gaps in the Literature and Research Justification

Various explanations exist in previous studies about entrepreneurial motivation and social value alongside profit function, yet researchers face important knowledge gaps. Research about Generation Z's entrepreneurial pursuits delivers mainly descriptive results without intensely studying their profit interpretation. Research lacks a detailed integration among McClelland's achievement need theory, social value theory, and the profit concept to explain the phenomenon. The present study shows weak relationships between its phenomenological research methods and existing literature. The study intends to resolve these gaps by creating an advanced systematic framework that provides analytical explanations. The scholarly works recognise digital transformation's impact on entrepreneurial behaviour (Gregori & Holzmann, 2020) yet fail to examine its precise effects on Generation Z's profit understanding. Researchers examine how new e-commerce and social media technologies affect profits and business sustainability among organisations managed by Generation Z.

Conclusion and Theoretical Implications

This research revealed that Generation Z possesses an unparalleled understanding of profit within entrepreneurship alongside monetary, social, and ethical frameworks. It contributes to the development of theory and practical application through the insights provided by applying McClelland's theory, social value theory, and strategic profit concepts. It works to advance knowledge of their psychosociological motives about digital and sustainable entrepreneurship. The findings set a foundation for further investigation concerning the entrepreneurial motivations of Gen Z. Further studies are needed alongside pending changes to economic conditions. It assists policymakers and educators in policy development, supporting Generation Z's psychosocial needs.

RESEARCH METHODOLOGY

We adopted a phenomenological approach to investigate how Generation Z entrepreneur-wannabes understand profit from their creative industry business ventures. Given the importance placed upon meaning and interpretation by participants, we used IPA, defined by Smith *et al.* (2021). It is based on Heideggerian and hermeneutic traditions and focuses on how people interpret their ex-

periences. According to Moustakas (1994), several phenomenological principles can be used to deepen interpretive analysis, such as intentionality, eidetic reduction, and noema-noesis correlation. Eidetic reduction helps bracket or set aside preconceived thoughts, whereas intentionality concerns consciousness and the experienced object. The noema-noesis lens enabled a thematic approach to how participants construct and deconstruct meaning around profit.

The data comprised four participants who considered themselves aspiring entrepreneurs from the creative industry, due to semi-structured interviews. We designed the interview protocol based on transcendental phenomenology theory to ensure alignment with research objectives. The main questions posed included: (1) How do you perceive the concept of profit in your business? (Exploring noema); (2) What has been your experience in achieving profit, and how do you interpret it? (Exploring noesis); (3) Do you consider profit as more than just financial gain? If so, in what way?; (4) How does the concept of profit influence your business strategy and long-term goals?; (5) How do you balance profit and social values in your business? We designed these questions to explore the meaning of profit more deeply from the participants' subjective perspectives, in line with the core principles of transcendental phenomenology.

This sample size aligns with the idiographic commitment of IPA with its emphasis on depth (Smith *et al.*, 2021). Despite the small sample, the selection of four participants was methodologically reasonable. Data saturation, or the point at which no new themes arise, was demonstrated to occur with as few as six interviews, particularly in more homogeneous samples (Guest *et al.*, 2006). Furthermore, research conducted in this area, such as Mendoza *et al.* (2021), also utilised IPA alongside a limited number of participants in-depth and explored the former's identity and identity in youth populations (Shahzad *et al.*, 2024).

Table 1. Participant Demographics

Participant Code	Gender	Age	Field in the creative industry	Entrepreneurial stage
P1	Male	22	Graphic Design	Early-stage business owner
P2	Female	21	Fashion Design	Product development
P3	Female	23	Digital Content Creation	Pre-launch phase
P4	Male	22	Animation & Illustration	Freelance, exploring a startup

Note: All participants were undergraduate students and identified as members of Generation Z, aspiring to build businesses within the creative economy sector.
Source: own study.

We recruited participants through creative entrepreneurship networks. Inclusion criteria included being part of Generation Z (born 1996-2012), engaging in or planning a creative business, and being at various venture stages. We obtained informed consent and assured confidentiality. We used pseudonyms and stored data securely. Participants could withdraw without consequences.

We conducted the analysis within the structured framework of IPA, which is comprised of steps including reading and re-reading transcripts, initial noting, forward noting, developing emergent themes, searching for connections across themes, and moving to the next case before integrating patterns across cases (Smith *et al.*, 2021). Throughout this process, the researcher engaged in reflective journaling and bracketing to cope with bias and remain open to the phenomenon as the participants experienced it (Creswell, 2018).

RESULTS AND DISCUSSION

This research sheds light on the consumption patterns of Generation Z millennials and their profit-making tendencies as aspiring entrepreneurs. It revealed five interrelated themes constructed through open, axial, and selective coding within a phenomenological interpretative framework. Profit was re-conceptualised as financial gain and purposeful achievement driven by authenticity, personal values, and key influences. Respondents displayed a strong commitment to achieving mastery through failure, which aligned with their long-term goals, balanced profit with social responsibility, and ethical impact. The analysis incorporated thematic and phenomenological aspects of the analysis, as shown in Table 3, which depicts the development of the initial codes into broader themes.

Table 2. Analytical Process and Emergent Themes

IPA analytical step	Description	Emergent themes from analysis
Reading and re-reading	Immersion in transcripts to deeply understand participants' narratives and contexts	Initial insights into how profit is seen as *beyond money* and linked to personal fulfilment
Initial noting	Exploratory notes focusing on descriptive, linguistic, and conceptual observations	Identification of contrasts between *financial vs. non-financial motivations*
Developing emergent themes	Clustering interpretative notes into preliminary themes reflecting participants' perspectives	Flexibility and Autonomy as Key Entrepreneurial Drivers
		Financial vs. Non-Financial Profit: A Shift in Prioritisation
		Profit as a Motivational Factor vs. Ultimate Goal
		Balancing Profit and Social Impact: A Complex Dynamic
		Reconciling Theoretical Perspectives: A Multi-Framework Approach
Connecting themes	Establishing relationships among themes and organising them into superordinate structures	Thematic intersections reveal dynamic tensions in participants' entrepreneurial identities
Cross-case analysis	Comparing themes across all participants to uncover shared meanings and individual uniqueness	Recurring emphasis on *profit as value-laden*, not only numerical, and shaped by generational ethos

Source: own study.

Table 3. Coding Process and Thematic Framework Development

Selective coding (Core Theme)	Axial coding (Sub-theme)	Open coding (Initial code)	Illustrative quotations (Direct from Interview)
Profit as Meaning	Redefinition of Profit	Profit is more than money	'Profit for me is when I feel personally satisfied, not necessarily when I make money.' (Respondent 2)
			'It's not just financial gain; it's about happiness and fulfilment.' (Respondent 4)
		Profit as inner satisfaction	'I feel I've gained when I can sleep peacefully knowing I did something meaningful.' (Respondent 1)
			'Satisfaction is the real profit – money comes later.' (Respondent 3)
		Profit as contribution to others	'If I help others, that's already a profit to me.' (Respondent 4)
			'Impacting someone's life positively is more valuable than income.' (Respondent 2)
Entrepreneurial Meaning-Making	Social Orientation	Business should contribute positively	'It feels wrong to only chase money – my business should make a difference.' (Respondent 1)
			'Success for me is when my work uplifts others.' (Respondent 3)
		Pursuing social values in business	'My business supports local artisans – that's the value I stand for.' (Respondent 2)
			'I prioritise ethical products, even if they don't sell as fast.' (Respondent 4)
	Aspirational Goals	Desire to be impactful	'I want to be remembered as someone who inspired others.' (Respondent 1)
			'Leaving a legacy means more to me than getting rich.' (Respondent 3)

Selective coding (Core Theme)	Axial coding (Sub-theme)	Open coding (Initial code)	Illustrative quotations (Direct from Interview)
Entrepreneurial Identity Formation	Personal Values	Following one's passion	'I turned down a corporate job to follow what I love.' (Respondent 2)
			'Passion drives me more than any market opportunity.' (Respondent 4)
		Staying true to oneself	'Authenticity is key; I don't want to compromise who I am.' (Respondent 1)
			'I won't run a business that doesn't represent my values.' (Respondent 3)
	Influence of Role Models	Inspiration from family or mentors	'My father always said, 'Do good and profit will follow' – that stuck with me.' (Respondent 1)
			'My mentor showed me that business and kindness can coexist.' (Respondent 2)
Learning and Growth	Reflective Practice	Failure as part of learning	'I've failed before, but I now see those as stepping stones.' (Respondent 3)
			'Every mistake teaches me something new.' (Respondent 4)
		Learning from direct experience	'Theory is one thing, but I've learnt the most from doing.' (Respondent 1)
			'I grow by facing real challenges, not just reading about them.' (Respondent 2)
	Growth Mindset	Continuous improvement mindset	'There's always room to improve, no matter how far I've come.' (Respondent 3)
			'I want to keep learning and evolving with the times.' (Respondent 4)
Sustainability and Responsibility	Future Orientation	Seeing business as a life journey	'This is a long-term commitment for me, not a quick scheme.' (Respondent 1)
			'I view my business like raising a child – it needs time and care.' (Respondent 2)
		Building for long-term impact	'I want my brand to outlive me.' (Respondent 4)
			'What's the point of profit if it doesn't build something meaningful for the future?' (Respondent 3)

Source: own study.

The results from this research indicate that young prospective entrepreneurs consider profit not only monetary benefits but also moderate psychological benefits, as well as being aligned with their values. Respondents reported a strong preference for socially responsible ventures that practice 'purpose over profit' as entrepreneurial success, along with financial calmness, happiness, and meaningful contributions to society. Respondents also reported that entrepreneurship is a form of self-expression shaped by various role models and experiences, demonstrating the importance of authenticity and passion. They viewed challenges as opportunities, which depicts a bias towards holistic personal and professional development. Moreover, respondents highlighted the social dimension underpinned by an enduring moral responsibility to build socially responsible businesses within ethical entrepreneurship aligned with the Sustainable Development Goals (SDGs).

Discussion

This research shed light on Generation Z entrepreneurs' perception of profit, which is far more advanced than simply thinking of profit from a monetary perspective. As respondents described, profit is not only a financial outcome but a construct integrated with values, social impact, and responsibility. This interpretation confirms and expands McClelland's Achievement Motivation Theory (1961), specifically internal and external incentives. McClelland claims that people are motivated to master some skills personally (Abdullah *et al.*, 2025). However, our research indicates that Generation Z entrepreneurs integrate intrinsic aims (meaning, identity, social contribution) into achievement-focused extrinsic purposes. Such

hybrid motivation aligns with recent findings that younger entrepreneurs are increasingly driven by long-term value-based incentives instead of immediate results (Bui *et al.*, 2023). As participants narrated, 'profit as meaning' constructs a value-oriented, action-oriented approach to profit, which reverberates with the participants' understanding of traditional economic models. Moreover, such a shift in understanding is evident in (Abdullah *et al.*, 2022), which seems to assert that young entrepreneurs often prioritise impact over profit. This aligns with the broader understanding of 'psychological ownership' concerning a person's entrepreneurial activities, integrating elements of identity and moral obligation alongside economy-related choices (Dey & Fasbender, 2025). Moreover, this study reinforces Duncan-Horner *et al.* (2022) findings of purpose-driven entrepreneurs, stating that, in this case, personally socially embedded significance and the enduring change sought influence motivation.

Understanding profit as 'motivational confirmation' fits the hybrid theoretical approaches and corroborates the shared value theory premises (De Tommaso & Rodrigues, 2023). The participants' perception that profit is a proxy of the value they render to society motivates them to achieve goals that benefit their communities. Earlier, research by Abdulaziz-Alhumaidan and Khan (2024) showed that value-creation strategies tend to be formulated from the premise of blending ethical reasoning and business reasoning. This is more marked in Generation Z, whose economic behaviour stems from increased awareness about social issues, transparency on the internet, and advocacy for social issues (Ewe & Tjiptono, 2023). Moreover, participants in this study consider profit as a form of social verification of ethical entrepreneurship, where profit enables one to meaningfully contribute to social, environmental, and moral objectives. This finding affirms and extends the theoretical insights of Sadiq *et al.* (2021) on how hybrid entrepreneurs negotiate the opposing institutional logics of social good and financial return. Generation Z seems to breach this divide, viewing financial achievement and social contribution as synergistic rather than antagonistic – a view noted by Lopes *et al.* (2024) in their research on sustainable entrepreneurship.

This research contributes to the empirical research on the intersection between innovation and long-term entrepreneurial goals. It appears that participants strive for innovation that is not only technocentric but also ethical and ecological through the framework of sustainable innovation theory (Ghobakhloo *et al.*, 2021). Several respondents indicated that the aim is not economic domination but scaling solutions that provide resilience, circularity, and regenerative value. This interpretation corroborates Al Halbusi *et al.* (2024), who claim that sustainability-oriented innovation stems from an underlying entrepreneurial logic that prioritises deep care for the well-being of future generations and the planet. Moreover, respondents' acceptance of failure as a part of their entrepreneurial progression aligns with the entrepreneurial learning frameworks of Lattacher *et al.* (2024). These studies focus on the experience and the narratives around constructing an entrepreneurial identity, particularly how failure, reflection, feedback, and growth shape one's resilience and strategic foresight. In this study, Generation Z described failure not as a setback but as an essential component in self-improvement, indicating a movement toward 'reflective entrepreneurship' (Lattacher *et al.*, 2024).

Furthermore, role models were equally important to participants' development. This is consistent with Bandura's social cognitive theory (1986), which emphasises the importance of learning through observing others, also known as social learning. More recently, Morrar *et al.* (2022) noted the significance of entrepreneurial role models on young entrepreneurs' motivation and identity formation, especially when such models demonstrated integrity, innovation, and positive social impact. This research supports these findings with the addition that Generation Z, unlike the rest of society, idolises leaders with actual moral and ethical values instead of those who achieved wealth and success. Ultimately, self-expression was cited as yet another way to narrate profit. From their perspective, entrepreneurs saw their business undertakings as living manifestations of their personal philosophies, identities, and ethical commitments. This finding reinforces Gregori *et al*. (2021) understanding of entrepreneurial identity as a fluid negotiation of one's internalised values and externally based social acknowledgement. It also connects with the recent discourse on 'identity-based entrepreneurship,' which suggests that community, mission, or professional identity, rather than self-serving monetary incentives, drives entrepreneurship.

Considering the study's findings, the view on entrepreneurial profit regarding Generation Z has shifted to focus on ethics, learning, and the value of longevity. This research applies McClelland's theory by adding moral aspects to fundamental intrinsic-extrinsic motivation, examines how financial success and social impact divide and dialogue through shared value theory, and adds identity and intergenerational dimensions to sustainable innovation theory. Generation Z is characterised as economically active, ethically focused, and futurological. This ascribes collectively to educators, policymakers, and incubators to create systems that foster ethical self-identity and identity as self-sustainability oriented, advanced education on ethical reasoning, sustainability, and identity self-concept. Such ecosystems enable today's youth to develop and nurture businesses that support social resilience and ecological sustainability, going beyond mere contribution to the GDP, in synergy with SDG 4 (education), SDG 8 (decent work), and SDG 12 (responsible consumption and production).

CONCLUSIONS

The research examined how aspiring Generation Z entrepreneurs understand and conceptualise the profit of the creative economy. The study uncovered that profit is not only a financial gain but also redefined as a multidimensional construct that includes emotional fulfilment, purpose, social contribution, and alignment with personal values. This reframing captures a shift in entrepreneurial meaning-making, in which identity revolves around the archetypes of authenticity, sustainability, and long-term social impact. The research advances the discussion on entrepreneurial motivation and value creation by reframing the polar approach of intrinsic and extrinsic drivers towards profit. This Generation Z phenomenon illustrates the broader psychological and ethical context of entrepreneurship. The study was also methodologically innovative in using phenomenology to reveal the profound subjective experiences of developing entrepreneurship in the youth. In practice, the study results indicate that training and education in entrepreneurship require restructuring to better align with the expectations of this generation. The findings call for educators and programme developers to integrate ethics, social sustainability, and social innovations into entrepreneurial curricula. Policymakers should also promote business approaches that provide social value in addition to financial returns through funding, regulatory incentives, and capacity-building frameworks that support social entrepreneurship.

Noteworthy, this research has its limitations. The findings are not generalizable because of the use of qualitative methods and a small, homogeneous sample. The interpretive nature of the analysis also means the results are local, best understood as context-specific, and one should regard them primarily as explorative. Responding to these questions could further develop the understanding using quantitative or mixed-methods approaches to test the emerging themes, longitudinally analyse different business life cycle stages, or examine values associated with entrepreneurship across varying cultures.

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Authors

The contribution share of authors is equal and amounted to 20% for each of them.

Irwan Adimas Ganda Saputra (corresponding author)
Assistant Professor of Accounting Education and Lecturer of the Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia. His research interests include: auditing, financial accounting, financial behaviour, and accounting education.
Correspondence to: Irwan Admas Ganda Saputra, Universitas Negeri Surabaya, Faculty of Economics and Business, Surabaya, Indonesia, e-mail: irwansaputra@unesa.ac.id
ORCID https://orcid.org/0000-0003-3194-092X

Siti Sri Wulandari
Doctoral of economic education, Lecturer of the Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia. Her research interests include: development of teaching materials, development of learning models, and office administration science.
Correspondence to: Siti Sri Wulandari, Universitas Negeri Surabaya, Faculty of Economics and Business, Surabaya, Indonesia, e-mail: sitiwulandari@unesa.ac.id
ORCID https://orcid.org/0000-0002-6628-1242

Dewie Tri Wijayati Wardoyo
Professor of human resource management, strategic management, and leadership, Lecturer of the Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia. Her research interests include: human resource management, strategic management, and leadership.
Correspondence to: Dewie Tri Wijayati Wardoyo, Universitas Negeri Surabaya, Faculty of Economics and Business, Surabaya, Indonesia, e-mail: dewiewijayati@unesa.ac.id
ORCID https://orcid.org/0000-0002-4631-8781

Yoyok Soeatyo
Professor of business and economics education, Lecturer of the Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia. His research interests include: business and economics education.
Correspondence to: Yoyok Soeatyo, Universitas Negeri Surabaya, Faculty of Economics and Business, Surabaya, Indonesia, e-mail: yoyoksoesatyo@unesa.ac.id
ORCID https://orcid.org/0000-0002-5098-9262

Agung Listiadi
Professor of financial accounting learning media, Lecturer of the Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia. His research interests include: financial accounting learning media.
Correspondence to: Dewie Tri Wijayati Wardoyo, Universitas Negeri Surabaya, Faculty of Economics and Business, Surabaya, Indonesia, e-mail: agunglistiadi@unesa.ac.id
ORCID https://orcid.org/0000-0002-9686-5935

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Use of Artificial Intelligence

I hereby declare that the article is free from the use of Artificial Intelligence (AI) or Generative AI (GAI) tools in its preparation, writing, analysis, and interpretation. All ideas, arguments, and writings are the result of the author's own work and critical engagement with relevant academic sources.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article, 'Beyond Profit: A Phenomenological Exploration of Generation Z's Entrepreneurial Motivations and the Integration of Financial and Social Value'. The research was conducted independently, and no financial, commercial, or personal affiliations influenced the study design, data collection, analysis, or interpretation of the findings. All authors affirm that the work presented in this article is original and has not been submitted or published elsewhere. Any external support or funding, if applicable, has been transparently disclosed in the acknowledgements section.

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Ownership structure, stakeholder pressure, and sustainability transparency: Insights from Indonesia

Rizky Eriandani, Wahyu Agus Winarno

ABSTRACT

Objective: We investigated the effect of ownership structure, specifically foreign and institutional ownership, on the transparency of sustainability reporting. We also examined how stakeholder pressure, particularly from environmental and customer perspectives, moderates this association, either strengthening or weakening its effects.

Research Design & Methods: We employed a quantitative approach using a purposive sampling method, resulting in 672 firm-year observations from non-financial companies listed on the Indonesian Stock Exchange during the 2020-2023 period. We measured the transparency of sustainability reports using transparency scores from the CSRHub database. We categorised stakeholder pressure into two types: environmental pressure and customer pressure, based on industry classification. We also conducted moderated regression analysis to empirically test the research model.

Findings: The results indicate that we may positively associate higher levels of foreign and institutional ownership with greater transparency in sustainability reports. Stakeholder pressure moderates the impact of foreign ownership on transparency, with environmental pressure reinforcing this relationship, whereas customer pressure weakens it. Moreover, environmental and customer pressures do not significantly moderate the institutional ownership-transparency relationship.

Implications & Recommendations: The findings have significant implications for regulators and prospective investors. They highlight the need for stronger regulatory enforcement and targeted stakeholder engagement to improve environmental, social, and governance (ESG) transparency, particularly in customer-facing and environmentally sensitive sectors in emerging markets.

Contribution & Value Added: This study contributes to the growing body of literature on sustainability reporting transparency by offering empirical evidence from an emerging market context. Using evidence from Indonesia, it offers insights into the interplay between governance structures and stakeholder dynamics, with implications for theory and practice.

Article type: research article

Keywords: ownership structure; sustainability reporting; transparency; stakeholder pressure; emerging market

JEL codes: G14, G32, M41

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INTRODUCTION

Addressing the challenges of climate change, consumption, and resource depletion has become essential in today's business landscape. As organisations strive to demonstrate their commitment to ESG practices, sustainability reporting (SR) has become an increasingly important aspect of corporate disclosure. Recent studies emphasise that sustainability reporting should focus on outcomes and impacts aligned with the United Nations (UN) Sustainable Development Goals rather than merely reporting

outputs, thereby enhancing accountability and long-term value creation (Abeysekera, 2022). Moreover, shareholder engagement has emerged as a powerful mechanism to improve ESG practices, as activist investors can significantly influence firms' environmental and social performance and strengthen their disclosure quality (Barko *et al.*, 2022). Simultaneously, stakeholder engagement plays a crucial role in shaping the quality of sustainability reports, where higher involvement strategies foster more transparent and meaningful disclosures (Stocker *et al.*, 2020). Transparency in SR not only enhances corporate accountability but also improves investor confidence and reduces firms' cost of capital, thereby facilitating better access to sustainable finance (Kräussl *et al.*, 2024).

Through this study, we aimed to investigate the effect of foreign and institutional ownership on the transparency of sustainability reporting among publicly listed firms in Indonesia. To achieve this, we employed a sample of non-financial firms listed on the Indonesia Stock Exchange (IDX) over the 2020-2023 period, excluding financial institutions due to their distinct reporting and regulatory frameworks. In emerging markets like Indonesia, the institutional environment and ESG reporting practices are still maturing. Differences in institutional contexts between developed and emerging countries shape the impact of ESG practices. In developed countries, regulations are more established and enforcement mechanisms are stronger, which makes ESG practices largely mandatory and well-integrated into corporate governance. Consequently, the impact of ESG on firm performance tends to be more consistent and positive across environmental, social, and governance dimensions (Naeem *et al.*, 2022; Singhania & Saini, 2023). In contrast, emerging countries often rely on voluntary frameworks with weaker enforcement, producing mixed outcomes. Some firms improve transparency under stakeholder or foreign investor pressure, while others show only symbolic commitments (Singhania *et al.*, 2024). The volume of sustainability reporting practices in Indonesia has grown, but the practices continue to face significant challenges in regard to both quality and corporate commitment. Although the number of reports has increased since 2006, the majority still tend to be symbolic in nature, with low quality, especially in terms of readability, clarity, and reliability of information (Adhariani & du Toit, 2020; Gunawan *et al.*, 2022; Sebrina *et al.*, 2023). On the regulatory side, Indonesia has established a legal foundation through Regulation of the Financial Services Authority of Indonesia Number 51/POJK.03/2017 (OJK, 2017), which mandates public companies and financial institutions to publish sustainability reports. However, enforcement remains weak, with low compliance levels and many reports failing to meet standards. According to KPMG (2020), Indonesia was not among the 52 countries included in the N100 sample of the global sustainability reporting survey, although it appeared under the 'Other (5%)' category in the G250 global sample. This limited representation indicates that the authors did not analyse Indonesia as a distinct country, which reflects its relatively weak position in global sustainability reporting practices and reinforces the need for further research on factors that can enhance transparency in sustainability disclosures.

Transparency in sustainability reporting refers to the extent to which a company openly discloses its sustainability policies, practices, and stakeholder engagement, including compliance with recognised reporting standards and the use of external assurance. In developed markets, companies with greater foreign investor ownership tend to produce higher-quality sustainability reports (Correa-Garcia *et al.*, 2020). This indicates that firms attracting foreign investors are generally more committed to improving their corporate social responsibility (CSR) practices, as they are influenced by diverse cultural, economic, and strategic expectations. Moreover, international diversification has been shown to encourage the adoption of sustainability principles and global best practices in corporate reporting (Borda *et al.*, 2017). When foreign investors hold a majority stake, there is a greater demand for high-quality voluntary information (Haniffa & Cooke, 2005), stemming from a broader management perspective and the geographical diversity of shareholders. Consequently, companies with significant foreign ownership are likely to have heightened expectations for voluntary social and environmental reporting.

However, in emerging markets, the relationship between foreign ownership and transparency may differ due to weaker regulatory enforcement, limited institutional capacity, and less mature sustainability reporting frameworks. Zaid *et al.* (2020) found that foreign ownership does not necessarily influence social and environmental responsibility reporting. Foreign investors play a significant role in Indonesia's capital market, owning more than 40% of Indonesian securities (ICSD, 2024). These investors,

primarily from developed countries such as the United States and Japan (IDX Channel, 2022), typically possess greater resources and capabilities to conduct sophisticated investment analysis. Given the substantial capital they allocate to emerging markets like Indonesia, foreign investors are particularly cautious in their investment decisions to avoid high exit costs (Rudiawarni *et al.*, 2024). Their involvement is not limited to capital provision. Furthermore, they actively promote accountability and transparency. These investors increasingly demand that Indonesian companies address not only financial performance but also non-financial concerns, particularly environmental and social issues. As a result, many firms are compelled to improve the quality of their sustainability disclosures to meet the expectations of global investors (Wicaksono *et al.*, 2024). Foreign ownership can reinforce this legitimacy because foreign investors typically have higher expectations regarding the disclosure of sustainability-related information (Al Amosh & Khatib, 2022).

In developed markets, institutional investors play a significant role in promoting sustainability transparency. Based on a sample of European countries, Giordino *et al.* (2024) found that institutional investors exert a significant positive influence on corporate transparency related to the Sustainable Development Goals (SDGs). Owing to the magnitude of their investments and their exposure to long-term environmental and reputational risks, institutional investors are more inclined to demand high-quality, credible sustainability information (Ullah *et al.*, 2019). In line with this, Velte (2020) observes that firms with a higher proportion of institutional ownership tend to provide more comprehensive sustainability disclosures, driven by these investors' objective to reduce information asymmetry and promote sound governance. In the Indonesian context, institutional investors occupy a dominant position in the capital market, accounting for over 80% of share ownership among listed companies on the Indonesia Stock Exchange (ICSD, 2024). Nevertheless, empirical evidence from emerging markets such as Indonesia remains inconclusive. While Nurleni and Bandang (2018) report a significant association between institutional ownership and corporate social responsibility disclosure, more recent findings by Sujatnika *et al.* (2023) suggest that institutional ownership does not exert a meaningful influence on sustainability reporting. This divergence may be attributable to the short-term investment orientation of certain institutional investors operating in developing markets, which could overshadow their commitment to long-term ESG considerations. These contrasting findings underscore the necessity of further investigating the role of institutional ownership in shaping sustainability transparency, particularly within the institutional and regulatory context of emerging economies such as Indonesia.

Previous studies have shown mixed results on the relationship between ownership and transparency (Khan *et al.*, 2013; Raimo *et al.*, 2020; Zaid *et al.*, 2020), suggesting that this relationship may depend on contextual factors. Stakeholder pressure plays a crucial role in either enhancing or hindering the implementation of sustainable management practices (Haleem *et al.*, 2022). Meanwhile, in this study, we incorporated stakeholder pressure into the relationship between ownership structure and sustainability reporting transparency, focusing specifically on customer pressure and environmental pressure. In Indonesia, customer pressure is a relevant moderating factor, as consumers increasingly expect companies to act responsibly and disclose their sustainability practices. As Arli and Tjiptono (2014) show, Indonesian consumers value CSR, particularly when it reflects ethical behaviour and environmental concerns. Such expectations may influence how companies respond to ownership structure, particularly when foreign or institutional investors are involved. Environmental pressure is also a critical contextual factor. Generally, industries that are sensitive to environmental issues pay more attention to their ESG performance. Environmental disclosures serve to legitimise the operations of companies in these environmentally sensitive sectors. Scholars often refer to such industries as 'high-profile industries,' characterised by public pressure, consumer visibility, high political risk, or intense competition (Hackston & Milne, 1996; Roberts, 1992).

Building on these gaps, this study introduces several innovative aspects that differentiate it from prior research. Firstly, by providing empirical evidence from an emerging market, this study fills a gap in the literature that is predominantly centred on developed economies. It contributes contextual insights into how ownership structures function in less mature regulatory environments. Secondly, this study employs an alternative measurement of sustainability reporting transparency. Previous studies have primarily focused on the quality of these reports by counting and weighting the disclosed items

(Correa-Garcia *et al.*, 2020; Rudyanto & Siregar, 2018). We measure transparency using the Transparency and Reporting dimension of the CSRHub ESG score, which provides a more nuanced assessment than traditional binary or checklist-based disclosure indices. Scholars have widely adopted CSRHub in prior research as a reliable third-party ESG data source (Sandberg *et al.*, 2023; Yousefian *et al.*, 2023). This adds methodological value by introducing a multi-dimensional, scalable, and globally comparable measure of transparency. Thirdly, the study extends stakeholder theory by introducing industry-based stakeholder pressure, proxied through environmental and customer sensitivity, as a moderating variable in the ownership-transparency relationship. Lastly, the study offers policy-relevant insights by showing that different ownership types are associated with varying levels of transparency, and that stakeholder pressure does not consistently lead to greater disclosure. These insights support the development of differentiated ESG reporting policies tailored to ownership profiles and sector sensitivities, particularly in emerging countries.

This research is organised into five sections following this introduction. We start with a literature review, followed by the presentation of the research hypothesis, methodology, results and discussion. The article concludes with a summary of findings, research limitations, and suggestions for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

To strengthen the theoretical foundation of this study, we must outline the key theories that explain how ownership structure and stakeholder dynamics influence sustainability reporting transparency. These theories provide the conceptual basis for predicting firm behaviour and the expected relationships among the variables in the research model. Therefore, before presenting the hypotheses, the following section introduces the theoretical perspectives that underpin this study.

Agency theory explains the contractual relationship between the company owners (principals) and managers (agents), in which owners entrust managers with the authority to operate the company on their behalf. The central issue in this relationship lies in information asymmetry and potential conflicts of interest, as managers may act in their own self-interest rather than in alignment with shareholders' objectives (Jensen & Meckling, 1976). Moreover, we drew on legitimacy theory to explain company's motivation for voluntarily disclosing social and environmental information. According to Dowling and Pfeffer (1975), one achieves legitimacy when a company's value system is aligned with the broader social norms and expectations of the society in which it operates. In this context, sustainability disclosure can serve as a strategic tool for companies to gain, maintain, or restore legitimacy, particularly when facing pressure from influential stakeholders (Deegan, 2019). Moreover, this study is grounded in stakeholder theory, which posits that a company's survival and success depend on its ability to manage relationships with various stakeholders who can affect or are affected by corporate activities (Freeman, 1984). From this perspective, sustainability reporting is not only a means to address shareholders' concerns but also a mechanism to respond to the information needs and expectations of diverse stakeholder groups.

Businesses with foreign ownership often prioritise transparency in their sustainability reporting, primarily due to the influence of international shareholders. These shareholders demand best practices in information disclosure, significantly contributing to this heightened focus. Research indicates that foreign ownership is associated with greater stakeholder perceptions of legitimacy and trust, which may encourage firms to disclose sustainability information more transparently (Al Amosh & Khatib, 2022; Liou *et al.*, 2023). Foreign-owned businesses tend to improve the quality of their sustainability and financial reports, driven by managerial efforts to align with the transparency and accountability standards demanded by international shareholders. Research consistently shows that higher levels of foreign ownership are associated with better reporting practices and a more open approach to information dissemination (Hasanah *et al.*, 2023; Tokas & Yadav, 2023). In emerging markets, sustainability strategies can help foreign-owned firms mitigate liabilities of foreignness, strengthen legitimacy, and build stakeholder trust by aligning with business ethics principles (Gomez-Trujillo *et al.*, 2025). Taken together, prior studies suggest that the presence of foreign shareholders, often originating from institutional environments with stronger governance expectations, creates additional pres-

sure on firms to adopt more rigorous disclosure practices and align with higher standards of transparency and accountability (Al Amosh & Khatib, 2022; Gomez-Trujillo *et al.*, 2025; Hasanah *et al.*, 2023; Liou *et al.*, 2023; Tokas & Yadav, 2023).

H1: The greater the foreign ownership, the better the sustainability reporting transparency.

When significant, institutional ownership can function as a superior oversight mechanism compared to individual ownership. Companies with substantial institutional ownership are more likely to exhibit higher levels of transparency in their sustainability reports. This is because institutions are keen on ensuring the accuracy and reliability of the information presented to shareholders and other stakeholders. Research indicates that companies with high institutional ownership tend to have better disclosures in their sustainability reports, as institutions strive to reduce information asymmetry that could be detrimental to them (Delfy & Bimo, 2021). Financial institutions, operating under strict regulations and societal norms, are motivated to promote transparency regarding CSR and the Sustainable Development Goals (SDGs). This transparency helps legitimise the organisation and satisfy the expectations of various stakeholders (Giordino *et al.*, 2024). These institutions play a crucial role in the industry, influencing the adoption of ESG policies. The main argument is that financial institutions, often regulated by strict regulations and high public scrutiny, encourage more socially responsible behaviour (García-Meca & Pucheta-Martínez, 2018). Notably, ESG serves as a powerful tool to reduce information asymmetry and strengthen stakeholder trust, providing reassurance and confidence in the system. In this context, financial institutions can act as drivers of transparency, as they aim to ensure that their investments support companies with lower risk and long-term sustainability (García-Sánchez *et al.*, 2020).

H2: The greater institutional ownership, the better the transparency of sustainability reporting.

While scholars have demonstrated that ownership structure, particularly foreign and institutional ownership, influences sustainability reporting transparency, extant studies suggest that the magnitude and direction of this influence are contingent on external stakeholder pressures (*e.g.*, customer demand, environmental activism) as evidenced in prior research (Helmig *et al.*, 2016; Hsu & Bui, 2022). The stakeholder theory posits that companies must act reasonably and fairly towards the expectations of stakeholders, based on what stakeholders deem to be appropriate. This theory is grounded in legitimacy theory, which emphasises companies' ethical behaviour (Osei *et al.*, 2023). Considering the context of emerging markets such as Indonesia, customer pressure and environmental pressure represent two highly relevant and systematically measurable forms of stakeholder pressure. Many industries in Indonesia are environmentally sensitive, including mining, energy, forestry, and agribusiness. These sectors are highly exposed to environmental degradation issues and social conflict. The Indonesian government mandates all companies to engage in corporate social and environmental responsibility and to disclose such activities in their annual reports and/or sustainability reports (OJK, 2017; Republic of Indonesia, 2007). Moreover, customer pressure is particularly pronounced in industries that interact directly with consumers, such as retail, food and beverage, where corporate reputation and consumer trust are crucial. In fact, Indonesian consumers' purchase intentions are influenced by brands' CSR engagement (Hsu & Bui, 2022). Customer pressure is significant because customers' purchasing power can exert considerable influence on an organisation, especially if there is a perception that the company is not acting socially responsibly. There is heightened scrutiny of a company's ESG activities from non-profit organisations, the media, and the public (Helmig *et al.*, 2016). The level and direction of customer pressure vary according to the specific values and expectations of each market segment.

Studies on foreign ownership reveal the substantial influence of foreign investors in urging companies to improve their CSR ratings (McGuinness *et al.*, 2017) and adopt independent boards for increased transparency (Huang *et al.*, 2019). Companies with foreign ownership are often subjected to stricter scrutiny regarding their sustainability practices. These investors typically have higher expectations for transparency and accountability, motivating firms to improve the quality of their sustainability reports. In customer-oriented industries, where public trust and brand image are crucial, foreign investors may exert greater pressure for transparent disclosures to meet ethical and market expectations (Hsu, 2022). Likewise, in environmentally sensitive sectors such as mining and energy, where firms face regulatory and societal scrutiny, transparency becomes a tool to maintain legitimacy (Clarkson *et al.*, 2008). Therefore,

customer and environmental pressures serve as reinforcing conditions that strengthen the positive relationship between foreign ownership and sustainability reporting transparency.

H3: Stakeholder pressure strengthens the influence of foreign ownership on the transparency of sustainability reporting.

H3a: Customer pressure strengthens the influence of foreign ownership on the transparency of sustainability reporting.

H3b: Environmental pressure strengthens the influence of foreign ownership on the transparency of sustainability reporting.

Due to their emphasis on socially responsible behaviour, financial institutions play a significant role in promoting CSR practices (Mishra, 2022; Sharif & Rashid, 2014). Their expectations and regulatory pressures often lead to the implementation of CSR practices by the companies they invest in (García-Meca & Pucheta-Martínez, 2018; Motta & Uchida, 2018). As major capital providers, financial institutions aim to support long-term firm value while reducing environmental, social, and reputational risks (García-Sánchez *et al.*, 2020; Mishra, 2022). In this context, institutional ownership, particularly that held by long-term and risk-averse investors, is more responsive to stakeholder concerns and legitimacy demands. Drawing from stakeholder theory (Freeman, 1984), firms cannot operate effectively without stakeholder support, and different industry classifications involve distinct primary stakeholders (Branco & Rodrigues, 2008; Fernandez-Feijoo *et al.*, 2014). Customer pressure is a salient external factor that influences firms' decisions on transparency, particularly as consumers become increasingly aware of social and environmental issues. In firms with high institutional ownership, there is a stronger motivation to meet these expectations, thus enhancing the quality and quantity of sustainability disclosures (Lulu, 2020). Simultaneously, firms engaged in environmentally sensitive sectors are under growing pressure to adopt green innovation and avoid environmentally harmful practices, not only to maintain regulatory flexibility but also to compete in international markets and comply with global environmental standards (Alessa *et al.*, 2024). These external pressures, originating from customers and environmental regulation, reinforce the monitoring function of institutional investors and amplify their influence on sustainability reporting transparency.

H4: Stakeholder pressure strengthens the influence of institutional ownership on the transparency of sustainability reporting.

H4a: Customer pressure strengthens the influence of institutional ownership on the transparency of sustainability reporting.

H4b: Environmental pressure strengthens the influence of institutional ownership on the transparency of sustainability reporting.

RESEARCH METHODOLOGY

Population and Sample

We targeted all non-financial firms listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. We chose this period to obtain recent and sufficient data to evaluate the impact of ownership type on sustainability transparency and to analyse the role of stakeholder pressure in this relationship. We selected Indonesia as the research context for two main reasons. Firstly, foreign and institutional investors dominate the Indonesian capital market, holding over 40% and 80% of listed shares, respectively (ICSD, 2024). Secondly, although the Financial Services Authority (OJK) has mandated sustainability reporting through Regulation No. 51/POJK.03/2017, the quality of disclosure remains inconsistent due to uneven regulatory enforcement and limited stakeholder engagement (Rudyanto & Siregar, 2018). We selected the sample using the purposive sampling method, guided by several criteria. Firstly, we included all non-financial companies listed on the Indonesian capital market during the specified period. We excluded financial firms due to their distinct reporting requirements and regulatory environment, which differ substantially from non-financial sectors. Secondly, companies needed to have a transparency score available in the CSRHub database, which is a widely recognised source

for corporate social responsibility data. Thirdly, it was required that these companies consistently publish sustainability reports. Lastly, all necessary data for the research had to be available. The initial population consists of 3 076 firm-year observations of companies listed on the Indonesia Stock Exchange (IDX) between 2020 and 2023. From this population, we excluded 420 financial firms due to their distinct regulatory and reporting frameworks, resulting in 2 656 non-financial firm-year observations. Of these, we identified 672 firms as having available transparency sub-scores in the CSRHub database and consistently publishing sustainability reports. After excluding two observations with extreme debt ratios, the final sample comprises 670 firm-year observations used in the analysis.

Variables and Measurement

The dependent variable in this study was the transparency of sustainability reports (SRTrans), which we derived from the Transparency and Reporting sub-score within the Governance category of the CSRHub database. We designed this specific sub-score to assess how effectively a company communicates its ESG practices, focusing on the quality, scope, and accessibility of its sustainability disclosures. Notably, CSRHub is widely recognised as a reliable third-party ESG data provider. Its ratings derive from diverse sources and have been used in numerous academic studies to assess sustainability performance and disclosure (Sandberg *et al.*, 2023; Yousefian *et al.*, 2023). This sub-score evaluates various factors, including whether the company's policies and practices align with sustainability objectives, the level of transparency the company's management has with stakeholders, the involvement of employees in governance processes, and the adherence of sustainability reports to established standards, including the Global Reporting Initiative and AccountAbility (AA1000). It also assesses the availability of these reports to the public. Moreover, the score examines how the company engages with stakeholders, including the use of third-party audits to ensure the accuracy, completeness, and reliability of the reports. The score ranges from 0 to 100, where higher values reflect greater transparency and a stronger commitment to sustainability reporting.

The independent variable of this research was the type of ownership. The two types of ownership analysed in this study were foreign and institutional. We measured foreign ownership (FOREIGNOWN) by the ratio of the number of shares owned by foreign investors to the number of shares outstanding (Liou *et al.*, 2023). We assessed institutional ownership (INST_OWN) by comparing the number of shares held by financial institutions with the number of outstanding shares (Fang & Zhou, 2012). In this context, outstanding shares refer specifically to common stock, which represents the portion of equity that is actively traded in the market and serves as the basis for ownership control and voting rights.

The moderating variable in this study was stakeholder pressure, which we operationalised using industry-based proxies. Specifically, we adopted two widely recognised categorisations following (Fernandez-Feijoo *et al.*, 2014; Vitolla *et al.*, 2019): customer-oriented industries (CUST) and environmentally sensitive industries (ENV). For the customer pressure proxy, we coded as '1' industries with direct interaction with end-users, such as consumer goods, financial services, hospitality, tourism, healthcare, media, textiles, and all others as '0.' For environmental pressure, we coded as '1' industries whose operations have significant environmental impacts, such as mining, agriculture, chemicals, construction, and transportation, and classified them as environmentally sensitive. Meanwhile, we coded all other industries as '0'. Although this dichotomous approach may limit the interpretation depth, it provides a consistent and replicable method for large-sample analysis in emerging markets. Prior sustainability research validated this classification (Hackston & Milne, 1996; Roberts, 1992), including studies in Indonesia (Rudyanto & Siregar, 2018).

To account for other factors that may influence the transparency of sustainability reports and to avoid model specification errors, we included several control variables at the company level. Firstly, we considered the cash ratio (CR), which indicates a company's liquidity. Firms with stronger cash positions may have more resources to allocate toward sustainability initiatives and reporting. This is determined by comparing total cash to total assets (Giordino *et al.*, 2024). Secondly, debt-to-asset ratio (DAR) reflects the firm's capital structure; highly leveraged firms tend to voluntarily increase disclosure to reduce agency conflicts and signal financial stability to creditors (Zaid *et al.*, 2020). Thirdly, profitability, represented by return on equity (ROE), captures a firm's internal capacity and

incentives to engage in CSR practices, as more profitable firms are more likely to invest in sustainability as part of value creation (Khan *et al.*, 2013). The ROE variable is calculated as the net profit ratio to total equity. Lastly, market performance, measured by the price-to-earnings ratio (PER), reflects investor perception and may influence managerial decisions on transparency and disclosure to align with market expectations (Zaid *et al.*, 2020). The PER variable is determined by comparing the current stock price with the company's earnings per share.

Research Model

Hypothesis testing in this study employed a moderated regression analysis (MRA) approach, following the three-step procedure outlined by Sharma *et al.* (1981). We employed the MRA model to examine the relationship between sustainability reporting transparency (SRTrans) and two types of ownership structures: foreign ownership (FOREIGNOWN) and institutional ownership (INST_OWN). This model provides a robust framework for investigating the complex interactions among these variables. To capture the influence of external forces, we introduced stakeholder pressure as a moderating variable, categorised into two dimensions: customer pressure (CUST) and environmental pressure (ENV). They began the analysis with Model 1, which tested the direct effects of ownership structure on sustainability reporting transparency and addressed Hypotheses H1 and H2. Next, we estimated Model 2 to assess the independent effect of the moderator variable, stakeholder pressure, on transparency. Finally, Model 3 incorporated interaction terms between ownership variables and stakeholder pressure to examine the moderating effects, thus addressing Hypotheses H3a through H4b.

$$SRTrans_{it} = \alpha + \beta_1 Ownership + \beta_2 Controls_{it} + \varepsilon_{it} \quad (1)$$

$$SRTrans_{it} = \alpha + \beta_1 Ownership + \beta_2 StakeholderPressure_{it} + \beta_3 Controls_{it} + \varepsilon_{it} \quad (2)$$

$$SRTrans_{it} = \alpha + \beta_1 Ownership + \beta_2 StakeholderPressure_{it} + \beta_3 StakeholderPressure_{it} * Ownership + \beta_4 Controls_{it} + \varepsilon_{it} \quad (3)$$

According to Sharma *et al.* (1981), if the interaction term (β_3) in Model 3 was statistically significant and the main effect of the moderator (β_2) was also significant in both Model 2 and Model 3, the results would indicate a quasi-moderator effect. Conversely, if the moderator's main effect (β_2) was insignificant in Model 2 but significant in Model 3 alongside a significant interaction term (β_3), the model would reflect a pure moderator relationship. Furthermore, we evaluated the model fit using adjusted R^2 and F-statistics to determine the explanatory power and overall significance of the model.

RESULTS AND DISCUSSION

Results

Table 1 presents the descriptive statistics for both continuous (panel A) and dichotomous (panel B) variables. For continuous variables, the mean, median, and range between the maximum and minimum values provide an overview of the data distribution. Notably, SRTrans had a mean of 47.39 with a nearly identical median, indicating a relatively symmetric distribution. Meanwhile, INST_OWN and FOREIGNOWN, representing institutional and foreign ownership, had mean values of 0.15 and 0.22, respectively, with relatively high standard deviations, suggesting significant variation among companies. Next, CR had an extremely high maximum value (90.80), while its lower median (0.33) suggests that most companies had lower liquidity levels compared to a few extreme cases. Furthermore, DAR had a mean of 0.55 with a minimum value of 0.0026, while PER showed a very wide distribution, with a maximum value of 6980.73 and a minimum of -3040.95, reflecting high market volatility. The mean of ROE was 0.11, and its median was 0.08, with some companies reporting negative or extremely high ROE values. Although PER and ROE displayed large standard deviations, this did not undermine the empirical findings, because we applied transformation techniques, such as the inverse hyperbolic sine (arcsinh) transformation, and yielded consistent results. The arcsinh transformation, similar to the logarithmic function but capable of handling negative, zero, and positive values, was effective in addressing high standard deviations and extreme outliers (Aihounton & Henningsen, 2021; Bellemare & Wichman, 2020). The dataset contained a total of 670 observations for continuous variables. Meanwhile, for the dichotomous variable, 61.3% of

sample companies were included in the industry that had closeness to customers (CUST = 1), while 38.7% were not. The ENV variable comprised 35.7% of companies included in the sensitive industry, while the other 64.3% were not. Overall, these descriptive statistics offer a detailed overview of the variation in ownership structure, reporting transparency, and company characteristics related to sustainability and relationships with customers and the environment.

Table 1. Descriptive statistics

Panel A: Continuous variables					
Variables	**Mean**	**Median**	**Maximum**	**Minimum**	**Std. Dev.**
SRTrans	47.3973	47.4300	80.3800	21.1000	9.9481
INST_OWN	0.1476	0.1183	0.9578	0.0001	0.1356
FOREIGNOWN	0.2214	0.1515	0.9965	0.0001	0.2254
CR	0.9648	0.3316	90.8053	0.0000	4.5001
DAR	0.5532	0.4760	35.7866	0.0026	1.3974
PER	44.9581	10.5164	6980.7370	-3040.9490	378.3190
ROE	0.1122	0.0792	21.9715	-3.8146	0.9327
Observations	670	670	670	670	670
Panel B: Dichotomous variables					
Variable value	1		0		Total (%)
Variables	Frequency	Percent	Frequency	Percent	
CUST	411	61.3	259	38.7	100
ENV	239	35.7	431	64.3	100

Source: own study.

We conducted a correlation test to assess multicollinearity among the study variables. All correlation coefficients were below 0.35, with most under 0.10, indicating no serious collinearity issues. The highest correlation, between foreign ownership and institutional ownership (r = 0.3036), was still within an acceptable range. According to Gujarati (2004) and Gujarati and Porter (2009), multicollinearity are problematic only when coefficients exceed 0.70. To address potential overlap, we tested foreign ownership and institutional ownership in separate regression models, emphasising their distinct roles in the ownership structure analysis. Correlations among control variables (CR, DAR, PER, and ROE) were below 0.12, confirming the absence of significant collinearity. Overall, we could include all variables in the regression models without multicollinearity concerns.

The adjusted R^2 values across the regression models in Table 2 ranged between 0.0194 and 0.0327, while those in Table 3 ranged from 0.0147 to 0.0254, indicating that although the explanatory power of both models was relatively modest, the results remain statistically meaningful. The F-statistics in all models were significant at the 5% or 1% level, confirming the overall validity of the regression specifications. We acknowledge that R^2 values below 5% may appear limited. However, this is common in studies involving complex behavioural or organisational phenomena, such as sustainability disclosure (Shmueli, 2010). In explanatory models like ours, the significance and theoretical consistency of coefficients are more relevant than the magnitude of R^2. Findings from Table 2 demonstrate that foreign ownership positively influences sustainability reporting transparency, with this relationship significantly moderated by customer orientation (negatively) and environmental sensitivity (positively). In contrast, results in Table 3 reveal that while institutional ownership has a significant positive effect on transparency, this relationship is not significantly moderated by customer or environmental pressures. This implies that institutional investors independently drive greater transparency, regardless of external stakeholder expectations.

The empirical results presented in Table 2 show a positive and statistically significant association between foreign ownership (FOREIGNOWN) and sustainability reporting transparency. The coefficient on FOREIGNOWN is significant at the 1% level ($p < 0.01$) across all model specifications, thereby supporting Hypothesis 1 (H_1). These findings indicate that firms with higher levels of foreign ownership exhibit greater transparency in their sustainability reporting. This relationship likely reflects the

stronger monitoring and disclosure expectations imposed by international investors, who tend to demand higher reporting standards and accountability.

Table 2. Result (foreign ownership)

Variables	Transparency				
	(1)	(2)	(3)	(4)	(5)
C	46.7273***	47.4438***	46.8932***	45.3955***	46.2065***
	(81.6202)	(74.7647)	(68.5368)	(60.9656)	(50.4402)
FOREIGNOWN	4.3148***	4.2629***	6.7982***	4.2460***	4.6896***
	(2.5380)	(2.5179)	(3.2847)	(2.5098)	(2.2318)
CUST		-2.0505***	-0.3795		
		(-2.5709)	(-0.3387)		
FOREIGNOWN*CUST			-7.6113**		
			(-2.1185)		
ENV				2.1722***	0.9668
				(2.7772)	(0.8676)
FOREIGNOWN*ENV					5.4959*
					(1.5169)
CR	-0.1843**	-0.1721**	-0.1792**	-0.1886**	-0.1837**
	(-2.1496)	(-2.0133)	(-2.1010)	(-2.2108)	(-2.1549)
DAR	-0.1861	-0.1531	-0.1833	-0.1575	-0.1789
	(-0.6786)	(-0.5597)	(-0.6714)	(-0.5769)	(-0.6551)
PER	-0.0005	-0.0007	-0.0006	-0.0005	-0.0004
	(-0.5492)	(-0.6504)	(-0.6625)	(-0.4941)	(-0.4805)
ROE	0.1819	0.2446	0.3280	0.2423	0.2906
	(0.4431)	(0.5972)	(0.8016)	(0.5922)	(0.7088)
n	670	670	670	670	670
Adj. R^2	0.0105	0.0187	0.0239	0.0204	0.0223
F stat.	2.4138**	3.1301***	3.3382***	3.3173***	3.1777***

Source: own study.

In Table 2, column (2), the CUST variable shows a coefficient of -2.0505 and is significant at the 1% level ($p < 0.01$), with a t-statistic of -2.5709. These results indicate that customer pressure had a negative and significant impact on the transparency of sustainability reports. In other words, companies facing customer pressure tend to disclose less information in their sustainability reports. Conversely, in column (4), the ENV variable has a coefficient of 2.1722 and is significant at the 1% level ($p < 0.01$), with a t-statistic of 2.7772. These findings emphasise the considerable influence of environmental pressure on corporate transparency. Companies with strong environmental policies are more likely to be transparent in their sustainability reports, highlighting the significant impact of sustainability initiatives on corporate practices.

In Table 2, column (3), the interaction between FOREIGNOWN and CUST (FOREIGN*CUST) revealed a negative and significant coefficient at the 5% level ($p < 0.05$). This indicates that customer pressure diminishes the positive relationship between foreign ownership and transparency. This unexpected result suggests that companies with substantial foreign ownership may experience less incentive to disclose information when they are heavily reliant on specific customers, potentially due to confidentiality agreements or a diminished need to signal to the broader market. These findings do not align with the proposed hypothesis. Hence, we did not accept H_{3a}. Further research and exploration are necessary in this area. Conversely, the variable interaction FOREIGNOWN*ENV demonstrated a positive and significant relationship at the 10% level ($p < 0.10$), thereby supporting H_{3b}. These results indicate that companies with foreign ownership that are sensitive to environmental issues tend to be more transparent, although the significance is weaker. This may suggest that foreign investors prioritise sustainability initiatives and encourage more transparent reporting in companies that adopt environmental policies. Among the control variables, CR consistently showed a negative and significant effect on transparency at the 5%

level ($p < 0.05$), suggesting that firms with higher liquidity may have lower transparency, potentially because they face less external financing pressure. Moreover, DAR was positively significant at the 1% level ($p < 0.01$), implying that more leveraged firms are more transparent, likely due to creditor monitoring. Finally, PER and ROE do not show statistically significant relationships with transparency.

The regression results presented in Table 3 assess the relationship between institutional ownership (INST_OWN) and corporate transparency. The coefficient for INST_OWN was positive and significant at the 5% level ($p < 0.05$) in almost all model specifications, indicating that institutional ownership improves company transparency, thus supporting H_2. This result suggests that companies with a greater proportion of institutional ownership are likely to exhibit better information disclosure practices, possibly due to pressure from institutional investors advocating for stricter governance and increased transparency. In Table 3 column (2), the CUST variable has a coefficient of -2.1334 and is significant at the 1% level ($p < 0.01$) with a t-statistic of -2.0941. These results indicate that customer pressure significantly negatively impacts the company's transparency. Meanwhile, in Table 3 column (4), the ENV variable has a coefficient of 2.2273 and is significant at the 1% level ($p < 0.01$) with a t-statistic of 2.8891. This indicates that companies in industries with high environmental sensitivity will face pressure and be encouraged to contribute positively to corporate transparency.

Table 3. Result (institutional ownership)

Variables	Transparency				
	(1)	(2)	(3)	(4)	(5)
C	46.9362***	47.6415***	47.3313***	45.5332***	46.0422***
	(78.1549)	(72.6547)	(66.5107)	(53.0391)	(46.4947)
INST_OWN	5.1154**	5.2143**	7.3342**	5.2606**	1.9286
	(1.8013)	(1.8440)	(2.1560)	(2.0295)	(0.3915)
CUST		-2.0941***	-1.0791		
		(-2.6198)	(-0.8933)		
INST_OWN*CUST			-6.8435		
			(-1.1205)		
ENV				2.2273***	1.4890*
				(6.0670)	(1.2521)
INST_OWN*ENV					4.9575
					(0.8259)
CR	-0.1967**	-0.1845**	-0.1745**	-0.2014***	-0.2032***
	(-2.2854)	(-2.1492)	(-2.0226)	(-6.9542)	(-2.3709)
DAR	-0.1939	-0.1595	-0.1755	-0.1637***	-0.1765
	(-0.7052)	(-0.5820)	(-0.6397)	(-18.1926)	(-0.6438)
PER	-0.0006	-0.0007	-0.0007	-0.0005	-0.0005
	(-0.6058)	(-0.7095)	(-0.7042)	(-0.9977)	(-0.5327)
ROE	0.2731	0.3366	0.3321	0.3354	0.3271
	(0.6629)	(0.8211)	(0.8084)	(2.5943)	(0.7968)
n	670	670	670	670	670
Adj. R^2	0.0057	0.0144	0.0148	0.0162	0.0157
F stat.	1.8689*	2.6311**	2.4354**	2.8355***	2.5267**

Significant codes: ***sig.<0.01, **sig.<0.05, *sig.<0.1

(1) $SRTrans_{it} = \alpha + \beta_1 INS\_OWN_{it} + \beta_2 CR_{it} + \beta_3 DAR_{it} + \beta_4 PER_{it} + \beta_5 ROE_{it} + \varepsilon_{it}$

(2) $SRTrans_{it} = \alpha + \beta_1 INS\_OWN_{it} + \beta_2 CUST_{it} + \beta_3 CR_{it} + \beta_4 DAR_{it} + \beta_5 PER_{it} + \beta_6 ROE_{it} + \varepsilon_{it}$

(3) $SRTrans_{it} = \alpha + \beta_1 INS\_OWN_{it} + \beta_2 CUST_{it} + \beta_3 INS\_OWN * CUST_{it} + \beta_4 CR_{it} + \beta_5 DAR_{it} + \beta_6 PER_{it} + \beta_7 ROE_{it} + \varepsilon_{it}$

(4) $SRTrans_{it} = \alpha + \beta_1 INS\_OWN_{it} + \beta_2 ENV_{it} + \beta_3 CR_{it} + \beta_4 DAR_{it} + \beta_5 PER_{it} + \beta_6 ROE_{it} + \varepsilon_{it}$

(5) $SRTrans_{it} = \alpha + \beta_1 INS\_OWN_{it} + \beta_2 ENV_{it} + \beta_3 INS\_OWN * ENV_{it} + \beta_4 CR_{it} + \beta_5 DAR_{it} + \beta_6 PER_{it} + \beta_7 ROE_{it} + \varepsilon_{it}$

Source: own study.

However, the interaction between institutional ownership and the moderating variables presents more complex results. The coefficient for the interaction term INST_OWN*CUST was -6.8435,

but it was not statistically significant (t-statistic = -1.205), meaning Hypothesis 4a (H_{4a}) was not supported. This indicates that pressure from key customers does not significantly influence the relationship between institutional ownership and the transparency of sustainability reports. Thus, the effect of institutional ownership on transparency appears to remain unaffected by customer pressure. Furthermore, the interaction term INST_OWN*ENV had a coefficient of 4.9575, but it was also not significant (t-statistic = 0.8259), indicating that a was not supported either. These results indicate that environmental pressure did not moderate the effect of institutional ownership on sustainability report transparency. In other words, the positive impact of institutional ownership on transparency remains consistent, regardless of environmental pressure.

Discussion

This study demonstrates that foreign and institutional ownership are both positively associated with sustainability reporting transparency among firms listed on the Indonesia Stock Exchange (IDX). However, the moderating role of stakeholder pressure differs depending on the ownership type. While environmental and customer pressure significantly moderate the effect of foreign ownership on transparency, we did not observe any significant moderation for institutional ownership. These findings support the agency theory, which posits that ownership structures with strong monitoring capabilities, such as foreign and institutional investors, can mitigate agency conflicts by demanding more transparency and accountability in emerging markets. The positive relationship between foreign ownership and transparency aligns with previous findings from developing countries, suggesting that foreign investors play a key role in encouraging improved sustainability disclosure. These findings align with studies by Guo and Zheng (2021), Rustam *et al.* (2019), and Al Amosh and Khatib (2022), which show that foreign ownership promotes transparency across ESG dimensions, as it aligns with the expectations of international shareholders who are more attuned to global ESG norms. The greater the foreign ownership, the more likely the company is to have good ESG governance, resulting in transparency in sustainability reports. Investors encourage transparency in sustainability reports because they believe that transparency benefits the company's value. Furthermore, we may see ESG transparency as an additional non-financial information that provides insights to investors (Yu *et al.*, 2018). Increased ESG disclosure can reduce information asymmetry and investor agency costs (Cheng *et al.*, 2014). Foreign investors often serve as a force for convergence towards international best practices, particularly in environments where domestic regulatory enforcement is weak or inconsistent.

Likewise, institutional ownership positively affects the transparency of sustainability reporting. These findings are consistent with previous research by García-Sánchez *et al.* (2020) and Giordino *et al.* (2024). Due to their size and long-term investment strategies, financial institutions tend to place greater emphasis on accountability and transparency from the firms in which they hold equity. Their influence is further reinforced by regulatory requirements and reputational concerns (Kim & Yi, 2015). As Setyowati (2023) notes, in Indonesia, financial institutions actively comply with sustainability regulations. This includes submitting sustainability action plans and annual ESG reports, which reinforces legitimacy theory. This theory suggests that societal norms and expectations exert a substantial influence on corporate behaviour. Institutional ownership fosters sustainability, as these efforts assist in assessing a company's resilience and significantly mitigating social and environmental risks (García-Sánchez *et al.*, 2020; Mishra, 2022). Furthermore, social and environmental responsibility serves as a mechanism to reduce information asymmetry and support stakeholder trust. In this context, financial institutions can act as champions of transparency, as they aim to ensure their investments support companies with lower risks and long-term sustainability.

Interestingly, the moderating role of stakeholder pressure, particularly environmental and customer pressure, yields mixed results. Environmental pressure significantly strengthens the positive influence of foreign ownership on transparency, which is consistent with legitimacy theory and prior studies (Fernandez-Feijoo *et al.*, 2014; Rudyanto & Siregar, 2018). Companies operating in environmentally sensitive industries, such as mining or energy, face heightened scrutiny and are therefore more likely to adopt transparent sustainability reporting practices to legitimise their operations and

maintain stakeholder trust (Ching & Gerab, 2017). Stakeholders in these sensitive industries bring attention to various issues, including climate change, waste disposal, and emissions, which pose significant risks. High ESG risks can threaten a company's market value (Cohen, 2023; Eriandani & Winarno, 2024). Therefore, foreign investors strive to improve the transparency of sustainability reports to maintain the company's reputation and value (Rustam *et al.*, 2019).

Conversely, empirical results show that customer pressure weakens the influence of foreign ownership on the transparency of sustainability reports. This unexpected result contrasts with Rudyanto and Siregar (2018), and we may explain it by several factors. Firstly, managing transparency in customer-oriented industries with complex supply chains requires substantial resources and infrastructure, which may deter firms from fully disclosing ESG practices (Shafiq *et al.*, 2020). Secondly, consumers' awareness of ESG issues in Indonesia remains relatively low, leading companies to prioritise financial messaging over sustainability content (Vera-Martínez *et al.*, 2022; Wahyuningrum *et al.*, 2023). As a result, foreign-owned firms in these sectors may perceive limited stakeholder benefit from disclosing detailed sustainability information.

In contrast to foreign ownership, stakeholder pressure does not appear to significantly influence the relationship between institutional ownership and sustainability transparency. This suggests that institutional investors in Indonesia drive transparency primarily through internal governance mechanisms and compliance with regulatory frameworks, rather than in response to external stakeholder demands. Smith *et al.* (2008) documented that institutional shareholders exert a more significant impact on environmental disclosure than regulatory authorities. Furthermore, following the typology proposed by Sharma *et al.* (1981), stakeholder pressure may act as an independent predictor of transparency rather than a moderator in this case.

CONCLUSIONS

We analysed the relationship between ownership structure and sustainability reporting transparency, specifically in the context of publicly listed non-financial companies in Indonesia. The findings reveal that both foreign and institutional ownership positively influence the level of sustainability reporting transparency. Foreign ownership is associated with increased disclosure, likely driven by international investors' expectations for higher standards of accountability and governance. Institutional ownership also supports transparency, consistent with the regulatory obligations and long-term orientation of financial institutions. However, stakeholder pressure exhibits mixed moderating effects. Environmental pressure strengthens the positive impact of foreign ownership on transparency, highlighting the role of regulatory and societal expectations in encouraging corporate sustainability disclosures. In contrast, customer pressure weakens this relationship, suggesting that firms with significant consumer reliance may strategically limit their disclosures to protect competitive advantages. Interestingly, neither customer nor environmental pressure significantly moderates the relationship between institutional ownership and transparency, indicating that institutional investors may already enforce strict reporting practices regardless of external stakeholder influence. The findings reinforce the legitimacy and stakeholder theories, underscoring that ownership structure shapes corporate transparency, while stakeholder pressures exert varying degrees of influence. These insights provide important implications for regulators and policymakers in crafting sustainability reporting standards tailored to industry-specific stakeholder dynamics. These findings contribute to the literature by highlighting how foreign and institutional investors respond differently to stakeholder environments in shaping corporate transparency in emerging markets. The results support both legitimacy and stakeholder theory, suggesting that ownership structure and contextual pressures jointly shape sustainability disclosure practices.

The results also offer practical implications for regulators, corporate managers, and investors. For policymakers, the findings underscore the importance of strengthening regulatory frameworks and stakeholder engagement to encourage transparency, particularly in customer-oriented industries. Overall, these findings underscore the importance of distinguishing between different forms of ownership and stakeholder pressure when evaluating sustainability reporting in emerging markets. While foreign

investors appear responsive to external stakeholder expectations, particularly in environmentally sensitive contexts, institutional investors rely more on internal and regulatory drivers of transparency. These dynamics should inform policymakers and corporate leaders seeking to promote ESG performance and reporting standards in Indonesia and similar contexts. For companies, the findings underline the importance of ownership governance and responsiveness to stakeholder pressures as key drivers of transparent sustainability reporting, which in turn can enhance legitimacy and corporate reputation. For investors, the level of transparency in sustainability reporting may serve as an important signal of a firm's governance quality and commitment to responsible business practices, thereby improving the reliability of information used in assessing corporate credibility and long-term stability.

Despite its contributions, this study has several limitations. Firstly, we derived the transparency score from the Transparency and Reporting sub-score within the Governance category of the CSRHub database. Although scholars widely use CSRHub, the study did not independently validate the reliability and construct validity of the data. Secondly, the study focused solely on one country and sector, limiting generalisability. Expanding the sample to include financial firms or multinational corporations would improve the conclusions' robustness. Thirdly, we measured stakeholder pressure using a binary classification of industry type, which, while practical, may oversimplify complex stakeholder dynamics. This approach limits interpretative depth and excludes firm-specific stakeholder engagement. Future research should explore alternative measures of transparency, incorporate additional moderating variables, and extend the analysis to broader regional contexts.

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Authors

The contribution share of authors is equal and amounted to 50% for each of them.
RE – conceptualisation, literature writing, discussion, WAW – methodology, calculations, discussion.

Rizky Eriandani (corresponding author)
Associate Professor at the Faculty of Business and Economics, University of Surabaya, Indonesia. Her research interest includes Sustainability Accounting, Corporate Social Responsibility, Governance and Financial Accounting.
Correspondence to: Dr. Rizky Eriandani, Faculty of Business and Economics, University of Surabaya; Center of Excellence for Financial Literacy and Intergenerational Well-Being, University of Surabaya, Raya Kalirungkut, Surabaya 60293, Indonesia, e-mail: rizky.eriandani@staff.ubaya.ac.id
ORCID https://orcid.org/0000-0003-0280-542X

Wahyu Agus Winarno
Associate Professor at Jember University, Indonesia. His research interests include Management Accounting and Information Systems, ERP systems, as well as IT investment and strategy.
Correspondence to: Dr. Wahyu Agus Winarno, Jember University, Faculty of Economics and Business, Jl. Kalimantan No. 37 – Kampus Tegalboto Jember, Jawa Timur, 68121, Indonesia, e-mail: wahyuaw@unej.ac.id
ORCID https://orcid.org/0000-0003-3124-3278

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Use of Artificial Intelligence

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Developing a cross-cultural competence model for cross-border e-commerce practitioners: Empirical validation and implications for entrepreneurial education

Ziyun Song, Sheerad Sahid, Iszan Hana Kaharudin

ABSTRACT

Objective: This study proposes a cross-cultural competence (CCC) model for Chinese college students in the cross-border e-commerce (CBEC) sector, aiming to identify key dimensions and support talent development in digital global trade.

Research Design & Methods: We conducted a cross-sectional questionnaire survey among 592 CBEC students from 10 universities in China. We applied a two-step structural equation modelling (SEM) approach to identify and validate key dimensions and test interrelationships. We performed the analysis using SPSS Statistics 26 and AMOS 24, ensuring statistical rigour.

Findings: The results support a validated second-order model of cross-cultural competence in CBEC, comprising five core dimensions: English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC Expertise. Among them, CBEC Expertise and Cultural Knowledge demonstrated the strongest contributions. The model showed a strong positive effect on CBEC performance and achieved good overall fit, confirming both its structural soundness and practical relevance.

Implications & Recommendations: This study provides practical implications for entrepreneurial education, offering a validated framework to guide the development of cross-cultural competence among CBEC practitioners, thereby enhancing their ability to operate effectively in global markets.

Contribution & Value Added: This study advances the theoretical understanding of cross-cultural competence in CBEC by empirically validating a multi-dimensional, second-order model, integrating factor structures and their relative influences, which scholars have not systematically examined in this context before.

Article type: research article

Keywords: entrepreneurial education; structural equation modelling; social media marketing; cross-cultural communication; intercultural competence; global mindset

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INTRODUCTION

In recent years, global e-commerce has experienced sustained growth despite economic challenges posed by the COVID-19 pandemic. According to recent estimates, worldwide online retail sales reached USD 5.54 trillion in 2022 and are projected to climb to USD 7.39 trillion by 2025, further increasing their share in global retail markets (Liu *et al.*, 2022; Yan *et al.*, 2023; Yang *et al.*, 2024). Among the leading forces driving this trend is China, where rapid digital infrastructure development and widespread use of mobile internet have fuelled a booming e-commerce sector. China's total e-commerce transaction volume reached 43.8 trillion yuan in 2022, making it a global leader in online trade (Ministry of Commerce, 2021; Yang *et al.*, 2024). As a crucial part of this expansion, cross-

border e-commerce (CBEC) has become a strategic channel for China to engage in international trade, especially under the Belt and Road Initiative (Zhao, 2024). By enabling businesses to directly reach global consumers through digital platforms, CBEC contributes not only to national export growth but also to the internationalisation of Chinese brands and services.

In the CBEC context, social media platforms serve not only as marketing tools but also as interactive spaces where trust is built through direct communication (Bhattacharyya & Bose, 2020). The rise of social media has significantly reshaped how businesses engage with consumers (Adiandari, 2022). This is especially relevant in high uncertainty avoidance cultures, where consumers tend to avoid risk and prefer structured, predictable environments. In e-commerce, these cultural traits can significantly influence purchasing decisions and behaviour, making trust-building a critical component of digital engagement (Al-Adwan *et al.*, 2022). Empirical data also support this as CBEC users who engage via social media exhibit a 13.5% transaction conversion rate, compared to just 0.07% for those without such interactions (Luo *et al.*, 2020). However, effective engagement in social media-mediated CBEC depends on the practitioner's ability to communicate across cultural boundaries. As Hu and Zhu (2022) suggest, cross-cultural competence (CCC) plays a crucial enabling role in digital trust-building and relational marketing. Despite its importance, the specific dimensions of CCC required in CBEC environments remain under-defined and under-researched.

The diverse use of social media platforms across regions further complicates the CCC required in CBEC. With Facebook, YouTube, Instagram, TikTok, and X popular globally, while WeChat and Douyin dominate in China, Line in Japan, and VKontakte (VK) in Russia (Kumar *et al.*, 2025). However, China's regulatory environment does not permit access to many Western platforms, limiting practitioners' exposure to global digital communication norms (Lyulina & Efimenko, 2022). When Chinese CBEC practitioners, who have never used platforms such as X, Facebook, and Instagram, attempt to engage foreign consumers through them, they face notable challenges (Lin, 2022).

Existing studies tend to overlook this contextual constraint and often treat CCC as a general construct, without considering the interactive, informal, and real-time characteristics of social media communication. Improving CCC is an important factor in enhancing the effectiveness of digital engagement (Alfiyatul *et al.*, 2022). Although some literature has explored its dimensions in CBEC contexts, research rarely addresses these platform-specific demands or the institutional limitations in China. Furthermore, most studies focus on experienced practitioners, leaving a gap in understanding how students in CBEC-related disciplines are being prepared for these challenges (Song & Sahid, 2025).

To effectively prepare Chinese college students for careers in CBEC, it is essential to understand what specific cross-cultural competencies they need and how these competencies develop. Addressing this educational and professional imperative, this study seeks to identify the key dimensions and underlying mechanisms of CCC in the CBEC context. Building upon the foundational model of CCC in international business proposed by Johnson *et al.* (2006), this study developed and empirically validated a revised framework adapted to the realities of digital commerce and the socio-institutional context of Chinese CBEC students. Specifically, the model identifies five core dimensions: English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC Expertise. These dimensions reflect both the general intercultural requirements of international business and the specific competencies needed for CBEC activities, including platform-based communication, online negotiation, and digital brand engagement.

Theoretically, this study contributes to the literature by bridging international business theory and the emerging field of CBEC. It demonstrates how one can reinterpret the existing models of competence and expand them to meet the demands of digitally mediated, culturally diverse, and platform-dependent commercial interactions. Practically, the validated model provides actionable insights for educators, curriculum designers, and policymakers seeking to prepare students for global digital markets. Moreover, it offers a diagnostic tool for assessing training needs and competence development in CBEC enterprises.

To explore these contributions, the study addresses the following research questions:

RQ1: To what extent do the identified dimensions contribute to CCC in CBEC?

RQ2: How does CCC influence CBEC practitioners' performance?

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Existing Models of Cross-cultural Competence in International Business

Early models of CCC in international business, such as Johnson *et al.* (2006), emphasise the integration of knowledge, skills, and personal attributes to function effectively across cultures. Their model introduced affective, cognitive, and behavioural dimensions, and highlighted the importance of motivation in bridging the gap between knowing and doing. While foundational, Johnson *et al.* (2006) developed this model for traditional face-to-face business settings and did not consider the digital, asynchronous, and multimodal nature of communication in CBEC. Later frameworks, such as Wongkhamdi *et al*. (2020), responded to digital transformation by outlining e-commerce competence dimensions relevant to SMEs, including digital skills, business fundamentals, and language. However, cultural adaptability was underemphasised.

In addition to the above, Alon *et al.* (2016) introduced the Business Cultural Intelligence Quotient, which incorporates cultural knowledge, metacognition, cross-cultural motivation, and communication ability. This model aligns closely with the structure of the present study and reflects a comprehensive understanding of intercultural business competence. However, it does not address English proficiency, which is a critical skill gap among Chinese CBEC students. Moreover, it lacks consideration of domain-specific knowledge related to CBEC platforms, tools, and regulatory contexts. Similarly, the Consumer-Based Cultural Competency Inventory by Cornelius *et al.* (2004) includes multicultural attitudes, language ability, and respectfulness, offering valuable insight into consumer-oriented cultural competence. While this model does acknowledge the role of language, it does not account for the digital and multimodal communication features unique to the CBEC environment, such as real-time messaging, algorithm-driven marketing, and short-form video interaction. These limitations further underscore the need for a tailored framework and empirical validation in the CBEC context.

Conceptual Foundations of Cross-cultural Competence

Scholars commonly define cross-cultural competence (CCC) as an individual's integrated capability to effectively communicate, interact, and adapt in multicultural environments, encompassing cognitive, affective, and behavioural dimensions (Feola *et al.*, 2024; Liao *et al.*, 2021; Richter *et al.*, 2023; Zamroni, 2021). The cognitive dimension refers to cultural knowledge and awareness, the affective dimension involves openness and respect toward cultural differences, and the behavioural dimension emphasises adaptive communication and action (Feola *et al.*, 2024; Liao *et al.*, 2021; Shadiev *et al.*, 2025). Moreover, scholars increasingly view CCC as a dynamic, developmental process involving sustained intercultural learning and engagement (Gu & Meng, 2021; Lakshman *et al.*, 2021; Sylwia *et al.*, 2024).

While these studies provide a comprehensive understanding of CCC, most of them are situated in traditional expatriation or academic exchange contexts and reflect a Western-centric perspective (Richter *et al.*, 2023). However, the fast-evolving field of CBEC demands a more nuanced application of CCC. In CBEC, communication takes place through digital platforms, live-streaming, and social media tools, modes of interaction that differ significantly from face-to-face or formal business communication. However, few studies explore how CCC manifests or influences performance in such technology-mediated environments. Therefore, although previous research highlights useful constructs and antecedents of CCC (Gu & Meng, 2021; Liao *et al.*, 2021; Qomariyah *et al.*, 2022; Sylwia *et al.*, 2024), these studies fall short of addressing how CCC functions in the CBEC setting, especially among underprepared student practitioners.

Competency Requirements in Cross-border E-commerce Performance

Scholars widely recognise CBEC performance as a critical measure of international business success, encompassing outcomes such as market expansion, brand image, purchase intention, and word-of-mouth (Cassia & Magno, 2021; Wang *et al.*, 2023). Although technical and marketing inputs are important, recent research suggests that practitioner-level competencies, particularly in cross-cultural communication, are equally vital for success in international markets (Gu & Meng, 2021; Liao *et al.*, 2021). Liao *et al.* (2021) underscore the role of CCC as a mediating factor in expatriate effectiveness, implying its relevance in CBEC as well.

Nevertheless, the majority of CBEC performance studies focus on business strategy or consumer behaviour, without fully explaining how individual competencies, such as CCC, impact performance through the digital channels unique to CBEC. In this context, communication is asynchronous, multimodal, and often driven by short-form media like live broadcasts and platform messaging. This raises questions about the applicability of traditional CCC frameworks. Consumers in CBEC markets, especially those in high uncertainty avoidance cultures, demand clear, trustworthy, and culturally tailored communication (Al-Adwan *et al.*, 2022). Practitioners' ability to bridge cultural gaps through digital means directly affects perceived value and customer loyalty (Wang *et al.*, 2023; Xu *et al.*, 2024). For Chinese students preparing to enter this workforce, the need for highly contextualised CCC becomes even more critical. Studies have observed that Chinese CBEC enterprises struggled with intercultural communication during the pandemic, highlighting cultural flexibility as a key driver of digital adaptation (Fodouop Kouam, 2025). Talent development and brand positioning are also increasingly tied to market performance in China's CBEC ecosystem (Xi *et al.*, 2023). However, few empirical studies connect these outcomes to students' CCC. These previous studies allowed us to assume the following research hypotheses, as shown in Figure 1:

H1: Cross-cultural competence has a positive and significant impact on CBEC performance.

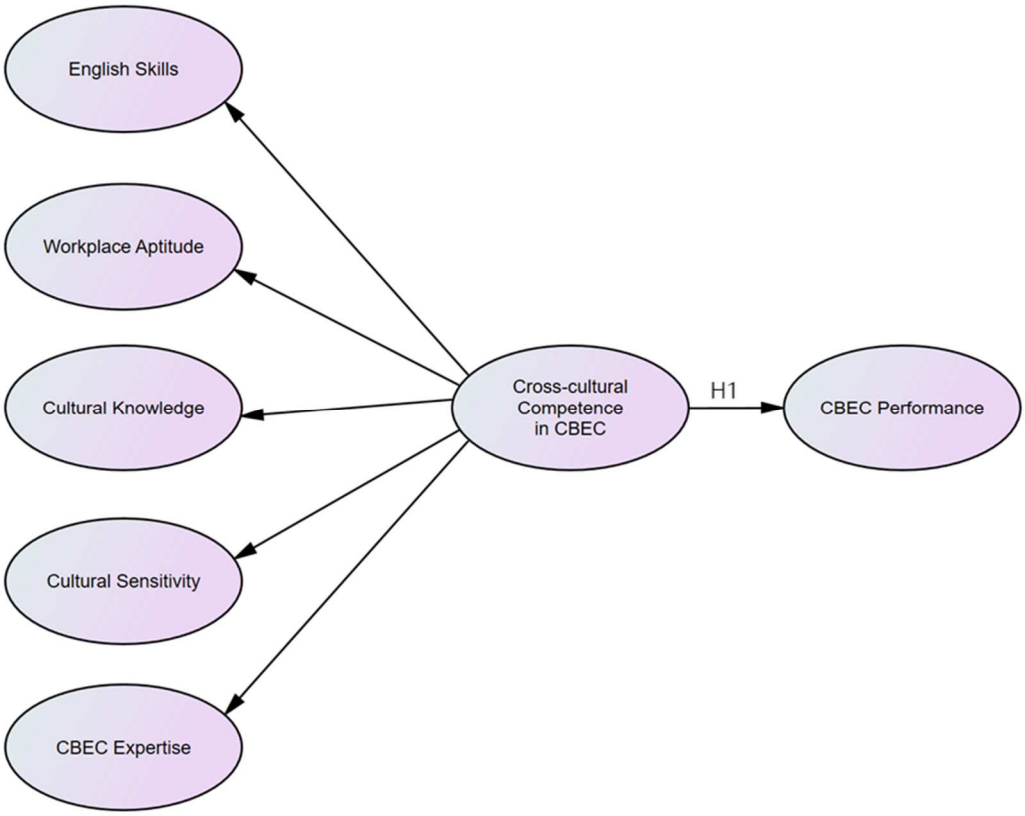

Figure 1. Proposed model
Source: own elaboration.

RESEARCH METHODOLOGY

Research Design

This study adopted a cross-sectional survey design to examine the relationship between CCC and CBEC performance among Chinese college students. We collected data through an online questionnaire and analysed it using structural equation modelling (SEM) with AMOS 24. A pilot study confirmed the reliability and validity of the instrument before the main analysis.

Sample and Data Collection

We selected respondents through stratified cluster sampling. We divided China into Western, Northern, and Southeastern regions, and selected one CBEC-offering institution from each. Within each institution, we used simple random sampling to recruit CBEC-major respondents. We collected a total of 654 responses. After excluding inattentive responses, 592 valid responses remained. This sample size exceeded the commonly recommended minimum of 384 for general survey research (Krejcie & Morgan, 1970) and met the requirements for structural equation modelling, which typically calls for 200 or more cases (Hair, 2019). Therefore, the sample was sufficient to ensure statistical power and generalisability.

Measurement

This study employed a 7-point Likert scale to enhance response flexibility and precision, improving reliability and reducing central tendency bias (Tanujaya, 2022). To ensure reliability and validity, we adapted all items from well-established scales. We measured CBEC performance using the E-Commerce Competence Assessment Framework (Wongkhamdi *et al.*, 2020), and we adapted cross-cultural competence (CCC) from 'cross-cultural competence scale in cross-border e-commerce' (Song *et al.*, 2025). This study employed the back-translation method to ensure the accuracy and cross-cultural equivalence of the questionnaire.

Pilot Study

We conducted a pilot study with 161 respondents to evaluate the reliability and validity of the research instrument. To assess data suitability for factor analysis, we performed the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. The KMO values for all dimensions exceeded the 0.60 threshold, indicating sufficient sampling adequacy (Kaiser, 1974). Bartlett's Test of Sphericity was significant ($p < 0.001$) for all dimensions, confirming that the correlation matrices were suitable for factor analysis. We further assessed the reliability and validity of the constructs through Cronbach's alpha and average variance extracted (AVE). The Cronbach's alpha values for all dimensions exceeded the recommended 0.7 threshold, indicating high internal consistency. The AVE values ranged from 0.484 to 0.696, confirming adequate convergent validity (Fornell & Larcker, 1981). These results demonstrate that the research instrument was reliable and valid for further data collection and analysis, as shown in Table 1.

Table 1. Discriminant validity, convergent validity, and reliability assessment

Dimension	Lan	Apt	Att	CI	CE	AVE	Mean	Std. Deviation	Cronbach's α
Lan	0.813					0.66	4.554	1.279	0.936
Apt	0.344	0.834				0.696	3.463	1.042	0.912
Att	0.019	0.303	0.759			0.576	2.141	0.97	0.943
CI	0.499	0.491	0.156	0.74		0.547	4.093	1.135	0.901
CE	0.393	0.652	0.298	0.55	0.696	0.484	3.381	1.035	0.864

Note: the values on the diagonal are the square roots of the average variance extracted (AVE).
Source: own study.

Data Analysis

This study employed a two-step structural equation modelling (SEM) approach with AMOS 24 to test the proposed model and hypotheses (Anderson & Gerbing, 1988). Firstly, confirmatory factor analysis (CFA) evaluated the measurement model's fit, reliability, and validity, using standard fit indices. We removed indicators with low factor loadings or high error covariance to improve reliability and model parsimony. We assessed reliability via Cronbach's alpha and composite reliability (CR), while we confirmed validity using standardised factor loadings, average variance extracted (AVE), and the Fornell-Larcker criterion (Fornell & Larcker, 1981). Secondly, we tested the structural model to examine hypothesised relationships. We verified model fit, and standardised path coefficients, critical ratios (C.R.), and p-values to evaluate the strength and direction of relationships between constructs.

RESULTS AND DISCUSSION

Profile of Respondents

The respondents' profiles reflect a diverse demographic composition, as shown in Table 2. Among the 592 participants, 78.38% were female, 20.61% were male, and 1.01% identified as other. In terms of age distribution, the majority (48.65%) were 18 years old, followed by 32.26% aged 19, 12.16% aged 20, and 6.92% aged 21 or older. Regarding academic background, most respondents majored in Business English (42.40%), followed by Marketing (19.76%), E-commerce (17.74%), Foreign Trade (5.74%), and other disciplines (14.36%). A considerable proportion (28.38%) reported having a family business background, while 71.62% did not. When asked about entrepreneurial intention, 47.30% of the respondents expressed an interest in entrepreneurship, whereas 52.70% did not. Furthermore, only 20.95% of participants reported possessing an overseas social media account, while 79.05% did not. Highlighting potential barriers to direct engagement with foreign consumers on global platforms.

Table 2. Respondents' demographic

Demographic variable	Category	Frequency (n=592)	Percentage
Gender	Male	122	20.61%
	Female	464	78.38%
	Other	6	1.01%
Age	18	288	48.65%
	19	191	32.26%
	20	72	12.16%
	21 & above	41	6.92%
Major	Business English	251	42.40%
	E-commerce	105	17.74%
	Foreign trade	34	5.74%
	Marketing	117	19.76%
	Other	85	14.36%
Family Business	Yes	168	28.38%
	No	424	71.62%
Entrepreneurial Intention	Yes	280	47.30%
	No	312	52.70%
Possession of overseas social media account(s)	Yes	124	20.95%
	No	468	79.05%

Source: own study.

Model Fit Summary

Before model estimation, we assessed univariate normality using skewness and kurtosis values (see Table 3). Except for Att3, which showed skewness and kurtosis slightly exceeding acceptable thresholds, all other items fell within tolerable limits. Given the large sample size (n = 592), the data were sufficiently normal for SEM using maximum likelihood estimation (Hair, 2019).

The initial measurement model showed sub-optimal fit, as seen in Figure 2. The chi-square to degrees of freedom ratio was 3.93, above the preferred threshold of 3, indicating a need for refinement. The goodness of fit index (GFI) at 0.827 and adjusted goodness of fit index (AGFI) at 0.789 both fell below the recommended 0.90, suggesting inadequate capture of data variance. The comparative fit index (CFI) of 0.896 was slightly below optimal, and the root mean square error of approximation (RMSEA) of 0.070 indicated moderate fit. The standardised root mean square residual (SRMR) of 0.0649 exceeded the 0.06 threshold, showing residual discrepancies needing reduction. These results highlight the need for model adjustments (Anderson & Gerbing, 1988; Fornell & Larcker, 1981).

Table 3. Normality test results based on skewness and kurtosis

Variable	Min	Max	Skewness	CR (Skew)	Kurtosis	CR (Kurt)
Lan1	1	7	0.122	1.22	-0.364	-1.811
Lan2	1	7	-0.119	-1.19	-0.451	-2.244
Lan3	1	7	0.293	2.93	-0.431	-2.144
Lan4	1	7	0.148	1.48	-0.431	-2.144
Lan5	1	7	-0.036	-0.36	-0.496	-2.468
Lan6	1	7	0.2	2	-0.609	-3.030
Apt1	1	7	0.23	2.3	-0.256	-1.274
Apt3	1	7	0.165	1.65	-0.375	-1.866
Apt4	1	7	-0.005	-0.05	-0.04	-0.199
Apt5	1	7	0.316	3.16	-0.324	-1.612
Apt6	1	7	0.333	3.33	0.097	0.483
Att1	1	6	1.015	10.15	0.269	1.338
Att3	1	7	2.029	20.29	4.844	24.100
Att4	1	7	1.803	18.03	3.754	18.677
Att5	1	7	1.229	12.29	1.641	8.164
Att6	1	7	1.519	15.19	2.963	14.741
Att10	1	7	1.783	17.83	2.908	14.468
CI2	1	7	-0.028	-0.28	-0.405	-2.015
CI3	1	7	0.269	2.69	-0.216	-1.075
CI4	1	7	0.163	1.63	-0.296	-1.473
CI5	1	7	0.409	4.09	-0.162	-0.806
CE1	1	7	0.09	0.9	-0.077	-0.383
CE2	1	7	0.29	2.9	-0.058	-0.289
CE3	1	7	0.127	1.27	-0.404	-2.010
CE4	1	7	0.003	0.03	-0.48	-2.388
CE5	1	7	0.403	4.03	0.17	0.846

Source: own study.

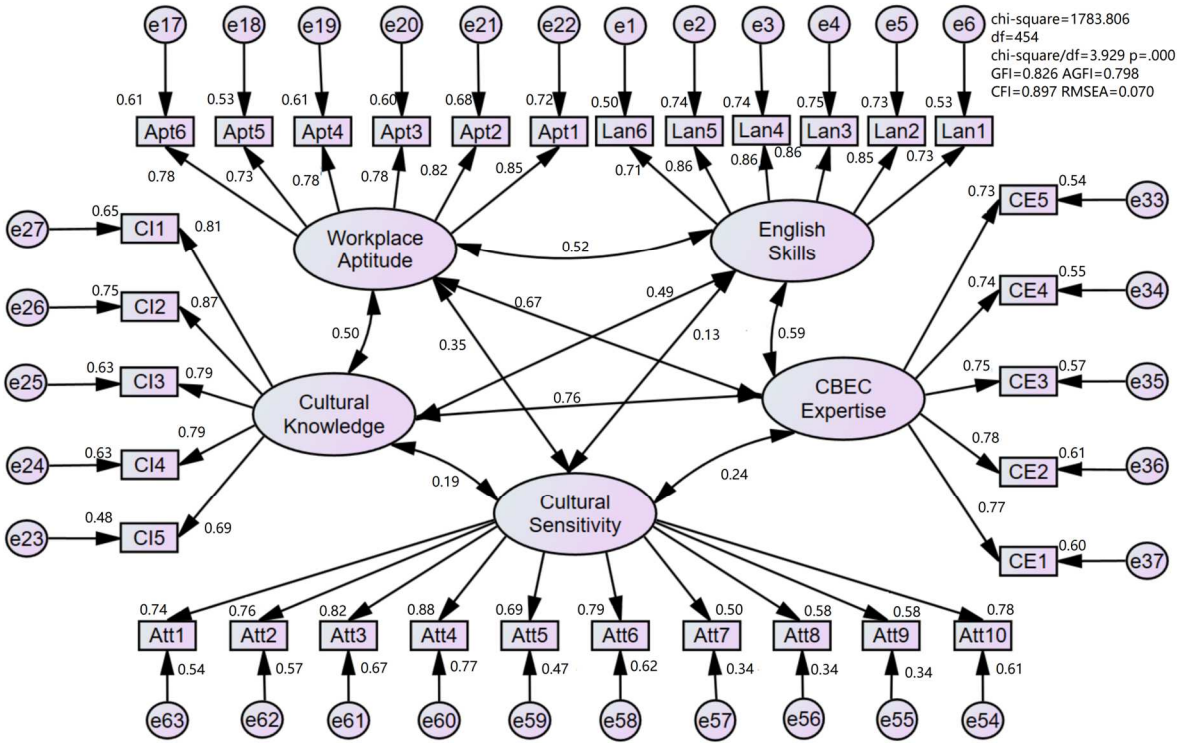

Figure 2. Measurement model (before modification)

Source: own elaboration.

To enhance the model, we made several adjustments based on factor loadings and modification indices. We removed items Att7, Att8, and Att9 due to their low factor loadings, which fell below the recommended threshold of 0.60, suggesting weak relationships with their respective latent constructs. Moreover, we removed APT2, ATT2, and CI1 due to high modification indices, indicating significant cross-loadings or high residual correlations, which could compromise the model's discriminant validity, as shown in Figure 3. These modifications aimed to strengthen the reliability of the measurement model and improve overall model fit.

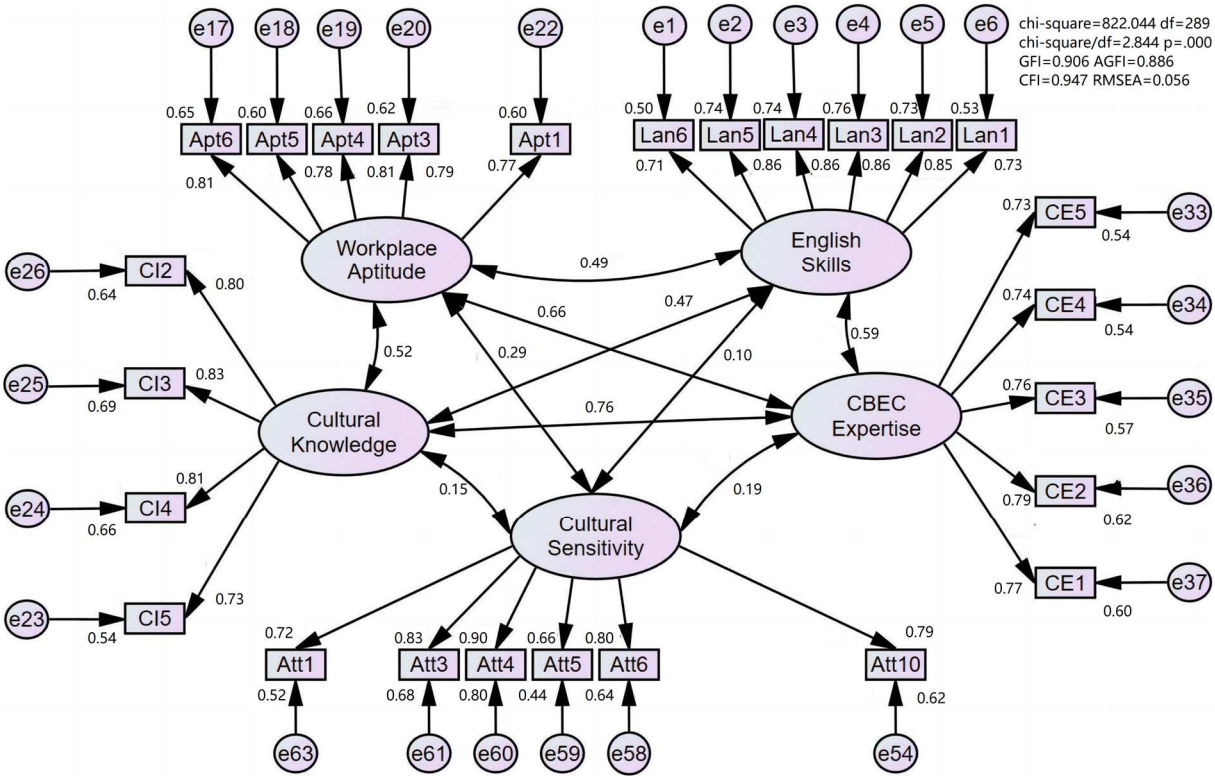

Figure 3. Measurement model (after modification)
Source: own elaboration.

The chi-square value reduced to 822.582 with 290 degrees of freedom, resulting in a chi-square to degrees of freedom ratio of 2.836. This value falls below the recommended cutoff of 3. The GFI increased to 0.906, exceeding the 0.90 threshold. Moreover, the AGFI improved from 0.789 to 0.886, indicating a better model fit and improved representation of the data structure. Moreover, CFI improved to 0.947, and RMSEA reduced to 0.056, further supporting good model fit. The SRMR also improved to 0.0536, now within the acceptable range of under 0.06, indicating reduced residual discrepancies and better alignment between observed and predicted correlations.

Reliability and Validity of the Modified Measurement Model

The CFA results showed that all observed variables significantly loaded onto their latent constructs, supporting convergent validity (Table 4). Standardised factor loadings ranged from 0.661 to 0.897, exceeding the 0.50 threshold (Hair, 2019), with t-values above 16.622 ($p < 0.001$). CR values ranged from 0.870 to 0.922, surpassing 0.70, indicating strong internal consistency. The AVE values, between 0.572 and 0.666, exceeded 0.50 (Fornell & Larcker, 1981), confirming sufficient variance capture. These results affirm the modified measurement model's reliability and convergent validity.

Table 5 shows the discriminant validity assessment results. Off-diagonal elements indicate correlation coefficients between constructs. We confirmed discriminant validity as the square root of each construct's AVE exceeded its correlation coefficients with other constructs, establishing that the constructs were empirically distinct within the measurement model.

Table 4. Construct reliability and convergent validity

Dimension	Item	Unstd.	S.E.	t-value	P	Std.	SMC	CR	AVE
Workplace Aptitude	Apt3	1.16	0.058	19.976	***	0.786	0.618	0.894	0.628
	Apt5	1.046	0.054	19.314	***	0.777	0.604		
	Apt6	1.037	0.051	20.416	***	0.808	0.653		
	Apt4	1.019	0.05	20.483	***	0.815	0.664		
	Apt1	1				0.774	0.599		
English Skills	Lan5	1.221	0.059	20.783	***	0.86	0.74	0.922	0.666
	Lan3	1.214	0.058	21.094	***	0.865	0.748		
	Lan4	1.209	0.058	20.752	***	0.862	0.743		
	Lan2	1.186	0.057	20.977	***	0.855	0.731		
	Lan6	1.128	0.066	17.032	***	0.71	0.504		
	Lan1	1				0.729	0.531		
Cultural Sensitivity	Att4	1.064	0.044	24.009	***	0.897	0.805	0.906	0.62
	Att3	1.055	0.047	22.409	***	0.832	0.692		
	Att10	1				0.786	0.618		
	Att6	0.968	0.045	21.322	***	0.801	0.642		
	Att1	0.952	0.052	18.433	***	0.723	0.523		
	Att5	0.887	0.053	16.622	***	0.661	0.437		
Cultural Knowledge	CI3	1.093	0.056	19.614	***	0.832	0.692	0.874	0.634
	CI2	1.077	0.058	18.496	***	0.802	0.643		
	CI4	1.065	0.056	19.109	***	0.814	0.663		
	CI5	1				0.734	0.539		
CBEC Expertise	CE4	1.181	0.068	17.439	***	0.736	0.542	0.87	0.572
	CE1	1.092	0.061	17.947	***	0.772	0.596		
	CE2	1.07	0.059	18.29	***	0.785	0.616		
	CE3	1.049	0.06	17.603	***	0.755	0.57		
	CE5	1				0.732	0.536		

Source: own study.

Table 5. Discriminant validity assessment

Variables	AVE	Cultural Sensitivity	CBEC Expertise	Cultural Knowledge	Workplace Aptitude	English Skills
Cultural Sensitivity	0.620	**0.787**				
CBEC Expertise	0.572	0.186	**0.756**			
Cultural Knowledge	0.634	0.147	0.759	**0.796**		
Workplace Aptitude	0.628	0.295	0.661	0.516	**0.792**	
English Skills	0.666	0.104	0.590	0.474	0.491	**0.816**

Notes: the diagonal value is the square root of AVE.
Source: own study.

Pooled CFA

The overall model fit indices indicated a good model fit. The chi-square statistic was 1137.569 with 458 degrees of freedom, resulting in a chi-square to degrees of freedom ratio of 2.484 with a p-value of 0.000. The GFI was 0.896, and the AGFI was 0.880, both approaching the recommended threshold of 0.90. The CFI was 0.950, exceeding the acceptable benchmark of 0.90, indicating a well-fitting model. The RMSEA was 0.050, which was within the preferred range of under 0.08, suggesting a reasonable approximation of the model to the observed data. Moreover, SRMR was 0.0572, further supporting the model's good fit, as shown in Figure 4.

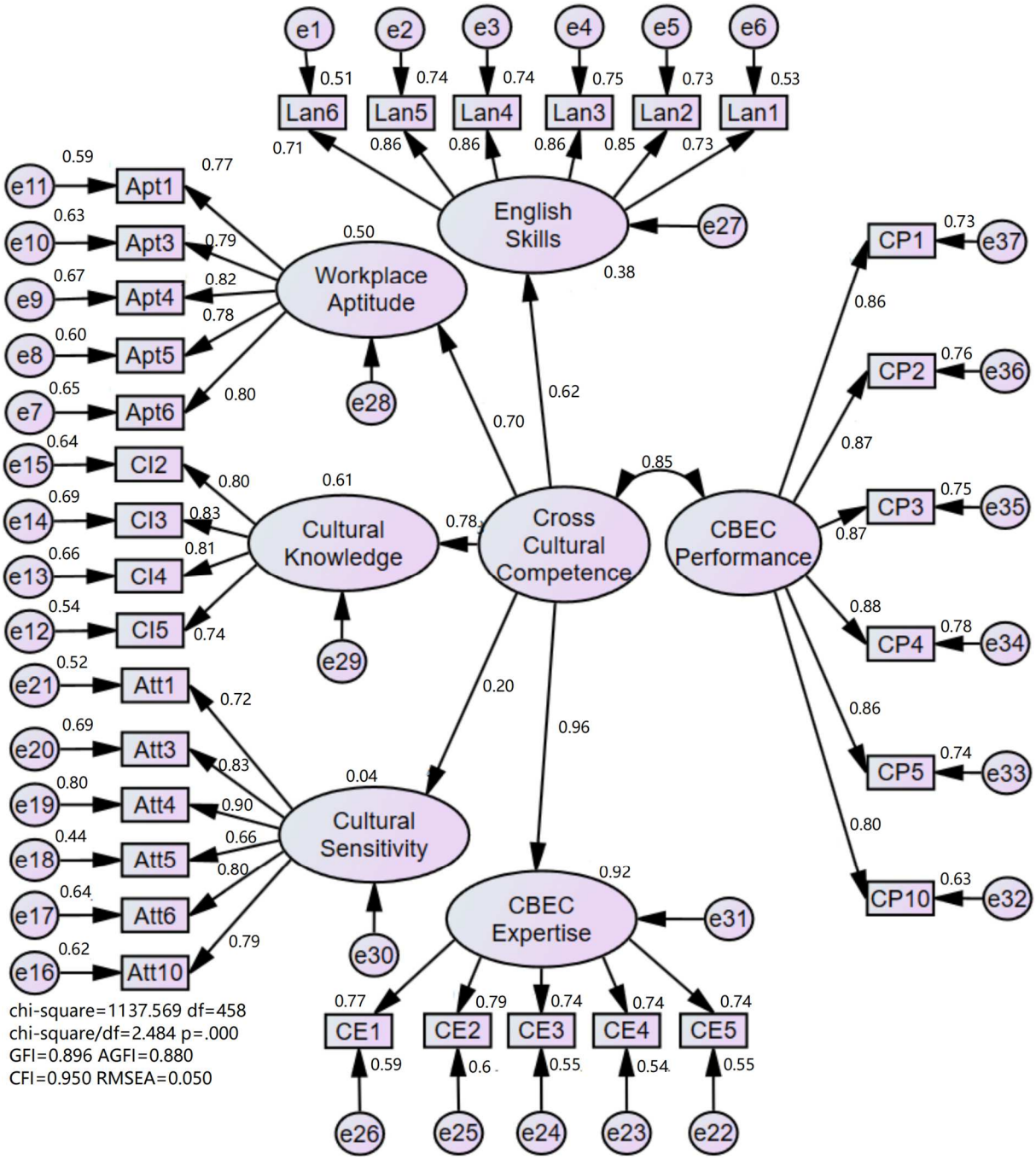

Figure 4. Measurement model (pooled CFA)
Source: own elaboration.

In the path diagram, the factors English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC Expertise all exhibit significant relationships with CCC and CBEC Performance. The standardised factor loadings for most indicators were above 0.70, indicating strong reliability. The correlations among factors were also significant, demonstrating good construct validity.

Structural Model and Hypothesis Testing

Before interpreting the path coefficients, we assessed multicollinearity to ensure the validity of the regression estimates. Multicollinearity diagnostics indicated no serious collinearity issues among the independent variables. All tolerance values ranged from 0.418 to 0.868, and all VIF values ranged from 1.152 to 2.392, which were within acceptable thresholds (Hair, 2019). The structural equation model (SEM) il-

lustrates the impact of CCC on CBEC performance and examines the roles of multiple latent variables. As shown in Figure 5, five latent variables influence CCC: English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC Expertise. CBEC Expertise and Cultural Knowledge strongly influence CCC, while Cultural Sensitivity has a minor effect. Moreover, CCC significantly boosts CBEC performance. The model's fit indices confirm its validity, with a chi-square to degrees of freedom ratio of about 2.48, indicating good fit. The GFI was 0.896, AGFI was 0.880, and CFI was 0.950, all reflecting a robust model. The RMSEA of 0.050 and SRMR of 0.0572 further support the model's strong explanatory power.

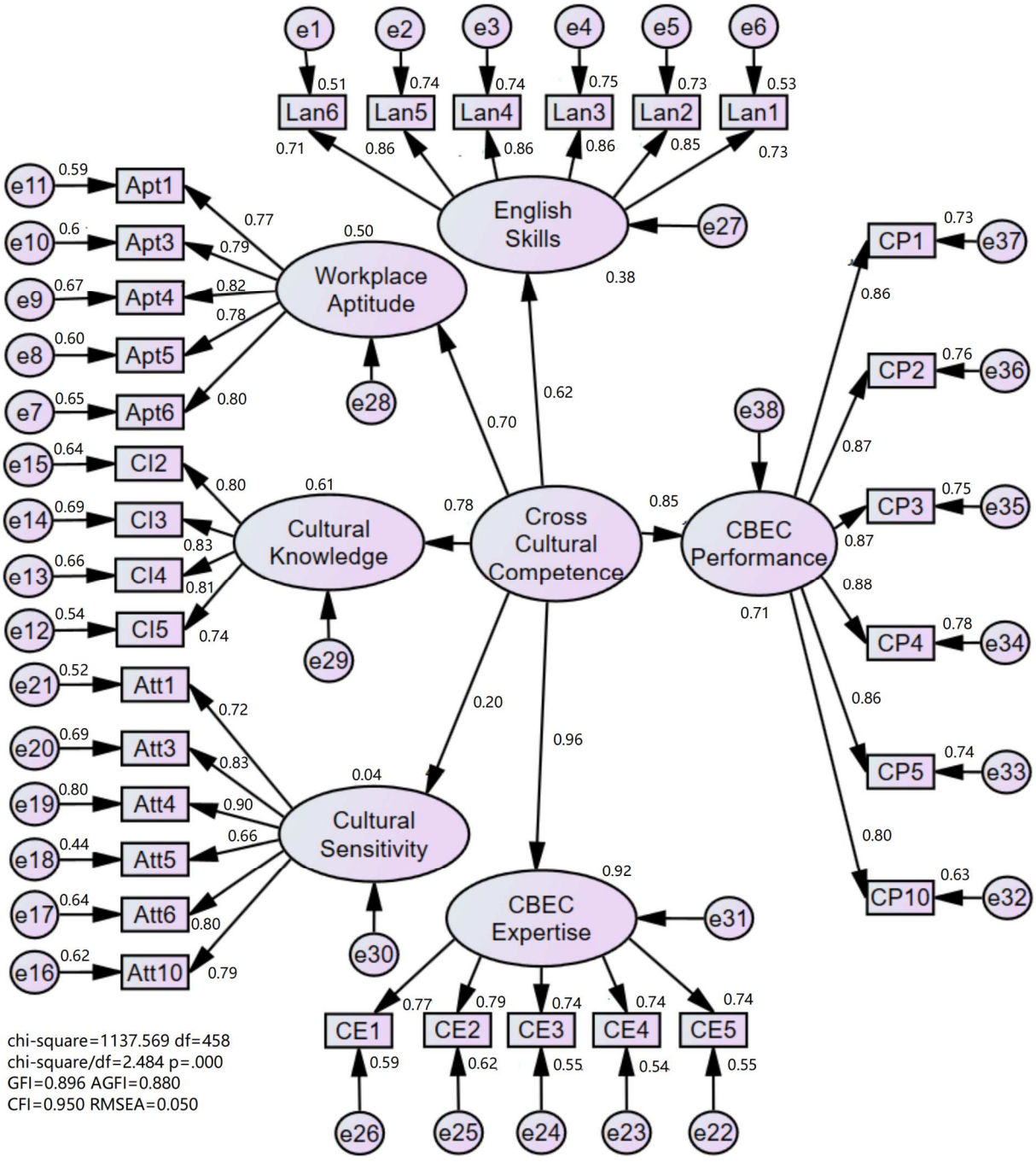

Figure 5. Structural model for cross-cultural competence in CBEC
Source: own elaboration.

The hypothesis of this study examines the impact of CCC on CBEC performance. The results show that CCC has a strong positive impact on CBEC performance, with an estimated effect of 1.529, a standard error of 0.123, a critical ratio of 12.446, and a significance level below 0.001. The critical

ratio (C.R.) exceeded the 1.96 threshold, confirming that the effect was statistically significant. These findings provide strong empirical support for the proposed hypothesis, demonstrating that higher CCC leads to improved CBEC performance.

Discussion

This study addressed the growing competence challenges posed by shifting patterns of cultural interaction in the context of cross-border e-commerce (CBEC). Focusing on Chinese college students in this field, who operate in digital, social media-based environments with limited opportunities for Western social media exposure, we proposed and empirically validated a second-order model of cross-cultural competence (CCC). Centred on Chinese CBEC students, we proposed and validated a second-order model of CCC comprising five dimensions: English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC expertise. In response to RQ1, CBEC expertise and cultural knowledge made the strongest contributions, reflecting the integration of platform know-how and cultural understanding. Cultural sensitivity showed a weaker influence, suggesting underdevelopment of affective readiness in low-contact environments. Regarding RQ2, the model showed good fit across indices, and the standardised path from cross-cultural competence to CBEC performance reached 0.85, indicating a strong and meaningful impact. These findings affirm that CCC is not only foundational for digital communication but also a key driver of transactional outcomes and international adaptability, offering timely insights for talent development in the global digital economy.

The proposed model extends the foundational framework of CCC developed by Johnson *et al.* (2006) through contextualization to the CBEC environment. The original model conceptualised competence across affective, cognitive, and behavioural domains. It emphasised personal adaptability in international business contexts. However, it was developed for traditional face-to-face interactions and did not account for the multimodal, platform-based, and real-time nature of CBEC communication. The Business Cultural Intelligence model introduced metacognitive strategies and intercultural motivation (Alon *et al.*, 2016). However, it overlooked the critical role of language proficiency for non-native speakers and failed to distinguish the influence of industry-specific knowledge. The e-commerce competence model by Wongkhamdi *et al.* (2020) focused on platform operations and digital skills. However, it lacked theoretical depth in the cultural dimension. This study integrates the strengths of these models while addressing the specific challenges that Chinese CBEC students face, such as language barriers, platform restrictions, and limited cultural exposure. It proposes five key dimensions, which retain the core structure of earlier models while embedding essential task competencies and contextual knowledge needed for CBEC. The result is a model that offers stronger theoretical alignment and practical relevance in explaining how Chinese students engage in intercultural communication and market adaptation through online channels.

The findings of this study not only provide a theoretical basis for CBEC talent development in higher education but also highlight key mechanisms and gaps in students' CCC. Noteworthy, CBEC expertise and cultural knowledge made the strongest contributions to the overall construct, suggesting that competence development must go beyond traditional language or attitudinal training. It should be closely integrated with practical knowledge of digital platforms, transaction processes, and cultural norms in target markets. As Luo *et al.* (2020) note, effective use of social media platforms significantly improves CBEC performance, indicating that culturally informed digital engagement is central to building trust and facilitating market conversion. Xi *et al.* (2023) similarly note that essential capabilities in the CBEC ecosystem are increasingly oriented toward platform literacy and real-world applicability. This study reinforces the synergy between cultural knowledge and CBEC-specific expertise, helping to explain why general cultural awareness courses often fall short. Without a functional understanding of how culture shapes digital transactions, such training may fail to produce measurable improvements in student outcomes.

The model also confirmed that English skills and workplace aptitude play strong enabling roles in supporting CCC, with standardised loadings of 0.62 and 0.70, respectively. This aligns with findings by Alfiyatul *et al.* (2022), who emphasise the role of language proficiency and professional adaptability in enhancing cross-cultural performance. Moreover, CBEC students are often required to handle real-time negotiations, order processing, and dispute resolution. Those with accurate language

use and task-oriented flexibility are better equipped to overcome misunderstandings or trust issues arising from cultural differences. Therefore, language instruction should shift from abstract knowledge accumulation toward contextualised and functional communication. Educators should guide students to apply language skills in authentic business tasks through methods such as virtual customer service or simulated e-commerce operations (Shadiev *et al.*, 2025), thereby strengthening their behavioural expression in intercultural settings.

Although cultural sensitivity showed a relatively weak path coefficient of 0.20, this does not suggest diminished importance. Rather, it points to a structural issue rooted in limited exposure, insufficient experience, and fixed attitudes. As Hu and Zhu (2022) argue, social media plays a central role in building cultural trust today. However, Chinese CBEC students are disadvantaged in this regard, as they lack direct access to Western platforms like Facebook and Instagram. This may explain why students with solid cognitive and technical skills still struggle with nuanced cultural responsiveness. To address this gap, university administrators should consider adopting 'soft connection' strategies, such as implementing virtual exchange programs (Sylwia *et al.*, 2024), inviting foreign mentors through school-enterprise collaborations, or simulating multicultural customer scenarios. These approaches can create sustainable, near-authentic intercultural experiences that compensate for institutional limitations in cultural input.

CONCLUSIONS

We developed and empirically validated a second-order model of cross-cultural competence (CCC) tailored for Chinese college students in the cross-border e-commerce (CBEC) context. By identifying five key dimensions, *i.e.*, English Skills, Workplace Aptitude, Cultural Knowledge, Cultural Sensitivity, and CBEC Expertise, this model provides a comprehensive yet context-sensitive framework to understand and enhance students' readiness for global digital commerce. The findings confirm that CCC exerts a significant and positive influence on CBEC performance, with CBEC Expertise and Cultural Knowledge playing particularly critical roles. These results not only refine existing theoretical models by integrating platform-specific and task-oriented competencies but also offer actionable insights for educators and policymakers to design targeted interventions that bridge cognitive, behavioural, and affective gaps in cross-cultural preparation. Thus, this study contributes both theoretically and practically to the advancement of intercultural business education in the era of digital globalisation.

Despite its theoretical and empirical contributions, this study has several limitations. Firstly, the sample was limited to three Chinese universities, which may restrict generalisability due to regional differences in educational resources. Future research should include students from central and western provinces or international programs. Secondly, the cross-sectional design cannot capture the developmental process of cross-cultural competence; longitudinal studies are needed to examine its evolution through coursework and practical experience. Third, the model does not include possible mediators or moderators such as social support, self-efficacy, or emotional regulation, which have been linked to intercultural adjustment (Alfiyatul *et al.*, 2022; Liao *et al.*, 2021). Lastly, future studies could explore how digital tools like virtual reality or simulation platforms may help overcome institutional barriers to cultural exposure, especially in technology-enhanced learning environments.

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Authors

The contribution share of authors is equal and amounts to ⅓ for each of them.

Ziyun Song
Lecturer, School of Foreign Languages and Trade, Guangdong Polytechnic of Water Resources and Electric Engineering (China). His research interests include intercultural competence, cross-border e-commerce, and business education.
Correspondence to: Ziyun Song, School of Foreign Languages and Trade, Guangdong Polytechnic of Water Resources and Electric Engineering, 510610 Guangzhou, China, e-mail: songzy@gdsdxy.edu.cn
ORCID https://orcid.org/0009-0002-5653-6106

Sheerad Sahid (corresponding author)
PhD in Education (2015, Universiti Kebangsaan Malaysia, Malaysia); Associate Professor at the Faculty of Education, Universiti Kebangsaan Malaysia (Malaysia). His research interests include entrepreneurship education, economic well-being, and entrepreneurial marketing.
Correspondence to: Assoc. Prof. Dr. Sheerad Sahid, Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia, e-mail: sheerad@ukm.edu.my
ORCID https://orcid.org/0000-0003-2401-4629

Iszan Hana Kaharudin
PhD in Education (2017, Universiti Kebangsaan Malaysia, Malaysia); Assistant Dean of Entrepreneurship & Creativity at the School of Liberal Studies, Universiti Kebangsaan Malaysia (Malaysia). Her research interests include educational innovation, entrepreneurship development, and creative pedagogy.
Correspondence to: Dr. Iszan Hana Kaharudin, School of Liberal Studies, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia, e-mail: iszanhana@ukm.edu.my
ORCID https://orcid.org/0000-0002-1418-4870

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The impact of internationalisation through export growth on debt financing in construction firms: Evidence from the Americas

Justyna Bogołębska, Magdalena Gostkowska-Drzewicka, Julia Koralun-Bereźnicka, Ewa Majerowska, Anna Wojewnik-Filipkowska

ABSTRACT

Objective: This study investigates the impact of internationalisation on the indebtedness of construction companies in the Americas. We measured internationalisation as the share of exports in total revenues, reflecting a firm's engagement in cross-border sales.

Research Design & Methods: The analysis utilised panel data from 132 construction firms across 13 American countries. We employed fixed and random effects models.

Findings: International firms show distinct debt financing patterns, with firm size positively influencing debt levels, especially in long-term debt. Internationalisation moderates the impact of firm-specific factors on capital structure. For international firms, asset tangibility positively affects long-term debt, contrasting with domestic firms, where this relationship is negative. Country-specific factors have a stronger impact on the capital structure of international firms than on domestic firms.

Implications & Recommendations: As both the country context and the degree of internationalisation influence financing decisions, firms pursuing international expansion must adapt their financing strategies accordingly.

Contribution & Value Added: This research uniquely investigates how internationalisation moderates the relationship between firm- and country-specific factors and the indebtedness of construction companies in the Americas – a sector and regional context that previous studies largely overlooked.

Article type: research article

Keywords: corporate finance; construction companies; financial leverage; international companies; financing decisions; panel data analysis

JEL codes: G32, F23, L74, D22

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INTRODUCTION

Internationalisation, measured by the share of exports in total revenues, brings both opportunities and threats in all dimensions of a company's activities. This particularly applies to shaping the capital structure, which is a combination of debt and equity. The literature emphasises that capital structure significantly influences a firm's profitability and competitiveness (Barton & Gordon, 1987) and closely links to firm risk (Myers, 1984). An increase in a company's exposure to external risks – for example by expanding operations into countries with low economic stability – requires a compensatory reduction in financial risk. This process involves reducing debt to a level that leads to minimising the probability of insolvency while maximising the firm's value. For this reason, traditional theories explaining capital structure formation (*e.g.*, Modigliani & Miller, 1963; Myers, 1977) may inade-

quately account for the complexities of international operations, where companies face unique risks like political instability, currency fluctuations, and regulatory variability (Chkir & Cosset, 2000; Desai *et al*., 2004). Despite extensive research, the impact of internationalisation on capital structure remains inconclusive (Lindner *et al.,* 2018). This ambiguity underscores the importance of industry-specific analyses, particularly for the construction sector, which has distinctive financing challenges. This is primarily due to differences in theoretical perspectives on changes in risk levels and, consequently, changes in capital structure resulting from increased internationalisation.

The literature contains a substantial number of studies on capital structure across companies in various industries. The differences between these industries encourage a case-by-case approach. Therefore, the construction sector also requires a separate analysis (Pinto *et al.,* 2023). Research on the construction industry mainly focuses on technical issues, meaning that studies on management and finance are a marginal part of the academic literature on this sector. Most studies on the capital structure of construction firms concentrate on the empirical verification of the main theories concerning capital structure, namely the pecking order and trade-off theories, and their influencing factors (*e.g.*, Choi *et al.,* 2014; Nguyen & Tran, 2020; Mazur *et al.*, 2023; Nalurita, 2017). Some studies emphasise the role of the relationship between capital structure and profitability (*e.g.*, Wassie, 2020; Oyewobi *et al.,* 2013), while others stress the importance of the industry effect (*e.g.*, Gunardi *et al.*, 2020; Feidakis & Rovolis, 2007; Atakul & Gundes, 2020). To the best of our knowledge, only one study (Chung & Cheah, 2006) addresses internationalisation as a factor influencing the capital structure of construction companies. The findings of these authors align with those observed for companies operating across other industries. Specifically, multinational construction companies exhibited lower levels of leverage compared to those operating solely within their domestic markets.

The literature highlights the complex relationship between internationalisation and capital structure, with contrasting perspectives. Some studies suggest that internationalisation increases firm risk due to factors such as political uncertainty, exchange rate fluctuations, and agency costs, leading to a lower reliance on debt, particularly long-term debt (Reeb *et al.*, 1998; Burgman, 1996). Other authors argue that internationalisation enhances risk diversification, access to global capital markets, and tax efficiency, resulting in higher debt levels (Mansi & Reeb, 2002; Mittoo & Zhang, 2008). These contrasting findings highlight the necessity of investigating internationalisation as a determinant of capital structure, including indebtedness, in sectors with unique financing requirements, such as construction – the focus of the current study. Precisely speaking, we examined the internationalisation-leverage nexus in the construction sector based on evidence from the Americas.

The construction sector possesses several distinctive features that justify a focused examination. First, it is capital-intensive and project-based, requiring substantial funding for multi-year contracts. It faces long investment cycles, payment delays, and seasonality effects, which increase reliance on external financing. Second, the sector shows exposure to high levels of risk, including price volatility, demand fluctuations, and administrative delays. These risks affect financing choices and the debt policy. Third, the specifics of international contracts further complicate financial management. Cross-border operations involve currency risk, regulatory differences, and the need to maintain liquidity across multiple markets. These characteristics may affect the internationalisation-leverage relationship differently than in less capital-intensive, more stable industries. For these reasons, the construction sector requires dedicated analyses that will account for its particularities and enable a better understanding of the mechanisms shaping financial decisions in the context of international expansion.

While previous studies on internationalisation in other industries provided valuable insights, its role in shaping the leverage level of construction firms still awaits investigation. Moreover, the moderating role of internationalisation on traditional capital structure determinants, such as firm size, profitability, and asset tangibility, remains underexplored. Finally, the influence of country-specific factors, especially in the Americas, where financial systems and market conditions vary significantly, calls for further investigation. Therefore, this study distinguishes itself by incorporating geographical heterogeneity. We analysed firms from both Americas, representing both the developed markets, notably the United States of America and Canada, and the developing markets – Argentina, Brazil, Colombia, Costa Rica, Mexico, and Trinidad. This allowed for a deeper understanding of institutional influences

on the firms' debt financing decisions and a two-context comparison. On developed markets, access to external financing is broad and cheaper; on emerging markets, constraints and higher debt costs make internal funding more prominent. This diversity helped us test whether internationalisation has a similar financing effect irrespective of market development. The comparative design research that contrasted results for U.S. construction firms with those from other countries enabled the measurement of country-specific factors on debt financing choices. The U.S. market, highly developed and competitive, served as a reference point. This market features strong financial system depth, broad instrument availability, and high internationalisation, revealing mechanisms that might be invisible in purely emerging-market samples. Finally, cross-country coverage improved representativeness and the generalisability of conclusions while preventing a single-country context from informing the results.

Together, these aspects of the research scope, namely the focus on indebtedness and the geographical and sector specificity, underscore the study's originality, advancing the understanding of how internationalisation dynamics unfold in capital-intensive and geographically diverse construction firms, and how these dynamics shape firm-level financial strategies. The research objective was to determine whether and to what extent internationalisation impacts the level of debt financing in construction companies. While capital structure consists of both equity and debt, this research focused specifically on the debt component, which plays a critical role in financing large-scale construction projects.

The article is organised into five main sections. The introduction outlines the theoretical background and identifies the research gap concerning the relationship between internationalisation and debt financing in construction firms. The literature review summarises prior findings on capital structure determinants and internationalisation theories. The methodology section presents the sample, data sources, variables, and econometric approach. The results and discussion section reports the empirical findings and interprets them in light of firm- and country-level determinants. The paper concludes with key implications, theoretical contributions, and directions for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Capital structure has undergone extensive examination over decades, with foundational theories exploring the balance between equity and debt and identifying factors that influence optimal leverage levels. Modigliani and Miller (1958) posited that on perfect markets, capital structure does not affect firm value. In a later work (1963), they introduced the tax shield benefit of debt, especially relevant for capital-intensive construction firms that rely on external financing for large projects. The trade-off theory (Kraus & Litzenberger, 1973) refines this by balancing tax benefits against the elevated financial distress risks inherent in construction due to project complexity and seasonality. Financing choices must therefore account for higher operating risk and potential liquidity strain, which limits excessive borrowing. The pecking order theory (Myers & Majluf, 1984) suggests firms prioritise internal funds before debt and equity, whereas the agency theory (Jensen & Meckling, 1976) frames capital structure as a response to conflicts between managers, owners, and creditors. For construction firms, international projects strengthen these theoretical tensions given the higher risks, monitoring challenges, and liquidity pressures.

Internationalisation theories provide complementary perspectives. The Uppsala model (Johanson & Vahlne, 1977) conceptualises internationalisation as incremental. In construction, this often means starting with smaller export-based contracts and later establishing subsidiaries on high-demand markets. The transaction cost theory (Williamson, 1985) emphasises governance costs on foreign markets. In construction, these costs are high due to project specificity and regulatory adaptation, shaping entry modes and project financing. Dunning's paradigm (Dunning, 1988) links expansion to ownership, location, and internalisation advantages. For construction, the advantages of location and ownership are particularly important; these include growing infrastructure markets and experience in large projects respectively. All the above frameworks suggest that internationalisation is not just a market entry but a process that interacts with financing choices through risk, control, and resource allocation, all relevant to construction's international expansion.

Literature presents conflicting views on internationalisation's impact on multinational firms' capital structure. Some studies argue that multinational firms face higher risks because of political uncertainty,

currency volatility, and rising operational costs stemming from geographical and operational complexity (Reeb *et al.*, 1998; Akhtar & Oliver, 2009). These risks lead to a perception of multinational firms as less creditworthy compared to domestic firms, resulting in reduced overall and long-term debt levels, even when the debt financing costs are low (Burgman, 1996; Reeb *et al.*, 2001; Khaw, 2019; Chen *et al.*, 1997; Doukas & Pantzalis, 2003; Lindner *et al.*, 2018). This aligns with the pecking order theory, which prioritises internal financing to mitigate financing costs and agency conflicts (Myers, 1984; Jensen & Meckling, 1976). Consequently, geographical diversification offers internal funds at cheaper costs, further reducing reliance on external debt (Gonenc & de Haan, 2014). The agency theory explicates the challenges in monitoring dispersed management, elevating information asymmetry and agency costs, which depress leverage too (Doukas & Pantzalis, 2003). Firms may misuse free cash, increasing the cost of debt and reducing financial leverage (Chen *et al.*, 1997). Contrarily, other scholars reported that internationalisation enhances firms' ability to diversify operational risk and access global capital markets, enabling them to assume higher leveraging consistent with the trade-off theory (Mansi & Reeb, 2002; Mittoo & Zhang, 2008; Modigliani & Miller, 1963). Additionally, subsidiaries in tax-favourable locations amplify tax shield advantages, further incentivising debt (Gonenc & de Haan, 2014; Chen *et al.*, 1997; Doukas & Pantzalis, 2003).

Beyond internationalisation, firm-specific factors such as profitability, size, asset structure, and country-level institutional contexts substantially influence leverage, explaining variation across geographies (Lindner *et al.*, 2018; Pacheco, 2016; Edward & Marciano, 2019; Akhtar, 2005). For instance, U.S. multinational firms hold more debt than their Canadian counterparts, partly due to differential capital market access (Mittoo & Zhang, 2008). Recent evidence also identified a rise in zero-leverage policies among multinational firms aiming for financial flexibility amid cross-border challenges (Chatzivgeri *et al.*, 2023).

Combining capital structure and internationalisation theories aims to explain how foreign expansion influences financing decisions, particularly in capital-intensive sectors like construction. First, internationalisation indeed increases external financing needs due to upfront investments required for projects abroad, involving additional logistics and regulatory compliance costs. Second, cross-border activities introduce additional risks such as foreign exchange volatility or political instability, which affect the firm's cost of capital and willingness or capacity to take on leverage. Next, experienced international contractors often gain better access to financing because their reputation and revenue diversification lower the perceived credit risk and agency costs. Finally, the relationship between internationalisation and leverage can be non-linear. Leverage tends to increase initially to support growth and expansion, but as foreign operations mature and generate steady cash flows, firms may reduce leverage due to improved internal funding capacity and risk management. As indicated, the literature provides two opposing theoretical perspectives on how internationalisation affects corporate leverage. International expansion introduces risk factors leading to more conservative financing, particularly by reducing long-term debt ratios. However, access to multiple markets enables firms to leverage operational and financial benefits to increase debt capacity. The present study aimed to clarify these conflicting viewpoints by focusing on construction firms across diverse American countries. We employed a nuanced empirical approach that integrated the interplay of internationalisation with firm- and country-specific factors. The findings advance the theoretical understanding of how internationalisation shapes financing strategies – in particular, how companies manage debt within the context of international operations and institutional heterogeneity.

Based on the identified gaps and the distinct characteristics of construction firms, we formulated the following literature-supported hypotheses to explore how internationalisation affects the debt financing patterns in this sector:

- **H1:** Internationalisation impacts the debt levels of construction companies in the Americas.
- **H2:** Internationalisation moderates the influence of firm-specific factors on the debt levels of construction companies in the Americas.
- **H3:** Country-specific factors have a stronger effect on the debt levels of internationally active construction companies compared to non-internationalised firms.

These hypotheses aimed to deepen the understanding of how internationalisation interacts with firm-specific and country-specific factors in shaping the indebtedness of construction firms in the Americas. By addressing these aspects, the study contributes to filling the existing research gap and offers

insights relevant to both academics and practitioners. This evidence has important implications for managerial practices relating to capital structure optimisation and economic policy within the sector.

RESEARCH METHODOLOGY

The analysed sample consisted of 132 construction firms operating across 13 countries in the Americas, covering both developed and developing economies. Approximately half of the sample comprised firms from highly developed markets such as the U.S. and Canada, while the remainder represented emerging or developing markets, including Argentina, Brazil, Colombia, Costa Rica, Mexico, and Trinidad. Table 1 presents the distribution of companies across different countries, with the firms classified by their internationalisation level. The data distinguishes between firms operating solely on domestic markets and those involved in international operations. We sourced the data from the Thomson Reuters database and compiled them between July and September 2024.

Table 1. Sample structure

Country	Number of companies		
	Total	Internationalised	Non-internationalised
ArgenMna	8	5	3
Bolivia	1	1	0
Brazil	13	13	0
Canada	9	3	6
Chile	13	7	6
Columbia	5	2	3
Costa Rica	1	0	1
Ecuador	1	1	0
Jamaica	1	0	1
Mexico	14	7	7
Peru	5	3	2
Trinidad	1	0	1
United States	60	30	30
Total	132	72	60

Source: own study based on Thomson Reuters.

The sample structure demonstrates substantial variation in internationalisation levels among countries. Some of them, like Brazil, show a complete absence of internationalised companies; others, such as the U.S. and Mexico, exhibit a balanced distribution. This reveals differing market orientations and approaches to international expansion strategies.

Table 2 presents the variables used in the analysis, along with their definitions and formulas. The dependent variables represent three different debt maturities considered in the analysis, while the explanatory variables capture firm growth, size, asset tangibility, profitability of assets and equity, financial liquidity, tax burden, operating risk, non-debt tax shields, and asset intangibility. The selection of variables relied on prior studies well established in the literature (Koralun-Bereźnicka *et al.*, 2024). This methodological approach enabled the comparability of findings. We performed the empirical analysis on an unbalanced panel, covering annual data from 2000 to 2023.

The dependent variable in this study was leverage, measured through ratios that reflected the proportion of debt in total financing. This focus enabled an assessment of how internationalisation affected the firms' reliance on external funding. Using the notations described in Table 2, the proposed model assumed the following form:

$$Y_{it} = f(X_{1it}, \dots, X_{10it}, Z_{1it}, \dots, Z_{12it}, \xi_{it}) \quad (1)$$

where the total respective amount of debt (D), long-term debt (LD), or short-term debt (SD) represents the endogenous variable Y. Table 2 describes the model's exogenous variables, $X_{1it}, \dots, X_{10it}$. Finally, the variables Z_1, …, Z_{12} are dummy variables which took the value of 1 when the company came

from the country selected or 0 in other cases, in the order given in Table 2. In the first step of the empirical analysis, we tested the stationarity of the panel series. We also used the fixed effects estimator and the random effects estimator. Then, we selected the best version of the model based on three tests. The first one, namely the joint significance test, allowed us to test whether the pooled ordinary least squares (OLS) method was adequate in favour of the fixed effects alternative. The second one, the Breusch-Pagan Lagrange multiplier test, let us check whether the pooled OLS method was adequate in favour of the random effects alternative. The third one, the Hausman test, showed whether the random effects model was consistent or whether the fixed effect model was more adequate. The subscript $_i$ denotes the number of the company under consideration, $_t$ means the number of the period (year), and ξ is the random component.

Table 2. Description of variables used in the analysis

Character	Symbol	Name	Formula
Dependent	D	Total debt	Total liabilities / total assets
	LD	Long-term debt	Long-term liabilities / total assets
	SD	Short-term debt	Short-term liabilities / total assets
Explanatory	GR	Firm growth	Revenue growth rate
	SIZE	Firm size	Ln (total assets)
	TANG	Asset tangibility	Tangible assets / total assets
	ROA	Profitability of assets	Net income / total assets
	ROE	Profitability of equity	Net income / equity
	LIQ	Financial liquidity	Current assets / current liabilities
	TAX	Tax burden	Gross profit / net profit
	RISK	Operating risk	EBIT growth rate
	NDTS	Non-debt tax shields	Depreciation / total assets
	ATRR	Asset intangibility	(Fixed assets – tangible assets) / total assets

Source: own study.

RESULTS AND DISCUSSION

The analysis provided clear evidence that internationalisation affects the debt financing patterns of construction companies in the Americas. Its influence is visible in the overall leverage, the maturity structure of debt, and the way firm- and country-specific factors translate into financing choices.

Table 3 presents the correlation coefficients among the variables. While some significant associations emerged, most relations proved weak, indicating that reliable inference required multivariate models. The regression analyses that followed provided more detailed insights.

Table 3. Correlation coefficients between variables

Vbr.	D	SD	LD	GR	SIZE	TANG	ROA	ROE	LIQ	TAX	RISK	NDTS	ATRR
D	1	*0.993*	*0.704*	-0.001	*-0.235*	*-0.037*	*-0.305*	0	-0.019	-0.006	0.001	-0.002	*-0.044*
SD		1	*0.461*	-0.001	*-0.216*	-0.033	*-0.31*	0.001	-0.017	-0.005	0.001	-0.03	*-0.04*
LD			1	-0.003	*-0.244*	*-0.052*	*-0.234*	-0.002	-0.026	-0.015	0.003	*0.058*	*-0.047*
GR				1	-0.007	0.015	0.001	0	-0.004	-0.003	*-0.877*	-0.011	0
SIZE					1	*-0.104*	*0.164*	-0.013	*-0.045*	0.035	-0.006	*-0.172*	*0.231*
TANG						1	0.024	0.016	*-0.102*	-0.002	-0.009	*-0.204*	*-0.51*
ROA							1	0.01	0.01	0.004	-0.001	*-0.094*	0.032
ROE								1	-0.006	-0.002	0	*-0.093*	-0.005
LIQ									1	-0.024	0.01	*-0.046*	-0.009
TAX										1	0.004	0	-0.007
RISK											1	0.016	0.002
NDTS												1	*0.284*
ATRR													1

Source: own study.

The models explaining debt measures underwent estimation first for the full sample and then for the two groups of countries – with and without internationalisation – as pooled models, including a dummy variable for internationalisation but without country-specific dummy variables. The internationalisation dummy proved significant only for the total debt measure. Due to the article's scope, we do not report the detailed results here. In the next step, we re-estimated these models for the same three groups of countries – the full sample and countries with and without internationalisation – as pooled models, this time incorporating country-specific dummy variables. However, we excluded the internationalisation dummy variable due to the excessive number of variables relative to the number of observations. In all cases, the pooled model proved the most suitable, as confirmed by the panel tests. Tables 4-6 show the results. Only variables that were statistically significant at least in one of the models appear in the tables.

Table 4 reports the determinants of total debt.

Table 4. Estimates of the panel regression of D with country-specific factors for the full sample

Variables	All companies	Internationalised	Non-internationalised
Const.	0.643***	0.479***	77.403***
GR	0.103***		
SIZE		0.014***	-5.684***
TANG	-0.177***	-0.169***	-13.799***
ROA	-0.123***		-0.032***
ROE	0.018***	-0.001**	
LIQ	-0.024***	-0.051***	
NDTS	-0.637*	-0.925**	
ATRR		0.065*	
ArgenMna		0.135***	
Brazil	0.197***		
Canada	0.073**	0.121***	
Columbia		-0.098***	
Costa Rica		-0.130***	
Ecuador	-470.661***		
Trinidad		0.105*	
R^2	0.161	0.336	0.159
DW	1.702	1.398	1.889
Joint significance test stat.	1.261	0.608	0.837
Breusch-Pagan test stat.	0.690	N.a.	N.a.
Hausman test stat.	21.774	13.537	18.822

Note: *)**)***) – statistical significance at the level of 0.1, 0.05, or 0.01; #) the null hypothesis rejected at the 0.05 significance level. The U.S. served as the reference country for the country-specific factors.
Source: own study.

Firm growth showed a positive association with leverage in the full sample, suggesting that expansion stimulates reliance on external funding. Yet, this link disappeared for both international and domestic firms when considered separately, pointing to heterogeneity in financing strategies. Firm size proved a decisive factor: for internationalised companies, it raised the leverage, reflecting their greater ability to access global capital markets, while for non-internationalised firms, the relationship was negative, consistent with the constraints of domestic credit systems. Asset tangibility reduced leverage in all groups, but internationalised firms showed a unique pattern: one can leverage intangible assets in financing, likely because global lenders recognise their collateral value. Profitability, measured by ROA, decreased leverage in most models, in line with the pecking order theory, but it was insignificant among internationalised firms, suggesting that access to diverse funding substitutes for internal resources. Differences in country-specific factors strengthened these observations, with several significant deviations among international firms but virtually none among domestic ones.

Table 5 focuses on short-term debt.

Table 5. Estimates of the panel regression of LD with country-specific factors for the full sample

Variables	All companies	Internationalised	Non-internationalised
Const	0.747***	0.625***	70.740***
GR	0.045***	0.025**	
SIZE	-0.010***		-5.224***
TANG	-0.501***	-0.494***	-12.424**
ROA	-0.094***		-0.035***
ROE	0.014***		-0.857*
LIQ	-0.038***	-0.060***	
NDTS	-0.648***	-0.553*	
ATRR	-0.430***	-0.381***	
ArgenMna	0.081***	0.216***	
Brazil	0.096***		
Canada	0.042*	0.047***	
Chile	0.027**	0.0172*	
Columbia		-0.036**	
Costa Rica		-0.036**	
Ecuador	-206.126***		
Jamaica		0.153**	
Mexico		-0.029**	
R^2	0.376	0.611	0.155
DW	1.652	1.066	1.914
Joint significance test stat.	1.032	0.881	0.901
Breusch-Pagan test stat.	0.011	N.a.	N.a.
Hausman test stat.	3.605	20.211	18.524

Note: *)**)***) – statistical significance at the level of 0.1, 0.05, or 0.01; #) the null hypothesis rejected at the 0.05 significance level. The U.S. served as the reference country for the country-specific factors.
Source: own study.

Growth positively related to short-term borrowing in internationalised firms, reflecting their greater access to credit for expansion, whereas no such effect emerged among domestic firms. Size reduced reliance on short-term debt in the full sample and in domestic firms, likely because larger firms can secure longer maturities. For internationalised companies, however, size was not a significant determinant, suggesting that the scale advantage operates mainly in the long-term segment. Tangibility consistently reduced short-term borrowing across all groups, supporting the view that tangible assets better align with long-term financing. Profitability, especially ROA, reduced short-term debt for the full sample and domestic firms but lost importance for internationalised ones. Liquidity similarly decreased short-term debt among internationalised companies, which can rely on internal resources, but was not significant for domestic firms. Non-debt tax shields and intangibility also mattered mainly for internationalised firms, while country-specific factors once again underlined the role of institutional environments in shaping access to short-term credit.

Table 6 addresses long-term debt.

The patterns here are distinct. For internationalised firms, size proved positively associated with long-term leverage, confirming that scale provides access to global financing instruments. In contrast, size negatively related to long-term debt for domestic firms, suggesting their preference for equity or internal funds when large enough. Tangibility showed opposing effects: it discouraged long-term borrowing among domestic firms but supported it for internationalised firms, where one can pledge tangible assets abroad. Profitability again reduced leverage for the full sample and domestic firms, but not for international ones, consistent with their broader financing choices. Non-debt tax shields and intangibility gained importance in internationalised firms, reflecting their ability to utilise diverse collateral and tax advantages. Finally, strong country-specific factors appeared only for internationalised companies, while domestic firms remained bound to local financing patterns.

Table 6. Estimates of the panel regression of LD with country-specific factors for the full sample

Variables	All companies	Internationalised	Non-internationalised
Const	4.245***	-0.138***	7.402***
GR		-0.035**	
SIZE	-0.284***	0.014***	-0.552***
TANG	-0.749**	0.322***	-1.076*
ROA	-0.059***		-0.092***
ROE	0.001**	-0.000**	
NDTS		0.899*	
ATRR		0.459***	
ArgenMna		-0.074***	
Brazil	1.410***		1.732***
Canada	-0.727*	0.070***	
Columbia		-0.057***	
Costa Rica		-0.202***	
Mexico		0.056***	
Trinidad		0.135**	
R^2	0.116	0.420	0.182
DW	1.949	1.525	1.966
Joint significance test stat.	1.054	0.563	0.754
Breusch-Pagan test stat.	N.a.	N.a.	N.a.
Hausman test stat.	23.718	11.633	15.381

Note: *)**)***) – statistical significance at the level of 0.1, 0.05, or 0.01; #) the null hypothesis rejected at the 0.05 significance level. The U.S. served as the reference country for the country-specific factors.
Source: own study.

Overall, the findings highlighted two contrasting financing logics. Internationalised firms pursue strategies shaped by scale, collateral diversification, and sensitivity to institutional environments. Their access to global markets enables them to secure long-term financing and to use both tangible and intangible assets in debt negotiations. Domestic firms, in contrast, remain constrained by limited financial depth, showing conservative borrowing patterns with greater reliance on short-term debt and stronger dependence on profitability and liquidity. These results suggest that internationalisation not only changes the indebtedness level but also alters the relevance of classical determinants of capital structure, while amplifying institutional influences.

CONCLUSIONS

This study demonstrated that internationalisation primarily influences debt financing decisions in the case of construction companies in the Americas, focusing on its role both as a determinant and as a moderating factor. The analysis provided insights into the unique financing behaviours of internationally active and non-internationalised firms within the construction sector, addressing the three proposed hypotheses.

The results provided partial support for H1, showing that internationalisation impacts the debt level. This aligns with the trade-off theory of capital structure, which suggests that international firms leverage the tax advantages and broadened access to diverse capital sources available on global markets. Larger, multinational construction firms typically fund extensive projects with long durations using stable, long-term financing, reflecting their capacity to manage associated risks and the need for liquidity across multiple currencies and jurisdictions. By contrast, non-internationalised firms, often constrained by limited financial market development and information asymmetry, show a preference for lower leverage and a dominance of short-term debt. This reflects their greater difficulty in accessing external financing and their higher sensitivity to local economic fluctuations. Moreover, the positive association between firm size and leverage among internationalised firms further supports the notion

that scale and international presence contribute to enhanced borrowing capacity. The negative or insignificant relationship for non-internationalised firms highlights the role of institutional and market constraints in domestic settings. Simultaneously, we confirmed no statistically significant impact after splitting debt into short- and long-term maturities. This suggests that the role of internationalisation becomes less pronounced when considering debt maturities separately.

The analysis supported H2, revealing that internationalisation moderates the impact of firm-specific factors on the capital structure. As suggested by the agency and trade-off theories, internationalisation alters risk profiles and financing opportunities, affecting how firm characteristics like size, profitability, and asset structure translate into debt financing decisions. For internationally active firms, the relationships between the capital structure and several firm-specific factors such as size, tangibility, and profitability differed considerably from those observed in non-internationalised firms. For instance, while size positively influenced long-term debt among internationalised firms, it had a negative impact on non-internationalised firms, likely reflecting the enhanced borrowing capacity of larger firms operating on global markets. Similarly, asset tangibility, which typically reduced reliance on debt for non-internationalised firms, positively influenced the use of long-term debt in internationally active firms, revealing the role of internationalisation in shaping collateral utilisation strategies.

The findings also supported H3, highlighting the significant role of country-specific factors in shaping the capital structure of internationally active construction firms, whereas such factors were negligible for non-internationalised firms. The differences in debt levels observed across countries likely stem from variations in financial systems, tax regulations, and market conditions. In contrast, non-internationalised firms, operating primarily within their domestic financial constraints, showed minimal variation attributable to country-specific factors. Institutional theory and empirical findings highlight that firms operating across multiple countries navigate varied legal, financial, and macroeconomic environments, which amplifies the role of country-level determinants in their capital structure choices.

To sum up, the results of this study align with the literature, which highlights the ambiguous nature of the relationship between internationalisation and capital structure, in particular company indebtedness. While some studies suggest that internationalisation leads to higher debt levels due to better access to global capital markets (Mansi & Reeb, 2002; Mittoo & Zhang, 2008), others indicate that increased risk and diversification can reduce reliance on debt (Reeb *et al.*, 1998; Burgman, 1996; Chung & Cheah, 2006). Our research implicates theory. The higher leverage observed among internationalised firms concurs with the trade-off theory, where the tax benefits of debt and access to diversified capital markets enable greater debt-incurring capacity. These firms often engage in long-term contracts requiring stable financing instruments, which explains the prominence of long-term debt in their capital structure. This supports the notion that a larger scale and geographical diversification reduce information asymmetries and address agency costs, as postulated by the agency theory. Conversely, domestic firms with no international exposure showed conservative financing patterns, characterised by lower overall leverage and the predominance of short-term debt. Such behaviour is consistent with the pecking order theory and reflects limited access to external capital, informational opacity, and heightened sensitivity to local financial market imperfections. The negative relationship between firm size and leverage among domestic firms suggests that institutional barriers on less developed markets may constrain growth opportunities. The influence of firm-specific factors, such as profitability, asset tangibility, and liquidity, and of country-specific factors underscores the critical interplay between microeconomic and macroeconomic determinants in shaping financing decisions. Particularly, the differential impact of asset tangibility on debt for international versus domestic firms highlights how collateral valuation and lender confidence vary across contexts.

These contrasting findings suggest the need for further research, as the industry-specific characteristics and market conditions of the construction sector shape financial decisions. The results of this research highlight the importance of internationalisation as a determinant and moderator of indebtedness for construction firms too. Both the country context and the internationalisation degree shape financing choices. Developed-market and internationalised firms rely more on debt and show more stable, diversified funding; in turn, developing-market and purely domestic firms main-

tain lower leverage and higher short-term debt. Although internationalisation emerged as a significant factor influencing total debt, its impact on debt maturity structures remained limited. Moreover, we observed some deviations from classical theory, for instance the lack of significant influence of profitability on debt among international firms. These deviations suggest that strategic financing decisions in internationalised firms incorporate a broader set of considerations including risk management, access to internal funds, and currency exposure.

From a theoretical viewpoint, the findings enrich the ongoing debate on capital structure by situating firm-level financial behaviour within the broader institutional and international frameworks. They call for integration of traditional financial theories with insights from institutional economics, international business, and strategic management, advocating a multi-dimensional approach to understanding financing strategies. In practical terms, construction firms aiming for international expansion should strategically balance the benefits of diverse funding sources against emerging risks, while policymakers on emerging markets could focus on developing financial infrastructures to support longer-term financing, thereby fostering competitiveness in the global arena.

Limitations and Future Research

When considering the study's results and their implications for managerial practice and policy, one should pay attention to certain limitations. First, we restricted the analysis to construction companies operating in 13 countries across the Americas, which limited the findings' generalisability to other regions. Second, the sample covered annual data from 2000 to 2023 and thus may have been sensitive to specific macroeconomic cycles, trends on capital markets, and policy changes over this period. Third, the research relied exclusively on firm-level financial statements, without incorporating qualitative information such as managerial decision-making processes or unique local regulatory contexts. Fourth, the model did not capture all possible determinants of the capital structure, including alternative financing sources or hybrid capital instruments. Fifth, considerable heterogeneity in the level of internationalisation and financial market maturity among the included countries may have affected the precision of cross-country comparisons. Finally, as the empirical analysis remained limited to the construction sector, one cannot readily extrapolate the results to other capital-intensive industries with different asset structures.

Future research could expand the analysis to include construction firms from other regions and sectors, enabling a broader generalisability assessment of the observed relationships. Integrating the above-mentioned qualitative data – such as managerial perspectives, strategic motivations, or institutional factors – could provide deeper insights. Next, longitudinal studies capturing the effects of changing macroeconomic conditions, policy environments, and market cycles could enhance the robustness of empirical findings. Finally, comparative analyses involving other capital-intensive industries, such as capital-intensive infrastructure, may clarify the sector-specific versus universal determinants of financing strategies among internationally active firms.

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Authors

The contribution share of authors is equal and amounted to 20% for each of them.

Justyna Bogołębska (corresponding author)

PhD in Management and quality sciences (2025, University of Lodz, Poland); Assistant Professor at the University of Lodz. Her research interests include finance, management, and internationalisation in companies.
Correspondence to: dr Justyna Bogołębska, University of Lodz, Department of Corporate Finance Management, Matejki 22/26, 90-237 Łódź, Poland. e-mail: justyna.bogolebska@uni.lodz.pl
ORCID https://orcid.org/0000-0002-37301849

Magdalena Gostkowska-Drzewicka

PhD in Economics (2010, University of Gdańsk, Poland); Lecturer at the University of Gdańsk. Her research interests include corporate finance, especially capital structure analysis.
Correspondence to: dr Magdalena Gostkowska-Drzewicka, University of Gdańsk, Department of Corporate Finance, Armii Krajowej 101, 81-824 Sopot, Poland. e-mail: magdalena.gostkowska-drzewicka@ug.edu.pl
ORCID https://orcid.org/0000-0002-4384-7711

Julia Koralun-Bereźnicka

Associate Professor at the University of Gdańsk (Poland). Post-doctoral degree (dr hab.) in Economics and Finance (2017, Wroclaw University of Economics and Business, Poland). Her research interests include corporate finance, corporate performance, and industry analyses.
Correspondence to: dr hab. Julia Koralun-Bereźnicka, prof. UG, University of Gdańsk, Faculty of Management, Department of Corporate Finance, Armii Krajowej 101, 81-824 Sopot, Poland. e-mail: julia.koralun-bereznicka@ug.edu.pl
ORCID https://orcid.org/0000-0003-4498-0381

Ewa Majerowska

Associate Professor at the University of Gdańsk (Poland). Post-doctoral degree (dr hab.) in Economics and Finance (2020, Wrocław University of Economics and Business, Poland). Her research interests include portfolio analysis, capital market investment risk analysis, and corporate finance with advanced econometric methods.
Correspondence to: dr hab. prof. UG Ewa Majerowska, University of Gdańsk, Department of Corporate Finance, Armii Krajowej 101, 81-824 Sopot, Poland, e-mail: ewa.majerowska@ug.edu.pl
ORCID https://orcid.org/0000-0003-0991-3714

Anna Wojewnik-Filipkowska
Associate Professor in Management at the University of Gdańsk (Poland). Her research interests include finance, management, and sustainable development.
Correspondence to: dr hab. prof. UG Anna Wojewnik-Filipkowska, University of Gdańsk, Department of Investment and Real Estate, Armii Krajowej 101, 81-824 Sopot, Poland, e-mail: anna.wojewnik-filipkowska@ug.edu.pl
ORCID https://orcid.org/0000-0003-4715-6101

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Conflict of Interest

The authors declare that the research took place in the absence of any commercial or financial relationships which one could construe as a potential conflict of interest.

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Organisational culture, business model design and performance: Does ambidexterity play a role?

Blendi Gerdoçi, Marco Cucculelli, Daniela Lena

ABSTRACT

Objective: The article aims to explore the relationships between cultural and innovation ambidexterity and novel business model design (NBMD) and trace their influence on business performance in the context of transition economies.

Research Design & Methods: We adopted a cross-sectional survey design using data collected in 2019 from 175 managers and owners of Albanian firms across nine knowledge-intensive sectors. We employed structured questionnaires with validated multi-item Likert scales to measure constructs like ambidexterity, NBMD, and performance, followed by rigorous validity and reliability checks (CFA). The analysis used covariance-based structural equation modelling (SEM) with bootstrapping to test hypothesised relationships and assess indirect effects.

Findings: Our study demonstrates that new business model design can capture the value created by organisational culture and innovation ambidexterity. More specifically, we found a chain relationship between ambidextrous organisational culture, innovation ambidexterity, novel business models, and business performance. These results support the view that, as a dynamic capability, ambidexterity affects performance indirectly through NBMD, while the performance outcomes of cultural ambidexterity are mediated by factors such as innovation ambidexterity and NBMD.

Implications & Recommendations: We identified NBMD as a design theme aligned with contextual ambidexterity that can capture the value-creation potential of this form of innovation ambidexterity. Managers should consider adopting an NBMD when pursuing innovation ambidexterity, while government and development agencies should consider providing grants to start-ups experimenting with novel business models.

Contribution & Value Added: This study represents one of the few attempts to investigate the relationships between organisational culture, capabilities and business models, contributing to the literature that focuses on identifying business models that can support paradoxical strategies, including ambidexterity.

Article type: research article

Keywords: innovation; ambidexterity; business model design; organisational culture; business performance; transition economies

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INTRODUCTION

Researchers have studied ambidexterity extensively and recognised its importance for improving short- and long-term organisational performance (PERF) (Jansen *et al*., 2008; Ochie *et al*., 2022). Scholars define ambidexterity as an organisational capability to deal with opposing tensions, including alignment vs adaptability, comfort of the past vs uncertainty of the future, flexibility vs efficiency, and exploitation vs exploration of knowledge (March 1991; Tushman & O'Reilly, 1996). Scholars commonly recommend the pursuit of ambidexterity to improve both long-term viability as

well as short-term profit and revenue maximisation (Birkinshaw *et al*., 2016; Brix, 2019; Mura *et al*., 2021). Given the concept's versatility, ambidexterity has attracted the attention of scholars in various disciplines, ranging from technology innovation (Akbari *et al*., 2025), strategic management (Jansen *et al*., 2008), dynamic capabilities (van Lieshout *et al*., 2021), organisation learning (March, 1991; Duan *et al*., 2022), and organisational change (Bell & Hofmeyr, 2021).

Several scholars focus on organisational culture as an antecedent to ambidexterity and emphasise its role in creating a dynamic organisational ecosystem that supports an organisation's ability to manage change, seize opportunities, and achieve growth in a dynamic business environment. In their seminal work, Wang and Rafiq (2014) propose the concept of 'ambidextrous organisational culture' (CULAD), which integrates two core values, *i.e.*, organisational diversity (OD) and shared vision (SV), as the foundation for contextual ambidexterity: fostering diversity in the workplace encourages exploratory action while shared vision contributes to a common understanding and implementation of organisational goals. However, despite the emphasis on promoting both OD and SV, the existing literature on ambidexterity has two major drawbacks, as it often examines one dimension of CULAD and focuses only on developed economies. Therefore, investigating the role of CULAD as an antecedent of contextual ambidexterity in a post-communist transition economy such as Albania, characterised by a collectivist culture and acceptance of power structures, which translates into the prevalence of hierarchical managerial practices within business organisations (Vajjhala & Strang, 2014), is of considerable empirical relevance.

Based on O'Reilly and Tushman (2008), the literature often emphasises that ambidexterity as a dynamic capability does not directly lead to competitive advantage. To capture the value and convert it into revenue streams, Teece *et al*. (2020) propose a four-step approach that identifies business model (BM) change as a mechanism to transform the value created by dynamic capabilities into sustainable competitiveness. With regard to ambidexterity, Kringelum and Gjerding (2018) argue that business model innovation (BMI) acts as an effective mechanism for balancing exploitation and exploration. Thus, given the challenges posed by BMI (Zott & Amit, 2010), developing an initial BM design that is compatible with ambidexterity is critical for a business organisation. In this context, a specific template, scholars proposed the novelty-centred business model design (NBMD). It is considered an optimal design for companies that strive for innovation ambidexterity (INNAD) and balance exploitative and explorative innovation activities to achieve sustainable performance (Božič & Dimovski, 2019). In this study, we aimed to test whether INNAD and CULAD align with NBMD.

After testing the initial hypotheses, we investigated the mediating roles of INNAD and NBMD in the relationship between CULAD and PERF, as well as the mediating effect of NBMD in the relationship between INNAD and PERF. Although prior research has addressed the mediation between CULAD and PERF, the role of business models as mediating mechanisms that enable both CULAD and INNAD to translate into performance gains remains underexplored.

We tested the hypotheses using survey data from a sample of 175 Albanian companies surveyed in 2019. Notably, the World Economic Forum's report for 2019 classifies Albania as an 'efficiency-driven economy.' Even though the economy has improved overall, the market environment is still characterised by persistent uncertainty. Such a context can be insightful for studying ambidexterity. Scholars see the pursuit of organisational ambidexterity in a turbulent business environment as a means of transforming organisations while maintaining competitiveness in the face of market uncertainties (Alkaabi *et al*., 2024).

As a preview of the results, the study shows that CULAD has a moderate positive effect on contextual ambidexterity, a form of INNAD. In turn, contextual ambidexterity has a positive effect on NBMD and, thus, on PERF. The results of the study align with the arguments of various researchers and support the notion that ambidexterity, like other dynamic capabilities, has an indirect rather than a direct effect on performance. Finally, the indirect effect of CULAD on PERF underscores the mediating role of factors such as INNAD and NBMD in translating ambidextrous culture into performance gains.

This study makes three contributions to this research topic. Firstly, it improves our understanding of the mechanisms for supporting the pursuit (*i.e.*, CULAD) and harnessing its potential (*i.e.*, NBMD) of INNAD in the context of a transition economy. Secondly, by corroborating the relationship between ambidexterity and NBMD, it responds to Wilden *et al*.'s (2018) call to examine how exploration and

exploitation are configured across organisational boundaries, and Smith *et al*.'s (2010) and Stoiber *et al*.'s (2022) call to identify business models that support strategies such as ambidexterity. Thirdly, the study establishes a comprehensive framework that links CULAD, INNAD, NBMD, and PERF by analysing a unique sample of knowledge-intensive service and manufacturing firms.

The article is structured as follows: Section 2 reviews the literature on CULAD, INNAD, and NBMD and presents the hypotheses. Section 3 provides information on the dataset used and explains the methodology applied, the covariance-based structural equations with maximum likelihood estimator (ML-SEM) approach. Section 4 provides an assessment of both the measurement and structural models, followed by the presentation of the results. Finally, in the last section, we discuss theoretical and practical implications and draw conclusions.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Concepts and Definitions

Ambidextrous Organisational Culture

According to Wang and Rafiq (2014), CULAD effectively balances two complementary components: OD and SV. OD refers to a system of values and norms that promotes, acknowledges, and rewards diversity in individuals' perspectives, skills, and knowledge. In doing so, it cultivates creative thinking, autonomy, and innovative behaviour, and supports exploratory learning. On the other hand, SV is defined as a 'set of values and norms that encourage the active participation of organisational members in the development, communication, dissemination and implementation of organisational goals' Wang and Rafiq (2014, p. 62). We should see both dimensions as complementary and mutually reinforcing. Maintaining a balance between OD and SV is crucial to avoid focusing too much on one dimension at the expense of the other and thus falling into the trap of solving problems only with known solutions or steering individuals in different directions when tackling problems (Wang & Rafiq, 2014).

Innovation Ambidexterity

From an organisational learning perspective, INNAD means striking a balance between exploitative and exploratory innovation activities to introduce both incremental and radical innovations that ultimately lead to sustainable and improved performance (Božič & Dimovski, 2019; Nakandala *et al*., 2024). Exploratory innovation, usually considered to be synonymous with radical innovation, focuses on identifying new market opportunities and developing new knowledge for a firm's long-term survival (Asiaei *et al*., 2023). In contrast, exploitative innovation, which is associated with incremental innovation, aims to expand the company's current competitive advantage through efficient management of existing resources, capabilities, and skills (De Silva *et al*., 2022).

Both exploratory and exploitative innovation contribute to PERF, which shows the importance of maintaining a balance between them (Farzaneh *et al*., 2022). An overemphasis on exploratory innovation can lead to risks of obsolescence and additional costs due to failed attempts and dissatisfied consumers, whereas an exclusive emphasis on exploitative innovation may lead to the company falling into the capability trap and not being able to adapt flexibly enough to the market (March, 1991).

The theory of innovation ambidexterity proposes various solutions to the paradox of exploitation and exploration, which include balancing, combining, and simultaneously developing explorative and exploitative innovation activities (Duan *et al*., 2022). This theory posits that firms can achieve ambidexterity either through sequential ambidexterity, *i.e.*, temporarily separating exploration and exploitation activities over time or through structural ambidexterity, *i.e.*, these activities are divided across different departments or units (Ossenbrink *et al*., 2019). Finally, the ability of a firm to concurrently engage in both exploitative and explorative innovation, referred to as contextual ambidexterity, represents an alternative means of achieving such a balance (Duan *et al*., 2022; Farzaneh *et al*., 2022).

Novel Business Model Design

In contrast to traditional product and process design, BM design focuses on the way companies do business, including activities that span organisational boundaries. The activity system perspective of

BM, formulated by Zott and Amit (2010), illustrates the importance of the purposeful integration of interdependent activities conducted by the company or its partners. The system comprises three design elements: *i.e.*, content (which activities to include), structure (how the activities relate to each other), and governance (who executes the activities).

Amit and Zott (2010) proposed four themes for BM design: novelty-centred, efficiency-centred, complementarity, and lock-in. Among these, NBMD has attracted the attention of researchers because it is a powerful design theme for developing a business that enables value creation and capture by innovating existing transactions in novel ways (content), reorganising transaction participants and activities (structure), or introducing new methods for managing transactions (governance) (Zott & Amit, 2007; 2008; 2010).

Research Hypotheses

Academic research recognises the challenges and complexities that organisations face in pursuing INNAD. In particular, research has focused on two main contexts, *i.e.*, the organisation's internal and external environment. From an internal perspective, many studies have confirmed the positive relationships between INNAD and various internal factors, including corporate governance, leadership, and employee characteristics (Zang & Li, 2017; Liu *et al*., 2019; Berraies & Ben Rejeb, 2021). From an external environment perspective, scholars have highlighted the significant effect of factors such as environmental uncertainties and institutional circumstances on INNAD (Wiratmadja *et al*., 2020).

Recent studies have investigated the impact of individual components of CULAD, *i.e.*, OD or SV, on INNAD. For instance, OD, including team heterogeneity and top management team diversity, enhances INNAD (Zhang *et al*., 2021). Similarly, studies have linked SV and beliefs that promote a collectivist culture and cultural embeddedness to the promotion of INNAD. Wang and Rafiq (2014) emphasise the complementary nature of OD and SV, arguing that both dimensions of CULAD jointly facilitate the integration and balance of exploration and exploitation required for contextual ambidexterity. Therefore, we hypothesise the following:

H1: Ambidextrous organisational culture (CULAD) positively affects innovation ambidexterity (INNAD).

Recent studies suggest that successful product innovation, such as incremental and radical product innovation, is also the result of a well-established CULAD. More specifically, OD stimulates individuals to think creatively and to act autonomously and innovatively, thereby fostering new managerial approaches and novel solutions (Wang & Rafiq, 2014). Furthermore, diversity facilitates the acquisition of information about new technologies (Khanagha *et al.,* 2014) and new market trends (Bock *et al*., 2012). Such a propensity to novelty can affect the way firms do business. On the other hand, an SV that promotes the sharing of knowledge and information within an organisation may facilitate the development of new BMs by conferring unity and discipline to organisation members' actions in implementing a novel BM. All these arguments and research findings regarding the two dimensions of CULAD are consistent with the novel nature of the design elements that form the activity system of NBMD (Zott & Amit, 2010). Based on this rationale, we hypothesise that CULAD is consistent and compatible with the activity system of NBMD. Therefore, we hypothesise the following:

H2: Ambidextrous organisational culture (CULAD) positively impacts the novel business model design theme (NBMD).

Consistent with Teece's (2007) sensing, seizing, and reconfiguring framework, scholars conceptualise ambidexterity as a dynamic capability (O'Reilly & Tushman, 2008; Carter, 2015). In the context of business model design, Amit and Zott (2016) argue that the sensing and seizing capabilities foster NBMD. This logic implies a positive association between INNAD and NBMD. It also agrees with dynamic capabilities research suggesting a reciprocal relationship between a firm's dynamic capabilities and its chosen business model (Teece *et al*., 2020).

Using a more granular line of reasoning and focusing specifically on contextual ambidexterity, we can identify an alignment between contextual ambidexterity and NBMD. Stoiber *et al*. (2022) argue that simultaneously pursuing explorative and exploitative innovation reduces structural

barriers and cultural inertia, enabling organisations to discover new opportunities and develop disruptive BMs. Among the design themes, NBMD fits well with contextual ambidexterity outcomes. As noted by Amit and Zott (2016), the NBMD requires managers and the organisation to stay alert in response to signals from the environment to sense and seize opportunities, indicating a propensity to change and avoid path dependencies.

Finally, some empirical studies corroborate these arguments by explaining the mechanism by which exploration and exploitation are balanced. For example, Karmeni *et al*. (2021) demonstrated that the NBMD can facilitate the transition from exploration to exploitation among small and medium-sized enterprises (SMEs), providing further evidence of the compatibility between INNAD and NBMD. Thus, based on the dynamic capability framework, the alignment argument presented above and the recent empirical research, we hypothesised the following:

H3: Innovation ambidexterity (INNAD) positively impacts the novel business model design theme (NBMD).

Research has firmly established that organisations leverage innovative BM designs to achieve superior performance and gain a competitive advantage (Zott & Amit, 2007; 2008). The reason lies in the capacity of this design to create and capture value. Compared to lock-in, complementarity, and efficiency designs, this BM design has some advantages since it emphasises value creation, while the other designs focus more strongly on value capture (Almeida Costa & Zemsky, 2021). It helps organisations capture the interest of a new client base by capitalising on new ideas, original designs, and innovative technologies, *i.e.*, creating more value (Jin *et al*., 2022). However, Chesbrough and Rosenbloom (2002) argued that this design also performs very well in translating technological innovation into performance gains, highlighting the value capture potential of such a design. Therefore, based on these arguments and following various studies that have already demonstrated the positive effects of NBMD on performance (*e.g.*, Zott & Amit, 2007, 2008; Gronum *et al*., 2016; Gerdoçi *et al*., 2018), we decided to retest this hypothesis to confirm previous empirical research. Thus, we hypothesise:

H4: The novel BM design theme (NBMD) positively impacts business performance (PERF).

The Mediating Role of Innovation Ambidexterity and NBMD on Performance

The norms and values embedded in CULAD promote originality and entrepreneurial behaviour among employees and encourage innovative solutions (Spraggon & Bodolica, 2017). This culture makes it easier for employees to reconcile different perspectives with existing knowledge and pursue creative ideas in line with organisational goals (Wang & Rafiq, 2014). While prior research has explored the mediating role of innovation ambidexterity between CULAD and firm performance, our study advances this line of inquiry by examining the mediating roles of both innovation ambidexterity and novel BM design. We hypothesise that the INNAD and NBMD serve as sequential mediators for CULAD to achieve performance gains.

M1: Innovation ambidexterity (INNAD) and novel BM design (NBMD) mediate the relationship between ambidextrous organisational culture (CULAD) and business performance (PERF).

Notably, INNAD plays a crucial role in achieving competitive advantage by creating a balance between immediate gains and long-term development (Cheng *et al*., 2023), leading to improved business performance, growth, and competitive advantage (Wang & Fang, 2021). However, the mechanisms underlying this effect on PERF have yet to be fully understood. We hypothesise that NBMD serves as a vital value capture mechanism. We find support for this in the theoretical arguments of technological innovation and dynamic capabilities, *i.e.*, the need for a BM to capture the value generated through innovation (Chesbrough & Rosenbloom, 2002), and the notion that dynamic capabilities, such as ambidexterity, affect performance indirectly (Zott, 2003; Teece *et al*., 2020). Therefore, we hypothesise:

M2: Novel BM design (NBMD) mediates the relationship between innovation ambidexterity (INNAD) and business performance (PERF).

Figure 1 illustrates our model. The dotted lines (M1 and M2) represent our hypotheses for serial mediation via INNAD and NBMD, as well as mediation via NBMD, while the other hypotheses (H1, H2

H3, and H4) represent the direct effects.

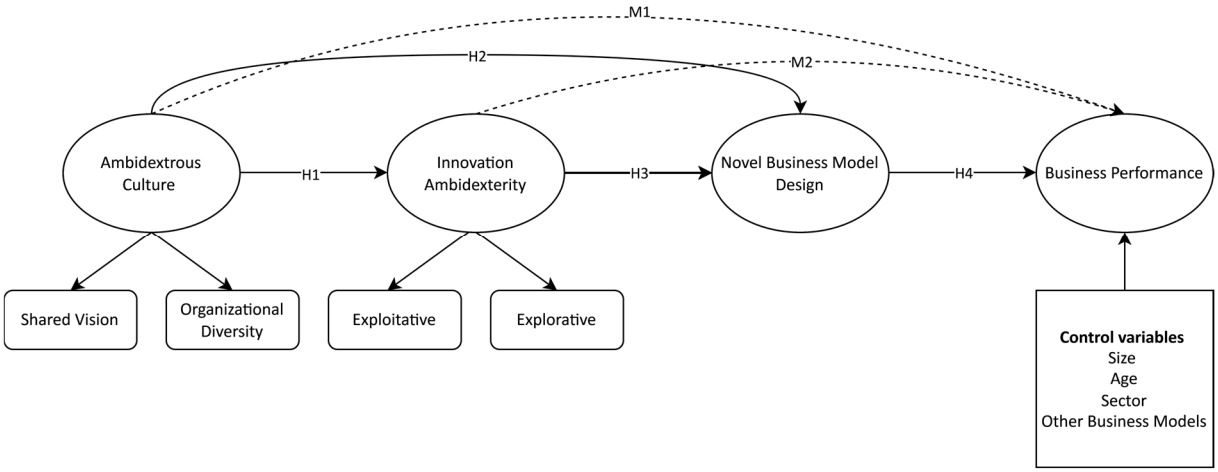

Figure 1. Model and hypotheses
Source: own elaboration.

RESEARCH METHODOLOGY

Data Collection and Sampling

We obtained the data in the second half of 2019 from managers and owners of companies in Durres and Tirana, the two most important regions in Albania in terms of economic activity, which are home to 41% of all companies (INSTAT, 2019). We obtained the randomly selected sample from a database of all limited liability firms operating in nine sectors with medium to high knowledge intensity.[1] The sample was heterogeneous, comprising 28.4% of manufacturing, 2% of mining, and the rest of service companies.

The selection of knowledge-intensive firms aimed to capture better and investigate both the phenomena of BM innovation and ambidexterity. Despite such a focus on knowledge-intensive sectors, there was sufficient variability in terms of technology intensity, which helped mitigate potential industry-specific biases (around 80% of cases were below medium levels of R&D, while the rest displayed medium or high levels of R&D). Technology intensity refers to the level of research and development (R&D) investment relative to a given industry's economic output. The OECD's taxonomy of economic activities based on R&D intensity classifies industries into five groups according to the ratio of R&D expenditure to gross value added. Unlike earlier classifications, it encompasses both manufacturing and non-manufacturing sectors, including services, agriculture, and mining (OECD, 2005; Galindo-Rueda & Verger, 2016).

Survey Design and Administration

We developed the questionnaire from the original scales in English. The process included independent translations and a pre-test with several companies.

We administered most questionnaires (62%) through in-person interviews conducted by four trained researchers. We also provided the researchers with written guidelines on how to conduct the interview with the company managers.

The active response rate was approximately 44.4%. To ensure that non-response bias was not a problem in our dataset, we examined potential variations within the existing dataset by comparing early respondents with late respondents. The test holds, and there was no difference between the group organisations' attributes, such as the number of employees, age, or respondents' attributes, such as the number of years of experience in a managerial position (with a p-value range between p=0.12 and p=0.47 for the $\chi 2$ test).

[1] We used the Statistical Classification of Economic Activities (NACE) (European Commission, 2008) to identify sectors with medium to high knowledge intensity.

Measures, Operationalisation, and Data Diagnostics

We measured firm performance (PERF) using five key factors: sales, market share, cash flow, profit, and return on investment (Slater & Olson, 2000; Delaney & Huselid, 1996). Regarding the NBMD variable, we measured it using the original scale developed by Zott and Amit (2007, 2008), which consists of ten items. Following Wang and Rafiq (2014), we conceptualised CULAD as a second-order factor consisting of the components SV and OD. Moreover, we operationalised OD using the three-item scale of Ferner *et al*. (2005), and SV using the four-item scale of Sinkula *et al*. (1997) and Patterson *et al*. (2005), as reported by Wang and Rafiq (2014). Following Liao *et al*. (2018), we conceptualised INNAD as a second-order variable composed of explorative (ERI) and exploitative innovation (EII). We operationalised these two components using the original seven- and six-item scales of Jansen *et al*. (2006) (see Table A.1 in Appendix A).

We measured all constructs using self-reported items rated on a seven-point Likert scale. We included several controls at the company and sector level in the model. Following previous research (*e.g.*, Zott & Amit, 2008; Brettel *et al*., 2012), we controlled for the effect of the log-transformed number of employees (*i.e.*, firm size) and the firm's operational age, expressed as the natural logarithm of years since establishment. We also controlled for the adoption of the different BMs by the firms, using the operationalisation of Pucci *et al*. (2017). We identified three types of business models using a multinomial variable: novel, efficient, and new market business models, thus controlling for the effect of other BMs. Finally, following Brettel *et al*. (2012), we accounted for sector heterogeneity by including a binary variable distinguishing manufacturing from service firms.

To strengthen data reliability, we conducted both ex-ante and ex-post checks for common method bias. This was necessary, as a single respondent, typically the proprietor or a senior manager, represented each firm. Following Podsakoff *et al*. (2003), we pre-tested the questionnaire with experts and managers to avoid misleading questions and ensured respondents' anonymity. Moreover, the common latent factor analysis showed that the difference between standardised regression weights of the unconstrained model and those of the constrained one was minimal (below 0.057) (see Table B.5 in Appendix B).

The characteristics of our dataset also comply with those of a normal distribution, which is essential when using covariance-based structural equations with maximum likelihood estimator (ML-SEM) (Kline, 2011). All skewness values were within the range (-2 and +2), except for just one below the threshold of -2 (-2.085). Similarly, kurtosis levels were also mild, indicating that every item had a univariate normal distribution.

We further examined the dataset for missing data, unengaged responses, and outliers (Kline, 2011). The proportion of missing data did not exceed 1% for any construct. Little's test showed that our data were missing completely at random (p-value > 0.05). Thus, for latent factors, we used the mode of the surrounding values to impute missing values. We removed one case of unengaged responses since the standard deviation of latent factors was 0; for the rest of the cases, the standard deviation was around 1. We detected and removed thirteen univariate outliers using the modified Z-score approach (Iglewicz & Hoaglin, 1993). We identified multivariate outliers via Mahalanobis distance and excluded twelve cases from the analysis (Kline, 2011). Cook's distance indicated no influential outliers. The resulting final sample comprised 175 firms.

The assumption of multivariate kurtosis was not fully satisfied, despite acceptable multivariate skewness. To ensure robustness, we performed bootstrapping to validate the model and confirm the statistical significance of the estimates.

Survey Sample Properties

The final sample consisted of 63.4% micro and small organisations and 36.6% medium and large firms (see Table 1). Approximately 48% of the firms were less than ten years old, 34% were between 11 and 20 years old, and the remainder were over 20 years old. In terms of industry, 28.6% operated in manufacturing, while the majority (72%) belonged to seven service sectors.

Table 1. Sample descriptives

Characteristics	Valid %; Full sample; (N = 201)	Valid %; Sample without outliers (N = 175)
Sector		
Manufacturing	29.4%	28.6%
Services	70.6%	71.4%
Size of firm		
Micro/Small	62.1%	63.4%
Medium/Large	37.9%	36.6%
Number of employees		
1-9 employees	25.9 %	25.7%
10-49 employees	36.2 %	37.7%
50-249 employees	29.4 %	30.9%
More than 250 employees	8.5%	5.7%
Firm's age		
Ten or less than ten years old	45.8%	48%
11-20 years	34.8%	34.3%
Over 20 years	19.4%	17.7%

Source: own study.

Assessment of the Measurement Model

We first conducted a confirmatory factor analysis (CFA) for the model comprising first-order variables and then a pooled CFA comprising two second-order variables and two first-order variables (Koufteros *et al*., 2009). We tested item validity, internal consistency reliability, and convergent and discriminant validity for both models.

To ensure the validity of our self-assessed, multi-item variables, we checked the loading of the items in each construct. The SV and OD items loaded reasonably high, while six items for NBMD, one for PERF, four for ERI, and three for EII were removed because of low loadings, cross-loadings, and the indication of reliability analysis (Kline, 2011) (see Table B.1 in Appendix B).

CFA model fit statistics were adequate. Chi-square analysis shows that the two models (*i.e.*, first and second order) were not significantly different in terms of fit ($\Delta\chi 2 = 6.599$, $\Delta df = 5$, $p = 0.25$) (see Table B.2 in Appendix B). However, as indicated by Koufteros *et al*. (2009), considering that our second-order model rivals the first-order one, the second-order model constituted the most suitable option.

When estimating the first-order factor model, all retained indicators achieved loadings above the 0.60 threshold, thereby confirming acceptable item validity. In the second model comprising second-order factors, one sub-construct, OD, had a lower loading of 0.55 (see Table B.1 in Appendix B). However, such loading was within the threshold suggested by Hair (2010). Furthermore, the CFA results for both models indicated that the maximum shared variance (MSV) values were lower than the corresponding AVE values (see Tables B.3 and B.4 in Appendix B). In addition, both the AVE values and their square roots exceed the inter-construct correlations, thereby supporting discriminant validity.

To assess construct consistency, we examined Cronbach's alpha, the average variance extracted (AVE), and composite reliability. The Cronbach's alpha values for all first-order constructs were above 0.70. The different outer loadings showed good composite reliability values above 0.796 for first-order factors and above 0.706 for second-order factors (see Table B.3 in Appendix B). In addition, all constructs reported AVE values above the recommended 0.50 threshold (Hair, 2010), supporting convergent validity. Each sub-dimension of the two second-order constructs displayed a significant association with its higher-order factor, confirming the appropriateness of conceptualising and modelling CULAD and INNAD as second-order constructs. Finally, the Bollen-Stine bootstrapping procedure returned a p-value greater than 0.05, indicating that our model fit the data.

Assessment of the Structural Model

Firstly, we assessed model fit and examined linearity. The curve estimations for all the relationships in our model were linear. The fit statistics were good ($\chi2/df = 1.509$ ($\chi2 = 369.806$; $df = 245$); CFI = 0.941; RMSEA = 0.054, Pclose = 0.268; SRMR = 0.063) (Hair, 2010). In addition, the Bollen-Stine bootstrap procedure returned a non-significant p-value ($p > 0.05$), indicating that the model specification was acceptable.

To further assess whether INNAD and CULAD operate as higher-order constructs, we tested a competing model where OD and SV directly predicted EII and ERI. Similarly, EII and ERI were linked to NBMD rather than as components of INNAD. The chi-square statistics of this competing model were $\chi2 = 413.936$, df=235, much worse than the model comprising second-order variables (*i.e.*, higher chi-square statistic and fewer degrees of freedom). These outcomes offered additional evidence that the use of higher-order constructs was warranted.

RESULTS AND DISCUSSION

Direct Effects

Table 2 shows the results of the hypothesised relations, unstandardised coefficients, their respective standard errors, standardised coefficients, and the critical ratio.

Table 2. Structural model results for the direction effect

Hypothesis	Path	Est.	SE.	St.est.	CR.	P
H1	CULAD → INNAD	0.409	0.192	0.283	2.128	0.033
H2	CULAD → NBMD	0.218	0.123	0.206	1.769	0.077
H3	INNAD → NBMD	0.363	0.092	0.494	3.955	***
H4	NBMD → PERF	0.474	0.111	0.353	4.289	***

Note: cultural ambidexterity (CULAD), innovation ambidexterity (INNAD), firm's performance (PERF), novel business model design theme (NBMD); '***' $p < 0.001$.
Source: own study.

As illustrated in Figure 2, CULAD exerted a moderate positive effect on INNAD ($\beta = 0.283$, $p < 0.05$), supporting H1. However, its direct effect on NBMD was not statistically significant ($\beta = 0.206$, $0.05 < p < 0.10$), although the coefficient remained positive and in the hypothesised direction. Thus, H2 was not fully supported. Moreover, INNAD showed a strong positive effect on NBMD ($\beta = 0.494$, $p < 0.001$), confirming H3. Finally, NBMD positively affected PERF ($\beta = 0.353$, $p < 0.001$), supporting H4.

Mediating Effects

We assessed mediation using the approach proposed by Zhao *et al*. (2010), who recommend applying bootstrapping to test the significance of indirect effects alongside the direct effect. The results showed that the direct effects of CULAD on NBMD and PERF, as well as the direct effect of INNAD on PERF, were not significant, whereas the corresponding indirect effects were significant (see Table 3). This provided support for the serial mediation hypothesis (M1). Likewise, the analysis above indicated that INNAD did not affect PERF directly, but the indirect effect through NBMD was significant, supporting hypothesis M2.

Table 3. Results of the mediation analysis

Hypothesis	Path	Indirect effect estimate	p-value	Type of mediation
M1	CULAD → INNAD → NBMD → PERF	0.059	0.024	Serial indirect-only mediation
M2	INNAD→ NBMD → PERF	0.176	0.022	Indirect-only mediation

Note: cultural ambidexterity (CULAD), innovation ambidexterity (INNAD), firm's performance (PERF), novel business model design theme (NBMD).
Source: own study.

The results for the control variables, presented in Table C.1 of Appendix C, indicated that firm size positively affects PERF (β = 0.325, p<0.001). Further, adopting other business models negatively affected INNAD and PERF (respectively, β = -0.279, p<0.01; β= -0.121, p = 0.1), although the results for the latter were not robust. Firm's age positively affected PERF (β = 0.188, p<0.05). Finally, operating in the manufacturing sector negatively affected PERF (β = -0.121, p< 0.1). All other control effects were non-significant.

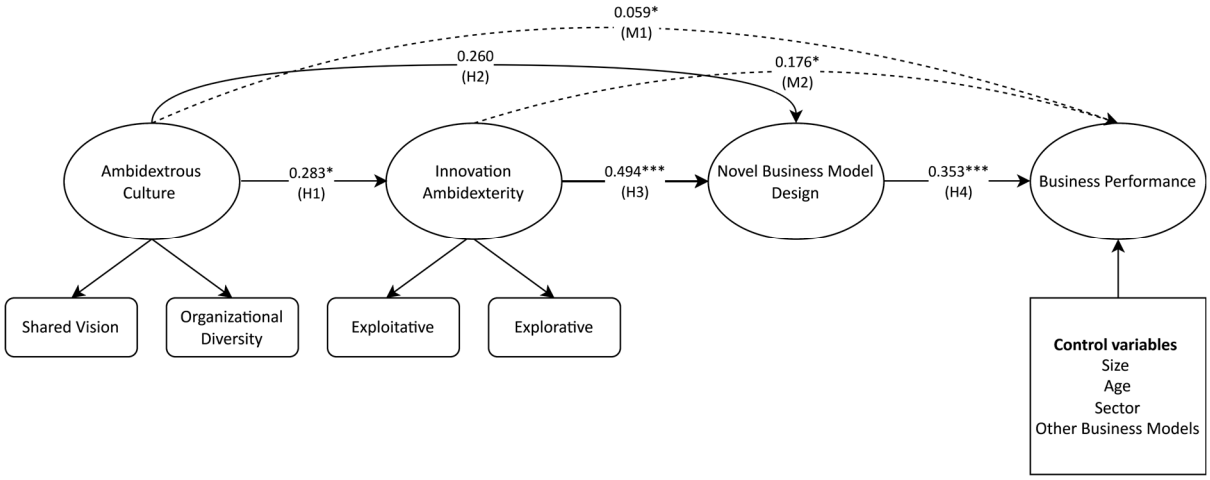

Figure 2. ML SEM results
Note: significant code: '***' p<0.001; '**'p< 0.01; '*'p< 0.05.
Source: own elaboration.

Discussion

Our findings regarding the INNAD-NBMD relationship provide empirical evidence for the proposed argument that NBMD, with its novel activities, structure, and governance (Zott & Amit, 2010), provides a good fit for contextual ambidexterity, a form of INNAD, that requires flexibility at organisational and individual (worker) level, *i.e.*, the adaptation of the organisational context and elimination of structural barriers (Stoiber *et al*., 2022). Furthermore, from a dynamic capabilities perspective, our results indicate that INNAD might drive the BM design choices (O'Reilly & Tushman, 2008). As indicated by O'Reilly and Tushman (2008), changing rigid hierarchical structures or routine-based processes and avoiding path dependencies to use the ambidexterity capability effectively requires the alignment of the firm's BM. In this study, we empirically showed that NBMD is very compatible with this form of ambidexterity. From a network perspective, given the boundary-spanning nature of BMs, our findings on the relationship between INNAD and NBMD provide some validation, albeit without exploring the mechanisms, for the propositions of Wilden *et al.* (2018) and other authors (*e.g.*, Lucena & Roper, 2016) that optimising conflicting aspirations of exploration and exploitation can arguably be achieved across organisational boundaries through partners, suppliers or customers. Finally, these results corroborate recent empirical research that points to NBMD as a mechanism that can balance exploration and exploitation (Karmeni *et al*., 2021), especially among SMEs, in contrast to some other researchers who assume that the implementation of such strategies requires competing, separate BMs (*e.g.*, O'Reilly & Tushman, 2013).

The results of our mediation analysis for the INNAD-NBMD-PERF chain relationship support our hypothesis of only indirect mediation. From the perspective of technological innovation, our results show that NBMD constitutes an excellent mechanism for capturing the value created by INNAD. This provides further evidence for Chesbrough and Rosenbloom's (2002) argument that a BM is required to appropriate the value created through innovation and convert it into a profit stream. From a dynamic capabilities perspective, our findings are consistent with numerous arguments suggesting that dynamic capabilities influence firm performance indirectly (*e.g.*, Zott, 2003; Teece *et al*., 2020). Finally, the study results are consistent with much of the empirical work that identifies NBMD as a value driver of PERF (e.g., Zott & Amit, 2007, 2008; Markides, 2013; Wei *et al*., 2017; Gerdoçi *et al*., 2018).

Our study further proves that an ambidextrous culture, which relies on the orchestration and synergy of seemingly incompatible components, *i.e.*, OD and SV, can flourish even in the context of a transition in a post-communist country characterised by a culture that shows high acceptance of power structures (Vajjhala & Strang, 2014). While the prevalence of hierarchical managerial practices within business organisations in Albania ensures discipline that leads to efficiency and continuous improvement (*i.e.*, SV component), constituting the basis for exploitation, our analysis shows that some organisations can still nurture characteristics aligned with exploration (*e.g.*, flexibility, creativity, and risk-taking associated with SV). Such results indicate that ambidextrous culture is a very 'resilient' concept that one can apply in other cultural contexts, such as transition economies. In post-communist countries, organisations are often subject to the dual challenge of maintaining stability while adapting to changing economic and social conditions. As noted by Kousina and Voudouris (2023), this duality recalls the role of ambidextrous culture as a particularly valuable skill in these transitional contexts, where legacy bureaucracies coexist with the need for modernisation and responsiveness. Moreover, as in developed and emerging economies, an ambidextrous culture leads to similar outcomes, *i.e.*, fostering innovation ambidexterity and, perhaps, the adoption of novel business models. Although our results on the proposed relationship between CULAD and NBMD are not robust enough, they suggest compatibility between CULAD, NBMD, and INNAD. Further, our mediation analysis results suggest that CULAD can lead to performance gains conditional on the ability to simultaneously engage in exploration and exploitation while introducing NBMD. Finally, from a methodological perspective, our study validates Wang and Rafiq's (2014) approach to examining CULAD and INNAD as higher-order constructs.

CONCLUSIONS

We set out to study the relationship between ambidextrous culture and contextual ambidexterity, *i.e.*, a form of innovation ambidexterity, in the context of a transition economy and the role of novel business model design in transforming ambidexterity value creation potential into performance gains, responding to the call of Smith *et al*. (2010) and Stoiber *et al*. (2022) to identify business models that can support strategies such as ambidexterity. Using a unique dataset of Albanian companies, our study corroborates previous findings that propose cultural ambidexterity as a higher-order construct that helps integrate and balance exploration and exploitation. Given the context and the sample composition, our study supports previous findings that cultural differences, the economic development level of the country, or the type of industry do not affect such a relationship. Most importantly, our study identifies NBMD as a design theme aligned with contextual ambidexterity, compatible with cultural ambidexterity and able to transform the value-creation potential of this capability into performance gains. We believe these findings hold important implications for both scholars and practitioners.

Practical Implication

Our study has some practical implications. Since many empirical studies have confirmed that ambidexterity is essential for firms' short-term performance and long-term survival, the choice of a compatible BM design aligned with ambidexterity becomes crucial for entrepreneurial firms, *i.e.*, young firms with high potential. Contrary to conventional notions of an efficiency-driven economy, our study suggests that managers of Albanian firms, particularly those operating in moderate to high knowledge-intensity sectors, should consider adopting an NBMD to pursue innovation ambidexterity. Furthermore, established firms that have fallen behind and are struggling with an imbalance between exploration and exploitation should engage in BMI and move towards NBMD. Furthermore, managers should prioritise developing OD and SV as mechanisms to build INNAD capabilities, as establishing cultural norms while ensuring organisational diversity requires time, continuous effort, and a bottom-up approach. Such efforts are more challenging in the context of a culture that cherishes power structures that can stifle creativity and innovation.

Moreover, our study has implications for policymaking, particularly in transition economies. Since NBMD plays a mediating role in transforming ambidexterity capabilities and culture into performance

gains, and given that our findings are not affected by industry type, policies that incentivise the adoption of novel BMs, models that demonstrate a high level of versatility in harvesting both exploitation and exploration, can be widely applicable across industries. From a policy action perspective, the various programs proliferating recently should consider providing grants for entrepreneurial firms and start-ups experimenting with business model innovation, as well as supporting hubs and accelerators that promote and validate new value propositions and revenue models. Such policy implications are particularly relevant in today's business environment, which is similar to, or even more challenging than, the one during the period when the data were collected, as technological disruptions and market realignments following the COVID pandemic are affecting the ways firms conduct business. As this article demonstrates, such an environment requires the development of innovation ambidexterity capabilities and the adoption of novel BMs.

Limitations and Future Research

This study has several limitations that offer opportunities for future research. Firstly, from a methodological perspective, our analysis relied on cross-sectional, self-reported data, which may raise concerns about potential common method bias (CMB). Although we took the necessary steps to ensure construct validity and test the CMB, the risk of potential CMB remains (see Kline, 2011). Secondly, from a generalisability perspective, while the heterogeneity of our sample provides an opportunity to test the ambidexterity hypotheses using a heterogeneous sample, it was biased toward knowledge-intensive firms. Moreover, although testing the ambidexterity hypotheses in the context of a transition economy adds new insights to the existing literature, it also limits the study's generalisability. Future research should test whether it is possible to extend these findings to less knowledge-intensive sectors and firms, as well as to various cultural and economic contexts. Thirdly, with respect to research design, our cross-sectional approach did not allow us to fully assess temporal ambidexterity, that is, the notion that firms may alternate between exploration and exploitation phases rather than pursuing them concurrently (Ossenbrink *et al*., 2019). More importantly, while there is sufficient theoretical rationale and empirical evidence to justify our conceptual model and sufficient validation of the model through comparisons of model fit indices with alternative models, the cross-sectional nature of the study design does not provide sufficient confidence in determining the chain of causal links between variables. We could not measure reverse causality and the interplay of the variables in time. Longitudinal studies may allow researchers to understand such dynamics better and expand on how sequential and simultaneous ambidexterity work in practice.

By introducing the concept of BM design and the activities beyond the organisation's boundaries, our research stresses the importance of inter-organisational learning for innovation ambidexterity. Future research might look more in-depth at the role of alliances (see Wilden *et al*., 2018), different forms of inter-organisational ambidexterity (Brix, 2019) and their interplay with BMs in an open innovation context.

Our study has limited its focus to internal firm dynamics, neglecting important external factors (Wiratmadja *et al*., 2020). Moreover, external environmental factors, such as levels of munificence and dynamism, can affect the performance of various BMs, including the NBMD (Zott & Amit, 2007; 2008). Therefore, future studies should investigate the interplay among BM, ambidexterity, and performance by introducing external environmental factors as moderators. Another promising avenue for research concerns the role of strategic leadership in managing the trade-offs and contradictions inherent in ambidexterity, as highlighted by O'Reilly and Tushman (2008). Leadership and management are vital for successfully implementing a BM design. As noted by Zott and Amit (2007, p. 195), 'bad management corrupts inherently good designs.'

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Appendix A:

Table A.1. Measurement items

Novel Business model design theme (NBMD)	Zott and Amit (2007; 2008)
Our business model offers new combinations of products, services, and information (NBMD1).	
The business model brings together new participants (NBMD2).	
Incentives offered to participants in transactions are novel (NBMD3).	
Our business model gives access to a wide variety and number of participants and/or goods/services (NBMD4).	
The richness (*i.e.*, quality and depth) of some of the enabled links between participants is novel (NBMD5).	
In our industry, we are a pioneer in exploiting our business (NBMD6).	
We have continuously introduced innovations to make our business more effective (NBMD7).	
There are no competing businesses in our industry that are threatening ours (NBMD8).	
There are other important aspects of the business model that make it novel (NBMD9).	
Our business model, overall, is novel (NBMD10).	
Organisational diversity (OD)	Ferner *et al*. (2005)
In this business unit ...	
we respect everyone's different viewpoints (OD1).	
we value people from diverse backgrounds with diverse experiences and skills (OD2).	
we encourage all employees to generate as many alternative solutions to problems as possible (OD3).	
Shared vision (SV)	Sinkula *et al. (*1997) and Patterson *et al*. (2005)
All employees view themselves as partners in charting the direction of this business unit (SV1).	
The future direction of this business unit is clearly communicated to everyone (SV2).	
Everyone who works here is well aware of the long-term plans and direction of this business unit (SV3).	
There is a strong sense of where this business unit is going (SV4).	
Explorative innovation (ERI)	Jansen *et al.* (2006)
Our organisation accepts demands that go beyond existing products and services (ERI1).	
We invent new products and services (ERI2)	
We experiment with new products and services in our local market (ERI3).	
We commercialise products and services that are completely new to our organisation (ERI 4).	
We frequently utilise new opportunities in new markets (ERI 5).	
Our organisation uses new distribution channels (ERI 6).	
Our firm has developed new marketing techniques (ERI 7).	
Exploitative innovation (ERI)	Jansen *et al.* (2006)
We frequently refine the provision of existing products and services (EII1).	
We regularly implement small adoptions to existing products and services (EII2).	
We introduce improved, but existing, products and services for our local market (EII3).	
We improve our provision's efficiency of products and services (EII4).	
We increase economies of scale in existing markets (EII5).	
Our organisation expands services for existing clients (EII6).	
Performance (PERF)	Adapted from Auh and Merlo (2012); Delaney and Huselid (1996)
Performance compared to the direct competitor concerning market share (PERF1).	
Performance compared to the direct competitor concerning revenues (PERF2).	
Performance compared to the direct competitor concerning profit (PERF3).	
Performance compared to the direct competitor concerning cash flow (PERF4).	
Performance compared the direct competitor concerning return on investment (PERF5).	

Source: own elaboration.

Appendix B:

Table B.1. Model fit statistics

	First-order model estimates	Second-order model estimates
CMIN/DF	1.471	1.466
CFI	0.96	0.96
SRMR	0.059	0.065
RMSEA	0.052	0.052
PClose	0.393	0.403

Note: chi-square divided by the degrees of freedom (χ2/df); comparative fit index (CFI); root mean squared error of approximation (RMSEA); p of close fit (PClose); root mean square residual index (SRMR).
Source: own elaboration.

Table B.2. Factor loading

Items	Item loading	Sub-factor loading	Sub´-factor
ERI2	0.86	0.83	ERI
ERI3	0.84		
ERI4	0.71		
EII1	0.87	0.79	EII
EII2	0.75		
EII3	0.62		
OD1	0.82	0.55	OD
OD2	0.94		
OD3	0.69		
SV1	0.92	0.91	SV
SV2	0.77		
SV3	0.69		
SV4	0.68		
NBMD 2	0.76	N/A	NBMD
NBMD 3	0.87		
NBMD 4	0.60		
NBMD 5	0.62		
PERF1	0.81	N/A	PERF
PERF3	0.92		
PERF4	0.89		
PERF5	0.89		

Note: PERF = business performance, SV = shared vision, NBMD = novelty-centred business model design, ERI = explorative innovation, OD = organisational diversity, EII = exploitative innovation; not applicable (N/A).
Source: own elaboration.

Table B.3. Internal consistency, convergent validity, and discriminant validity for the model comprising first-order constructs

	CA	CR	AVE	MSV	MaxR(H)	PERF	SV	ERI	NBMD	OD	EII
PERF	0.923	0.930	0.768	0.149	0.936	**0.876**					
SV	0.851	0.853	0.595	0.247	0.901	0.087	**0.772**				
ERI	0.842	0.847	0.650	0.422	0.863	0.285**	0.189*	**0.806**			
NBMD	0.821	0.809	0.520	0.202	0.848	0.386***	0.319***	0.449***	**0.721**		
OD	0.834	0.861	0.677	0.247	0.910	-0.047	0.497***	0.141	0.146†	**0.823**	
EII	7.888	0.796	0.570	0.422	0.834	0.151†	0.229*	0.649***	0.447***	0.205*	**0.755**

Note: cronbach's alfa (CA), composite reliability (CR), average variance extracted (AVE), maximum shared variance (MSV), maximum reliability (MaxR (H)); on the diagonal are the square roots of AVE in bold font; Significance codes: '†' p < 0.100, '*' p < 0.050, '**' p < 0.010, '***' p < 0.001.
Source: own elaboration.

Table B.4. Internal consistency, convergent validity, and discriminant validity for the model comprising second-order constructs

	CR	AVE	MSV	MaxR(H)	PERF	NBMD	INNAD	CULAD
PERF	0.930	0.768	0.150	0.936	**0.876**			
NBMD	0.809	0.520	0.307	0.849	0.388***	**0.721**		
INNAD	0.787	0.649	0.307	0.789	0.281**	0.554***	**0.806**	
CULAD	0.706	0.560	0.117	0.835	0.075	0.342***	0.295**	**0.748**

Note: composite reliability (CR); average variance extracted (AVE); maximum shared variance (MSV); maximum reliability (MaxR (H)); on the diagonal are the square roots of AVE in bold font; Significance codes: '†' p < 0.100, '*' p < 0.050, '**' p < 0.010, '***' p < 0.001.
Source: own elaboration.

Table B.5. Common latent factor: The difference between the standardised regression weights of the unconstrained and constrained models

Path	Standardised regression weights		
	Constrained model (with CLF)	Unconstrained models (without CLF)	Difference
PERF → PERF1	0.763	0.777	0.014
PERF → PERF3	0.922	0.932	0.010
PERF → PERF4	0.876	0.887	0.011
PERF → PERF5	0.862	0.873	0.011
SV → SV1	0.627	0.649	0.022
SV → SV2	0.861	0.882	0.021
SV → SV3	0.822	0.829	0.007
SV → SV4	0.726	0.740	0.014
ERI → ERI2	0.853	0.863	0.010
ERI → ERI3	0.830	0.839	0.009
ERI → ERI4	0.702	0.709	0.007
NBMD → NBMD2	0.746	0.762	0.016
NBMD → NBMD3	0.815	0.833	0.018
NBMD → NBMD4	0.625	0.650	0.025
NBMD → NBMD5	0.653	0.672	0.019
OD → OD1	0.790	0.823	0.033
OD → OD2	0.888	0.940	0.052
OD → OD3	0.629	0.686	0.057

Path	Standardised regression weights		
	Constrained model (with CLF)	Unconstrained models (without CLF)	Difference
EII → EII1	0.849	0.868	0.019
EII → EII2	0.734	0.755	0.021
EII → EII3	0.588	0.621	0.033

Note: common latent factor (CLF).
Source: own elaboration.

Appendix C:

Table C.1. Structural model results for control variables

Path	Est.	SE.	St.Est.	CR.	P
Other BMs → INNAD	-0.831	0.266	-0.279	-3.130	0.002
Sector → INNAD	-0.025	0.257	-0.009	-0.098	0.922
AGE (log) → INNAD	0.366	0.173	0.188	2.111	0.035
SIZE (log) → NBMD	0.065	0.054	0.097	1.192	0.233
Other BMs → NBMD	-0.079	0.18	-0.036	-0.438	0.662
Sector → NBMD	-0.131	0.166	-0.061	-0.793	0.428
AGE (log) → NBMD	-0.150	0.115	-0.105	-1.306	0.192
SIZE (log) → PERF	0.290	0.069	0.325	4.213	***
Other BMs → PERF	-0.354	0.215	-0.121	-1.647	0.1
Sector → PERF	-0.350	0.210	-0.121	-1.671	0.095
AGE (log) → PERF	-0.103	0.139	-0.054	-0.738	0.461

Note: cultural ambidexterity (CULAD), innovation ambidexterity (INNAD), firm's performance (PERF), novel business model design theme (NBMD), logarithm of firm's age (AGE (log)), logarithm of size (SIZE (log), other business models (other BM), Sector (1 = manufacturing firms; 0 = service firms); '***' p<0.001; estimates (Est.); standardised estimates (St.est.); standard errors (SE); critical ratio (CR); p-value (P).
Source: own elaboration.

Authors

The contribution share of authors is equal and amounted to ⅓ for each of them.

Blendi Gerdoçi
Associate Professor at the Department of Management, University of Tirana, Albania. His research interests include transaction cost economics, strategic alliances and networks, contracting, and, more recently, education, business modelling, and innovation. He has published several articles in reputed scientific journals such as the Journal of Computers in Education, European Journal of Innovation Management, and other international journals.
Correspondence to: Prof. Blendi Gerdoçi, Department of Management, University of Tirana, Faculty of Economy, Arben Broci Road, 1000 Tirana, Albania, e-mail: blendigerdoci@feut.edu.al
ORCID https://orcid.org/0009-0006-5313-4688

Marco Cucculelli
Full Professor at the Department of Economics and Social Science, Marche Polytechnic University, Italy, where he coordinates the PhD program in Economics. His research interests are in the fields of innovation, corporate governance and finance, entrepreneurship and firm performance. He has published in several international journals, such as Research Policy, Journal of Corporate Finance, Small Business Economics, Journal of Evolutionary Economics, Cambridge Journal of Economics, Journal of Cleaner Production, Technological Forecasting & Social Change, and others. He is an Associate Editor of JSBM, JSBE and the Italian Economic Journal.
Correspondence to: Prof. Marco Cucculelli, Department of Economics and Social Science, Marche Polytechnic University, Faculty of Economy 'Giorgio Fuà,' Piazzale Martelli 8, 60121 Ancona, Italy, e-mail: m.cucculelli@staff.univpm.it
ORCID https://orcid.org/0000-0003-0035-9454

Daniela Lena (corresponding author)
Post-Doc researcher at the Department of Economics and Social Science, Marche Polytechnic University, Italy. Her research interests include field, business modelling, firm growth and performance, productivity growth, sustainability development, environment regulation, and resilient cities. She has published in the *European Journal of Innovation Management, Economia Marche-Journal of Applied Economics,* and *Technological Forecasting & Social Change.*
Correspondence to: Daniela Lena, PhD, Department of Economics and Social Science, Marche Polytechnic University, Faculty of Economy 'Giorgio Fuà,' Piazzale Martelli 8, 60121 Ancona, Italy, e-mail: d.lena@univpm.it
ORCID https://orcid.org/0000-0003-4839-8794

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Use of Artificial Intelligence

We used Grammarly for proofreading but edited the final version ourselves.

Conflict of Interest

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Entrepreneurial acquisitions and small-cap private equity overlaps: A resource-based view

Alexander Pöschl, Jörg Freiling

ABSTRACT

Objective: This study examines the competitive and collaborative dynamics between entrepreneurship through acquisition (ETA) and small- and micro-cap private equity (PE) in acquiring small and medium-sized enterprises (SMEs). Focusing on the DACH region (Germany, Austria, Switzerland), it explores how both actors overlap in target firm size, compete in deals, and identify opportunities for co-investment – an area that has received limited academic attention.

Research Design & Methods: To address this gap, we used an inductive mixed-methods approach rooted in entrepreneurship theory and the resource-based view (RBV). We drew on interviews with twelve PE firms in the DACH region, complemented by eight expert interviews, to develop a theoretical model grounded in both practice and strategic intent.

Findings: The study revealed an intensifying level of competition between ETA entrepreneurs and PE firms for smaller businesses, which are frequently central to PE buy-and-build strategies. Despite this competition, there is evidence of collaboration between the two parties. Private equity firms show a willingness to co-invest with ETA entrepreneurs, provided that they retain majority ownership and that the entrepreneurs bring relevant, task-related human capital to the table.

Implications & Recommendations: These findings have practical implications for aspiring ETA entrepreneurs, suggesting the importance of strategic career planning and the development of industry-specific expertise to align with PE firms' partnership expectations. Additionally, the research encourages future studies to explore which types of SMEs are particularly attractive to both ETA entrepreneurs and PE firms.

Contribution & Value Added: This study contributes to entrepreneurship theory by offering a nuanced perspective on the relationship between ETA and PE in SME acquisitions. It presents a novel theoretical model capturing both competitive and collaborative dynamics, while also enriching the empirical understanding of the often-overlooked small- and micro-cap PE segment.

Article type:	research article
Keywords:	entrepreneurship through acquisition; management buy-ins; search funds; business succession; private equity
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INTRODUCTION

Entrepreneurship through acquisition (ETA) has become a notable niche in private equity (PE) investments (Hoffmann *et al.*, 2023; Kent, 2022; Morrissette & Hines, 2015). Unlike traditional entrepreneurship, ETA involves acquiring and leading existing small and medium-sized enterprises (SMEs) (Fueglistaller *et al.*, 2016; Kent, 2022). Private equity is crucial in small business finance, especially since such firms often lack access to public capital markets (Berger & Udell, 1998). Moreover, PE funds are major acquirers of SMEs (Lindsey *et al.*, 2021). Some scholars see ETA entrepreneurs as competitors to PE firms in finding target companies (di Laurea, 2018; Hoffmann *et al.*, 2023; Morrissette & Hines, 2015), while others sug-

gest they often collaborate (Dennis & Laseca, 2016; di Laurea, 2018). There are significant differences between ETA and PE, such as deal sizes and purchase prices (Johnson, 2014). Typically, PE firms retain existing management teams post-acquisition, but high management turnover is frequent (Hoffmann *et al.*, 2023; Kaplan *et al.*, 2009). In secondary buyouts, entrepreneurially minded managers often replace incumbents (Wright *et al.*, 2019). However, in the ETA context, such patterns are hard to assess, as prior research tended to treat PE as a broad category, without distinguishing between small- and micro-cap firms and large-cap investors (Puche *et al.*, 2015; Schickinger *et al.*, 2018). Still, several studies suggest an overlap between segments of the PE market and ETA entrepreneurs in terms of target firm size. For instance, Boucly *et al.* (2011) found median sales of EUR 13 million among French SMEs acquired in leveraged buyouts, which is comparable to the USD 9.5 million median revenue for ETA acquisitions cited by Kolarova *et al.* (2022). Similar patterns appear in Finland, where PE funds target SMEs also seen as ETA-suitable, with average deal sizes of EUR 5.9 million (Paaomasijoittajat, 2019), and in the UK, where the 2022 average for small business PE buyouts was GBP 3.5 million (BVCA, 2023). In Italy, authors have also reported collaborations between PE firms and ETA entrepreneurs (di Laurea, 2018), further supporting the notion of a shared investment segment. Unfortunately, empirical research on such PE involvement remains limited (Scholes *et al.*, 2008), partly due to the inherent complexity of studying business transfers, which often require a multi-level perspective – accounting for both incumbent owner-managers and incoming investors (Wennberg *et al.*, 2011). This research gap is unsatisfying because the acquisition of an existing company demonstrates an alternative entry mode into entrepreneurship and can thus act as a growth engine for economies (Kent, 2022; Pinkwart *et al.*, 2005). The ETA model can manifest in various forms, including management buyouts (MBOs) (Scholes *et al.*, 2008), management buyins (MBIs) (Freiling & Pöschl, 2020) or search fund (SF) models (Freiling & Oestreich, 2022; Morrissette & Hines, 2015). The latter two categories of ETA involve entrepreneurs acquiring shares in a company without prior involvement in its incumbent management, as highlighted by Vanoorbeek (2022). Recognising the significance of external entrepreneurs in the context of business succession (Freiling & Pöschl, 2020; Scholes *et al.*, 2010), strategic rejuvenation for established firms (van Teeffelen & Uhlaner, 2010), or the inclination of current owners to divest their businesses (Zellweger *et al.*, 2012), our study concentrates on MBIs and SFs. In doing so, we aim to contribute to the emerging field of ETA research, which currently suffers from a notable shortage of scientific insights, as acknowledged by Hoffmann *et al.* (2023).

On this note, we set out to answer the following research question: How do small- and micro-cap PE funds and ETA entrepreneurs overlap in their effort to acquire small businesses? To respond, we adopted a qualitative, inductive approach suited for this under-researched phenomenon (Edmondson & McManus, 2007). Given the entrepreneurial nature of acquisition processes (van Burg *et al.*, 2002; Wennberg & DeTienne, 2014), we conducted multiple case studies based on 12 interviews with PE executives in German-speaking countries, complemented by eight expert interviews from Chambers of Commerce and archival data. Using replication logic, we treated cases as discrete experiments (Eisenhardt, 2021; Yin, 2018), allowing insights to emerge inductively. Our research drew on sensitising concepts from entrepreneurial resource assembly (Harrison & Rouse, 2014) and followed the resource-based view (RBV), which helps explain how entrepreneurs mobilise and coordinate resources during business takeovers (Alvarez & Busenitz, 2001; Bruining, 2018; Kellermanns *et al.*, 2016). While RBV traditionally addresses firm-level advantage, its application to individual entrepreneurs in resource-constrained environments provided a valuable lens for our study (Siqueira & Bruton, 2010). The following article sections are: literature and conceptual background, methodology, results and discussion with our theoretical model and propositions, and conclusions.

LITERATURE REVIEW

Resource-based View

The RBV is a strategic framework that highlights the importance of a firm's resources in gaining and sustaining competitive advantage (Alvarez & Busenitz, 2001; Barney, 2001; Rumelt, 1984). In ETA, entrepreneurs leverage existing resources to exploit opportunities (Hoffmann *et al.*, 2023). According to RBV, strategically relevant resources are valuable, rare, difficult to imitate and substitute while paving the way

for firms' long-term success (Foss *et al.*, 2008). Understanding which resources contribute to competitive advantage is crucial for acquirers (Hoffmann *et al.*, 2023; Vanoorbeek, 2022), making RBV a potential foundation for this research (Vanoorbeek, 2022). Bellavitis *et al.* (2017) also support applying RBV to modern entrepreneurial finance. Human capital is often the backbone of competitive advantage, on condition that it proves valuable, rare, and difficult to imitate (Wright *et al.*, 2001). In entrepreneurship, human capital correlates with success (Marvel *et al.*, 2016; Unger *et al.*, 2011). Prior knowledge, a form of human capital, is crucial for identifying and creating opportunities (Alvarez & Busenitz, 2001; Ardichvili *et al.*, 2003; Shane, 2003), exploiting these opportunities through acquisition and venture launching (Bruns *et al.*, 2008), and accumulating knowledge (Brush *et al.*, 2002; Foss *et al.*, 2008). Based on an open system logic, this applies to both competitive and co-opetitive settings (Freiling *et al.*, 2008).

The ETA-SME Relationship

Following Hunt and Fund (2012), we define ETA as the acquisition of an existing SME by an entrepreneur or small team aiming to improve the business through transformational strategies. Entrepreneurial motivation and the pursuit of recognised opportunities (Shane, 2008) are central to this approach. Similarly, early research on PE-backed MBIs showed that smaller PE investors often engage operationally, beyond the financial structuring typical of larger deals (Robbie & Wright, 1996; Scholes *et al.*, 2008). Given that PE funds vary widely in size, experience, and specialisation (Hoffmann *et al.*, 2023), we focus on small- and micro-cap PEs, defined as those investing in privately held firms valued between EUR 500 000 and EUR 50 million (Hunt & Fund, 2012). These smaller PE firms have shown to collaborate with entrepreneurs on MBIs, especially in acquiring privately owned family firms (Scholes *et al.*, 2008), and have participated in succession processes which needed external buyers (Dawson & Barrédy, 2018; Freiling & Pöschl, 2020; Molly *et al.*, 2018; Scholes *et al.*, 2010). They are also active in secondary MBIs (Wright *et al.*, 2000). In the United States, 34% of search funders come from PE or investment banking (Kolarova *et al.*, 2022), and around 80% of SF exits involve sales to traditional PE firms (Morrissette & Hines, 2015), highlighting strong interconnections between the ETA and PE ecosystems. The similarity in target firm sizes pursued by both groups further reinforces these links. Specifically, Ruback and Yudkoff (2017) advise ETA entrepreneurs to look for target firms with up to USD two million in annual pre-tax profits but warn that at this level smaller PE businesses also 'become interested' (p. 84) in acquiring these targets. Thus, we expected to find some level of shared interest in acquiring privately owned SMEs between ETA entrepreneurs and small- and micro-cap PE businesses. As such, we asked if, why, and how small- and micro-cap PE investors targeted the same type of SMEs that seemed appealing to ETA entrepreneurs.

Research on external family firm succession showed that PE firms often invest alongside buy-in managers when acquiring privately owned family businesses (Scholes *et al.*, 2008). Similar co-investment models exist in fields like business angel investing (Avdeitchikova & Landström, 2016; Bonini *et al.*, 2018). From a resource-based perspective, combining complementary skills and knowledge through syndication can enhance investment screening and due diligence, creating greater value than individual efforts alone (Alvarez & Busenitz, 2001; Adegbesan, 2009; Mason *et al.*, 2016). In particular, ETA entrepreneurs may be valuable partners when targeting owner-centric SMEs (Freiling & Pöschl, 2020), especially where sellers prefer them or they initiate the deal flow (Ruback & Yudkoff, 2017). Given the complexity and ownership preferences in such firms (Howorth *et al.*, 2016), PE firms may not always be able or willing to acquire majority stakes outright (Battistin *et al.*, 2017). In those cases, ETA entrepreneurs bring operational expertise and networks (Vanoorbeek, 2022), while PE firms contribute deal-making capabilities (Ahlers *et al.*, 2016), rendering co-investment mutually beneficial. Since ETA entrepreneurs often lack the capital for full acquisitions, collaboration with small- and micro-cap PE firms closes this gap. Therefore, we asked whether, why, and how small- and micro-cap PE investors tended to invest alongside ETA entrepreneurs in acquiring SMEs. Entrepreneurship theory's emphasis on innovation and risk-taking individuals (Shane, 2003; Freiling, 2008) aligns with growth-oriented ETA entrepreneurs (Baumol, 1993; Covin & Miles, 1999; Hunt & Fund, 2012). Private equity firms often prioritise entrepreneurially experienced candidates for top MBI roles (Robbie & Wright, 1996), underscoring the importance of human capital. Such attributes are crucial for opportunity exploitation in areas like sales, negotiation, and problem-solving (Bruns *et al.*, 2008; Marvel *et al.*, 2016; Shane, 2003). Installing new

managers is a common PE strategy in buy-ins (Meuleman *et al.*, 2009), and search funders – often from PE, investment banking, or consulting backgrounds (Kelly, 2024; Kolarova *et al.*, 2022) – as well as experienced buy-in entrepreneurs (Freiling & Pöschl, 2020; Hoffmann *et al.*, 2023) are strong candidates for such roles. Given ETA entrepreneurs' human capital and entrepreneurial motivation (Hunt & Fund, 2012), we expected small- and micro-cap PE investors to show an inclination towards putting ETA entrepreneurs in charge of the small businesses they acquired together. Consequently, we asked if, why, and how small- and micro-cap PE investors demonstrated this inclination – not just as resource contributors, but also as co-opetitive partners in shared value creation.

RESEARCH METHODOLOGY

Given the under-researched field of small- and micro-cap PE and ETA investments, an in-depth and exploratory examination seemed warranted. In line with our research design, we deliberately approached hypothesis development as an outcome of the empirical process rather than a predetermined input (Gioia *et al.*, 2013; Maxwell, 2005). This decision reflects the limited availability of prior empirical studies on the intersection of small- and micro-cap PE firms and ETA. While foundational constructs based on RBV and human capital theory are well established, the specific relationships, investment preferences, and co-investment dynamics between ETA entrepreneurs and small- and micro-cap PE firms remain largely unexplored (Ruback & Yudkoff, 2017; Vanoorbeek, 2022). Accordingly, we adopted a theory-informed but data-driven approach (Miles *et al.*, 2014; Gioia *et al.*, 2013), using the literature to establish a conceptual frame, such as for the RBV, while developing our research propositions inductively based on informant narratives and expert validation. This approach aligns with accepted practices in inductive and qualitative entrepreneurship research, where scholars ground theory building in empirical insight – particularly when generalisable empirical findings are still scarce (Eisenhardt & Graebner, 2007; Levasseur *et al.*, 2022). As such, the propositions presented in this study should not appear as formal hypotheses for immediate testing, but rather as analytically grounded avenues for future empirical investigation. To support our exploratory aim, we used a convergent mixed-methods design, collecting qualitative and quantitative data in parallel, analysing them separately, and integrating them during interpretation for triangulation (Creswell, 2009; 2015). This approach, well suited to the heterogeneity of entrepreneurship and PE research (Levasseur *et al.*, 2022), enabled a deeper understanding of how PE firms interact with ETA entrepreneurs. We began with two expert interviews to contextualise the topic and shape our semi-structured interview guide (Flick, 2014), followed by 12 interviews with small- and micro-cap PE professionals in the DACH region. A short questionnaire captured descriptive data on investment preferences and ETA familiarity, helping to identify broader sector patterns and reinforcing qualitative insights. This integration provided a strong foundation for generating novel, grounded findings on the ETA-PE overlap.

Sampling and Data Collection

For our qualitative sampling, we purposively chose small- and micro-cap PE managers to focus on theoretical rather than representative arguments (Eisenhardt, 2021; Miles *et al.*, 2014). We identified 70 German, Austrian, and Swiss PE firms through an online search and contacted their owners or managing directors via LinkedIn. Initially, nine responded positively, and three more agreed after a reminder, totalling 12 informant interviews. This aligns with Guest *et al.*'s (2006) perspective that a sample size of at least twelve participants in homogenous groups is sufficient for data saturation, where new information minimally alters the codebook. The attributes of the interview participants and their firms appear in Table 1.

The informant group comprised 12 participants: one female and 11 males, aged 41-60 (M = 51.3), all in managerial roles – mainly partners or managing directors, and with an average professional tenure of 24.5 years (range: 12-42). Their firms specialised in micro- to small-cap PE investments via MBIs, MBOs, or carve-outs. We conducted semi-structured interviews in November-December 2023 via phone or video, guided by a protocol in-formed by literature (Miles *et al.*, 2014; Galletta, 2013). It included open-ended questions on target firms, competition, and collaboration with ETA entrepreneurs. Due to confidentiality concerns, most participants declined recording. To ensure data quality, two researchers took

detailed notes independently, reconciled them post-interview, and supplemented them with reflexive summaries and follow-up clarifications. Prior studies confirm that such procedures yield data comparable to recordings (Rutakumwa *et al.*, 2020; Flick, 2014). We also triangulated our data with company websites, press releases, and deal reports. In parallel, we interviewed eight business succession experts from German chambers of commerce (IHK), selected from a pool of 50 contacts. These interviews (30-45 minutes, phone/video) followed a semi-structured format (Meuser & Nagel, 2002), combining questions informed by literature (Bell *et al.*, 2022; Klenke, 2016) with flexibility for emergent themes. The focus was on perceptions of ETA and PE, competition, collaboration, and seller preferences. The expert interviews included a short quantitative module aligned with the informant survey.

Table 1. Characteristics of small- and micro-cap PE investors and their firms

Participant	Sex	Age	Job title	Work experience	Investment focus
AT PE1	Male	49	Partner/Managing Director	20 years	small- and mid-cap, succession, MBI, MBO
AT PE2	Male	60	Partner/Managing Director	35 years	medium-sized companies, succession, MBI, MBO
AT PE3	Male	47	Partner/Managing Director	20 years	growth and buy capital in medium-sized companies, succession
AT PE4	Male	48	Partner/Managing Director	20 years	medium-sized companies, succession, MBI, MBO
DE PE1	Male	56	Partner/Managing Director	30 years	medium-sized companies, succession, MBI, MBO, owner buyout, buy and build
DE PE2	Male	50	Partner/Managing Director	20 years	small-cap, medium-sized companies, succession, MBI, MBO, micro-buy
DE PE3	Male	44	Partner/Managing Director	15 years	small- and mid-cap, buyouts, MBI, buy and build
DE PE4	Male	53	Partner/Managing Director	25 years	small-cap, medium-sized companies, succession, MBI, MBO, micro-buy
DE PE5	Male	49	Partner/Managing Director	20 years	micro- and small-cap
DE PE6	Male	47	Partner/Managing Director	29 years	small- and mid-cap, buyouts, MBI, buy and build
CH PE1	Female	41	Head of Investor Relations	12 years	medium-sized companies, succession, buyouts
CH PE2	Male	60	Partner/Managing Director	42 years	medium-sized companies, succession

Source: own study.

Data Analysis

We followed the three-step process by Miles *et al*. (2014): data reduction, display, and conclusion drawing. Coding combined deductive categories from our conceptual framework and inductive insights from the data. We used a structured coding approach, linking interview responses to thematic codes based on our research propositions. Each code reflected specific interview questions; for instance, the code ETA touchpoints captured participants' professional interactions with ETA entrepreneurs (RP1), while Collaboration criteria addressed criteria for or against collaboration (RP2). The study reached saturation after 12 interviews (Guest *et al*., 2006). We then clustered codes into higher-level categories (Creswell, 2017) and interpreted them using relevant literature (Gioia *et al*., 2013). Key themes, such as sector-specific experience or co-investment dynamics, underwent further exploration through magnitude coding (Miles *et al*., 2014) to indicate the strength and consistency of views across country contexts. We present the results as follows: Table 2 shows the magnitude-coded cross-case summary of informant perspectives on competition, overlap, collaboration, and leadership. Table 3 displays selected illustrative quotes by theme. Tables 4 and 5 show supporting quotes and expert perspectives. Finally, we triangulated findings with secondary data (Flick, 2014), and iteratively refined interpretations in line with theory-informed qualitative inquiry (Maxwell, 2005).

Table 2. Main findings including magnitude codes

PE Code	ETA seen as competition[1]	Target overlap[2]	Willingness to co-invest[3]	Putting entrepreneurs in charge[4]
AT PE1	+	+++	++	++
AT PE2	+	+	++	++
AT PE3	++	+++	+++	+++
AT PE4	+	+++	+++	+++
CH PE1	+	+	++	++
CH PE2	+	+++	+++	+++
DE PE1	+	++	++	++
DE PE2	+	+	++	++
DE PE3	+	+	+++	+++
DE PE4	++	++	+	+
DE PE5	+	++	++	++
DE PE6	+	++	++	+++

Note: [1] perception of competition; [2] overlap in targets; [3] willingness to co-invest; [4] willingness to give leadership. Scale: + – low, +++ – high.
Source: own study.

Table 3. Selected illustrative quotes organised by analytical theme

Theme	Representative quote
Perception of ETA	'In my opinion, ETA has potential compared to other investment opportunities.' (AT PE1)
Perception of ETA	'I see the fact that the entrepreneurs may be interested in the same target companies as an opportunity for new collaborations.' (CH PE2)
Competition	'It also happens that these people take over 100 % of the company and then they do not need us at all. In other words, there is competition and sometimes they win.' (AT PE3)
Competition	'There are definitely overlaps, especially for smaller companies, but we would rather buy them as part of a buy-and-build strategy.' (DE PE5)
Co-investing	'We are happy to cooperate with people who come from precisely this sector of the company and have enough professional and management experience.' (CH PE2)
Co-investing	'We use Nexxt-Change to build up a pool of interested seekers who could act as CEO in the future with co-investment from this PE.' (DE PE3)
Leadership role	'If the entrepreneur has the necessary skills and experience and a clear and convincing vision for the company, I would certainly be inclined to put them in charge of the firm.' (AT PE1)
Leadership role	'Work and management experience is crucial. So yes, we are willing to put them in charge, given the right profile and starting position.' (CH PE1)
Leadership role	'We try to get good people if we have to install external management at a company ourselves.' (CH PE2)

Source: own study.

RESULTS AND DISCUSSION

Most respondents favoured majority ownership in investment deals (Mean = 4.08), with lower preference given to equal (1.83) and minority ownership (1.58). The idea that ETA entrepreneurs and small- and micro-cap PE firms target the same companies received a neutral response (3.08). The investors showed some openness to building pools of future managers (2.58) and were moderately neutral on placing ETA entrepreneurs in leadership roles (3.33). While most were unfamiliar with SFs (1.42), they demonstrated strong knowledge of MBIs (4.42), highlighting the relevance of buy-in structures in this investor segment.

Competition

The majority of interviewees acknowledged an overlap between ETA entrepreneurs and small- and micro-cap PE in targeting smaller firms – especially in the context of add-on acquisitions for buy-and-build strategies. While medium-sized firm deals rarely involve individual entrepreneurs due to capital

constraints, competition is more evident in small-cap transactions. Some investors, such as CH PE1 and DE PE6, reported direct encounters with ETA entrepreneurs in these smaller deals. Others, like DE PE2, emphasised that competition varies depending on entrepreneurs' financial capacity. Several informants, for example DE PE1 and AT PE1, viewed ETA entrepreneurs not as rivals, but as potential co-investors, seeing collaborative potential in certain transactions. However, DE PE2 cautioned that well-funded ETA entrepreneurs may sometimes outcompete PE firms entirely in acquiring a firm: 'It also happens that these people take over 100 per cent of the company and then they do not need us at all. In other words, there is competition and sometimes they win'.

The informants also painted a clear picture of common characteristics of typical ETA entrepreneurs. The latter are wealthy individuals with significant capital to invest, often generated through inheritance or long-term savings. They appear as experienced persons with extensive professional and management experience, looking to change careers or diversify, rather than as graduates who have just completed their studies and are new to the world of work.

> In my opinion, this is a certain type of manager, or entrepreneur. Wealthy, mainly through high positions in large companies. Quite experienced, of course. … They want to experience something other than just their previous company and previous employment, even as a CEO or similar. And if the companies are affordable, namely their purchase prices reach EUR two-three million or so, then of course these are people who can afford it, perhaps with some external capital. (DE PE6).

Collaboration

Eleven out of 12 informants expressed a preference for investing alongside ETA entrepreneurs in SME transactions. The sole exception was DE PE4, who focuses on acquiring companies as add-ons and typically utilises the existing management teams within those firms. For DE PE4, co-investment is irrelevant as they are self-financed. Among the 11 willing investors, all except AT PE3 prefer to be majority owners, with AT PE3 being open to minority ownership: 'We always want to have the majority of shares, if only for governance reasons' (DE PE6).

Several interviewees emphasised the advantages of partnering with ETA entrepreneurs, citing their professional experience, innovative ideas, and strong motivation as valuable for improving business management and accelerating growth. For example, DE PE3 actively searches for successors using platforms like Nexxt-Change.org to build a pool of qualified executives and entrepreneurs. In turn, DE PE5 described a case where they appointed an external CEO and CFO after a founder failed to find a successor, illustrating how ETA profiles can fill critical succession gaps. However, interviewees also noted potential challenges. For instance, AT PE1 and DE PE1 warned of strategic misalignment and decision-making conflicts when interests diverge. Other concerns raised included personal motives such as boredom, financial constraints, or insufficient commitment, potentially undermining collaboration. In turn, AT PE4 stressed the need for focus: 'We do not want MBI managers to do a lot of other things on the side. We want them to focus and be fully committed'. Similarly, AT PE3 highlighted agency conflicts when co-investing with external entrepreneurs. Overall, successful collaboration depends on ETA entrepreneurs bringing industry expertise, added value such as networks or specialised skills, and a clear long-term commitment, while investors remain cautious of integrity issues and conflicting goals.

> They must bring strategic added value, such as network or supplier relationships. These people can also participate in the management, or at least in the supervisory board or advisory board. … We look for emotional stability. I do not recognise a pattern; we have often been wrong. Only ex-post assessment is possible. If they are there, you have no chance of replacing them. Then it gets complicated; you have to look for new alliances, for instance on the advisory board or at the shareholders' meeting. (AT PE3)

Such potential agency dynamics and challenges are reasons why some investors (DE PE6, CH PE2, DE PE2) prefer to get to know these entrepreneurs thoroughly and vet them beforehand.

> On the one hand, we try to get good people if we have to install external management at a company ourselves. That is why we try to identify people in our network who can imagine

> managing a company and to have them on hand in case there is a vacancy. As we try to incentivise the management like any PE company, we naturally have to give them shares in the company. So they inevitably become co-entrepreneurs. … But we do not just start looking for external managers when we buy a company; we start looking for them be-forehand so that we have them in our network. We also check and vet them, obtain references, and so on. That takes time. (DE PE6)

The Human Capital of ETA Entrepreneurs

Apart from DE PE4, who showed little interest in collaborating with external entrepreneurs, all interviewees expressed a willingness to entrust co-investing ETA entrepreneurs with top-level leadership positions post-acquisition. However, this willingness depends on specific conditions, notably the entrepreneurs' capabilities and experience. Additionally, crucial roles belong to factors such as the entrepreneur's personality, goals, business model, and company type, and to whether the PE investor retains majority ownership. Interestingly, AT PE3 explicitly stated their firm's preference not to take charge, making the appointment of an external entrepreneur to lead the company a suitable choice.

Table 4. Indicative quotes relating to themes

Theme	Indicative quote
Collaboration	'Collaboration can lead to better business management and faster progress if the entrepreneur brings top-level experience and motivation.' (AT PE1)
Collaboration	'A fresh approach and specific experience can make a real difference.' (AT PE4)
Collaboration	'Some entrepreneurs lack long-term commitment, which poses risks for us.' (AT PE3)
Collaboration	'Joint investment offers governance benefits but may cause strategic conflicts.' (DE PE1)
Collaboration	'When scaling up, we sometimes need new external CEOs or CFOs.' (CH PE1)
Collaboration	'Joint investment depends on shared goals, capabilities, and mutual trust.' (AT PE1)
Competition	'Add-on deals are where we see some overlap with private individuals, especially when the tickets are small.' (CH PE1)
Competition	'There are definitely overlaps, especially in smaller companies, but our buy-and-build approach sets us apart.' (DE PE2)
Competition	'Private individuals compete in add-ons under EUR 10 million. Above that, they usually cannot afford it.' (DE PE4)
Competition	'In small companies, we do see individual entrepreneurs acquiring them sometimes.' (DE PE6)
Competition	'Indeed, ETA entrepreneurs might be after the same firms, but it depends on their financing.' (DE PE2)
Competition	'I view the potential overlap with ETA entrepreneurs as a chance for collaboration.' (DE PE1)
Competition	'I do not see ETA entrepreneurs as a threat; they might even lead to synergies.' (AT PE1)
Human capital	'If the entrepreneur has the necessary skills and experience and a clear and convincing vision for the company, I would certainly be inclined to put them in charge of the firm.' (AT PE1)
Human capital	'For highly professionally experienced leaders, you need companies for which there is value in being able to manage structures and processes. These are not start-up companies.' (AT PE2)
Human capital	'It is often difficult to find a suitable successor for people-centred companies. This is often easier for product-centred companies.' (DE PE5)
Human capital	'It is an advantage if these people are familiar with the industry or have at least worked for a wholesaler and understand the business (purchasing, projects, sales).' (DE PE3)

Source: own study.

Outcome from Expert Interviews

Experts consistently indicated that small- and micro-cap PEs prefer majority ownership of target companies (average: 4.71) over equal (1.5) or minority (1.64) ownership. The assumption that ETA entrepreneurs and small- and micro-cap private investors target the same companies received a neutral rating (3.17). According to the experts, small- and micro-cap PEs show high willingness to seek ETA entrepreneurs for collaboration on deals (4.57). The respondents had limited awareness of SFs (1) but moderate to high knowledge of MBIs (3.83).

Table 5. Main findings including magnitude codes from the expert interviews

Feature/Experts	EXP1	EXP2	EXP3	EXP4
ETA and PE overlap in targeting firms[1]	++	++	+	+
Perception of ETA and PE	Rarely meets ETA entrepreneurs; competition in small to medium-sized company deals; no competition in larger company deals.	Regularly meets ETA entrepreneurs; competition in small to medium-sized company deals; no competition in larger company deals.	Only meets private investors (small company deals).	Regularly meets different investors, including ETA entrepreneurs. Competition between ETA and PE depends on the sector. The situation of PEs is easier.
Sellers' preferences according to expert	Depends on company attractiveness and the level of buyer competition. Usually prefers local parties.	Depends on the seller and buyer (motivation).	Depends on their abilities, location, affordability, and sale price.	Depends on their abilities (medium-sized to large company deals) or sale price (small company deals).
Sellers' preferences according to expert	Depends on company attractiveness and the level of buyer competition. Usually prefers local parties.	Depends on the seller and buyer (motivation).	Depends on their abilities, location, affordability, and sale price.	Depends on their abilities (medium-sized to large company deals) or sale price (small company deals).

Note: [1] perception of competition. Scale: + – low, +++ – high.
Source: own study.

The expert interviews largely confirmed the insights from the informants. Except for EXP1 and EXP7, most experts reported regular interaction with ETA entrepreneurs, and about a half noted limited competition between PE and ETA, mostly in smaller deals. Specifically, EXP1, EXP2, and others stressed that private individuals often lack the financial capacity to compete for larger firms. Still, EXP4, EXP5, and EXP6 highlighted PE's advantage in financing and pointed out that competition varies by industry and region. Three experts (EXP5, EXP6, EXP8) observed cases of ETA entrepreneur collaboration with other investors, suggesting diverse market dynamics. According to the experts, buyer characteristics influence seller preferences more than the investor type does. For instance, EXP7 and EXP8 noted that sellers often favour private individuals due to perceived continuity and employee preservation, sometimes even accepting lower prices as a result.

> The MBI candidate should do the same as the transferor did in the past. For PE firms it is more difficult. There is a lot of persuasion work to do here because the PE image in Germany is quite poor. With strategic buyers, the sellers are more willing, but competitive thinking is present because it is difficult to hand over companies to competitors. (EXP7)

> I feel that sellers favour private individuals because afterwards they worry less about keeping the company alive and preserving jobs. That is different from financial investors or strategic buyers. Then, they are also prepared to accept purchase price reductions. … Sellers have different motivations. The one who needs the money for retirement goes purely by purchase price and is more likely to go to financial investors or strategic buyers. (EXP8)

Discussion

Targeting Similar SMEs

Evidence from informant interviews and expert validations revealed a shared interest among ETA entrepreneurs and small- to micro-cap PE investors in acquiring smaller – though not medium-sized

– firms. This overlap is particularly evident in competition for add-on acquisitions within buy-and-build strategies, which involve scaling a platform company through successive small firm acquisitions (Hammer *et al.*, 2022). Such firms are typically owner-centric (Freiling & Pöschl, 2020; Kammerlander, 2016), aligning with the entrepreneurial opportunities sought by ETA entrepreneurs. Due to limited data on private small add-ons (Cohn *et al.*, 2022), empirical research on these strategies remains scarce (Castellaneta *et al.*, 2019). Still, smaller fund sizes among PE firms targeting private companies (Cohn *et al.*, 2022; Hotchkiss *et al.*, 2021) suggest a segmented PE landscape that aspiring ETA entrepreneurs must navigate. These dynamics can guide both ETA and PE strategies when pursuing similar targets. Finally, as buy-and-build strategies thrive in fragmented industries (Hammer *et al.*, 2022), entrepreneurs operating in such markets may face intensified competition from small-cap PE investors. This competition underscores a central tenet of the RBV: entrepreneurial actors, including ETA entrepreneurs and PE investors, pursue the acquisition of firms whose underlying resources – organisational structure, customer relationships, and niche expertise – are both valuable and hard to replicate (Barney, 2001; Alvarez & Busenitz, 2001). In fragmented industries and owner-centric firms, these resources often remain deeply embedded in the target company's informal routines or human capital, making them especially attractive to entrepreneurial acquirers (Brush *et al.*, 2002; Foss *et al.*, 2008). Thus, both ETA entrepreneurs and PE investors may compete not just for ownership, but also for privileged access to idiosyncratic resource bundles. This insight extends RBV thinking to competitive dynamics in ETA. We received feedback for this reasoning through our expert interviews. As a result of this discussion, we propose the following for further empirical validation:

Proposition* 1*: Small- and micro-cap PE investors target the same type of small firms that also appeal to ETA entrepreneurs, with heightened competition observed during smaller add-on transactions associated with buy-and-build strategies.

The Inclination of PE Firms Towards Co-investments

Eleven out of 12 informants expressed their openness to co-invest and collaborate with ETA entrepreneurs, with a notable trend towards preferring majority ownership in the acquired firms. Our expert interviews corroborated this observation. This tendency also aligns with the exploratory research by Scholes *et al.* (2008), suggesting that PE companies have actively teamed up with individual entrepreneurs in MBIs, reinforcing the inclination for collaborative ventures. The acknowledged benefits of co-investment and collaboration, such as the expertise and innovative perspectives brought by ETA entrepreneurs, align with the literature on PE engagement in ETA, such as the exploration of hybrid buy-in/buyout transactions by Meuleman *et al.* (2009). They also confirm our resource-based reasoning that small- and micro-cap PE investors perceive the sharing of resources with ETA entrepreneurs as worthwhile when acquiring small firms (Alvarez & Busenitz, 2001; Bruns *et al.*, 2008; Marvel *et al.*, 2016; Unger *et al.*, 2011). Consequently, our study shows that whereas large-cap PE businesses typically co-invest with institutional investors (Flor *et al.*, 2023; Meuleman *et al.*, 2009), small- and micro-cap PE firms appear to be open towards co-investing with private entrepreneurs. These co-investments reflect what the RBV describes as resource complementarity (Adegbesan, 2009): PE firms bring financial and transactional expertise, while ETA entrepreneurs contribute entrepreneurial human capital – such as operational know-how, market insight, and local networks (Marvel *et al.*, 2016). Seen through the lens of entrepreneurship theory, this co-investment logic echoes Alvarez and Busenitz's (2001) view of entrepreneurs as opportunity enablers who leverage asymmetric information and embedded knowledge. The collaborations we observed show that small- and micro-cap PE firms do not merely tolerate entrepreneurial partners – they actively seek entrepreneurial resource configurations that improve due diligence, target firm fit, and post-acquisition value creation.

Furthermore, PE's strong preference for majority ownership in small target firms is not surprising, as PE acquisitions of privately held firms typically involve the purchasing of majority stakes (Kaplan & Strömberg, 2009). Also, the logic of buy-and-build strategies basically requires full control of the target firms' strategic direction (Castellaneta *et al.*, 2019; Cohn *et al.*, 2022). From an agency standpoint (Jensen & Meckling, 1976), this discovery presents an intriguing aspect, since it hints at a principal-agent

dynamic potentially existing between the PE firm as a majority owner and the ETA entrepreneur as a minority-owning manager. As such, our findings also relate to recent empirical evidence on agency problems in ETA settings (Ener & Dávila, 2023). Thus, we propose the following:

Proposition* 2*: Small- and micro-cap private investors exhibit a preference for collaborating with ETA entrepreneurs when acquiring a firm, with a distinct inclination towards securing majority ownership in the joint venture.

Putting ETA Entrepreneurs in Charge of the Acquired Firms

The majority of respondents demonstrated readiness to confer leadership responsibilities onto ETA entrepreneurs following the joint acquisition. However, this inclination seems significantly dependent on several conditions. The informants underscored the crucial requirement of ETA entrepreneurs engaging in co-investing to possess pertinent professional expertise, particularly in leadership roles and within the specific industries where target firms operate. These findings align with those of Gompers *et al.* (2023), reinforcing the notion that PE firms prioritise industry-specific expertise when engaging external executives for leadership roles within their acquired companies. Our findings transfer this discovery to the realm of smaller-scale ETA transactions. Yet, the findings indicated that PE investors heavily favour ETA entrepreneurs' task-related and specific human capital (Unger *et al.*, 2011). Relatedly, our evidence raises the question whether German, Austrian, or Swiss small- and micro-cap PE firms would co-invest as part of a second-stage SF transaction. According to Kolarova *et al.* (2022), a large part of SF entrepreneurs in the United States possess only a few years' worth of professional experience. Given our findings, we assume that such limited professional experience and presumably only limited industry-specific expertise would be problematic for German, Austrian and Swiss PE investors. From a resource-based angle, this suggests that specific human capital, as opposed to general leadership potential, is strategically more relevant in ETA-PE collaboration. This finding expands the entrepreneurship literature that links prior experience and domain knowledge with successful opportunity recognition and exploitation (Shane, 2003; Unger *et al.*, 2011). For small- and micro-cap deals in particular, PE firms appear to interpret entrepreneurs' human capital through an RBV lens: they consider leadership delegation as viable only when the entrepreneur's experience aligns with the firm's value-generating processes.

On a more general level, the evidence substantiates the existing literature on PE's established practice of introducing new managers to acquired firms (Meuleman *et al.*, 2009). Taken together, our findings highlighted the strategic criteria PE investors employ in their selection of ETA entrepreneurs as investment partners and collaborators. Consequently, we propose the following for further investigation:

Proposition* 3*: Small- and micro-cap private investors tend to entrust ETA entrepreneurs with leadership roles in the businesses they acquire together, expecting the entrepreneurs to possess relevant professional and industry experience.

Our findings confirmed that the RBV is a valuable lens for understanding both competitive and collaborative dynamics between ETA entrepreneurs and small- and micro-cap PE investors. Whether competing for strategic resources in the form of attractive target firms or sharing them through co-investment, both actors engage in building unique resource configurations to sustain post-acquisition advantage. At the same time, insights from entrepreneurship theory, particularly those emphasising human capital and opportunity exploitation, help explain why ETA entrepreneurs are appealing to PE firms in the first place (Alvarez & Busenitz, 2001; Shane, 2008; Gompers *et al*., 2023; Bruns *et al*., 2008; Marvel *et al*., 2016; Unger *et al*., 2011). To synthesise the patterns emerging from our data and to extend the existing theory, we developed a theoretical model grounded in our findings. It outlines key constructs and their relationships to explain the interaction and overlap between ETA entrepreneurs and small- and micro-cap PE firms. The model begins with target firm characteristics – especially small size and industry fragmentation – which create entrepreneurial opportunities attractive to both groups (Freiling & Pöschl, 2020; Castellaneta *et al*., 2019; Cohn *et al*., 2022). Fragmented industries prove especially well-suited for buy-and-build strategies involving sequential acquisitions of smaller add-on firms (Hammer *et al*., 2022), shaping acquisition strategies and often leading to competition for similar targets.

The model also reflects collaborative dynamics, including co-investment ventures where ETA entrepreneurs and PE firms combine resources and expertise (Meuleman *et al.*, 2009). It incorporates PE investors' typical preference for majority ownership, which serves to ensure strategic control and reduce agency problems, especially in joint acquisitions (Jensen & Meckling, 1976; Kaplan & Strömberg, 2009; Ener & Dávila, 2023). Finally, the model emphasises the human capital of ETA entrepreneurs as critical to building trust and adding value, aligning with the RBV. It visually represents these interrelationships, particularly in terms of competitive overlap, co-investment preferences, and human capital considerations (see Figure 1).

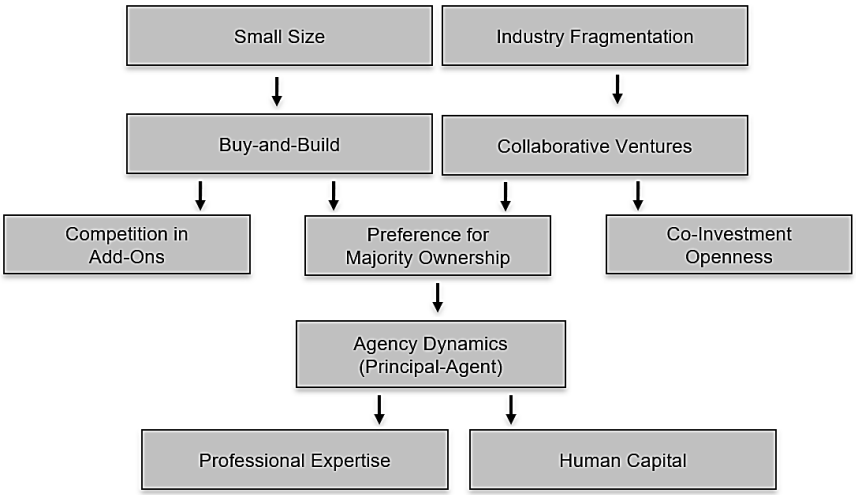

Figure 1. Theoretical model based on the findings
Source: own elaboration.

CONCLUSIONS

We set out to answer the research question of how small- and micro-cap PE funds and ETA entrepreneurs overlap in their effort to acquire small businesses. Our findings illuminated the intricate relationship between ETA entrepreneurs, small- and micro-cap PEs, and the types of firms targeted in the acquisition process. By setting sail to this under-researched topic and utilising elements of the RBV as a heuristic device, we discovered evidence that might be useful for practitioners and researchers.

Theoretical Contributions

Following the recommendations to distinguish between PE segments (Puche *et al.*, 2015; Schickinger *et al.*, 2018), our research focused on small- and micro-cap PE's relationship and overlap with ETA entrepreneurs. Previous studies often treated PE as a general term, neglecting the various types of PE firms. By providing evidence of the overlap in target firm size between ETA entrepreneurs and small- and micro-cap PE investors, we offer a nuanced understanding of the PE landscape.

Next, our study sheds light on a question that has so far split the ETA research community: what relationship and overlap exists between PE and aspiring ETA entrepreneurs? While some authors argued that PE and individual entrepreneurs compete for target firms (di Laurea, 2018; Hoffmann *et al.*, 2023; Morrissette & Hines, 2015), others stressed situations where the two parties work together (Dennis & Laseca, 2016). Our findings revealed circumstances, PE investment strategies, and transaction details that put ETA entrepreneurs in competition with small- and micro-cap PE firms, such as in the case of smaller firms that might act as add-ons in PE's buy-and-build strategies. Yet, our findings also pointed towards the collaboration potential between these two parties.

Moreover, our research contributes to the understanding of small- and micro-cap PE firms' inclination towards co-investments and collaboration with ETA entrepreneurs. The evidence indicated a trend towards preferring majority ownership in the acquired firms, specifying the findings by Kaplan and Strömberg (2009) for small- and micro-cap PE firms. This insight is relevant for understanding the

dynamics of collaborative ventures, supporting recent evidence hinting at the potential principal-agent dynamics in ETA transactions (Ener & Dávila, 2023).

Finally, our findings provide valuable insights into the leadership dynamics of firms acquired by small- and micro-cap PE firms jointly with ETA entrepreneurs. While the majority of PE investors interviewed expressed readiness to confer leadership responsibilities onto ETA entrepreneurs, this inclination is contingent on specific conditions. The study identified the crucial requirement of ETA entrepreneurs possessing relevant professional expertise, particularly in leadership roles and within the specific industries where target firms operate.

Implications for Practice

Our findings underscore a key tension: as the deal size increases, individual ETA entrepreneurs often lack the financial capacity to compete with PE investors. Meanwhile, small- and micro-cap PE firms tend to focus on smaller entities, especially add-ons in buy-and-build strategies, which are more accessible to entrepreneurs. This creates a strategic opportunity: ETA entrepreneurs can avoid direct competition by targeting firms in less PE-saturated industries or niches, such as those with lower fragmentation or outside typical buy-and-build segments. Rather than competing head-to-head, collaborating with PE firms may offer a more viable path to ownership, especially if entrepreneurs bring relevant experience and sector-specific skills. Aspiring ETA entrepreneurs should therefore approach their careers strategically, building deep expertise that makes them attractive co-investors. This aligns with PE firms' preference for majority control but allows entrepreneurs to contribute value through leadership, networks, and operational insight. Given the cost and complexity of acquisitions – due diligence, legal structuring, and governance – partnering with PE firms provides practical advantages. However, entrepreneurs should be mindful of power imbalances and prepare for minority roles in these partnerships. On the seller side, we found that growth-oriented owners may favour PE buyers, viewing them as better positioned to scale the business. This creates a risk of adverse selection, leaving ETA entrepreneurs with less desirable targets. We therefore recommend they carefully assess the sellers' past deal history and expectations. For PE firms, avoiding bidding wars with well-prepared entrepreneurs may be preferable. Forming strategic partnerships with experienced entrepreneurs who can co-invest and assume leadership offers dual value. We recommend that PE firms build and maintain networks of entrepreneurial talent as a resource for future transactions.

Implications for Research

Our study unveils specific attributes of SMEs that make them attractive to small- and micro-cap PE firms, notably their suitability as add-on firms in buy-and-build strategies. While this insight can guide aspiring ETA entrepreneurs away from direct competition with PE, further research is imperative to delineate the specific types of firms appealing to both parties. Investigating the alignment of SMEs with PE investment strategies represents a promising avenue for future research. This exploration may better guide ETA entrepreneurs towards businesses less likely to attract PE competition.

Additionally, our findings highlight potential agency challenges when entrepreneurs and PE firms collaborate, especially when the entrepreneur assumes a managerial role in the acquired business. With PE typically holding majority ownership, misalignment of interests may lead to agency issues, underscoring the need for future research in ETA settings where such collaborations occur.

Moreover, the evidence indicates a strong preference among German, Austrian, and Swiss small- and micro-cap PE firms for partnering with industry-experienced entrepreneurs. Comparing this with evidence from the United States, where SF entrepreneurs exhibit limited professional experience (Kolarova *et al.*, 2022), suggests a potential regional difference in attitudes and investment behaviour. Future research should explore whether this discrepancy poses a general obstacle for PE investors in co-investing in SFs or whether it is specific to regional contexts, such as the United States and Western Europe. Furthermore, this finding suggests that PE and ETA collaborations might be more realistic in the form of MBIs compared to SFs.

Limitations

While our study offers valuable insights into the under-researched intersection of small- and micro-cap PE and ETA, we should also note several limitations. First, the geographical focus and the small sample size limit the generalisability of our findings. Regional differences in legal, financial, and cultural contexts may yield different dynamics elsewhere. Second, our targeted sampling of small- and micro-cap PE managers resulted in a relatively homogeneous dataset, which aligned with our theoretical focus but may limit the breadth of perspectives. Third, we could not record most interviews due to confidentiality concerns, relying instead on detailed notes. While we took steps to ensure accuracy, one cannot exclude some interpretive bias. Fourth, the quantitative component remained limited in scope and sample size, offering only descriptive insights. Fifth, the study primarily reflects PE managers' views, omitting direct input from ETA entrepreneurs, which future research should incorporate for a more balanced understanding. Sixth, we collected the data in late 2023, so they may not capture evolving market dynamics or regulatory shifts. Finally, the exploratory nature of our design precludes causal inference; the study aimed to build understanding, not to test hypotheses.

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Authors

The authors' contribution share is equal and amounts to 50% for each of them.
AP & JF – conceptualisation, literature writing, methodology, discussion.

Alexander Pöschl (corresponding author)
Full Professor of Entrepreneurship at University of Applied Sciences Saarland, Germany. His research interests include entrepreneurship through acquisition and entrepreneurial buyouts as well as strategic change in SMEs and start-ups.
Correspondence to: Prof. Dr. Alexander Pöschl, University of Applied Sciences Saarland, Waldhausweg 14, 66123 Saarbrücken, Germany. e-mail: alexander.poeschl@htwsaar.de
ORCID https://orcid.org/0000-0001-6657-8807

Jörg Freiling
PhD (Dr. rer. oec.), Full Professor and Head of the Chair in Small Business and Entrepreneurship, University of Bremen, Germany. His research interests include transnational entrepreneurship, entrepreneurial ecosystems, entrepreneurial support systems, incubators, accelerators, business model innovations, corporate entrepreneurship, and small firm governance.
Correspondence to: Prof. Dr. Jörg Freiling, LEMEX, Faculty for Business Studies and Economics, University of Bremen, Enrique Schmidt Str. 1, D-28359 Bremen, Germany. e-mail: freiling@uni-bremen.de
ORCID https://orcid.org/0000-0001-6922-98055

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Trade openness, regional economic growth, and crises in transition countries: The case of Ukraine

Elena Horská, Serhiy Moroz, Jozef Palkovič

ABSTRACT

Objective: The article aims to explore the impact of trade openness on the economic development of Ukrainian regions in different conditions, with a particular focus on the global financial crisis (2007-2009) and the 'hybrid' stage of the war (2014-2021).

Research Design & Methods: We analysed the influence of trade openness on economic development, considering exchange rate fluctuation and foreign direct investment (FDI). Based on 21 input variables, we created the composite index of economic development using principal component analysis. To verify the hypothesis about the impact of determinants on economic development, we employed this index as a dependent variable in autoregressive dynamic panel models with error correction terms. We used trade openness, exchange rate, and foreign investment as explanatory factors. The article presents the examination of the effects of the mentioned variables across several regional categories, including coastal vs. non-coastal regions, regions with different levels of urbanisation and trade openness, and regions affected by military occupation.

Findings: The findings reveal that trade openness has a significant positive impact on regional development, with its highest influence in the pre-war period. Economic growth of coastal regions is more sensitive to trade openness and FDI, compared to non-coastal regions. Moreover, regions with a higher level of trade openness experience stronger positive effects of FDI. We identified the increased impact of trade openness and FDI on the economic development of coastal regions during the 2007-2009 crisis. On the other hand, their influence decreases in non-coastal regions, compared to pre-crisis years. Furthermore, FDI has a positive effect on economic performance, particularly in non-occupied regions.

Implications & Recommendations: The article's results are important to better understand the interaction between trade openness and the economic development of Ukrainian regions, especially during the crisis and war periods. The findings indicate that higher trade openness should be achieved to ensure the economic stability of the country's regions. That is why it is necessary to develop a strategy for the expansion and diversification of Ukrainian exports. The received results could help improve target programs that aim to promote the economic development of the country's regions. The findings could also serve trade-oriented businesses to understand regional processes in more detail and to enhance decision-making under war conditions.

Contribution & Value Added: The novelty of the article is threefold: (i) practical analysis of Ukraine that can serve as a benchmark in future research for comparative analysis between this country and other economies; (ii) comparison of the impact of trade openness on economic development of regions under crisis and non-crisis conditions; and (iii) the use of several classifications of the country's regions (*i.e.*, the proximity to the war zone, the sea access, and the urbanisation level) to identify peculiarities of the above-mentioned impact during the 'hybrid' stage of the war.

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INTRODUCTION

The economic literature widely investigates relationships between trade openness and economic development (see, *e.g.*, Luangaram & Wongpunya, 2024; Mao Takongmo & Touré, 2023; Mtar & Belazreg, 2023; Roquez-Diaz & Escot, 2018; Garncarz, 2024; Kulińska, 2024). Simultaneously, in recent decades, we witnessed the increasing impact of crises with global repercussions, *i.e.*, the 2007-2009 financial crisis, the COVID-19 pandemic, the war in Ukraine, *etc*. Therefore, it is necessary to explore how crises influence economic and trade relationships and to propose measures that could help reduce their negative consequences. However, only a limited number of studies examine these relationships during crisis periods (for example, Benita, 2019; Hossain *et al*., 2022; Olechnicka & Kniazevych, 2025). Our research aimed to fill this gap, considering the effect of the openness of trade on regional development in transition economies like Ukraine. This country, located in Eastern Europe, is well known for its agriculture and industry. However, nowadays, the Ukrainian economy is in a very difficult situation due to Russia's full-scale war against the country.

We aimed to investigate the impact of trade openness on the economic development of Ukrainian regions in different conditions, with a particular focus on the global financial crisis (2007-2009) and the 'hybrid' stage of the war (2014-2021). We explored the effect of trade openness on the regional economic growth from various perspectives. Firstly, the country's regions are divided into specific groups according to:

- The proximity to the war zone: (i) regions occupied by Russia and located in the war zone, (ii) regions that have joint borders with regions occupied by Russia and located in the war zone, and (iii) all remaining regions;
- The sea access: coastal and non-coastal regions;
- The urbanisation level: high, moderate, and low urbanisation level.

Secondly, in addition to the whole research period (2003-2021), we examined the following periods separately:

- 2003-2006 (the period before the global financial crisis);
- 2007-2009 (the period of the global financial crisis);
- 2010-2013 (the period after the global financial crisis, the pre-war period);
- 2014-2021 (the war period).

The novelty of this study is threefold: (i) practical analysis of Ukraine that can serve as a benchmark in future research for comparative analysis between this country and other economies; (ii) comparison of the impact of trade openness on regional economic performance under crisis and non-crisis conditions; and (iii) the use of several classifications of regions (*i.e.*, the proximity to the war zone, the sea access, and the urbanisation level) to determine peculiarities of the above-mentioned impact during the 'hybrid' stage of the war. Besides, no empirical articles have been published on the impact of trade openness on the economic performance of Ukrainian regions so far. Thus, our article can contribute to theory and practice in this research field.

The study results could help improve target programs that aim to promote the economic development of the country's regions. The findings could also be useful for trade-oriented businesses to understand regional processes in more detail and to enhance decision-making under war conditions.

The article is organised as follows. The next section presents the literature review and hypotheses development. The section research methodology describes the data and methodology used in this article. The section results and discussion provides the empirical results. The section conclusions present main findings, policy implications, research limitations, and suggestions for future research directions.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

There are many publications devoted to the influence of trade openness on the economic development of different countries. For instance, Huchet-Bourdon *et al.* (2018) estimate the impact of trade

openness on the economic growth of 169 developed and developing economies, based on the system GMM estimator. The findings show that countries that have more open trade and larger exports of quality products demonstrate higher growth. However, trade openness can negatively impact economic growth if exports focus mostly on low-quality products. Thus, a certain level of export quality should be achieved to have the positive influence of trade openness on economic performance. It is also determined that export diversification is an essential feature to have a higher contribution of trade to economic growth. Duernecker *et al.* (2022) assessed the interaction between the openness of trade and economic development, employing data for 204 countries. In this study, they considered trade openness from a broader perspective, considering not just the country's direct trade connections with other economies, but also its second-order and higher-order connections. Adopting the Bayesian model-averaging approach, Duernecker *et al*. (2022) revealed significant positive relationships among the used integration measures and the country's economic growth.

Meanwhile, Dorn *et al.* (2022) investigated how trade openness affects income inequality, using the data for 139 countries. Based on the ordinary least squares and two-stage least squares models, they found that the interaction between trade openness and inequality differs substantially in the analysed countries, depending on the level of their economic performance. In the case of emerging and developing economies, disproportional benefits of trade liberalisation are observed for the relative income shares of the very poor. The positive impact of the openness of trade on inequality is identified in most advanced economies. Besides, a strong positive effect of openness on income inequality is determined in China and transition countries from Central and Eastern Europe. Benarroch and Pandey (2012) consider whether there is a causal relationship between trade openness and government size of 119 high- and low-income countries, employing aggregate and disaggregated government expenditure data. Using the dynamic regression equation, scholars find little or no evidence for the interaction between trade openness and government size. The only exception is a significant, positive nexus between the openness of trade and education expenditures in low-income countries.

Kim *et al.* (2010) analysed the impact of trade openness on the financial development of 88 economies, relying on the pooled mean group method. The findings indicate that while there is a positive relationship between the openness of trade and financial development in the long run, their negative interconnection is identified in the short run. However, when countries are divided into groups depending on their income or inflation levels, the same results exist only in the cases of relatively low-income economies or high-inflation countries. Haddad *et al.* (2013) estimated the effect of trade openness on growth volatility, based on data set of 77 developing and developed economies. Applying the system GMM approach and random effects estimates, as well as export concentration measures, scholars proved that openness has a significant negative impact on the volatility of many countries with diversified exports. Eris and Ulasan (2013) examined the influence of trade openness on the long-term growth of 66 countries with different levels of economic development, employing Bayesian model averaging techniques. Findings show that trade openness is not directly connected with economic growth in the long run. They also determined that economic institutions and macroeconomic uncertainties are the main determinants of the countries' long-run economic growth.

Kim *et al.* (2011) explored the effect of trade openness on the economic performance of 61 developed and developing countries, using the instrumental-variable threshold regressions approach. The researchers argue that openness leads to uneven development of countries. It has a positive effect on the growth of high-income economies. Simultaneously, researchers observe the significant negative impact of trade openness in the case of low-income countries. Moreover, while the positive influence of trade openness on investment, productivity growth, and financial development is determined in high-income countries, the opposite situation is seen in low-income ones. Gonçalves *et al.* (2021) assess whether trade openness functions as a channel of knowledge transmission, which affects productivity growth of 58 countries with different levels of economic development, based on the generalised method of moments. The findings confirm that while trade openness does not have a long-run impact on the productivity growth of countries, it has a temporary positive effect on their total productivity. However, with the sample restricted to a group of 33 high- and middle-income countries, researchers

found a permanent impact of the openness level on productivity. In the case of low-income and emerging countries, the research results were opposite, namely, trade openness had a negative effect on productivity growth, considering their domestic knowledge capital stock.

Nannicini and Billmeier (2011) evaluated the influence of trade openness on economic growth in transition countries. Based on synthetic control methods, they identified that trade liberalisation has a positive effect on the real GDP per capita of the analysed economies. Their study also revealed that trade openness constitutes a key factor of the successful transition process, measured in terms of economic growth. Caporale *et al.* (2023) investigated the short- and long-run impacts of trade openness on the financial development of 35 European countries. Applying the pooled mean group estimator, researchers found different results across the countries depending on the income levels, governance, and efficiency of financial institutions and markets. In the case of the middle-income countries, while trade openness has a positive effect on financial development in the long-run period, its short-run influence is negative. On the contrary, its positive and significant short-run impact is revealed for the high-income countries, which have better financial systems.

Sakyi *et al.* (2015) studied the influence of trade openness on the income levels and growth rates of 115 developing countries, using the panel cointegrated model. The results indicate that there is a positive interconnection between trade openness and income level in the long run. They also confirmed the existence of a short-run nexus between trade openness growth and economic growth of the countries. Gnangnon and Brun (2019) examined the effect of trade openness on tax reform in 95 developing economies, employing the two-step system generalised methods of moments. The findings show that the countries with a higher openness have a larger positive impact of tax reform on tax revenue performance in comparison with countries which have a lower level of trade openness. Kacou *et al.* (2022) explore the interaction among trade openness, export structure, and labour productivity in 61 developing countries. Using the panel vector autoregressive and Granger causality approaches, they revealed the trade-led productivity not in all the analysed economies. It is only significant in the case of countries with higher levels of openness. Lin *et al.* (2014) examined the interaction between trade openness and government size of small developing countries based on the Baltic Dry Index. Using different regression specifications, they identified the positive causal relationship between trade liberalisation and government expenditure. Camarero *et al.* (2016) investigated the influence of trade openness on the level of productivity in 26 economies: 12 Latin American and 14 Asian countries. Using the panel co-integration techniques with structural breaks, they identified that openness has a significantly positive significant impact on the productivity growth in both groups of countries. Simultaneously, the researchers argue that the Asian approach to trade openness is more successful in comparison with the Latin American one. According to their opinion, the main reason for this situation was that the export-promoting industrialisation process in Asian was a better strategy than the trade liberalisation approach in Latin American countries.

Nam *et al.* (2024) studied the relationship between trade openness, institutional quality, and income inequality in the countries of the Association of Southeast Asian Nations (ASIAN), applying the fixed effects, generalised method of moments, and method of moments quantile regression approaches. The empirical results show that the inverted U-shaped interaction exists between the openness of trade and income inequality. In the case of a low level of openness, the growth in trade openness causes higher income inequality. However, when the openness of trade exceeds a certain threshold, we notice a decline in income inequality. Besides, the findings highlight the importance of institutional quality not just to encourage the country's economic growth, but also to have a balanced distribution of its benefits across society. Using the data on the ASIAN member states, Nam *et al.* (2023) compared the effect of trade openness on GDP growth and human development, using different models. They confirmed that, while trade openness has a positive influence on economic growth, it has a negative impact on human development. The researchers also mention the importance of governance and FDI to mitigate the unfavourable effect of openness on human development. Khan *et al.* (2021) estimate the effect of trade openness and inward FDI on the income distribution of five South Asian countries, employing the system GMM regressions. The findings

show that while the growth of trade openness initially worsens the income distribution, an improvement in the standard of living is observed later in the countries.

There are some publications in which scholars investigate the effect of trade openness on economic development at the regional level. For instance, Fujii (2017) explored the interaction among the openness of trade, the government size, and output volatility across Japanese prefectures, applying the lagged cross-sectional regression. The results show that regions with a higher level of trade openness have a smaller size of government. Simultaneously, there is limited evidence on the impact of the government size on the output stabilisation of prefectures. Rivas (2007) evaluated the influence of trade openness on regional inequality in Mexican states, based on the regression equation approach. The findings reveal that the openness of trade decreases inequality in regions with a lower educational level. Simultaneously, Rivas observed the increase in inequality in the case of regions with higher levels of income and infrastructure. Because the latter effect exceeds the former, the overall impact of trade liberalisation is that its growth causes an increase in regional inequality. Özyurt and Daumal (2013) studied the impact of the openness of trade and human capital on per capita income in Brazilian microregions, employing the spatial Durbin growth model. The results show that, while the higher openness promotes the region's economic performance, it negatively affects its neighbouring regions. At the same time, human capital positively influences both the region and its neighbours.

Kong *et al.* (2021) examined the relationship between trade openness and economic growth of Chinese provinces, considering the exchange rate fluctuation. Using the autoregressive-distributed lag model and the threshold approach, they determined that this openness has a positive impact on regional economic performance in both short and long terms. The effect of trade openness on the quality of economic development is statistically significant and has regional heterogeneity. Findings also prove that the positive influence of openness on regional economic growth has non-linear threshold characteristics. Li *et al.* (2023) consider how trade openness affects the economic recovery of Chinese regions, paying special attention to the renewable energy sector. Applying panel data approaches, the study identified a substantial positive correlation between trade liberalisation and the province's economic revitalisation. Besides, they found a positive relationship between the openness of trade, innovation, and technological development within the renewable energy industry. Zhao *et al.* (2024) assessed the influence of trade liberalisation and the degree of trade openness on foreign direct investment of Chinese provinces, employing the fixed effect, the variable coefficient, and threshold models. They identified that both trade liberalisation and openness have a significantly positive interaction with FDI. However, the influence of trade liberalisation on FDI is quite heterogeneous across regions. Moreover, Zhao *et al*. (2024) identified the significant threshold effects of the degree of trade openness on the relationship between trade liberalisation and FDI.

To the best of our knowledge, there are no empirical articles about the impact of trade openness on the economic performance of Ukrainian regions. Few articles were published on the effect of trade on the country's regional development in the pre-conflict and conflict periods (for instance, Horská *et al.*, 2019; Horská *et al.,* 2023). Therefore, our study brings novelty and can contribute to theory and practice in this research field.

Research Aim and Hypotheses

We aimed to investigate the impact of trade openness on the economic development of Ukrainian regions in different conditions, with a particular focus on the global financial crisis (2007-2009) and the 'hybrid' stage of the war (2014-2021). Based on the previous empirical studies, including Benita (2019), Horská *et al.* (2019), Horská *et al.* (2023), Hossain *et al.* (2022), and Kong *et al.* (2021), we verified the following research hypotheses:

- **H1:** The impact of trade openness on economic development varies significantly between coastal and non-coastal regions.
- **H2:** The 2007-2009 global financial crisis had a varying influence on the regional economic development, namely, coastal regions experienced a more significant decline in economic

performance compared to non-coastal regions due to their higher dependence on trade openness and FDI.

H3: The effect of exchange rate fluctuations on economic growth is more pronounced in regions with a higher level of trade openness.

H4: The relationship between FDI and economic performance is stronger in regions with a higher level of trade openness.

H5: The impact of trade openness, exchange rates, and FDI on economic growth differs substantially between regions occupied by Russia, neighbouring regions, and non-occupied regions.

H6: The economic development of coastal regions is more sensitive to changes in trade openness and FDI compared to non-coastal regions.

RESEARCH METHODOLOGY

The study used the data on 27 Ukrainian administrative regions from 2003 to 2021. The data came from publications and websites of the State Statistics Service of Ukraine (www.ukrstat.gov.ua, db.ukrcensus.gov.ua/MULT/Dialog/statfile_c.asp), as well as the Ministry of Finance of Ukraine (www.mof.gov.ua), National Bank of Ukraine (bank.gov.ua), and Ukrainian National Office for Intellectual Property and Innovations (www.nipo.gov.ua). The data for 2014-2021 is not available for the Autonomous Republic of Crimea and the city of Sevastopol due to Russia's annexation of these administrative regions. For the same period, there is also no data for the occupied parts of Donetsk and Luhansk regions.

To better understand the impact of trade openness on economic development, we divided Ukrainian regions into specific groups. Firstly, considering the proximity to the war zone, we distinguished the following types of regions:

- Regions occupied by Russia and located in the war zone (Autonomous Republic of Crimea, the city of Sevastopol, Donetsk and Luhansk oblasts);
- Regions that have joint borders with regions occupied by Russia and located in the war zone (Dnipropetrovsk, Kharkiv, Kherson, and Zaporizhzhya oblasts);
- All remaining regions.

Secondly, we split regions into two categories, depending on the sea access: coastal and non-coastal regions. The coastal regions included the Autonomous Republic of Crimea, the city of Sevastopol, Donetsk, Kherson, Mykolaiv, Odesa, and Zaporizhzhya oblasts, while all the rest were non-coastal ones.

Thirdly, we divided regions into the following groups, depending on the urbanisation level:

- Regions which have a high urbanisation level (more than 80%);
- Regions that have a moderate urbanisation level (50-80%);
- Regions which have a low urbanisation level (less than 50%).

Description of Variables and Data Sources

To estimate the economic performance of the country's regions, the indicator of economic development is employed, which is based on the review of articles in the literature review and hypotheses development (*e.g.*, Kong *et al.*, 2021; Horská *et al.*, 2023). This indicator includes variables shown in Table 1.

The selected variables relate to the state of the economy, labour market, income, investment, transport infrastructure, sustainability, and innovation. We recalculated the values of variables in Ukrainian hryvnias (UAH) into US dollars (USD), employing information from the National Bank of Ukraine on the annual average official exchange rate between the currencies. We used three explanatory variables in this research: trade openness, exchange rate, and foreign direct investment (Table 2).

Table 1. Variables used to create the composite indicator of economic development

No.	Variable	Explanation and units	Source
1.	Industry's ratio	(Output of industry/Total output)/(Population employed in industry/Total employed population)	State Statistics Service of Ukraine
2.	Profitability of the enterprise's operational activity	%	State Statistics Service of Ukraine
3.	Ratio of agricultural and non-agricultural gross value added	(Gross value added of agriculture/Population employed in agriculture, forestry and fishing)/(Gross value added of non-agricultural sectors/Population employed in non-agricultural sectors), ratio	State Statistics Service of Ukraine
4.	Non-agricultural and informal employment	(Non-agricultural and informal employment)/total employment	State Statistics Service of Ukraine
5.	Gross regional product (GRP) per employed person	Gross regional product/Employed population aged 15-70 (USD)	State Statistics Service of Ukraine
6.	Wages to GRP	Wages/Gross regional product, ratio	State Statistics Service of Ukraine
7.	Unemployment	Unemployed population aged 15-70 years old (according to the International Labour Organisation's methodology), %	State Statistics Service of Ukraine
8.	Expenditure on the purchase of goods and services	Population's expenditure on the purchase of goods and services/Gross regional product, ratio	State Statistics Service of Ukraine
9.	Gini index	Index	State Statistics Service of Ukraine
10.	GRP to fixed assets	Gross regional product/Fixed and intangible assets of enterprises (residual value)	State Statistics Service of Ukraine
11.	Capital investment to GRP	Capital investments/Gross regional product	State Statistics Service of Ukraine
12.	Inward foreign direct investment	Inward foreign direct investment, mln. USD	State Statistics Service of Ukraine, National Bank of Ukraine
13.	Loans	Loans provided by depository corporations (with the exclusion of the National Bank of Ukraine) to the corporate sector and households/Gross regional product, ratio	National Bank of Ukraine, State Statistics Service of Ukraine
14.	Deposits	Deposits of the corporate sector and households (with the exclusion of the National Bank of Ukraine)/Gross regional product, ratio	National Bank of Ukraine, State Statistics Service of Ukraine
15.	Revenues to expenditures	Total budget revenues/total budget expenditures, ratio	Ministry of Finance of Ukraine
16.	Roads	Length of hard surfaced roads of general use, thousands km	State Statistics Service of Ukraine
17.	Rail tracks	Operational length of public rail tracks, km	State Statistics Service of Ukraine
18.	General water drain	General water drain/Gross regional product, ths. cub. m/mln. USD	State Statistics Service of Ukraine
19.	Waste generation	Waste generation (I-III hazard classes)/Gross regional product, t/mln. USD	State Statistics Service of Ukraine
20.	Emissions of pollutants to GRP	Emissions of pollutants/Gross regional product, t/mln. USD	State Statistics Service of Ukraine
21.	Protective documents	Number of protective documents (patents) on inventions (national applicants), units	State Statistics Service of Ukraine, Ukrainian National Office for Intellectual Property and Innovations

Source: own study.

Table 2. Explanatory variables in estimated econometric models

Variable	Explanation	Unit	Source
Trade openness	(Export of goods + import of goods)/Gross regional product	ratio	State Statistics Service of Ukraine
Exchange rate	Official exchange rate of the Ukrainian hryvnia to the US dollar	UAH	National Bank of Ukraine
Foreign direct investment	Inward foreign direct investment/Gross regional product	ratio	State Statistics Service of Ukraine, National Bank of Ukraine

Source: own study.

In addition to the whole research period (2003-2021), we analysed the following periods separately:

- 2003-2006 (the period before the global financial crisis);
- 2007-2009 (the period of the global financial crisis);
- 2010-2013 (the period after the global financial crisis, the pre-war period);
- 2014-2021 (the war period).

Methodological Framework

We created the composite index of economic development of Ukrainian regions using 21 input variables in the principal components analysis. We employed the constructed index as a dependent variable in the panel data modelling procedure. It assumes a causal relationship suggested by Kong *et al.* (2021) in accordance with equation 1.

$$ECO_{it} = f(FDI_{it}, TOP_{it}, EER_{it}) \quad (1)$$

in which:

Eco_{it} - the composite index of economic development;
FDI_{it} - foreign direct investment;
TOP_{it} - trade openness;
EER_{it} - the exchange rate of UAH to USD;
the i index - regions;
the t index - time.

First, there is an estimated long-term relationship between the variables, following equation 2.

$$lnECO_{it} = \beta_0 + \beta_1 lnFDI_{it} + \beta_2 lnTOP_{it} + \beta_3 lnEER_{it} + u_{it} \quad (2)$$

in which:

$lnEco_{it}$ - the logarithm of the composite index of economic development;
$lnFDI_{it}$ - the logarithm of foreign direct investment;
$lnTOP_{it}$ - the logarithm of trade openness;
$lnEER_{it}$ - the logarithm of the exchange rate of UAH to USD;
$\beta_0, \beta_1, \beta_2, \beta_3$ - the estimated model parameters;
u_{it} - the random error component.

We investigated the cointegration of relationships using the Fisher type unit root test based on Augmented Dickey-Fuller statistics on residuals u_{it} from the long-term relationship model. This relationship would be confirmed if long-term regression residuals were stationary. The Fisher-type unit root test combines p-values from the panel-specific unit-root tests using the four methods proposed by Choi (2001). Inverse-logit transformations can be employed whether N is finite or infinite. The null hypothesis verified by the Fisher test is that all panels contain a unit root. For a finite number of panels, the alternative is that at least one panel is stationary.

We estimated the short-term dynamic of the relationship among variables using the *ARDL (p1, p2, p3, p4)* error correction model in the form of equation 3. Moreover, we determined maximum lag

orders according to the AIC value and obtained model parameters based on the Arrellano-Bond dynamic panel data estimation method.

$$\Delta lnECO_{it} = \gamma_0 \sum_{j=1}^{p1} \Delta lnECO_{i,t-j} + \gamma_1 \sum_{j=0}^{p2} \Delta lnFDI_{i,t-j} + \gamma_2 \sum_{j=0}^{p3} \Delta lnTOP_{i,t-j} + \gamma_3 \sum_{j=0}^{p4} \Delta lnEER_{i,t-j} + \delta ECM_{i,t-1} + \mu_{it} \quad (3)$$

in which:

Δ - the first-order difference;
$ECM_{i,t-1}$ - the error correction term;
$\gamma_0, \gamma_1, \gamma_2, \gamma_3$ - estimated model parameters;
j - the lag order;
p_1, p_2, p_3, p_4 - the maximum lag order;
δ - the coefficient of the error correction term, which measures the speed of adjustment to the long-run relationship;
μ_{it} - the random error component.

Equation 4 presents the threshold model on the impact of different levels of trade openness, according to the definition by Hansen (1999). The considered values for trade openness were 0.5 and 1.

$$lnECO_{it} = \alpha_0 + \alpha_1 lnFDI_{it} + \alpha_2 lnEER_{it} + \alpha_3 lnTOP_{it}.I(TOP < \varphi) + \alpha_4 lnTOP_{it}.I(TOP \geq \varphi) + \varepsilon_{it} \quad (4)$$

In which:

TOP - the threshold of the trade openness variable;
φ - the threshold value;
ε_{it} - the random error component.

RESULTS AND DISCUSSION

Figure 1 shows the relationship between the economic performance and trade openness of Ukrainian regions. It confirms that regions with larger trade openness tend to have higher economic development.

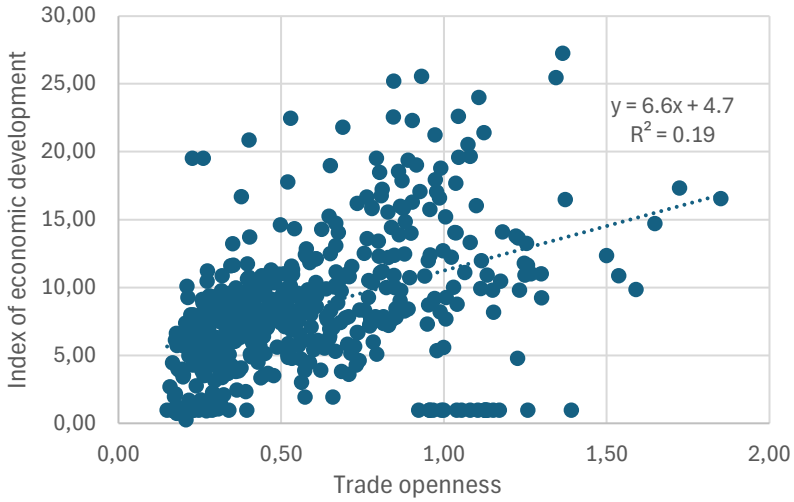

Figure 1. Relationship between trade openness and the index of economic development
Source: own elaboration.

The function may have been biased by some observations with extremely low values of economic performance, but there was still clearly a significant positive interaction. Figure 2 presents the relationship between economic development and foreign direct investment. In comparison to Figure 1, this interaction is weaker. On the one hand, many regions could have a low level of economic development, despite higher FDI. On the other hand, there are some regions with a higher level of economic performance, in spite of a smaller FDI inflow.

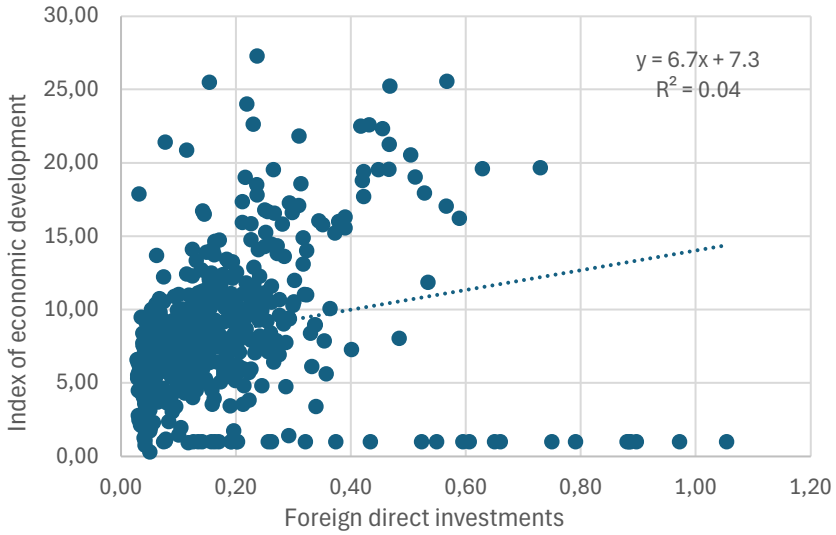

Figure 2. Relationship between foreign direct investments and the index of economic development
Source: own elaboration.

To estimate the economic performance of Ukrainian regions, we constructed the composite index based on 21 input variables as indicators of sustainable economic development (Table 1). We used this index as a proxy variable of economic performance and applied it as a dependent variable in further econometric modelling. We analysed the relationship between the region's economic development and three explanatory factors: the exchange rate, trade openness, and FDI. We employed all variables in the form of the natural logarithm, utilising the data for Ukraine's regions in the period 2003-2021. We examined the interaction between variables from different perspectives, using autoregressive dynamic panel models with the error correction term.

Long-term Relationship Between Variables

Firstly, we explored the overall long-term relationship between the variables. Table 3 provides the econometric model, which analyses this relationship for all regions during the research period. We can consider it as an average interaction between the levels of variables. Despite the smaller R-squared value (0.43), the model was significant with the F value equal to $1.41.10^{-56}$. All presented variables had a substantial impact on the region's economic performance. We determined the highest influence in the case of trade openness with the coefficient value of 0.46, *i.e.*, the 1% change in trade openness led to an average change in economic growth of 0.46%. We found the smaller effect in the case of FDI (0.23%) and, among the three analysed variables, the lowest impact in the case of the exchange rate (0.13%).

Table 3. Long-term relationship between the variables: The overall period

Variable	Coefficient	Standard error	t-stat	p-value	Significance
const	2.55	0.12	21.11	1.07E-69	***
LnEEr	0.13	0.03	3.99	7.68E-05	***
LnTOP	0.46	0.04	10.57	1.55E-23	***
LnFDI	0.23	0.04	6.445	2.91E-10	***

Source: own study.

However, due to the non-stationary nature of most economic variables, we could consider this model as a spurious regression. Moreover, we examined the significance of the long-term relationship using the cointegration test. Hence, we investigated the stationarity of residuals from the previous model, applying the panel Fisher-type unit root test based on Augmented Dickey-Fuller statistics. The mentioned stationarity meant the validation of the stable long-term relationship between economic

development and explanatory factors, which one could use as evidence of cointegration among the variables. Table 4 provides the cointegration test results.

Table 4. Cointegration test results

Indicator	Statistics	p-value
Inverse chi-squared(50) P	173.1732	0.0000
Inverse normal Z	-8.5894	0.0000
Inverse logit t(129) L*	-9.2882	0.0000
Modified inv. Chi-squared Pm	12.73	0.0000

Source: own study.

All p-values suggest the rejection of a unit root in residuals from the panel model presented in Table 3. This confirms that residuals were stationary, and a stable long-term relationship exists between the economic development and explanatory factors in Ukrainian regions in 2003-2021. The model in Table 3 assesses the interaction among the levels of the investigated variables. We could consider it as a long-term equilibrium, whose existence is also proved by employing the cointegration test.

Short-term Relationship Between Variables

To analyse a short-term relationship among indicators, we evaluated a nexus between differenced variables. The results in Table 5 include the model, which estimates the short-term interaction between the analysed variables. We dynamised this model using the lagged value of the dependent variable as the explanatory factor and lagged residuals from the long-term model as the error correction term.

Table 5. Short-term relationship between the variables: The overall period

Variable	Coefficient	Standard error	t-stat	p-value	95% confidence interval	
d_LnECO$_{(t-1)}$	0.112***	0.039	2.74	0.005	0.035	0.191
d_LnEEr	-0.297***	0.093	-3.19	0.001	-0.480	-0.114
d_LnTOP	0.788***	0.090	4.03	0.000	0.610	0.965
d_LnFDI	0.366***	0.055	5.03	0.000	0.258	0.473
ECM$_{t-1}$	-0.894***	0.052	-17.21	0.000	-0.996	-0.792

Source: own study.

We obtained the model parameters by applying the Arrellano-Bond dynamic panel data estimation. The Wald chisq=482.52 and the corresponding p-value of 0.000 confirmed the significance of this relationship. The model assesses the interaction between differenced variables and compares it with the long-term estimation. It has two additional variables: the lagged values of the economic development indicator dECO$_{(t-1)}$ and the error correction term (ECM), which are residuals from the long-term relationship lagged by one period. Similar to the long-term assessment, the interaction was estimated as the average for all regions and years.

The model results prove that the region's development level in the previous year significantly influenced the economic performance. The analysis of explanatory factors reveals that trade openness (0.79) had the highest positive effect on the regional economic performance, followed by FDI (0.37). In contrast to the results of the long-term model, we found a negative value in the case of the exchange rate. We could explain it by the substantial increase in the exchange rate over the analysed period due to events which have an adverse influence on the country's economic growth. This implies the existence of a negative relationship between the difference values of the economic development indicator and the exchange rate.

The last explanatory factor included in the model was the error correction term. Its significance confirmed the evidence of the long-term equilibrium between the variables, as suggested by the cointegration test results in Table 4. The estimated value of the error correction term measures the speed of the recovery of the long-term equilibrium in the case of its interruption. Based on the results in Table 5, we found a significant relationship between economic development and exchange rate, as

well as foreign direct investment and trade openness. The model also proves the existence of a significant long-term interaction among these variables.

Period-specific Analysis

Many events have had a large impact on the economic situation of Ukraine since 2003. Hence, we conducted the analysis also separately for main periods related to the most significant events: (i) 2003-2006 – the period before the global financial crisis, (ii) 2007-2009 – the period of the global financial crisis, (iii) 2010-2013 – the period after the global financial crisis, the pre-war period, and (iv) 2014-2021 – the war period. These events may have had a substantially different impact on regions depending on their characteristics. Table 6 presents the estimated models for the mentioned periods. The influence of trade openness varied over time, with the highest effect on economic development in the pre-war period. However, we found the smallest impact of trade openness on the region's economic performance during the war period. We noticed a similar situation in the case of FDI. While the largest impact of the indicator on the economic state of regions was in the pre-war period, its lowest influence was in the war period. The significance of the error correction term in the whole period provides evidence of the stable long-term relationship between the variables.

Table 6. Models estimated for different periods

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
d_LnECO$_{(t-1)}$	0.0126	0.139	-0.025	0.179**	0.160***
d_LnEEr	0.062	-0.355	-0.47	-0.381***	-0.28***
d_LnTOP	0.699***	0.515***	1.024***	0.488***	0.818***
d_LnFDI	0.304***	0.418***	0.518***	0.392***	0.332***
d_LnEEr(t-1)	-0.103	0.249	0.137	0.112	-0.077
d_LnTOP(t-1)	0.207	0.177	-0.436	0.095	0.183*
d_LnFDI(t-1)	-0.019	-0.025	0.062	-0.029	0.011
ECM$_{t-1}$	-0.809***	-0.6***	-0.569***	-0.812***	-1.088***
Const	0.145***	-0.0145	0.0562	0.046*	0.067***
Wald chisq	90.71***	67.73***	61.1***	197.89***	598.84***

Source: own study.

Further, we divided the regions into different groups. Firstly, we explored the war's impact on the analysed relationship separately for occupied regions, neighbours to occupied regions, and non-occupied regions during the war period. Secondly, we examined the interaction between variables, considering whether regions had sea access or not. We investigated it for coastal and non-coastal regions in all periods. The last considered factor was the urbanisation level. We performed the analysis for regions with the high, moderate, and low urbanisation levels during the mentioned periods.

Table 7 shows the relationship between the economic development and explanatory variables of regions divided according to military occupation in the pre-war and war periods. In this case, the autoregressive dynamic panel model also includes all explanatory variables lagged by one period. The obtained results prove that explanatory variables had different effects on economic development depending on the type of region. In occupied regions, trade openness and FDI significantly influenced economic performance during the pre-war period.

We observed the most significant impact in the case of foreign direct investment lagging by one period. However, in the war period, the interaction among the variables changed. The results show that only FDI still had a significant effect, but we saw its decrease from 1.18 to 0.52. Notably, the economic development of occupied regions and their relationship with other influencing variables did not follow any traditional assumptions. On the other hand, the models on the regions neighbouring with occupied oblasts, as well as non-occupied ones, confirmed a more significant relationship between the investigated variables. In the case of neighbours of occupied oblasts, the peculiarity is that trade openness and FDI had a significant negative impact on the region's economic performance. This could be

caused by anticipation of the conflict in the pre-war period, and, as a result, these regions have a specific economic situation. During the war period, the findings differ substantially from the results of the previous period, and they are more in line with economic theory. While trade openness and FDI had a positive effect, the increasing exchange rate had a significant negative impact on the economic development of regions in this period.

Table 7. Model's results for regions categorised according to military occupation in the pre-war and war periods

Variable	Occupied regions		Neighbours to occupied regions		Non-occupied regions	
	pre-war period	war period	pre-war period	war period	pre-war period	war period
dLnEco$_{(t-1)}$	-0.539*	-0.014	-0.262***	0.278	0.212***	0.228***
dLnEEr	-3.319	-0.199	0.918***	-0.541***	-0.278	-0.296
dLnTOP	0.898*	0.264	-1.319***	0.717***	0.788***	0.561***
dLnFDI	1.179*	0.517***	-0.903***	0.297***	0.258**	0.413***
dLnEEr(t-1)	-2.56*	-0.184	2.203***	-0.417*	-0.243	0.028
dLnTOP(t-1)	-0.748	-0.478*	-1.11***	0.275	-0.055	0.102
d_LnFDI(t-1)	1.588***	-0.067	-1.375***	-0.154	0.162	0.032
ECM	0.515	-1.017***	-0.415***	-1.225***	-1.427***	-1.094***
const	0.808	0.046	-0.393**	0.0765	0.099	0.0335
Wald Chi2	40.97***	1410.35***	437.26***	1893.84***	53.53***	487.09***

Source: own study.

In non-occupied regions, the findings were more consistent in both periods and corresponded to the expectations according to economic theory. The influence of the exchange rate was not substantial in these regions, but both trade openness and FDI had a strong impact on the region's economic performance. Compared to the pre-war period, the effect of trade openness declined slightly in the war period, but at the same time, the impact of FDI increased to a substantial extent. Based on the comparison of results during the war period, we can conclude that, on the one hand, the economic development of neighbours of occupied regions was more influenced by trade openness, while, on the other hand, the economic performance of non-occupied regions was more affected by FDI. Besides, the coefficient values of the error correction term in estimated models suggest that the equilibrium relationship between examined variables is restored quicker in non-occupied regions in the pre-war period. However, during the war period, we identified the faster recovery of the long-term equilibrium in oblasts, which are neighbours to occupied regions, compared to occupied ones.

Coastal and non-coastal Regions

We conducted a similar analysis for regions with sea access, *i.e.*, coastal and non-coastal oblasts. We estimated the relationship between the region's economic development and its influencing factors in the pre-crisis, crisis, pre-war, and war periods and, for comparison purposes, in the overall research period too. Table 8 presents the findings for coastal regions, which are in accordance with expectations. During the pre-crisis period, trade openness and its lagged value, as well as the lagged values of the exchange rate and FDI, had a significant effect on the economic performance of regions. We also identified that the influence of trade openness increases during times of crisis. Simultaneously, other variables become insignificant. Moreover, the sign of lagged foreign direct investment contrasts with expectations, and the interaction between this investment and the region's economic development does not follow usual patterns during the crisis period.

The interesting finding is that the effect of trade openness is the highest in the crisis time, but FDI has the highest impact on the economic development of coastal regions during the pre-war period. Another interesting result is that the crisis time determines the fastest recovery of the long-run equilibrium relationship between variables. On the other hand, the regional economic performance is not influenced by its previous level in the crisis and war periods because the lagged value of dLnEco(t-1) is not significant.

Table 8. Model's estimations for coastal regions

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
dLnEco$_{(t-1)}$	-0.512***	0.219*	0.0281**	-0.085	0.016
dLnEEr	-0.039	-0.457	-0.085	-0.443**	-0.098
dLnTOP	0.538***	0.930***	0.789***	0.603***	0.795***
dLnFDI	0.0323	0.115	1.301***	0.371***	0.294***
dLnEEr$_{(t-1)}$	0.516***	0.216	0.367	-0.269	0.101
dLnTOP$_{(t-1)}$	0.927***	0.353	-1.301***	0.106	0.198
d_LnFDI$_{(t-1)}$	0.136*	-0.650***	0.827***	0.087	0.0216
ECM	-0.876***	-1.756***	-0.907***	-0.754***	-0.945***
const	0.132***	0.007	0.101	0.117**	0.084**
Wald Chi2	215.22***	28.06***	106235***	981.14***	547.48***

Source: own study.

Table 9 shows similar results for non-coastal regions. The influence of FDI was stable during the overall research period, and its coefficients varied between 0.4 and 0.5. Besides, the impact of trade openness was significant in all analysed periods. While we identified its highest effect on the economic development of non-coastal regions in the pre-war period, we saw the substantially lower impact of this variable during the war period. Interestingly, in the case of non-coastal regions, we observed the fastest recovery of the long-run relationship among the variables in the pre-war period.

Table 9. Model's estimations for non-coastal regions

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
dLnEco$_{(t-1)}$	0.018	0.155*	0.063	0.231***	0.107
dLnEEr	-0.101	-0.749	-0.674***	-0.314	-0.335**
dLnTOP	0.613**	0.326***	0.916***	0.484***	0.638***
dLnFDI	0.504***	0.404***	0.492***	0.405***	0.355***
dLnEEr(t-1)	-0.344*	0.156	-0.792**	0.144	-0.054
dLnTOP(t-1)	0.099	0.222*	0.055	0.172*	0.107
d_LnFDI(t-1)	0.128	0.027	0.295***	-0.019	0.069
ECM	-0.871***	-0.734***	-1.367***	-1.091***	-1.229***
const	0.178***	-0.061	0.0254	0.016	0.040
Wald Chi2	147.38***	21.26***	469.86***	2423.89***	1052.76***

Source: own study.

Urbanisation Levels

We estimated the same models for Ukrainian regions, depending on the urbanisation level. We used the following intervals for this indicator in the study: the high urbanisation level – more than 80%, the moderate urbanisation level – 50-80%, and the low urbanisation level – less than 50%. Table 10 includes results for regions with a high urbanisation level, *i.e.*, urban areas. We identified the largest impact of trade openness in the pre-war period, and the effect of FDI was the highest in this period, too. During the war period, the influence of FDI on the development of regions with a high urbanisation level was much smaller, and the impact of trade openness was insignificant. Simultaneously, in this period, we observed the quickest restoration of the long-run equilibrium between variables, measured by the estimated coefficient for ECM. The effect of the exchange rate on the region's development was also significant in all periods, except the war period.

Table 11 provides the results for regions with a moderate urbanisation level. The economic performance of these regions is mostly affected by trade openness, and we found the highest impact of this variable in the pre-war period. The influence of trade openness was substantially lower during the crisis and war periods. On the other hand, FDI had the largest impact during the war period. While we saw the fastest restoration of the long-run relationship between variables in the pre-war period, we observed its slowest recovery during the war period. The effect of FDI was lower in this case compared

to regions with a high urbanisation level, and its largest impact was determined in the crisis and pre-war periods.

Table 10. Model's results for regions with a high urbanisation level

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
dLnEco$_{(t-1)}$	-0.38	-0.395	0.047	0.119	0.134
dLnEEr	-0.1456	0.083	-1.537*	-0.786	-0.464
dLnTOP	-0.474	0.0455***	1.173***	0.321	0.733**
dLnFDI	-0.628	0.213	1.013**	0.234**	0.239**
dLnEEr(t-1)	1.939***	1.461***	-2.49***	0.125	-0.237
dLnTOP(t-1)	-1.456*	-0.056	-1.263*	0.109	-0.434*
d_LnFDI(t-1)	-1.066***	-0.512***	0.392	-0.274***	-0.193
ECM	-1.037**	-0.542*	-0.851*	-1.242***	-1.323***
const	-0.239	-0.145***	0.151	0.048	-0.001
Wald Chi2	905.23***	6.6	39.62***	593.48***	240.47***

Source: own study.

Table 11. Model's results for regions with a moderate urbanisation level

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
dLnEco$_{(t-1)}$	0.172*	0.298	0.189***	0.01	0.100
dLnEEr	0.256*	-0.557**	-0.189	-0.407	-0.253*
dLnTOP	0.826***	0.648***	1.14***	0.71***	0.767***
dLnFDI	0.248***	0.371***	0.236	0.409***	0.329***
dLnEEr(t-1)	-0.154	0.629***	0.009	-0.07	-0.169*
dLnTOP(t-1)	0.331***	0.336***	0.272	0.18	0.243**
d_LnFDI(t-1)	-0.075	-0.138*	0.305	0.129*	0.079
ECM	-1.212***	-1.101***	-1.377***	-0.808***	-1.239***
const	0.195***	-0.062	0.154*	0.071	0.099*
Wald Chi2	964.07***	78.23***	851.81***	725***	567.19***

Source: own study.

Table 12 includes results for regions with a low urbanisation level, *i.e.*, rural areas. Interestingly, the effect of trade openness, exchange rate, and FDI on the region's development was not significant in the pre-crisis and crisis periods. On the other hand, trade openness had a substantial impact on these regions during the pre-war and war periods. Moreover, FDI also significantly affected the economic performance of rural regions in these two periods. The current level of the region's development substantially depends on its previous performance, mainly in the pre-war period. Another interesting discovery is that the fastest restoration of the equilibrium relationship among variables was in rural areas compared to regions with moderate and high levels of urbanisation. We observed the quickest recovery of the long-run relationship between the region's economic development and its influencing factors during the crisis period.

We also examined regions considering the degree of trade openness. According to its value, we divided trade openness into three intervals: the low level (smaller than 0.5), the average level (between 0.5 and 1.0), and the high level (higher than 1.0). Table 13 shows threshold effects for the mentioned levels of the variable in different periods. The model's results show the highest impact of trade openness change in regions with its average level. The findings also confirmed that the largest effect of trade openness was in the pre-crisis period. During the crisis and war periods, we saw a similar influence of the variable's change in regions with small trade openness. In regions with average trade openness, its effect is slightly larger in the war period, compared to the crisis period. The interesting finding is that the change in trade openness in regions with its high level did not have any significant impact on economic development during all periods. We found the most significant effect of trade openness in the case of regions with the variable's low and average levels during the pre-war period.

Table 12. Model's results for regions with a low urbanisation level

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
dLnEco$_{(t-1)}$	-0.346	0.205	0.376***	0.277	0.194**
dLnEEr	-0.215	0.733	-0.392	-0.898	-0.032
dLnTOP	0.103	2.112	1.46***	0.440**	0.595***
dLnFDI	0.312	-0.158	0.465**	0.327***	0.384***
dLnEEr$_{(t-1)}$	0.667*	0.043	0.168	0.309	0.085
dLnTOP$_{(t-1)}$	0.213	-0.044	-0.085	0.107	0.126
d_LnFDI$_{(t-1)}$)	-0.087	0.013	-0.139	-0.248**	0.047
ECM	-0.468	-2.076***	-1.277***	-1.517***	-1.328***
const	0.060	-0.237	-0.072	-0.016***	0.006
Wald Chi2	138.58***	103.32***	79.52***	4332.54***	751.44***

Source: own study.

Table 13. Results of threshold effects models

Variable	Pre-crisis period	Crisis period	Pre-war period	War period	Overall period
LnECO$_{(t-1)}$	0.44	0.14	-0.10	0.16**	0.15***
LnEEr	-12.41***	-0.35	1.37	0.16***	0.08**
LnFDI	0.42	0.49*	0.02	0.22***	0.19***
TopSmall	1.14	0.56*	0.80***	0.55***	0.46***
TopMedium	1.47*	0.45	0.85***	0.57**	0.56***
TopHigh	1.93	1.19	0.47	0.74	0.10
_cons	23.08***	3.94***	0.11	2.12***	2.30***
Wald Chisq	11.48**	7.89	61.02***	71.77***	177.06***

Source: own study.

Furthermore, Table 14 presents the estimated models for the subsample of regions with low, average, and high trade openness. It shows that FDI and the exchange rate had the highest impact on the economic performance of regions with a high level of trade openness. The influence of the exchange rate was not significant in regions with the average and low levels of the variable, and, in this case, the effect of FDI was smaller too.

Table 14. Subsample results for high, average, and low levels of trade openness

Variable	High	Medium	Small
LnECO$_{(t-1)}$	0.26*	0.02	0.14**
LnEEr	0.15*	-0.05	0.06
LnFDI	0.32**	0.25***	0.20**
_cons	2.04***	2.76***	1.88***
Wald Chisq	19.58***	16.6***	21.65***

Source: own study.

The results indicate that coastal regions benefited more from trade openness compared with non-coastal regions, which supports the research hypothesis about the different impact of trade openness on the economic development of coastal and non-coastal regions. The influence of trade openness was more pronounced in coastal regions, particularly during the pre-war and crisis periods, suggesting that the sea access enhances the positive effects of trade openness on the region's economic development. The findings indicate that coastal regions benefit significantly from trade openness and FDI, underscoring the importance of the geographic location in shaping economic outcomes. We also confirmed the hypothesis about the different impact of the 2007-2009 global financial crisis on the regional economic development (namely, coastal regions experience a more significant decline in eco-

nomic performance compared to non-coastal regions due to their higher dependence on trade openness and FDI). On the other hand, we also accepted the hypothesis about a stronger relationship between FDI and economic development in regions with a higher level of trade openness.

The research results provide partial support for the hypothesis about the significant interaction between exchange rate fluctuations and economic development, particularly in regions with a higher level of trade openness. The findings also partially confirm the hypothesis about a higher sensitivity of the economic development of coastal regions to changes in FDI and trade openness. The only exception is the pre-war period, when coastal regions were highly sensitive to changes in foreign direct investments.

We also accepted the hypothesis about the various impacts of trade openness, exchange rates, and FDI across different regional categories (occupied, non-occupied and neighbouring). Occupied regions exhibited unique patterns, *i.e.*, trade openness and FDI had different effects compared to non-occupied regions. Neighbouring regions also showed distinct interactions, particularly during the war period.

Our findings support the results of some other studies on this topic. For instance, Benita (2019) investigated the interaction between trade openness and GDP per capita of 15 Latin American countries before, during, and after the 2007-2009 global financial crisis. Benita tested measures of trade openness and identified mixed outcomes. If one analyses only Latin American countries, a slightly positive nexus between trade openness and economic growth is found. Hossain *et al.* (2022) investigated the impact of trade openness and FDI on the economic growth of 30 Asian countries, considering 1997-1998 and 2008-2009 financial shocks. The results confirmed that trade openness and FDI have positive effects on the economic development of countries in the long run. Ali and Imai (2015) identified similar research results in their study regarding the influence of various crises and trade openness on the economic development of African countries. They determined that while there is an association of crises with the economic decline of countries, trade openness encourages their economic growth. Moreover, the researchers conclude that the openness of trade could mitigate the negative effects of crises, but this is possible when a certain level of trade openness is achieved.

Simultaneously, our findings differ from the conclusions of Nam and Ryu (2024). They argue that excessive trade openness could have a negative influence on economic growth, using data on ten Asian countries. Besides, our results are somewhat different from the findings of Musila and Yiheyis (2015). Their study revealed that while trade openness has a positive impact on the economic growth of Kenya, its effect is statistically insignificant.

CONCLUSIONS

This study provides a rigorous analysis of the impact of trade openness, exchange rate fluctuation, and foreign direct investment on the economic development of Ukrainian regions over the 2003-2021 period. The empirical results demonstrate that trade openness exerts a significant positive influence on regional economic performance, particularly during the pre-war period. Coastal regions and regions with a higher level of trade openness exhibit the most substantial benefits. Moreover, FDI is also identified as a critical driver of economic development, with its effects being more pronounced in non-coastal and non-occupied regions.

Conversely, we found that exchange rate fluctuations have a detrimental short-term impact on economic performance, reflecting the adverse events experienced by Ukraine during the research period. The analysis further revealed significant heterogeneity across different regional categories on the effect of these variables, including coastal versus non-coastal regions, regions with varying levels of urbanisation, and regions affected by military occupation. Coastal regions and regions with higher trade openness experience stronger positive effects of FDI and trade openness, while non-coastal regions exhibit a more stable influence of FDI.

The findings indicate that coastal regions benefit more from trade openness compared with non-coastal regions, which supports our research hypothesis. The impact of trade openness was more pronounced in coastal regions, particularly during the pre-war and crisis periods, suggesting that the sea

access enhances the positive effects of trade openness on regional economic development. The findings indicate that coastal regions benefit significantly from trade openness and FDI, underscoring the importance of the geographic location in shaping economic outcomes.

During the crisis period, coastal regions, which are more integrated into international trade and attract higher FDI levels, face greater economic challenges. In contrast, non-coastal regions, which are less dependent on international trade and FDI, exhibit more resilience during the financial crisis. The economic performance of these regions is less affected by the decline in global trade and investment, resulting in a relatively stable economic environment compared to their coastal counterparts.

The different impact of the financial crisis on Ukrainian regions underscores the importance of regional characteristics in shaping economic outcomes. Coastal regions, with their higher exposure to global economic fluctuations, are more vulnerable to external shocks, while non-coastal regions benefit from a more insulated economic structure. These findings highlight the need for tailored economic policies that consider regional disparities and aim to enhance the resilience of regions to global economic shocks.

The novelty of our article is threefold: (i) practical analysis of Ukraine that can serve as a benchmark in future research for comparative analysis between this country and other economies; (ii) comparison of the impact of trade openness on economic development of regions under crisis and non-crisis conditions; and (iii) the use of several classifications of the country's regions (*i.e.*, the proximity to the war zone, the sea access, and the urbanisation level) to identify peculiarities of the above-mentioned impact during the 'hybrid' stage of the war.

This article can contribute to theory and practice in this research field. The article's results are important to better understand the interaction between trade openness and the economic development of Ukrainian regions, especially during the crisis and war periods. The findings indicate that higher trade openness supports the economic stability of the country's regions. Therefore, it is necessary to develop a strategy for the expansion and diversification of Ukrainian exports.

The obtained results could help improve target programs that aim to promote the economic development of the country's regions. The findings could also be useful for trade-oriented businesses to understand regional processes in more detail and to enhance decision-making under war conditions.

There are some limitations of our study. Firstly, we did not investigate the influence of trade openness on demographic changes. Secondly, we did not consider the relationship between trade openness and foreign direct investment by origin and sector. Future research could explore the effect of trade openness on human capital allocation and export diversification.

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Authors

The contribution share of authors is equal and amounted to ⅓ for each of them.

Elena Horská
Dr.h.c. Prof. Dr. Ing., Institute of Marketing, Trade and Social Studies, Faculty of Economics and Management, Slovak University of Agriculture in Nitra. Dean of the Faculty of Economics and Management, Slovak University of Agriculture in Nitra. Her research interests include consumer studies, food marketing and internationalisation.
Correspondence to: Dr.h.c. Prof. Dr. Ing. Elena Horská, Institute of Marketing, Trade and Social Studies, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, e-mail: elena.horska@uniag.sk
ORCID https://orcid.org/0000-0002-4973-9573

Serhiy Moroz (corresponding author)
Assoc. prof., CSc., Institute of Marketing, Trade and Social Studies, Faculty of Economics and Management, Slovak University of Agriculture in Nitra. His research interests include economic development, regional economics and international trade.
Correspondence to: Assoc. prof., CSc., Serhiy Moroz, Institute of Marketing, Trade and Social Studies, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, e-mail: serhiy.moroz@uniag.sk
ORCID https://orcid.org/0000-0001-8136-3791

Jozef Palkovič
Ing., PhD, Institute of Statistics, Operation Research and Mathematics, Faculty of Economics and Management, Slovak University of Agriculture in Nitra. His research interests include food security, sustainable development and risk evaluation.
Correspondence to: Ing. Jozef Palkovič, PhD, Institute of Statistics, Operation Research and Mathematics, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, e-mail: jozef.palkovic@uniag.sk
ORCID https://orcid.org/0000-0002-4992-0145

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Young consumers in cultural context: A cross-national study of Hofstede's value dimensions

Małgorzata Bartosik-Purgat, Wiktoria Rakowska, Tomasz Grzegorczyk

ABSTRACT

Objective: The study aims to evaluate the internal validity of a scale measuring cultural traits in relation to Hofstede's framework and to identify the individual cultural characteristics of young people across three countries: Poland, South Korea, and the United States.

Research Design & Methods: We conducted the research using the computer-assisted web interview (CAWI) method. Young participants from three culturally diverse nations received a web-based questionnaire, designed in accordance with Hofstede's model and enriched with elements from other cultural measurement studies.

Findings: The results confirmed that one can measure Hofstede's dimensions as distinct, multidimensional constructs, with MA and IVR demonstrating strong cross-cultural validity. However, the weaker performance of IDV and UAI highlights semantic and contextual differences across societies, underlining the need for cultural adaptation of tools. The study also revealed that young cohorts often deviate from national cultural averages, reflecting their faster adoption of global trends, technology, and new media.

Implications & Recommendations: Theoretically, the study supports Hofstede's framework while pointing to the need for flexible, culturally inclusive, and dynamically validated scales. Practically, it demonstrates that youth-specific and locally tested strategies are essential in international marketing and management. Future research should extend cross-cultural validation to more countries, refine weaker items, and explore hybrid etic-emic models.

Contribution & Value Added: The article contributes to cultural research by empirically testing Hofstede's framework at the individual level, addressing generational differences, and offering methodological insights into the cross-cultural validation of measurement tools. It also provides practical recommendations for tailoring strategies to younger consumer segments across markets.

Article type: research article

Keywords: national culture; Hofstede's dimensions; cultural traits; young consumers; cross-cultural validation; CFA; Poland; South Korea; the United States of America

JEL codes: M31, M16, Z13, C38

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INTRODUCTION

National culture plays a vital role in each individual's life and within the community they belong to (Kacprzak & Dziewanowska, 2015; Pham *et al.*, 2024; Schoefer *et al.*, 2025). It comprises elements that form a complex whole, including the habits learned by humans as members of society (Benedict, 1949; Bartosik-Purgat, 2019), such as a nation's values, beliefs, norms, and patterns of behaviour (Leung *et al.*, 2005). According to Geertz (1973), national culture is the historically transmitted pattern of meanings expressed in symbolic forms, through which people communicate, preserve, and develop their understanding of and attitudes towards life. Solomon (2019) argues that we should view culture as the personality of society, influencing many aspects of individual behaviour, including consumer choices –

culture acts as a lens through which we interpret products. McCracken (1986) also describes culture as a lens through which people perceive the world. In his view, culture shapes how individuals see the phenomena around them, including globalisation, media, and technological advancements. According to Hofstede (1984, p. 9), national culture is a 'collective programming of the mind that distinguishes members of one group or category of people from another'.

The literature offers numerous typologies of national cultures, with authors describing cultural traits of societies using various scales of measurement (*e.g.*, Trompenaars & Hampden-Turner, 2001; Hofstede *et al.*, 2010; Meyer, 2014). One of the most recognisable and influential frameworks is the model introduced by Hofstede *et al.* (2010). The cultural traits identified in that study can explain people's reactions and behaviours across different cultures as employees, consumers, and community members. The results from that study often reflect a country's cultural characteristics and serve as a basis for comparing cultural traits, behaviours, and decisions (*e.g.*, Singh, 2006; Minkov *et al.*, 2019; Guftométros & Guerreiro, 2021; Schoefer *et al.*, 2025). In other words, this approach relies on the premise that culture influences how people think, value, and behave, and that we can study and compare cultural differences at the national level (Hofstede, 1984). However, these are average results for societies; they do not represent the characteristics of individual segments in terms of specific cultural traits. Additionally, young people sometimes display characteristics that diverge from national averages (Chang, 2024), because they usually tend to adopt global trends more rapidly and are more influenced by new media and technologies (*e.g.*, Kopaničová & Klepochová, 2016; Ponzoa *et al.*, 2021; Chang, 2024; Schoefer *et al.*, 2025). They are also more sensitive to changes in their environment. Several studies have identified differences within the young people's segment compared to the results obtained in the Hofstede study. For example, Eringa *et al.* (2015) present the findings of an analysis assessing the validity of Hofstede's cultural dimensions among contemporary international business students. The survey included 1 033 students from the Netherlands, Germany, China, South Africa, and Qatar. Concerning the specific dimensions, it is notable that power distance showed significant differences across all the countries studied. Similarly, long-term orientation varied significantly in most cases. When considering the countries, notable differences emerged between Hofstede's measurements and those of the survey, especially regarding individualism, power distance, uncertainty avoidance, and long-term orientation in China. This may reflect the evolving nature of cultures over time and the generational differences in value systems (Eringa *et al.*, 2015). However, to the best of our knowledge, this topic remains insufficiently explored.

The primary aim of our survey was twofold: firstly, to evaluate the internal validity of the developed scale for measuring cultural traits in relation to Hofstede's study, and secondly, to identify the individual cultural characteristics of young people across three countries based on Hofstede's model. Our research is academically original and significant, and it offers practical insights into the behaviour and decision-making of young people. Notably, our study focuses on the participants' individual cultural traits rather than societal-level characteristics, which is a limitation of Hofstede's research. To accomplish this focus, we conducted primary research using the computer-assisted web interview (CAWI) method, involving young participants from three culturally distinct nations: Poland, South Korea, and the United States. The research instrument, a web questionnaire, complied with Hofstede's model and integrated elements from other studies that measured similar features. We chose these three countries because of their cultural and economic differences, as well as their roles as cultural bridges connecting North America, Europe, and Asia.

The main research thesis drew from studies by other authors indicating the distinctiveness of young consumers' characteristics from the country's average behavioural patterns (*e.g.*, Eringa *et al.*, 2015; Chang, 2024). Therefore, the main thesis claimed that the specifics of cultural traits differed among young people in comparison to the results identified in a country in the light of Hofstede's study.The paper consists of the following parts: first, we present the theoretical background of Hofstede's model, including its strengths, weaknesses, and a cultural overview of the three analysed countries. The next part presents the methodology, describing the sample, the measurement scale, and the operationalisation of the six cultural dimensions. In the results section, we provide the scale validation,

CFA results, invariance testing, and cross-cultural comparisons. Finally, the paper provides concluding remarks, implications, and a discussion of the study's limitations and directions for future research.

LITERATURE REVIEW

Hofstede's Cultural Model

Despite its limitations and criticisms, Hofstede's model ranks among the most influential studies on cultural differences. This research analysed data from employees of the multinational corporation IBM based on questionnaires that enabled researchers to identify the key dimensions of national culture. The initial measurement took place between 1967 and 1973 (Hofstede, 1984), with a sample of more than 116 000 questionnaires (Hofstede *et al.*, 2010). The respondents were IBM employees in over 50 countries (Hofstede, 1984). A central assumption of this study was that one could compare national cultures by analysing responses from those working within the same organisation, thereby eliminating differences caused by distinct corporate cultures.

The primary research tool used in the study was a standardised questionnaire on employee values, attitudes, and beliefs (Hofstede, 1984), including questions on attitudes towards hierarchy, teamwork, risk-taking, and future orientation. The results underwent statistical calculations, namely factor analysis, allowing the researchers to distinguish dimensions of culture (Hofstede, 1984). Through the statistical analysis, Hofstede's model enables a systematic and reproducible comparison of cultures (Minkov & Hofstede, 2011). Initially, the team identified four dimensions of culture (Hofstede, 1984):

1. Power distance (PDW) measures the degree of acceptance of power inequality in a society.
2. Individualism vs collectivism (IDV) measures how well people function as individuals or within a group.
3. Masculinity vs femininity (MA) determines the dominant values in society, namely competition and success vs caring and cooperation, and the degree to which a culture maintains the traditional gender role distinctions. In 2023, researchers renamed this dimension as 'motivation towards achievement and success'.
4. Uncertainty avoidance (UAI) measures the tolerance level for uncertainty and unpredictability.

Later, the research expanded the model to include two additional dimensions (Hofstede & Bond, 1988; Minkov & Hofstede, 2011):

5. Term orientation (TO) refers to society's approach to tradition and the future.
6. Indulgence vs restraint (IVR) determines the degree to which society allows itself to indulge in pleasures and desires.

Eventually, these adjustments produced a model consisting of six cultural dimensions to compare societies based on their values and norms.

Strengths and Weaknesses of Hofstede's Model

The Hofstede model enables a structured comparison of cultures, allowing for the prediction of differences in people's behaviour and values across countries (Hofstede, 1984). Unlike earlier approaches based on descriptive analyses, the Hofstede model offers measurable and comparable indicators (Mooij, 2013), updated and expanded several times (Hofstede & Bond, 1988; Minkov & Hofstede, 2011). However, Baskerville (2003) criticises the attempt to represent complex aspects of culture through numerical indicators and matrices. In her opinion, such a reduction can lead to a loss of important nuances and cultural dynamics that resist capturing within the framework of rigid categories. Nevertheless, some authors point out that Hofstede's dimensions remain relevant despite globalisation and changing social conditions (Beugelsdijk & Welzel, 2018).

Hofstede's indicators provided the foundation for creating databases and online tools to enable cross-country comparisons, thus making the model more accessible to researchers and business practitioners (Hofstede Insights, 2024). This model has practical applications in international business, assisting companies to adapt management, human resource management, negotiation, and cross-cultural communication strategies (Hofstede, 2001; Kirkman *et al.*, 2006; Ploae, 2012). Furthermore, it

generated much subsequent research on organisational and national culture, such as Trompenaars's models, GLOBE, and Schwartz's value theory (Schwartz, 1994; House *et al.*, 2004; Zainuddin *et al.*, 2018), and influenced the development of theories related to leadership, business strategies, and cultural differences in social psychology (Taras *et al.*, 2012).

Despite its popularity and widespread use in cross-cultural research and international management, Hofstede's model has limitations and weaknesses. The former primarily concern methodology (*e.g.*, Spector *et al.*, 2001; Orr & Hauser, 2008; Bolzonella, 2024), generalisation (*e.g.*, Taras *et al.*, 2012; Ploae, 2012), and the research sample (*e.g.*, McSweeney, 2002). Among the weaknesses, researchers note that the study focused on respondents from a single company, IBM. This means its results may reflect IBM's organisational culture more than national cultural differences (McSweeney, 2002). Certain authors suggest that the model may be overly 'IBM-centric' (Beugelsdijk & Welzel, 2018). However, Taras *et al.* (2012) highlight the model's subsequent validation and extension to larger survey samples covering different countries and economic sectors, thereby increasing its empirical credibility. Nonetheless, Venaik and Brewer (2013) indicate that Hofstede's model relies on data from specific periods that may no longer be current. Consequently, there is a risk that some of the dimensions may not accurately reflect a country's present values and practices unless the data undergo regular updates. At the same time, they emphasise that culture is a dynamic variable rather than a static one (Venaik & Brewer, 2013). Blodgett *et al.* (2008) note in their study that Hofstede's cultural dimensions are valuable for analysing cross-cultural differences, though some may require updating or reinterpretation. The findings suggest that cultures evolve, and Hofstede's original data may not fully capture the contemporary differences between nations. According to the authors, the Hofstede model remains useful for analysing cultural differences in business and management but may be less applicable to rapidly developing societies (Blodgett *et al.*, 2008; Zainuddin *et al.*, 2018).

Another significant limitation highlighted in the literature is that Hofstede created his model to analyse cultural differences at the national level (Bolzonella, 2024). Venaik and Brewer (2013) emphasise that employing this model to examine individual behaviour or organisational practices is inappropriate because it ignores internal cultural diversity within countries. Other scholars also stress that Hofstede's model assigns fixed values to entire nations but overlooks important regional, ethnic, subcultural, and individual differences among people within a single society (*e.g.*, Taras *et al.*, 2012; Khlif, 2016). Furthermore, Kirkman *et al.* (2006) suggest that the portrayal of national cultures in this model seems overly generalised, as each culture and its members are internally diverse and their characteristics constantly evolve over time (Kirkman *et al.*, 2006; Ploae, 2012; Khlif, 2016). In essence, reducing complex national cultures to several dimensions can lead to oversimplifications (Ploae, 2012). Additionally, Baskerville (2003) notes that Hofstede equated the concept of a nation with culture, which is a simplistic perspective. In reality, national borders scarcely correspond with cultural boundaries. Moreover, Venaik and Brewer (2013) discuss the risk of ecological fallacy, which involves assuming that all members of a culture display similar traits. This is because the model relies on average scores for entire countries. In truth, a country might encompass considerable regional, ethnic, and class differences that this model fails to account for.

In addition to the above limitations, some researchers also observe that Hofstede's model relies on Western research methods and might not fully represent the perspectives of cultures outside Europe or North America (McSweeney, 2002; Ploae, 2012; Zhou & Kwon, 2020). Despite the aforementioned strengths and weaknesses of the Hofstede model, scholars commonly use it in post-comparative research, where cultural values serve as variables influencing a phenomenon (Zainuddin *et al.*, 2018).

Poland, South Korea, and the United States in the Light of Hofstede's Dimensions

According to Hofstede's model, the United States is one of the most individualistic societies in the world (Figure 1). The culture here emphasises personal achievement and independence. Poland represents a moderately individualistic country, where people value freedom, but family and local communities are still important. In turn, South Korea is a collectivist society, where group interests and social harmony are essential. People often identify strongly with groups, such as their family or workplace.

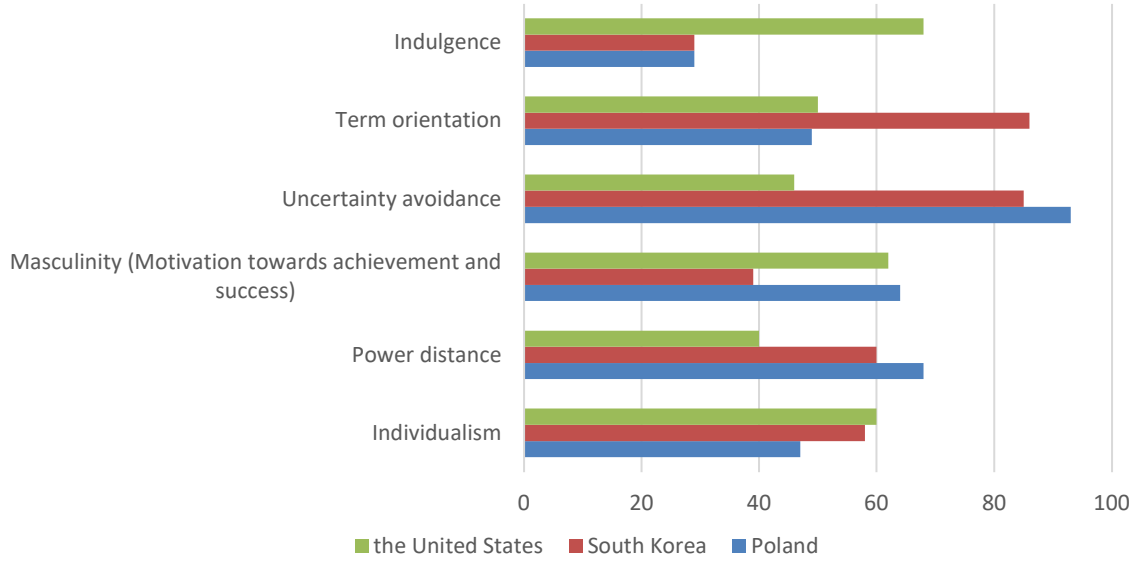

Figure 1. Hofstede's dimensions for Poland, South Korea, and the United States
Source: Hofstede Insight, 2025; Hofstede *et al.*, 2010.

Regarding the PWD dimension in Poland, the societal and organisational hierarchies proved quite pronounced; for example, subordinates expect clear guidance from their superiors. South Korea also displays a relatively high power distance, likely influenced by Confucianism, which emphasises respect for elders and authorities and shapes organisational and social culture. Conversely, the United States has a comparatively low PWD, indicating a greater sense of equality in interpersonal relationships and more freedom for employees to express themselves in relation to their superiors.

Referring to the MA dimension in Poland and the United States, we observed a similar result, favouring success, competition, and material achievements. Conversely, in South Korea, priorities focus on interpersonal relationships, harmony, and quality of life.

Regarding UAI, Poland scored the highest, which may indicate that people favour clear rules and structures and tend to be risk-averse to change. South Korea also achieved a high score for this dimension. Koreans dislike uncertainty, so they follow rules and procedures both in their work and personal lives. However, Americans are more receptive to uncertainty, risk, and experimentation, adjusting more quickly to change.

Koreans, who value frugality, perseverance, and investment in the future, achieved the highest TO rate. Poland has a short-term culture, characterised by a greater focus on traditions, rapid success, and relatively short-term goals. Similarly, Americans tend to demonstrate a short-term approach, focusing on quick success, results, and consumption.

Regarding the IVR dimension, Poles and Koreans appear as restrained countries, meaning that social norms influence behaviour and regulate desires, and people tend to be rather pessimistic. In contrast, Americans are more permissive, which allows for greater freedom to express emotions and enjoy life's pleasures.

RESEARCH METHODOLOGY

The primary research used in the study employed the CAWI method, engaging young participants from three culturally distinct countries: Poland (PL), South Korea (KOR), and the United States (US), with the support and permission of the ethical commission at our university. We collected the data from January to April 2025. Professors from various economic and business universities distributed the link to the questionnaire among their students, aged between 18 and 30, during classes in Poland (N = 201), South Korea (N = 253), and the United States (N = 214) (Table 1). There was a reasonably balanced gender distribution in each of the national groups, with a slightly higher proportion of women. In the

Korean group, women accounted for 59.3% of respondents, men for 40.3%, and one person (0.4%) described their gender as different. The Polish sample provided equal representation of women and men (50% each), while in the American group, women constituted 51%, men 48%, and 1% of respondents declared a different gender identity. Regarding the participants' age, we noticed significant differences between the groups ($p < 0.001$). The Polish sample was the youngest, with a mean age of 22.1 years and a slight variation (SD = 2.63). The Korean group had a higher mean age of 24.87 years, and the American group had a mean age of 24.25 years.

Table 1. Sample characteristics

Characteristic	KOR N = 253[1]	PL N = 201[1]	US N = 214[1]	*p*-value[2]
Gender				0.078
Female	150/253 (59.3%)	101/201 (50%)	109/214 (51%)	
Male	102/253 (40.3%)	100/201 (50%)	102/214 (48%)	
Other	1/253 (0.4%)	0/201 (0%)	3/214 (1%)	
Age	24.87 (6.98) Me: 23	22.1 (2.63) Me: 22	24.25 (3.67) Me: 24.5	< 0.001

[1] n/N; mean (SD); Me: median
[2] Pearson's chi-squared test; Kruskal-Wallis rank sum test
Source: own study.

The questionnaire included questions about Hofstede's six dimensions and personal information, such as gender. We developed a 28-item scale that measures Hofstede's six dimensions of culture at the individual level (Appendix 1). In creating this scale, we utilised the results of previous studies, such as CVSCALE (Yoo *et al.*, 2011; Alon *et al.*, 2023), validated across five dimensions, and a scale measuring the sixth dimension of IVR developed by Heydari *et al.* (2021). Respondents indicated their agreement with each statement using a 5-point Likert scale, where '1' means 'strongly disagree' and '5' means 'strongly agree'.

The IDV scale in the questionnaire assesses how much individuals value personal autonomy, independence in decision-making, and prioritising their own interests over those of the group. Items IDV2 and IDV4 emphasise personal responsibility and self-reliance, while IDV3 and IDV5 focus on self-motivation and comfort with distinguishing oneself.

The UAI scale evaluates a person's discomfort with ambiguity and preference for predictable, structured settings. Items UAI1-UAI3 measure the need for rules and order, while UAI4-UAI6 explore emotional reactions to unpredictability and risk.

The PWD scale evaluates the cultural acceptance of hierarchical authority and unequal power distribution. Items PWD1 and PWD3 highlight the legitimacy of unequal decision-making, while PWD2 and PWD4 represent social distance between individuals of higher and lower status.

The MA dimension explores cultural attitudes towards gender roles, assertiveness, and perceptions of gender-specific behaviour. The statements used in the study reflect traditional gender-role expectations, such as prioritising career over family (MA1) or belief in biologically or socially rooted differences in problem-solving and work ability (MA2-MA4).

The TO scale measures the cultural focus on future planning, perseverance, and delaying gratification. Items TO1 and TO2 relate to long-term goal commitment, while TO3 and TO4 stress the value of sacrificing immediate comfort for future stability and success.

The IVR scale evaluates attitudes towards pleasure-seeking, emotional expression, and the pursuit of gratification. Specifically, IVR1 and IVR2 indicate a general acceptance of personal enjoyment, while IVR3 and IVR4 assess resistance to delaying or suppressing desires.

RESULTS AND DISCUSSION

Scale Validation

After gathering data, we conducted a statistical analysis to achieve the primary aim of the research: internally validating the scale for Hofstede's dimensions and assessing the levels of these dimensions in the countries studied.

To evaluate the internal reliability and convergent validity of the measurement instruments, we calculated four indicators: Cronbach's alpha (α), composite reliability (ρC), average variance extracted (AVE), and rho A (ρA) (Table 2). Our aim was not solely to validate the scale in general, but also to examine differences between groups, so we developed the internal validity of measurements for all the cultural groups. The interpretive criteria we used relied on the recommendations of Hair *et al.* (2011) and those of Fornell and Larcker (1981).

Table 2. Internal validity of measurements

Measure	α	ρC	AVE	ρA
IDV				
US	0.80	0.85	0.5	0.8
PL	0.52	0.76	0.51	0.52
KOR	0.62	0.78	0.55	0.68
UAI				
US	0.81	0.89	0.72	0.85
PL	0.49	0.78	0.64	0.66
KOR	0.66	0.78	0.47	0.66
PWD				
US	0.76	0.83	0.55	0.86
PL	0.50	0.78	0.65	0.67
KOR	0.69	0.83	0.62	0.70
MA				
US	0.85	0.90	0.69	0.85
PL	0.82	0.88	0.64	0.86
KOR	0.81	0.88	0.64	0.86
TO				
US	0.76	0.85	0.58	0.76
PL	0.54	0.76	0.52	0.57
KOR	0.63	0.78	0.47	0.63
IVR				
US	0.86	0.89	0.68	0.92
PL	0.70	0.85	0.66	0.83
KOR	0.79	0.86	0.61	0.82

Source: own study.

The results show that the MA and IVR scales achieved the highest and most consistent reliability and convergent accuracy, with high index values across all three groups (*e.g.*, $\alpha > 0.80$, AVE ≥ 0.64) (Fornell & Larcker, 1981). We can perceive these scales as accurately reflecting the measured constructs regardless of the cultural context (Nunnally, 1978). Conversely, the IDV and UAI scales exhibited notable variation in reliability between countries. Specifically, in the Polish sample, the α values for IDV and UAI were 0.52 and 0.49, respectively, indicating low internal consistency. Additionally, the AVE for UAI in South Korea (0.47) did not meet the minimum threshold for convergent validity (0.50), which could suggest cultural differences in the interpretation of scale items. The PWD scale demonstrated moderate to good reliability in each group, although we once again observed a lower α value (0.50) in Poland. The TO scale, however, showed the lowest accuracy in the Korean sample (AVE = 0.47), possibly indicating a need to adapt the scale items to the local cultural context.

In conclusion, although most scales demonstrate acceptable levels of reliability and relevance, the noticeable differences between the countries highlight the need for further testing of measurement invariance. In particular, a comparative analysis of the CFA models under the invariance test – configural, metric, and scalar – warrants confirmation of whether one measures the constructs equivalently across the studied populations (Milfont & Fischer, 2010).

Confirmatory factor analysis (CFA) took place separately for the three cultural groups to verify the accuracy of measuring six latent constructs derived from Hofstede's cultural model: IDV, UAI, PWD, MA, TO, and IVR. We assigned a set of indicators to each construct, and we calculated standardised CFA parameters. Having linked several observable indicators to each construct, we evaluated their relevance based on the following parameters: non-standardised factor loading (B), standard errors of the B estimate (SE), Z statistical values, as well as lower (LCI) and upper (UCI) confidence intervals and standardised loadings (β) (Table 3). Subsequently, we assessed the convergent validity of the indicators and the model fit to the empirical data using metrics such as CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), RMSEA (Root Mean Square Error of Approximation), SRMR (Standardized Root Mean Square Residual), GFI (Goodness-of-Fit Index), and AGFI (Adjusted Goodness-of-Fit Index) (Table 4). To verify the factor model estimates, we performed structural equation modelling in R using the lavaan package (Rosseel, 2012). The calculation used the diagonally weighted least squares mean- and variance-adjusted (DWLSMV) test statistic algorithm (Rhemtulla *et al.*, 2012; Li, 2021). This method allows for the calculation of robust estimates and standard error corrections due to the ordinal nature of observable variables.

The Z-values for non-standardised loadings (B) are overwhelmingly significant ($Z > 10$), demonstrating excellent statistical accuracy. Simultaneously, the values of standardised factor loadings (β) reflect the strength of the relationship between observable variables and latent constructs.

The US group exhibits the highest β values, especially for MA3 ($\beta = 0.90$), IVR4 ($\beta = 0.89$), and IDV2 ($\beta = 0.82$). This indicates a strong connection between theory and empirical data. In Poland, most indicators also show $\beta > 0.60$, although there are weaker elements. For instance, IDV3 has $\beta = 0.38$, suggesting potential issues with the operationalisation of the individualism construct in the Polish context. UAI6 records $\beta = 0.36$ and $Z = 4.66$ – on the borderline of acceptability. In South Korea, the situation is comparable: for most indicators, β is within the acceptable range. For example, MA3 ($\beta = 0.87$), UAI1 ($\beta = 0.85$), and IVR3 ($\beta = 0.83$) demonstrate strong convergent relevance. Conversely, IDV2 ($\beta = 0.31$) and PWD4 ($\beta = 0.50$) may pose interpretation problems.

Referring to the fit values of the CFA models, the results indicate a good fit of the model to the data in the US group (Table 4). The values of key indicators (CFI = 0.95, TLI = 0.96, IFI = 0.95, GFI/AGFI = 0.96) exceed the recommended thresholds of acceptability (≥ 0.90). The values RMSEA = 0.05 and SRMR = 0.08 confirm a good though imperfect fit. Despite a significant χ^2 test, as is typical with larger samples, the overall picture suggests that the data in this group accurately reflect the model.

Regarding Poland (Table 4), the model shows a limited fit. The CFI (0.88), TLI (0.89), and IFI (0.87) indices do not meet the required thresholds, and the SRMR exceeds 0.08 (at 0.09), indicating an unacceptable fit. Only RMSEA (0.05) and GFI/AGFI (0.94/0.93) are within the acceptable ranges. The lack of fit may point to issues with the indicators' cultural relevance or to different interpretations of the questionnaire items. Similarly, the fit indices in the Korean group do not meet the basic standards for model quality. The CFI and IFI values equal 0.88, and the SRMR reaches 0.09. Additionally, the RMSEA is at a borderline level of 0.06, with an UCI of 0.07, which also suggests a limited fit. The GFI/AGFI values are comparable to those of the Polish group (0.94), but the overall fit remains below expectations.

Next, Table 5 presents four consecutive levels of measurement invariance analysis for the grouping variable (country): configural, metric, scalar, and strict – with the use of maximum likelihood estimation (MLR).

Table 3. The CFA results

Indicator	->	Latent variable	B			SE			LCI			UCI			*β*			Z		
			PL	KOR	US	PL	KOR	US	US	KOR	US	PL	KOR	US	PL	KOR	US	PL	KOR	US
IDV	->	IDV1	0.60	0.53	0.75	0.06	0.05	0.04	0.75	0.63	0.82	0.60	0.53	0.75	0.60	0.53	0.75	10.83***	10.34***	18.63***
IDV	->	IDV2	0.63	0.31	0.82	0.06	0.06	0.04	0.82	0.43	0.90	0.63	0.31	0.82	0.63	0.31	0.82	10.80***	4.95***	21.12***
IDV	->	IDV3	0.38	0.68	0.66	0.07	0.05	0.05	0.66	0.77	0.75	0.38	0.68	0.66	0.38	0.68	0.66	5.41***	13.76***	14.52***
IDV	->	IDV4	0.64	0.59	0.74	0.06	0.05	0.04	0.74	0.69	0.81	0.64	0.59	0.74	0.64	0.59	0.74	10.89***	12.21***	19.21***
IDV	->	IDV5	0.65	0.59	0.62	0.05	0.04	0.05	0.62	0.68	0.72	0.65	0.59	0.62	0.65	0.59	0.62	11.97***	13.13***	13.03***
IDV	->	IDV6	0.57	0.43	0.70	0.07	0.05	0.05	0.70	0.53	0.79	0.57	0.43	0.70	0.57	0.43	0.70	8.22***	8.27***	15.01***
UAI	->	UAI1	0.77	0.85	0.83	0.06	0.03	0.03	0.83	0.90	0.89	0.77	0.85	0.83	0.77	0.85	0.83	12.77***	28.34***	28.49***
UAI	->	UAI2	0.70	0.78	0.86	0.05	0.03	0.03	0.86	0.84	0.92	0.70	0.78	0.86	0.70	0.78	0.86	13.15***	22.52***	29.03***
UAI	->	UAI3	0.73	0.71	0.79	0.05	0.03	0.03	0.79	0.78	0.85	0.73	0.71	0.79	0.73	0.71	0.79	13.38***	20.74***	23.38***
UAI	->	UAI4	0.62	0.56	0.66	0.06	0.05	0.04	0.66	0.66	0.74	0.62	0.56	0.66	0.62	0.56	0.66	11.10***	11.73***	16.13***
UAI	->	UAI5	0.46	0.57	0.51	0.06	0.05	0.05	0.51	0.67	0.62	0.46	0.57	0.51	0.46	0.57	0.51	7.51***	11.50***	10.06***
UAI	->	UAI6	0.36	0.36	0.12	0.08	0.06	0.06	0.12	0.48	0.24	0.36	0.36	0.12	0.36	0.36	0.12	4.66***	5.60***	1.83
PWD	->	PWD1	0.63	0.74	0.70	0.08	0.04	0.05	0.70	0.82	0.80	0.63	0.74	0.70	0.63	0.74	0.70	8.18***	18.22***	14.03***
PWD	->	PWD2	0.65	0.83	0.94	0.07	0.04	0.05	0.94	0.90	1.03	0.65	0.83	0.94	0.65	0.83	0.94	9.04***	22.32***	19.09***
PWD	->	PWD3	0.62	0.59	0.68	0.07	0.05	0.05	0.68	0.69	0.77	0.62	0.59	0.68	0.62	0.59	0.68	9.32***	12.65***	14.58***
PWD	->	PWD4	0.50	0.51	0.68	0.07	0.05	0.04	0.68	0.61	0.76	0.50	0.51	0.68	0.50	0.51	0.68	7.32***	10.04***	15.12***
MA	->	MA1	0.81	0.83	0.81	0.03	0.03	0.04	0.81	0.88	0.88	0.81	0.83	0.81	0.81	0.83	0.81	23.87***	30.17***	22.90***
MA	->	MA2	0.74	0.81	0.83	0.04	0.03	0.03	0.83	0.86	0.89	0.74	0.81	0.83	0.74	0.81	0.83	18.57***	28.77***	30.04***
MA	->	MA3	0.86	0.87	0.90	0.04	0.03	0.02	0.90	0.92	0.94	0.86	0.87	0.90	0.86	0.87	0.90	24.36***	34.43***	37.46***
MA	->	MA4	0.75	0.59	0.75	0.04	0.05	0.04	0.75	0.68	0.82	0.75	0.59	0.75	0.75	0.59	0.75	17.07***	12.82***	20.30***
TO	->	TO1	0.51	0.72	0.82	0.08	0.04	0.03	0.82	0.81	0.88	0.51	0.72	0.82	0.51	0.72	0.82	6.21***	16.63***	26.15***
TO	->	TO2	0.59	0.71	0.90	0.07	0.05	0.03	0.90	0.81	0.96	0.59	0.71	0.90	0.59	0.71	0.90	8.95***	14.41***	29.10***
TO	->	TO3	0.54	0.47	0.33	0.07	0.07	0.06	0.33	0.61	0.44	0.54	0.47	0.33	0.54	0.47	0.33	7.48***	6.85***	5.76***
TO	->	TO4	0.61	0.65	0.92	0.07	0.05	0.03	0.92	0.74	0.98	0.61	0.65	0.92	0.61	0.65	0.92	8.35***	13.17***	32.83***
IVR	->	IVR1	0.70	0.72	0.72	0.04	0.04	0.04	0.72	0.79	0.79	0.70	0.72	0.72	0.70	0.72	0.72	16.37***	20.45***	19.73***
IVR	->	IVR2	0.75	0.73	0.87	0.04	0.04	0.02	0.87	0.80	0.91	0.75	0.73	0.87	0.75	0.73	0.87	19.52***	19.44***	39.96***
IVR	->	IVR3	0.83	0.84	0.80	0.04	0.03	0.03	0.80	0.90	0.86	0.83	0.84	0.80	0.83	0.84	0.80	21.36***	29.85***	26.89***
IVR	->	IVR4	0.77	0.68	0.89	0.04	0.04	0.02	0.89	0.75	0.93	0.77	0.68	0.89	0.77	0.68	0.89	18.17***	18.58***	45.24***

Note: – direction of the latent variable's effect on indicators; B – non-standardised factor loading; SE – standard error of the B estimate; Z – the Z-value; LCI, UCI – 95% confidence intervals, lower and upper respectively; *β* – standardised factor loading.

*** – $p < 0.001$; ** – $p < 0.01$; * – $p < 0.05$

Source: own study.

Table 4. The CFA model fit rates in the three cultural groups

Country/ Indicator	χ^2 (df)	CFI	TLI	IFI	RMSEA	PCLOSE (p-value for Close Fit)	SRMR	GFI	AGFI
PL	671.28 (df = 445)*	0.88	0.89	0.87	0.05; 90% CI [0.04-0.06]	0.000	0.09	0.94	0.93
KOR	838.11 (df = 447)*	0.88	0.90	0.88	0.06; 90% CI [0.05-0.07]	0.000	0.09	0.94	0.94
US	659.83 (df = 444)*	0.95	0.96	0.95	0.05; 90% CI [0.04-0.06]	0.000	0.08	0.96	0.96

* – $p < 0.001$
Source: own study.

Table 5. Results of invariance analysis for the groups

Model	DF	AIC	BIC	χ^2	χ^2 diff	DF diff	*p*
Configural	1005	50683.65	52021.42	1900.43			
Metric	1049	50699.88	51839.46	2004.66	82.16	44	0.000
Scalar	1093	50970.35	51911.74	2363.03	345.98	44	0.000
Strict	1149	51164.24	51853.40	2669.03	226.94	56	0.000

Note*:* χ^2 diff – statistical significance of the difference between estimates for collinear levels of invariance χ^2.
p – statistical significance of the difference.
Source: own study.

The multigroup CFA indicated that the configural model demonstrated an acceptable fit, confirming that the factor structure was consistent across groups. Imposing equality constraints on factor loadings (metric invariance) led to a statistically significant χ^2 increase ($\Delta\chi^2 = 82.16$, $\Delta df = 44$, $p < 0.001$); however, given the sensitivity of χ^2 to sample size, one should examine changes in alternative fit indices to confirm practical invariance. Introducing equal intercept constraints (scalar invariance) resulted in a substantial drop in model fit ($\Delta\chi^2 = 345.98$, $\Delta df = 44$, $p < 0.001$), suggesting that the analysis failed to achieve full scalar invariance. Finally, the strict invariance model further worsened the fit ($\Delta\chi^2 = 226.94$, $\Delta df = 56$, $p < 0.001$), indicating heterogeneity in residual variances across groups. These results support configural and likely metric invariance, but only partial scalar invariance, limiting the comparability of latent means (Chen, 2007).

Regarding the cultural dimensions, based on the CFA (Table 3) conducted for Hofstede's six cultural scales, we should note the following observations (Table 6):

1. The MA and IVR scales show the highest cross-cultural accuracy and stability, with very high standardised loadings and statistically significant Z values.
2. The PWD and TO scales present a good fit, although some indicators (e.g., PWD4 in South Korea, TO3 in the United States) show lower measurement quality.
3. The IDV and UAI scales have weaker fits. The weakest indicator in any culture is UAI6 – worth considering for elimination.
4. The best fit of the CFA model emerged in the US group, while the models in Poland and South Korea require a minor adaptation of indicators to improve structural consistency.

Hofstede's Dimensions

The cross-cultural analysis compared the respondents' performance on IDV, UAI, PWD, MA, TO, and IVR. We analysed means (M), standard deviations (SD), and standard errors (SE) for each indicator and conducted tests of significance for intergroup differences (Table 7). Due to the non-parametric nature of the data analysed, we also performed the Kruskal-Wallis test (Kruskal & Wallis, 1952).

Regarding the IDV, differences emerged among all three groups, where respondents from the United States exhibited the highest average values (*e.g.*, M ≈ 4.1), indicating the greatest level of individualism among all participants. The scores for South Korea (M ≈ 3.856) were slightly above those for

Table 6. Relevance and cross-cultural fit of cultural scales: A summary of the CFA

Scale	Overall accuracy (*β* and Z)	Cross-cultural fit	Remarks
IDV	+ Moderate	cross-culturally variable	Weak *β*: IDV3 (PL = 0.38), IDV2 (KOR = 0.31)
UAI	+ Moderate	unequal between cultures	UAI6 (US): Z = 1.83, *β* = 0.12 – for exclusion
PWD	++ Good	relatively stable	Strong PWD2 (*β* > 0.80) but weaker PWD4
MA	+++ Very good	cross-culturally consistent	*β* ≥ 0.75 for the majority in PL, KOR and US
TO	++ Good	moderate diversity	Weaker TO3 in the US (*β* = 0.33), but very strong TO4
IVR	+++ Very good	cross-culturally consistent	IVR3 – one of the best indicators overall

Source: own study.

Table 7. Item-level descriptive statistics (M ± SD; SE) for cultural dimensions in PL, KOR, and US

Cultural item	KOR (M ± SD; SE)	PL (M ± SD; SE)	US (M ± SD; SE)
IDV1	M = 3.5; SD = 1.12; SE = 0.07	M = 3.61; SD = 1.08; SE = 0.08	M = 4.22; SD = 0.87; SE = 0.06
IDV2	M = 4.08; SD = 0.86; SE = 0.05	M = 4.09; SD = 0.86; SE = 0.06	M = 4.41; SD = 0.77; SE = 0.05
IDV3	M = 3.05; SD = 1.24; SE = 0.08	M = 2.98; SD = 1.16; SE = 0.08	M = 3.73; SD = 1.11; SE = 0.08
IDV4	M = 4.05; SD = 0.86; SE = 0.05	M = 3.92; SD = 0.91; SE = 0.06	M = 4.28; SD = 0.78; SE = 0.05
IDV5	M = 4.01; SD = 0.1; SE = 0.06	M = 3.9; SD = 1.09; SE = 0.08	M = 3.59; SD = 1.21; SE = 0.08
IDV6	M = 4.45; SD = 0.7; SE = 0.05	M = 4.3; SD = 0.72; SE = 0.05	M = 4.42; SD = 0.74; SE = 0.05
UAI1	M = 4.15; SD = 0.94; SE = 0.06	M = 4.24; SD = 0.81; SE = 0.06	M = 4.0; SD = 1.03; SE = 0.07
UAI2	M = 4.04; S = 0.92; SE = 0.06	M = 3.98; SD = 0.74; SE = 0.05	M = 3.94; SD = 0.95; SE = 0.06
UAI3	M = 4.19; SD = 0.85; SE = 0.05	M = 4.21; SD = 0.89; SE = 0.07	M = 3.87; SD = 1.03; SE = 0.07
UAI4	M = 3.97; SD = 1.1; SE = 0.07	M = 3.73; SD = 1.08; SE = 0.08	M = 3.6; SD = 1.14; SE = 0.08
UAI5	M = 3.37; SD = 1.16; SE = 0.07	M = 2.94; SD = 1.21; SE = 0.09	M = 3.1; SD = 1.16; SE = 0.08
UAI6	M = 2.79; SD = 1.26; SE = 0.08	M = 2.63; SD = 1.15; SE = 0.08	M = 2.5; SD = 1.21; SE = 0.08
PWD1	M = 2.45; SD = 1.21; SE = 0.08	M = 2.15; SD = 1.14; SE = 0.08	M = 2.04; SD = 1.17; SE = 0.08
PWD2	M = 2.12; SD = 1.23; SE = 0.08	M = 1.5; SD = 0.92; SE = 0.06	M = 1.5; SD = 0.89; SE = 0.06
PWD3	M = 2.94; SD = 1.25; SE = 0.08	M = 2.66; SD = 1.06; SE = 0.07	M = 2.15; SD = 1.11; SE = 0.08
PWD4	M = 3.15; SD = 1.23; SE = 0.08	M = 2.33; SD = 1.09; SE = 0.07	M = 2.14; SD = 1.11; SE = 0.08
MA1	M = 2.56; SD = 1.41; SE = 0.09	M = 2.21; SD = 1.26; SE = 0.09	M = 1.98; SD = 1.2; SE = 0.08
MA2	M = 2.69; SD = 1.3; SE = 0.08	M = 3.08; SD = 1.3; SE = 0.09	M = 2.48; SD = 1.3; SE = 0.09
MA3	M = 2.25; SD = 1.3; SE = 0.08	M = 2.58; SD = 1.31; SE = 0.09	M = 2.37; SD = 1.29; SE = 0.09
MA4	M = 3.47; SD = 1.36; SE = 0.09	M = 3.45; SD = 1.54; SE = 0.11	M = 2.97; SD = 1.51; SE = 0.1
TO1	M = 4.34; SD = 0.75; SE = 0.05	M = 4.28; SD = 0.89; SE = 0.06	M = 4.48; SD = 0.72; SE = 0.05
TO2	M = 4.23; SD = 0.88; SE = 0.06	M = 4.2; SD = 0.81; SE = 0.06	M = 4.36; SD = 0.82; SE = 0.06
TO3	M = 3.12; SD = 1.24; SE = 0.08	M = 3.14; SD = 1.19; SE = 0.08	M = 3.38; SD = 1.25; SE = 0.09
TO4	M = 4.41; SD = 0.76; SE = 0.05	M = 4.3; SD = 0.87; SE = 0.06	M = 4.46; SD = 0.74; SE = 0.05
IVR1	M = 3.58; SD = 1.15; SE = 0.07	M = 3.23; SD = 1.28; SE = 0.08	M = 3.42; SD = 1.3; SE = 0.09
IVR2	M = 3.63; SD = 1.03; SE = 0.06	M = 3.85; SD = 0.94; SE = 0.07	M = 3.55; SD = 1.11; SE = 0.08
IVR3	M = 3.15; SD = 1.19; SE = 0.07	M = 3.67; SD = 1.03; SE = 0.07	M = 3.41; SD = 1.2; SE = 0.08
IVR4	M = 3.29; SD = 1.23; SE = 0.08	M = 3.34; SD = 1.13; SE = 0.08	M = 3.11; SD = 1.2; SE = 0.08

Source: own study.

Poland (M ≈ 3.8) on many of the IDV items, namely four out of six. This seems surprising given Hofstede's classic data, where Poland scored a higher level of individualism than South Korea (Table 8). This may have occurred because Hofstede's research defined cultural values at the societal level, namely the macrolevel, whereas our study measured individual perception – that is, how respondents feel and express their approach to everyday life.

The UAI also revealed notable differences, particularly between South Korea and the United States. American respondents exhibited the lowest UAI scores (M ≈ 3.5), whereas the highest scores emerged among Koreans (M ≈ 3.75), and Poles ranked in between (M ≈ 3.6). Poland's UAI scored lower than South Korea's, but the difference is not substantial. South Korea shows higher levels of UAI on certain items, especially those related to emotional responses to unpredictability and social structures (UAI4-UAI6).

Table 8. The cultural indicator level by country

Indicator	Highest	Medium	Lowest
IDV	US	KOR	PL
UAI	KOR	PL	US
PWD	KOR	PL	US
MA	PL	KOR	US
TO	US	KOR	PL
IVR	PL	KOR	US

Source: own study.

Across all four items of the PWD scale, group differences were statistically significant. Korean participants had the highest mean scores (*e.g.*, M ≈ 2.67), indicating a greater acceptance of social hierarchy and authority. Poland's scores were intermediate (M ≈ 2.16), while the lowest values emerged in the US group (M ≈ 1.95), reflecting a more egalitarian approach typical of American culture. The average PDWs in Poland and the United States did not exceed 2.5 on a 1-5 scale. In South Korea, the score was just above 2.5, suggesting that even young Koreans tend to underrepresent high PWD.

In relation to MA, Polish respondents achieved the highest average score (M ≈ 2.83), with Koreans close behind (M ≈ 2.74), while Americans scored the lowest (M ≈ 2.45), indicating a comparatively lower endorsement of traditional masculine norms in the United States. Notably, item MA4 received the highest average across all three countries, with particularly strong agreement in South Korea (M = 3.47) and Poland (M = 3.45), reflecting a persistent cultural endorsement of gender essentialism in the workplace. Meanwhile, MA1 and MA3, which relate to beliefs about male assertiveness or dominance in careers or problem-solving, scored lower across all three countries, suggesting a growing scepticism towards traditional gender hierarchies.

Regarding TO, respondents from the United States demonstrated the highest focus on the future and planning (*e.g.*, M ≈ 4.17). The Korean group scored similarly but slightly lower (M ≈ 4.025), while the lowest averages emerged in the Polish group (M ≈ 3.98). Although the differences between Poland and South Korea are minor, the trend shows a more forward-looking approach in American culture.

For the IVR dimension, few differences between groups reached statistical significance. Poland and South Korea showed higher mean values (*e.g.*, PL: M ≈ 3.52; KOR: M ≈ 3.4), while US respondents recorded the lowest values (M ≈ 3.37). Although these trends may suggest greater expression of needs and emotions in Eastern European and Asian cultures among young people, the lack of significant differences warrants a cautious interpretation.

CONCLUSIONS

Regarding the first part of the study's objective, which involved assessing the accuracy of the tool used to measure cultural dimensions, we performed a CFA for Poland, South Korea, and the United States. The CFA's purpose was to evaluate the quality of indicators/items within each cultural scale – IDV, UAI, PWD, MA, TO, and IVR – across the three groups, thereby identifying strong, weak, and unstable indicators between cultures. Secondly, we determined the fit indices of the CFA model in each cultural group. The CFA results showed an acceptable model fit in all groups (*e.g.*, CFI > 0.88, RMSEA ≤ 0.06) (Wang *et al.*, 2020). The highest fit indices emerged in the US group (CFI = 0.95; RMSEA = 0.05), which seems to comply with the conclusions that Hofstede's model relies mainly on the Western research method (McSweeney, 2002; Ploae, 2012; Zou & Kwon, 2020). The factor loadings analysis indicated that the MA and IVR scales had the highest convergent validity, with standardised loadings of $\beta \geq 0.75$ and statistically significant values across all three groups. The PWD and TO scales demonstrated good overall fit, although some individual indicators did not fully meet the significance criteria. The IDV and UAI scales displayed lower β values (below 0.50) in certain groups, with some indicators showing non-significant Z values, suggesting that further adaptation of some items may be necessary.

The invariance testing results show that the core factorial structure of the scale is consistent across cultural groups, as indicated by the acceptable fit of the configural model. This supports the theoretical assumption that young people in Poland, South Korea, and the United States understand the measured constructs similarly. Additionally, the findings on metric invariance suggest that the relationships between the latent constructs and their indicators are mostly comparable across these groups, enabling a meaningful comparison of their structural relationships.

However, the absence of full scalar invariance indicates that some item intercepts differ across cultures. This implies that respondents from various cultural backgrounds may interpret certain items differently or use distinct reference frames when answering. Such differences may arise from linguistic nuances, cultural norms, or varying response styles. Therefore, direct comparisons of latent means between groups require caution, and approaches like partial scalar invariance techniques or alignment optimisation methods may be useful in future research.

The absence of strict invariance highlights variability in measurement error terms across groups, potentially reflecting differences in the reliability of responses or cultural variability in item-specific precision. This further underscores the importance of culturally sensitive adaptation of measurement instruments, particularly when investigating cross-cultural differences in value-based constructs.

Taken together, the results confirm that while the scale offers cross-cultural structural stability, some measurement properties vary across contexts. This aligns with previous research on cultural dimensions, which often identified structural comparability but also intercept and residual variability between groups (*e.g.*, Blodgett *et al.*, 2008; Yoo *et al.*, 2011; Zainuddin *et al.*, 2018).

To achieve the second part of our primary objective, namely to identify the individual cultural characteristics of young respondents in the three countries based on Hofstede's model, we employed the scale developed for this study.

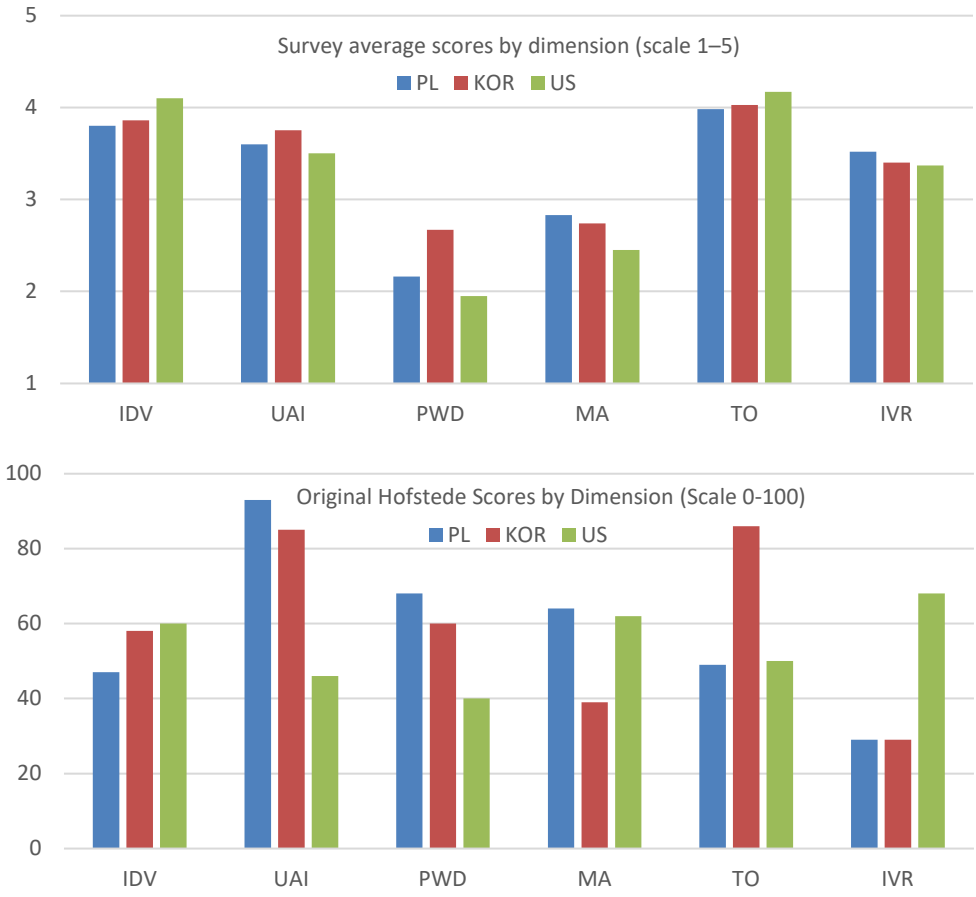

Figure 2. The survey versus Hofstede cultural dimensions scores
Source: own elaboration based on our results and Hofstede's study (Hofstede Insight).

Individualism

The results of the present study partially confirm the cultural order outlined in Hofstede's research, as the highest scores for most items on the IDV scale appeared in the American group. However, the comparison between Poland and South Korea was less consistent with the traditional, Hofstede pattern (Figure 2). Such a deviation from predictions may indicate significant shifts in the attitudes of young adults in Asian countries, including South Korea. The increasing influence of Western values, the individualisation of lifestyles, urbanisation, and an education system focused on competition and self-fulfilment might be strengthening individualistic attitudes among the younger generation of Koreans. Conversely, the collectivist values in Poland could remain more deeply embedded in social structures than Hofstede's nationwide indicators imply, particularly among groups of young adults, for whom community, social relations, and interdependence hold high importance. Generally, the IDV scores were the highest in this study, which shows a relation to Beugelsdijk and Welzel's (2018) study.

Uncertainty Avoidance

In this study, the results from respondents aged 18-30 do not fully reflect the classical assumptions concerning the UAI dimension in Hofstede's research. Although Poland showed relatively high averages on some items of the UAI scale, South Korea scored higher in most cases. Conversely, the United States consistently had the lowest scores. The discrepancy between the results obtained and the values proposed by Hofstede may stem from several factors. Firstly, Hofstede's measurement relied on surveys conducted in the 1970s and 1980s among employees of a multinational corporation, which limited the snapshot to a specific demographic profile. In contrast, the current study focused on young adults, whose attitudes may differ significantly from those of previous generations. Secondly, contemporary socio-cultural changes, including globalisation, technological development, and increased mobility, may have contributed to a weakening of traditional behavioural patterns associated with the need for predictability. The young generation in Poland may be more cognitively flexible and less inclined to avoid uncertainty than earlier cohorts.

Power Distance

Our study's findings generally do not fully confirm Hofstede's pattern, with the highest PWD values observed in the Korean group and the lowest in the US group. Poland ranked somewhat differently, although in some scale items (*e.g.*, PWD1-PWD3), it achieved values close to those of the Americans. This suggests that young respondents from Poland may be less willing to accept rigid hierarchical structures than Hofstede's model indicates. These differences could stem from the socio-cultural changes in Poland after 1989, which have contributed to the democratisation of social relations, the development of education, and increased civic awareness. Additionally, the younger generation of Poles, raised amid systemic transformation and openness to the West, may have higher expectations of egalitarian cooperation and governance. Notably, despite global influences, Korean respondents still demonstrated commitment to structural hierarchy when compared to the Polish and US groups, which may reflect the persistent influence of Confucian values on their social system. The differences among young people concerning PWD also emerged in Eringa *et al.*'s (2015) study.

Masculinity

The study's findings showed some alignment with Hofstede's masculinity scores but also revealed subtle differences across specific items. The US sample demonstrated the lowest agreement with masculine-coded items, possibly indicating a greater social acceptance of gender equality norms in both professional and personal spheres. Poland's relatively higher averages – but not very high M values – suggest that traditional gender norms may still hold significant socio-cultural influence, especially regarding workplace roles (MA4). Despite Hofstede's initial classification as low on masculinity, South Korea demonstrated higher agreement with certain statements, notably MA4, indicating possible discrepancies between macrolevel indices and individual gender beliefs. Importantly, masculinity is a multifaceted cultural dimension, with various scale items reflecting different aspects – from rivalry and ambition to work

approach and self-discipline. The findings imply that traditional cultural indicators might not fully capture the complexity of young people's attitudes today, necessitating a careful and nuanced interpretation.

Time Orientation

The results show that US respondents scored the highest on each item of the TO scale, indicating a particularly strong orientation towards organisation, planning, and punctuality. However, overall, all the countries exhibit high averages, reflecting a strong commitment to planning and working for the future. Chang (2024) achieved similar results. These minor differences suggest that this dimension may be more universal compared to the other scales.

Indulgence vs Restraint

Poland scored the highest averages in most IVR items, which may indicate greater openness to meeting needs and emotional expression. South Korea and the United States obtained lower scores, which may suggest more reserved social norms. These data partly differ from Hofstede's original results, possibly reflecting cultural changes or methodological differences. Firstly, our survey included people aged 18-30 years, who may hold different attitudes than the general population, especially regarding generational values. Young Poles growing up amid cultural liberalisation and globalisation may be much more open to emotional expression and pleasure seeking than earlier generations. Secondly, the lower scores of American respondents may mirror increased social, economic, and educational pressures, resulting in a more pragmatic and controlling lifestyle.

In summary, the results indicate that the levels of certain indicators (*e.g.*, IDV, UAI) do not depend on nationality alone. The generational dynamics, the political and socio-economic contexts, and the effects of global cultural trends and environmental factors can heavily influence those indicators as well. Therefore, exercising caution when interpreting Hofstede's traditional cultural indicators is essential, especially when analysing a population of young respondents raised in a rapidly changing cultural environment. The findings may also reflect intracultural variation that static national indices fail to capture.

Nevertheless, the differences might also have arisen because Hofstede examined cultural values at the societal level, namely the macrolevel, whereas our measurement focused on individual perception – that is, how respondents perceive and report their own approach to everyday life. Authors often cite the macrolevel in Hofstede's study as a limitation of his research (Bolzonella, 2024; Venaik & Brewer, 2013), so our study aimed to address this limitation in a cross-cultural context. In other words, many studies assume that people from a specific country possess the characteristics outlined by the Hofstede model. However, we considered differences among individuals within the same culture and study at the personal level. Modern approaches to cross-cultural analysis should allow for accurate unit diagnoses (Bolzonella, 2024) and acknowledge that culture is not static, but evolving – especially under the influence of economic development, education, and modernisation (Venaik & Brewer, 2013; Beugelsdijk & Welzel, 2018).

Despite clear cultural differences between Poland, South Korea, and the United States, the results indicated relatively small differences in the levels of most cultural dimensions measured among the younger generation. Concerning the results, one may conclude that we managed to partially support the main thesis. The scaled average and factor loading (β) values show a high level of consistency across groups, especially on dimensions such as IDV, UAI, MA, and IVR. The exception is the PWD dimension, which revealed more noticeable differences – particularly strong loadings in the Korean group compared to the American group. This may point to a greater persistence of hierarchical social norms in that culture. Overall, however, the convergence of results between the groups may signal a rising cultural similarity among young people, regardless of their country of origin, which could be a consequence of globalisation, digital socialisation, and shared developmental challenges.

Theoretical Implications

Based on the CFA, we can identify several important theoretical implications for cross-cultural research and the construct of culture according to Hofstede. Firstly, the CFA results confirmed that one can measure Hofstede's proposed cultural dimensions as distinct, multidimensional, latent constructs. In

particular, the MA and IVR scales show strong internal consistency and cross-cultural congruence, which supports their theoretical universality (Heydari *et al.*, 2021).

Secondly, variations in the measurement accuracy of certain scales, particularly IDV and UAI, suggest that some cultural dimensions may carry different semantic or contextual meanings across societies. This could imply that cultures express, for example, individualism or uncertainty avoidance in ways shaped by historical, political, economic, and social factors. Additionally, differences in the indicators' average values might stem from both cultural variations and diverse interpretations of the questionnaire items. Theoretically, this highlights the need to develop more culturally inclusive tools.

Thirdly, the results support the need for a cultural adaptation of research tools. While valuable in theory, Hofstede's classic scales require adjustment to fit local cultural and linguistic contexts, particularly in Asian countries or evolving social systems. This creates opportunities for developing more dynamic models of culture that consider social and historical diversity.

Fourthly, this study contributes to the methodological literature by emphasising the multistage validation of psychometric tools. Content validity alone is not enough in comparative research; one also needs to test the structural equivalence of measurement models. Only then can one make reliable cross-cultural comparisons free from a measurement error.

In the light of these observations, the study both validates many of Hofstede's theoretical assumptions and promotes further testing of the theory and the development of more flexible and culturally aware measurement tools (Eringa *et al.*, 2015).

Practical Implications

The study's practical implications provide guidance for international marketing and management, highlighting that while structural cultural tendencies may endure, response patterns and the importance of certain values can differ among younger cohorts. Younger groups often deviate from traditional Hofstede profiles, making youth-specific and locally tested messages vital. The relative stability of MA and IVR suggests that reward framing, recognition, and lifestyle benefits are likely to perform consistently across markets. However, cultural nuances still exist; for example, in the United States, emphasising individual agency and future rewards proves most effective; in South Korea, structured guidance, authority endorsements, and step-by-step onboarding align with higher PWD and UAI; and in Poland, aspirational yet inclusive narratives, combined with value-plus-pleasure appeals, are likely to resonate.

Limitations

Although methodologically solid, this study has several limitations. Firstly, the sample encompassed only three countries – Poland, South Korea, and the United States – and the groups were not representative at the national level, which may limit generalisability. Secondly, the absence of full scalar invariance indicates that mean comparisons across cultures require much caution, as some items might reflect cultural biases or differences in response styles. Thirdly, although widely employed, Hofstede's framework may not entirely capture the complexity or intracultural variability of cultural values, necessitating the use of complementary models in future research.

Directions for Future Research

Future research should broaden cross-cultural validation efforts by including more diverse cultural contexts beyond the three countries analysed in this study. Additionally, future studies could consider refining or culturally adapting the weak-performing items – especially within the IDV and UAI scales – through cognitive interviews or qualitative validation methods. Finally, exploring hybrid models that balance etic (universal) and emic (culture-specific) components may provide deeper insight into how cultural dimensions manifest in different national contexts.

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Appendix 1

Table A1. The scale used in the study

INDIVIDUALISM (IDV)	
IDV1	I enjoy being unique and different from others in many respects.
IDV2	I feel it is essential for me to act as an independent person.
IDV3	I try to do what is best for me, regardless of how that might affect others.
IDV4	Being able to take care of myself is a primary concern for me.
IDV5	I am comfortable with being singled out for praise or rewards.
IDV6	I`m individually responsible for the decisions I make.
UNCERTAINTY AVOIDANCE (UAI)	
UAI1	I prefer structured situations to unstructured situations.
UAI2	Standardized procedures are helpful in my life.
UAI3	It is essential to provide detailed instructions so that I always know what I am expected to do.
UAI4	I feel stressed when I cannot predict the consequences.
UAI5	I would not take risks when an outcome cannot be predicted.
UAI6	I don't quickly adapt to new situations.
POWER DISTANCE (PWD)	
PWD1	People in higher positions should make most decisions without consulting people in lower positions.
PWD2	People in higher positions should avoid social interaction with people in lower positions.
PWD3	People in lower positions should agree with the decisions of those in higher positions.
PWD4	People in higher positions should not delegate essential tasks to lower positions.
MASCULINITY (MA)	
MA1	It is more important for men to have a professional career than for women.
MA2	Men usually solve problems with logical analysis; women typically solve problems with intuition.
MA3	Solving difficult problems usually requires an active, forcible approach, which is typical of men.
MA4	There are some jobs that a man can always do better than a woman.
TIME ORIENTATION (TO)	
TO1	Working hard for success in the future.
TO2	Long-term planning is essential in life.
TO3	Giving up today's fun for success in the future.
TO4	Personal steadiness and stability are crucial in life.
INDULGENCE (IVR)	
IVR1	There should not be any limits on individuals' enjoyment.
IVR2	Societies should value the relatively free gratification of desires and feelings.
IVR3	Desires, especially concerning sensual pleasures, should not be suppressed.
IVR4	The gratification of desires should not be delayed.

Source: own study.

Authors

Małgorzata Bartosik-Purgat – 40%, Wiktoria Rakowska – 30%, Tomasz Grzegorczyk – 30%.

Małgorzata Bartosik-Purgat (corresponding author)
Professor, Head of the Department of International Management, Poznań University of Economics and Business, Poland. Her research interests include new technologies in consumer behaviour, cross-cultural communication, and the cultural environment of international business.
Correspondence to: prof. dr hab. Małgorzata Bartosik-Purgat, Uniwersytet Ekonomiczny w Poznaniu, al. Niepodległości 10, 61-875 Poznań, Poland. e-mail: malgorzata.bartosik-purgat@ue.poznan.pl
ORCID https://orcid.org/0000-0003-3517-3617

Wiktoria Rakowska
PhD Candidate in the Department of International Management at Poznań University of Economics and Business, Poland. Her research delves into understanding how consumers behave within the sharing economy and explores the variations in consumer behaviour influenced by cultural differences.
Correspondence to: mgr Wiktoria Rakowska, Uniwersytet Ekonomiczny w Poznaniu, al. Niepodległości 10, 61-875 Poznań, Poland. e-mail: wiktoria.rakowska@phd.ue.poznan.pl
ORCID https://orcid.org/0000-0002-2630-1528

Tomasz Grzegorczyk
Assistant Professor, Department of International Management, Poznań University of Economics and Business, Poland. His research interests include new technologies in consumer behaviour – especially artificial intelligence and augmented reality – and future studies.
Correspondence to: dr Tomasz Grzegorczyk, Uniwersytet Ekonomiczny w Poznaniu, al. Niepodległości 10, 61-875 Poznań, Poland. e-mail: tomasz.grzegorczyk@ue.poznan.pl
ORCID https://orcid.org/0000-0002-4286-5753

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Use of Artificial Intelligence

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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How do Artificial Intelligence-facilitated enablers influence international entrepreneurship: Does the Trump 2.0 tariff policy matter?

Cong Doanh Duong

ABSTRACT

Objective: Applying the integrated framework of the entrepreneurial event model (EEM) and theory of planned behaviour (TPB), this study examined how Artificial Intelligence self-efficacy, competency, and knowledge shape perceived desirability and feasibility of international entrepreneurship, which in turn influence attitudes and intentions. It also tested how global mindset and tariff policy uncertainty moderate the attitude-intention link.

Research Design & Methods: This study surveyed 336 Vietnamese international business students and applied linear and polynomial regression with response surface analysis to test core effects and interactions with contextual moderators.

Findings: The results indicate that AI capabilities significantly enhance perceived desirability and feasibility, which in turn positively influence attitudes and entrepreneurial intentions. Polynomial regression revealed that congruence between desirability and feasibility strengthens entrepreneurial outcomes, whereas incongruence weakens them. Moreover, global mindset positively moderates, and tariff uncertainty negatively moderates, the attitude-intention relationship.

Implications & Recommendations: The findings offer actionable insights for educators, policymakers, and aspiring entrepreneurs, highlighting the importance of cultivating AI literacy, a global perspective, and clarity in trade policy communication to foster entrepreneurial engagement.

Contribution & Value Added: This study extends the EEM-TPB model by incorporating digital (AI-related) and political (policy uncertainty) dimensions into entrepreneurial cognition. It provides empirical evidence for how psychological and contextual mechanisms jointly shape international entrepreneurial intentions in emerging economies.

Article type:	research article
Keywords:	Trump 2.0; artificial intelligence; international entrepreneurship; theory of planned behaviour; entrepreneurial event model
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INTRODUCTION

The spread of AI technologies is reshaping entrepreneurship, creating new opportunities, and transforming how ventures identify and exploit them. Indeed, in recent years, generative AI has become integral to startups, automating routine tasks, amplifying creativity, and allowing entrepreneurs to focus on strategy. This transformation coincides with globalisation, as many new ventures pursue international markets from inception ('born global') (Knight *et al.*, 2025), making international entrepreneurship (IE) a critical engine of economic growth (Wach, 2026). In this study, I defined international entrepreneurship as

the process of discovering, enacting, evaluating, and exploiting opportunities across national borders to create future goods and services (McDougall & Oviatt, 2000). International entrepreneurial intentions are defined as the self-acknowledge convictions of individuals to start a business that will operate internationally, reflecting both willingness and planning to engage in cross-border ventures (Ammeer *et al.*, 2022). In this context, examining how AI-related factors shape perceptions of cross-border ventures is timely. While prior studies address technology adoption, we know little about how students' AI self-efficacy, competencies, and knowledge influence entrepreneurial cognition. Bridging this gap is vital, as tech-savvy youths may perceive international opportunities as more feasible and attractive.

An issue adding to this complex environment is rising geopolitical uncertainty, particularly the prospect of a renewed 'Trump 2.0' administration, which has reintroduced volatility into global trade (Ferriani *et al.*, 2025). President Trump's platform strongly embraces tariffs as a core foreign policy tool, with the 2025 campaign pledging sweeping increases under a renewed 'America First' agenda. For export-driven economies like Vietnam, reports of potential 46% tariffs highlight severe risks to growth. In this climate, entrepreneurs face uncertainty: will tariffs restrict market access or spark innovative ways to bypass trade barriers? However, the effects of AI-enabled capabilities and tariff uncertainty on international entrepreneurial intentions remain unexplored. Few studies have examined how major policy shocks shape students' attitudes towards international entrepreneurship, even though global mindset and perceptions of political risk likely influence the translation of these attitudes into intentions.

To address these issues, this study integrates the entrepreneurial event model (EEM) (Shapero & Sokol, 1982) and the theory of planned behaviour (TPB) (Ajzen, 1991) into a unified framework that incorporates novel AI-related drivers and contextual moderators. The EEM (Shapero & Sokol, 1982) posits that entrepreneurial intentions hinge on perceptions of an idea's desirability and feasibility (Krueger, 1993). Similarly, TPB (Ajzen, 1991) holds that attitude towards a behaviour strongly predicts intention. By integrating EEM and TPB, I will demonstrate how attitudes toward international entrepreneurship (TPB) and evaluations of desirability and feasibility (EEM) jointly influence intention. However, little work explains why people see IE as desirable or feasible, with AI-related competencies largely overlooked. We posit that AI self-efficacy, competency, and knowledge serve as enablers, strengthening perceptions of both feasibility and desirability. Meanwhile, the turbulent trade environment under a potential Trump 2.0 administration represents an entrepreneurial event. Consistent with EEM, tariff policy uncertainty can act as a 'fence' that weakens the attitude-intention link by heightening risk. Thus, our model incorporates macro-level shocks and individual orientations, highlighting global mindset as a facilitator that enables positive attitudes to translate into intentions even under uncertainty.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Integrating the Event Entrepreneurial Model With the Theory of Planned Behaviour

This study builds on two classic intention models. Shapero and Sokol's (1982) EEM holds that entrepreneurial intention depends on perceptions of an idea's desirability (the attractiveness of venturing) and feasibility (one's sense of capability to pursue it). Similarly, Ajzen's (1991) TPB posits that an individual's attitude towards a behaviour strongly predicts the intention to perform that behaviour. By integrating EEM and TPB, I captured both cognitive evaluations and affective judgments: personal attitudes towards international entrepreneurship (a TPB construct) and beliefs about its desirability/feasibility (from EEM) jointly influence intention. Consequently, attitudes and desirability can be viewed as complementary facets of overall evaluation: attitudes represent a general favourable judgment, whereas desirability reflects a specific belief about opportunity attractiveness. Feasibility, in turn, corresponds to Ajzen's (1991) concept of perceived behavioural control, *i.e.*, the belief that one can successfully perform the venture.

Prior research has shown that one can integrate TPB and EEM into a single predictive framework of entrepreneurial intention. For instance, Iakovleva and Kolvereid (2009) demonstrated among Russian students that attitude, subjective norms, and perceived behavioural control shaped desirability and feasibility, which then predicted intentions. Eid *et al.* (2019) extended this approach by incorporating personality traits with the combined model, explaining over 70% of the variance in intentions.

These studies confirm the robustness of the integrated EEM-TPB model. However, limitations remain. Most applications emphasise personality or cultural moderators while overlooking digital competencies, such as AI knowledge and self-efficacy, that are increasingly central to feasibility appraisals. Likewise, scholars have rarely considered macro-level uncertainties, including geopolitical or trade policy shocks. Thus, while EEM and TPB integration is well established, its scope requires extending to contemporary determinants of entrepreneurial intention in digital and international contexts.

The Role of AI Drivers

Artificial intelligence self-efficacy refers to students' confidence in their ability to use and learn AI technologies. Those with high AI self-efficacy feel capable of managing complex tools and solving technical problems (Bewersdorff *et al.*, 2025). From the EEM perspective, such confidence enhances perceived feasibility, as self-efficacy underpins one's sense of control in executing a venture (Esfandiar *et al.*, 2019). In TPB, perceived behavioural control similarly fosters favourable attitudes and stronger intentions (Ajzen, 1991). Extending this to desirability, students who believe they can master AI may not only feel more capable but also see international entrepreneurship as more attractive, anticipating an AI-enabled advantage. Thus, confidence in AI skills should enhance both feasibility and desirability. Therefore, I hypothesised that:

H1: AI self-efficacy positively relates to (a) perceived desirability and (b) perceived feasibility.

Artificial intelligence competency refers to the perceived level of one's AI-related skills and practical knowledge (Duong, 2024), such as using AI-driven analytics or automation in business contexts. Higher AI competency should enhance perceived feasibility by reducing the anticipated difficulty of international tasks. Students confident in their AI skills expect to navigate cross-border challenges more effectively. It should also increase perceived desirability, as proficiency makes international opportunities, often requiring novel solutions, more attractive. Carolus *et al.* (2023) emphasise 'use & apply AI' as a core element of AI literacy, showing that individuals who feel competent applying AI envision clearer pathways to innovative international strategies. Thus, AI competency was expected to strengthen both feasibility and desirability. I hypothesised that:

H2: AI self-competency positively relates to (a) perceived desirability and (b) perceived feasibility.

Artificial intelligence knowledge refers to familiarity with AI concepts and awareness of its capabilities (Chiu *et al.*, 2024). Beyond hands-on skills, knowing what AI can accomplish can inspire entrepreneurial ideas and enhance the perceived attractiveness of international opportunities, thereby increasing desirability. Simultaneously, strong AI knowledge reduces uncertainty and complexity, elevating feasibility. Students with greater AI knowledge can better envision innovative cross-border ventures, identify market opportunities, and leverage AI tools such as predictive analytics, natural language processing, or automation to streamline operations and strengthen decisions (Uriarte *et al.*, 2025). In this way, AI knowledge lowers cognitive barriers by clarifying how AI can practically solve business problems and support international market entry. Accordingly, I hypothesised that:

H3: AI knowledge positively relates to (a) perceived desirability and (b) perceived feasibility.

The Role of EEM-related Drivers

In my integrated model, perceived desirability captures how attractive international IE appears to an individual (Ambad & Rafiki, 2025). When students view international venturing as personally appealing, for instance, aligned with their aspirations, it should strengthen their overall attitude towards IE. Prior studies emphasise that intentions hinge on the opportunities' attractiveness (Bui *et al.*, 2025). Moreover, high desirability should also directly increase intention. Following Shapero and Sokol (1982), desirability is a central driver of entrepreneurial action. Accordingly, I hypothesised that:

H4: Perceived desirability positively relates to (a) attitude towards international entrepreneurship and (b) international entrepreneurial intention.

Similarly, higher perceived feasibility, *i.e.*, the belief that one can successfully launch an international venture, can also enhance attitude and intention (Krueger, 1993). Feeling that a venture is doa-

ble generates confidence and optimism, which contributes to a more positive attitude (Ambad & Rafiki, 2025). In TPB terms, feasibility is akin to perceived control, and greater perceived control typically reinforces intention (Bui *et al.*, 2025). Hence, students who believe they have the resources, support, or skills (beyond AI factors) to start an international business will not only judge the idea more favourably but will also form stronger intentions to act. Formally, I hypothesised that:

H5: Perceived feasibility positively relates to (a) attitude towards international entrepreneurship and (b) international entrepreneurial intention.

The EEM suggests that entrepreneurial drive arises when one views opportunities as both desirable and feasible, underscoring the need for alignment between these evaluations (Ambad & Rafiki, 2025; Esfandiar *et al.*, 2019). Building on this, we argue that desirability and feasibility interact synergistically: when both are high, the motivation to pursue international entrepreneurship should be strongest (Duong, 2025). In such cases, students perceive ventures as attractive and attainable, reducing cognitive conflict and fostering maximal commitment. Accordingly, I hypothesised that:

H6: The degree of (a) attitude towards international entrepreneurship and (b) international entrepreneurial intention is higher when the congruent degree of perceived desirability and perceived feasibility is higher than when the congruent degree is low.

By contrast, misalignment between desirability and feasibility dampens entrepreneurial motivation by creating cognitive dissonance and uncertainty (Duong, 2025). For instance, if students find international entrepreneurship attractive but doubt their ability or resources to pursue it, internal tension is likely to weaken both attitude and intention. Such incongruence reduces psychological clarity and makes entrepreneurial outcomes less stable (Sassetti *et al.*, 2022). Accordingly, I hypothesised that:

H7: The degree of (a) attitude towards international entrepreneurship and (b) international entrepreneurial intention is lower when the incongruent degree of perceived desirability and perceived feasibility increases in either direction.

The Role of TPB-related Driver

Attitude towards international entrepreneurship constitutes a key determinant of entrepreneurial intention within the TPB framework (Ajzen, 1991). Students who perceive cross-border ventures as beneficial, prestigious, profitable, and personally fulfilling are more likely to be motivated to engage in such activities. Prior empirical research confirms that positive attitudes reliably predict stronger intentions, particularly in uncertain and complex entrepreneurial contexts (Maheshwari & Kha, 2022). Thus, I hypothesised that:

H8: Attitude towards international entrepreneurship positively relates to international entrepreneurial intention.

Global Mindset as a Facilitator

Global mindset, defined as openness and adaptability to diverse cultures and markets (Iddris, 2024), acts as a facilitating trait that strengthens the attitude-intention link. Individuals with a strong global orientation view cross-border variation as an opportunity rather than a risk (Mitan *et al.*, 2024). As Shahzad and Xu (2024) emphasise, such a mindset enables entrepreneurs to translate positive attitudes into concrete actions, even in uncertain situations. Accordingly, students with a high global mindset are expected to form stronger intentions at the same level of favourable attitude. Thus, I hypothesised that:

H9: Global mind positively moderates the relationship between attitudes towards international entrepreneurship and international entrepreneurial intention.

Perceived Tariff Policy Uncertainty as a Fence

Finally, we conceptualise perceived uncertainty about potential 'Trump 2.0' trade tariffs as an external contextual barrier, a 'fence' that weakens the attitude-intention link in international entrepreneurship. The EEM highlights that external shocks and disruptive policy changes can reshape entrepreneurial perceptions and decision-making (Esfandiar *et al.*, 2019; Krueger, 1993; Shapero & Sokol, 1982). Heightened

tariff uncertainty increases environmental ambiguity, making ventures appear riskier and less sustainable. This volatility reduces students' confidence in converting positive attitudes into actionable entrepreneurial behaviour. Thus, even when attitudes toward international entrepreneurship are favourable, uncertainty about tariff policies may suppress entrepreneurial intentions. Consistent with prior findings that environmental uncertainty impedes entrepreneurial action (Zayadin *et al.*, 2022), I hypothesised that:

H10: Perceived tariff policy uncertainty negatively affects the relationship between attitudes towards international entrepreneurship and international entrepreneurial intention.

RESEARCH METHODOLOGY

Sampling and Data Collection

To ensure contextual relevance, the sample focused on students from international-related disciplines, including international business, economics, logistics and supply chain management, relations, commercial law, and international studies. I recruited participants from seven major Vietnamese universities and collected data over three weeks (April 9-29, 2025) using a mixed-mode strategy (hard-copy and digital surveys) facilitated by lecturers and academic staff. Of 500 questionnaires distributed, I returned 357. After excluding 21 invalid cases, 336 valid responses formed the dataset.

The sample comprised 63.4% female and 36.6% male students, with most aged 20-24 (56.3%), followed by 18-19 (42.0%), and over 24 (1.8%). Academic majors among participants included international economics (28.6%), international business (21.4%), international commercial law (18.2%), logistics and supply chain management (17.6%), international relations (7.7%), and international studies (6.5%).

Scales

I measured all constructs with previously validated five-point Likert scales (1 = strongly disagree, 5 = strongly agree). I assessed international entrepreneurial intention with five items from Iddris (2024) and measured attitudes with Liñán's (2008) five-item scale. I captured perceived desirability and feasibility using items from Chaudhary and Biswas (2024) and Krueger and Carsrud (1993). I drew scales for global mindset and AI-related constructs from Shahzad and Xu (2024), Carolus *et al.* (2023), Duong (2024), and Chiu *et al.* (2024). I measured perceived tariff policy uncertainty with a five-item scale developed from Baker *et al.* (2016) and McMullen and Shepherd (2006). Following Hardesty and Bearden (2004), independent experts in tariff policy and entrepreneurship reviewed and refined item wording to ensure content validity.

RESULTS AND DISCUSSION

Scales and Validation

To evaluate the reliability and validity of the measurement instruments, I assessed Cronbach's alpha coefficients, composite reliability (CR), and average variance extracted (AVE), and conducted confirmatory factor analysis (CFA). I removed items with standardised loadings below 0.50; PD6 = 0.148, PF2 = 0.461, PF5 = 0.054, GM1 = 0.186). As shown in Table 1, all retained constructs exhibited satisfactory reliability (α = 0.728-0.933; CR > 0.70) and convergent validity (AVE > 0.40). Discriminant validity was also supported, as the square roots of AVEs exceeded inter-construct correlations (Hair *et al.*, 2020). Furthermore, CFA results indicated strong model fit for the nine-factor structure: χ^2 (732) = 1 041.168, GFI = 0.872, AGFI = 0.850, CFI = 0.956, TLI = 0.950, NFI = 0.866, RMSEA = 0.036. Comparisons with alternative models (eight-to-one-factor solutions) yielded significantly worse fits ($\Delta\chi^2$, $p < 0.001$), confirming the superiority and robustness of the nine-factor model. Together, these results established the distinctiveness and validity of the constructs for subsequent structural analyses.

Figure 1 illustrates the conceptual framework

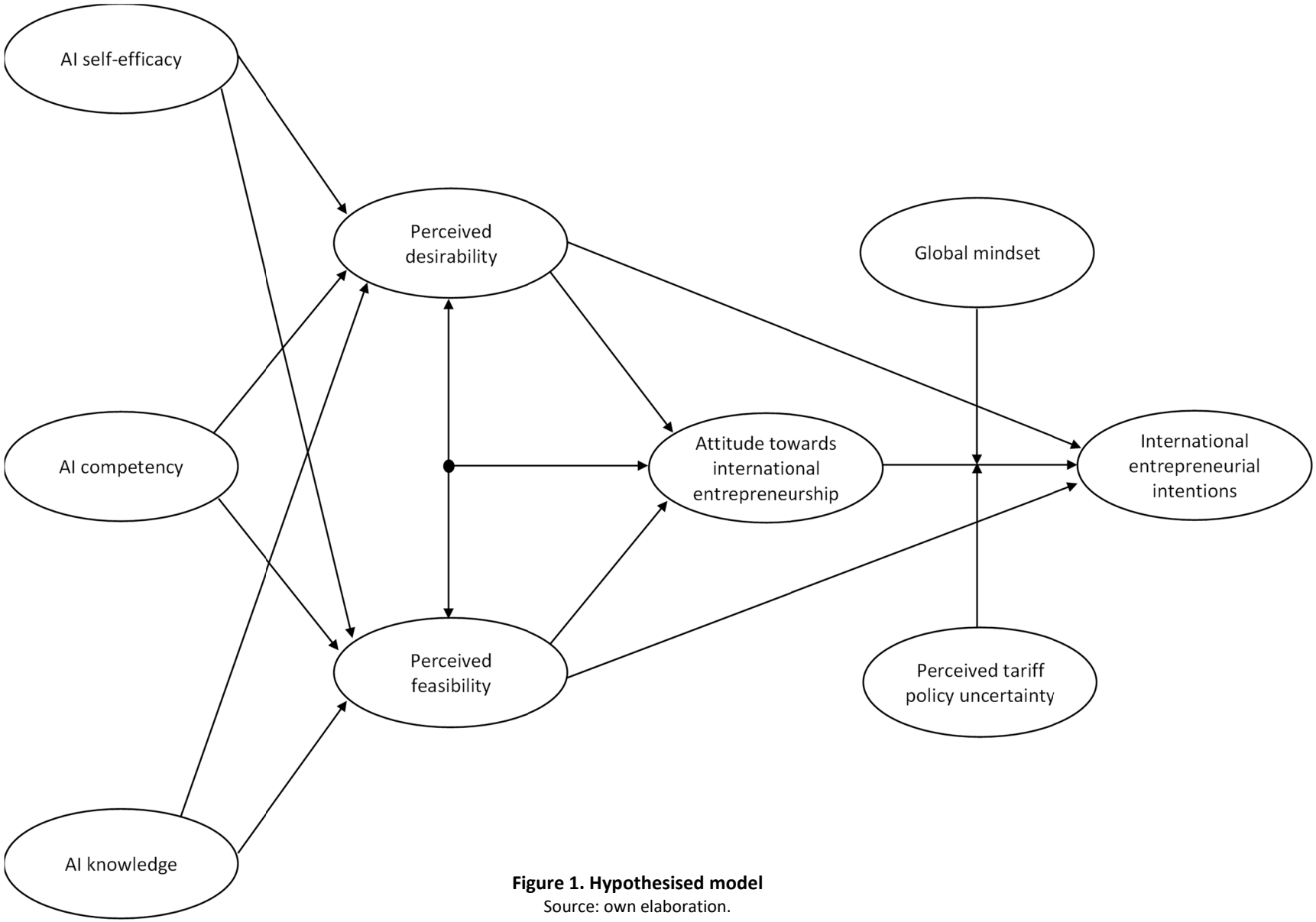

Figure 1. Hypothesised model
Source: own elaboration.

Common Method Variance

Since the data originated from a single source, I employed a combination of methodological and analytical strategies to mitigate concerns regarding common method bias (CMB). To ensure validity, I guaranteed confidentiality and anonymity to participants and randomised the arrangement of survey questions to minimise response bias and priming effects. From a statistical perspective, Harman's single-factor test showed that the leading factor accounted only for 24.02% of the variance, which is below the acceptable 50% threshold (Podsakoff *et al.*, 2003). A single-factor CFA model also fit poorly: χ^2 (779) = 4 671.235, GFI = 0.507, AGFI = 0.455, CFI = 0.440, TLI = 0.411, NFI = 0.399, RMSEA = 0.122. Finally, comparing standardised regression weights with and without a common latent factor revealed all differences < 0.20, confirming that CMB was not a significant concern.

Hypothesis Testing

I conducted multiple regression and polynomial regression analyses to examine the theoretical framework, with Tables 2-5 and Figures 2-3 presenting the results. I performed hierarchical regressions to assess the impacts of AI-facilitated drivers, *i.e.*, AIE, AIC, and AIK, on PD and PF. As Table 2 indicates, AIE ($\beta = 0.146$, $p < 0.05$), AIC ($\beta = 0.108$, $p < 0.01$), and AIK ($\beta = 0.270$, $p < 0.001$) significantly influenced PD. Similarly, all three constructs positively predicted PF, with AIE ($\beta = 0.252$, $p < 0.001$), AIC ($\beta = 0.136$, $p < 0.01$), and AIK ($\beta = 0.257$, $p < 0.001$). These findings fully support H1a-b, H2a-b, and H3a-b.

To evaluate the downstream effects of PD and PF, I conducted polynomial regression analyses. Table 3 demonstrates that both PD and PF positively impacted ATI (PD: $\beta = 0.403$, $p < 0.001$; PF: $\beta = 0.208$, $p < 0.001$) and IEI (PD: $\beta = 0.354$, $p < 0.001$; PF: $\beta = 0.699$, $p < 0.001$), thus supporting H4a-b and H5a-b. In terms of congruence and incongruence effects, the slope along the congruence line (PD = PF) was significantly positive for both ATI ($\varepsilon_1 = 0.610$, $p < 0.001$) and IEI ($\varepsilon_1 = 0.105$, $p < 0.001$), while curvature (ε_2) was non-significant, suggesting that congruent high values of PD and PF strengthened entrepreneurial outcomes. Along the incongruence line (PD = -PF), the slope was positive for ATI ($\varepsilon_3 = 0.200$, $p < 0.05$) but negative for IEI ($\varepsilon_3 = -0.300$, $p < 0.001$), whereas curvature (ε_4) remained non-significant in both cases. These results confirm the support for H6a and H7a, while H67 and H7b were partially supported. As depicted in Figures 2 and 3, the highest ATI and IEI values occurred when both PD and PF were jointly high and aligned, whereas incongruence reduced outcome levels.

Table 4 presents further tests of the role of ATI and its moderators. Notably, ATI had a significant positive effect on IEI ($\beta = 0.599$, $p < 0.001$), supporting H8. Moreover, GM strengthened this relationship (GM × ATI: $\beta = 0.046$, $p < 0.05$), confirming H9. In contrast, TPU weakened the ATI-IEI relationship (TPU × ATI: $\beta = -0.034$, $p < 0.05$), providing evidence for H10. Figures 4 and 5 indicate the interaction plots. Table 5 presents the results of the mediation analysis, indicating that all three AI-related enablers (AIE, AIC, AIK) had significant indirect effects on IEI through PD, PF, and ATI. Specifically, the indirect effects via the paths PD → ATI → IEI and PF → ATI → IEI were all significant, with 95% confidence intervals excluding zero. These findings confirm that ATI operates as a key mediating mechanism linking AI capabilities to entrepreneurial intentions.

Table 1. Descriptive statistics and correlation matrix

Variables	M	SD	α	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	1.634	0.482	n/a	n/a	n/a	n/a											
2. Age	1.598	0.526	n/a	n/a	n/a	-0.134*	n/a										
3. Majors	2.923	1.593	n/a	n/a	n/a	0.037	-0.326**	n/a									
4. TPU	3.920	0.742	0.871	0.873	0.580	0.023	-0.075	0.031	**(0.761)**								
5. IEI	3.468	0.883	0.933	0.935	0.743	-0.172**	0.142**	0.030	-0.118*	**(0.7862)**							
6. ATI	3.286	0.596	0.815	0.817	0.472	-0.048	0.075	0.032	-0.052	0.476**	**(0.687)**						
7. PD	2.597	0.617	0.818	0.826	0.445	-0.091	0.141**	0.060	-0.139*	0.526**	0.532**	**(0.667)**					
8. PF	3.549	0.760	0.863	0.863	0.677	-0.042	0.102	0.077	-0.121*	0.720**	0.448**	0.435**	**(0.823)**				
9. GM	3.816	0.650	0.806	0.806	0.586	-0.050	0.063	0.078	-0.023	0.238**	0.194**	0.112*	0.277**	**(0.765)**			
10. AIK	3.418	0.609	0.728	0.737	0.415	-0.067	0.088	-0.002	-0.055	0.319**	0.381**	0.357**	0.307**	0.428**	**(0.644)**		
11. AIE	3.669	0.565	0.854	0.853	0.498	-0.032	0.098	-0.015	0.034	0.249**	0.392**	0.231**	0.265**	0.178**	0.266**	**(0.706)**	
12. AIC	3.084	0.846	0.839	0.846	0.582	-0.025	-0.029	0.139*	-0.029	0.231**	0.307**	0.243**	0.236**	0.226**	0.277**	0.095	**(0.763)**

Notes: N = 336. **: p < 0.01. α refers to Cronbach's alpha; AVE stands for average variance extracted; CR indicates compo-site reliability. Values in parentheses represent the square root of each construct's AVE.
Source: own study.

Table 2. Hierarchical regression models for the impacts of AI-facilitated drivers on perceived desirability and perceived feasibility

Variables	Perceived desirability (PD)				VIF	Perceived feasibility (PF)				VIF
	Model 1					Model 2				
	β	SE	t	p-value		β	SE	t	p-value	
Constant	0.572	0.295	1.940	0.053		0.993**	0.368	2.695	0.007	1.022
Gender	-0.065	0.064	-1.020	0.308	1.022	-0.014	0.080	-0.173	0.863	1.153
Age	0.153*	0.063	2.449	0.015	1.153	0.143	0.078	1.836	0.067	1.140
Majors	0.033	0.021	1.627	0.105	1.140	0.044	0.026	1.711	0.088	1.083
AIE	0.146*	0.056	2.583	0.010	1.083	0.252***	0.070	3.571	<0.001	1.108
AIC	0.108**	0.038	2.825	0.005	1.108	0.136**	0.048	2.859	0.005	1.165
AIK	0.270***	0.054	4.972	<0.001	1.165	0.257***	0.068	3.790	<0.001	1.022
R^2	0.190					0.201				
Adjusted-R^2	0.175					0.189				
F Change	12.875***					18.065***				

Notes: N = 336, *p < 0.05. **p < 0.01, ** p < 0.001.
Source: own study.

Table 3. Polynomial regression models for the effects of perceived desirability and perceived feasibility on international entrepreneurial attitudes and intentions

Variables	Attitudes towards international entrepreneurship (ATI)				VIF	International entrepreneurial intentions (IEI)				VIF
	Model 3					Model 4				
	β	SE	t	p-value		β	SE	t	p-value	
Constant	0.062	0.156	0.399	0.690		0.344	0.182	1.895	0.344	
Control variables										
Gender	0.007	0.056	0.122	0.903	1.029	-0.211**	0.065	-3.248	0.001	1.029
Age	-0.003	0.055	-0.048	0.962	1.208	0.061	0.065	0.951	0.343	1.208
Major	-0.004	0.018	-0.251	0.802	1.151	-0.007	0.021	-0.348	0.728	1.151
Polynomial terms										
h_1: PD	0.403***	0.050	8.002	<0.001	1.375	0.354***	0.059	6.026	<0.001	1.375
h_2: PF	0.208***	0.041	5.085	<0.001	1.372	0.699***	0.048	14.649	<0.001	1.372
h_3: PD^2	-0.096	0.062	-1.540	0.125	1.731	-0.119	0.072	-1.645	0.101	1.731
h_4: PD x PF	0.069	0.083	0.825	0.410	2.642	0.092	0.097	0.954	0.341	2.642
h_5: PF^2	-0.058	0.040	-1.452	0.148	1.748	-0.086	0.047	-1.832	0.068	1.748
R^2	0.350					0.599				
Adjusted-R^2	0.335					0.589				
F Change	22.053***					60.973***				
Surface tests										
Congruence line (PD = PF)										
ε_1: Slope ($h_1 + h_2$)	0.610***	0.050	13.083	<0.001		0.105***	0.060	17.116	<0.001	
ε_2: Curvature ($h_3 + h_4 + h_5$)	-0.090	0.070	-1.291	0.198		-0.110	0.070	-1.631	0.105	
Incongruence line (PD = -PF)										
ε_3: Slope ($h_1 - h_2$)	0.200*	0.080	2.480	0.014		-0.350***	0.090	-3.910	<0.001	
ε_4: Curvature ($h_3 - h_4 + h_5$)	-0.220	0.160	-1.430	0.155		-0.300	0.018	-1.640	0.103	

Notes: N = 336, *p < 0.05. **p < 0.01, ** p < 0.001.

Source: own study.

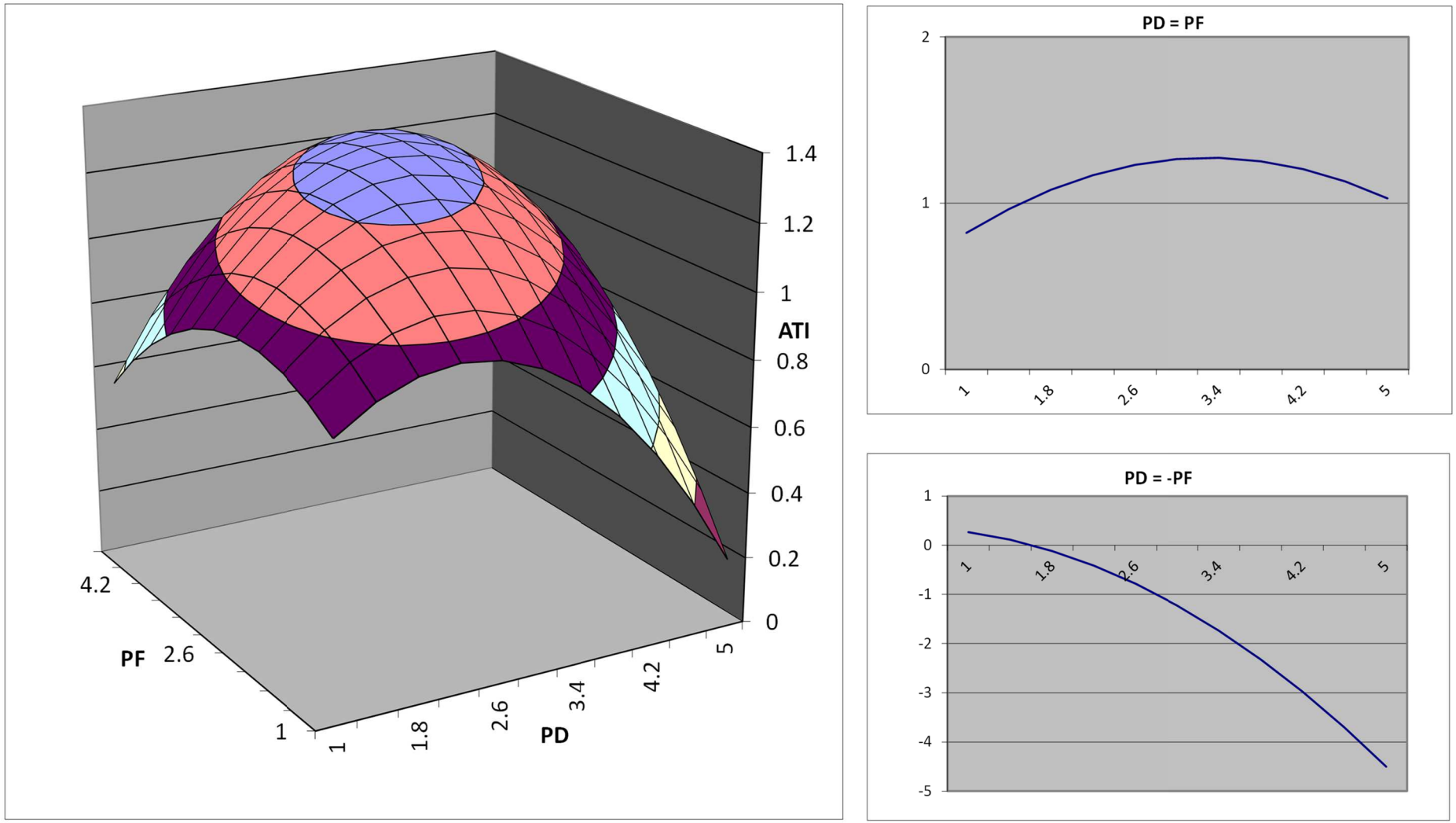

Figure 2. Response surface for ATI as predicted by PD and PF

Source: own elaboration.

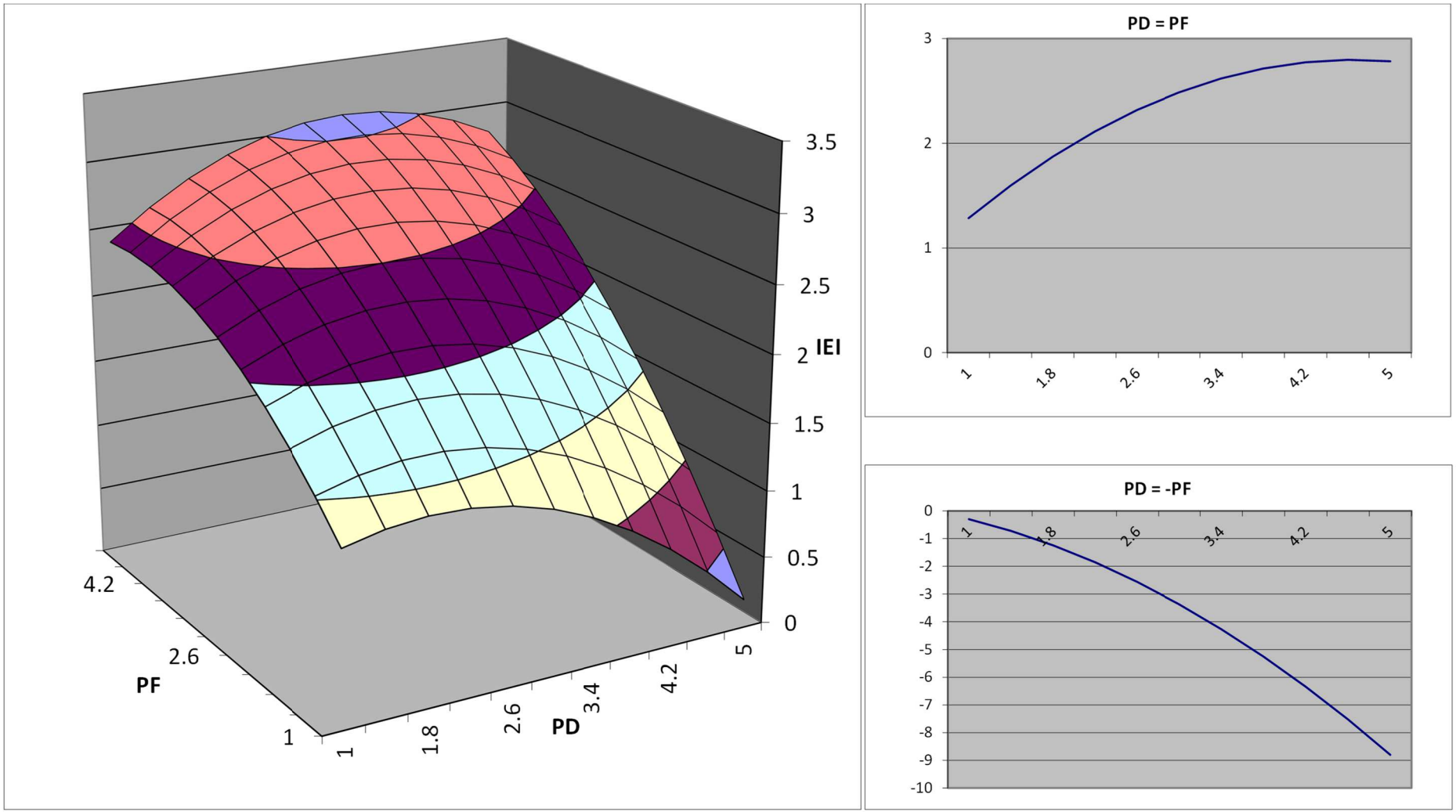

Figure 3. Response surface for IEI as predicted by PD and PF

Source: own elaboration.

Table 4. Hierarchical regression model for the impacts of international entrepreneurial attitudes and their interaction with global mindset and perceived tariff policy uncertainty on international entrepreneurial intentions

Variables	International entrepreneurial intentions (IEI)				VIF
	Model 5				
	β	SE	t	p-value	
Constant	1.438***	0.330	4.357	<0.001	
Gender	-0.249**	0.086	-2.882	0.004	1.021
Age	0.157	0.084	1.865	0.063	1.154
Majors	0.025	0.028	0.912	0.362	1.134
ATI	0.599***	0.126	4.745	<0.001	3.308
GM x ATI	0.046*	0.019	2.379	0.018	2.565
TPU x ATI	-0.034*	0.017	-1.996	0.047	1.751
R^2	0.281				
Adjusted-R^2	0.268				
F Change	21.424***				

Notes: N = 336, *p < 0.05. **p < 0.01, ** p < 0.001.
Source: own study.

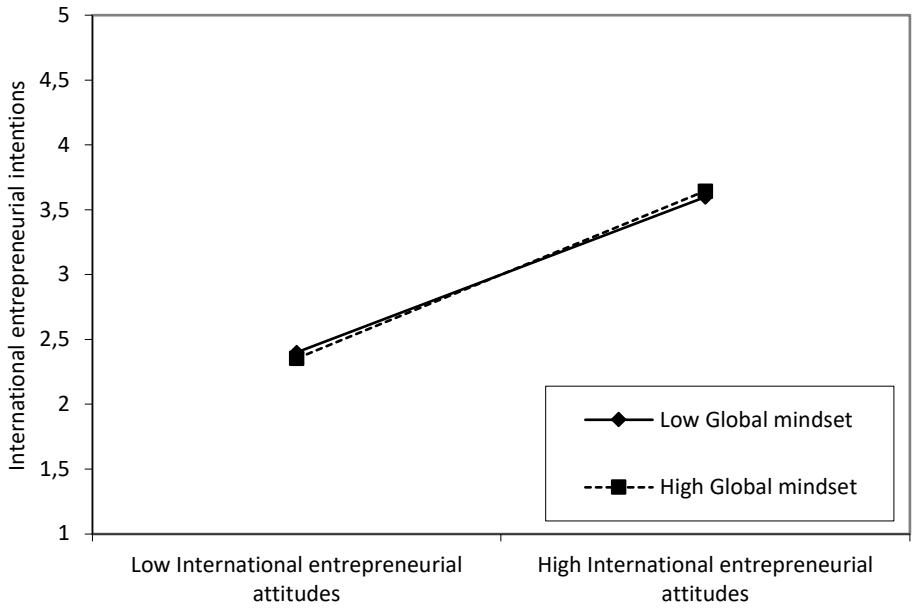

Figure 4. Interacted impact of GM and ATI on IEI
Source: own elaboration.

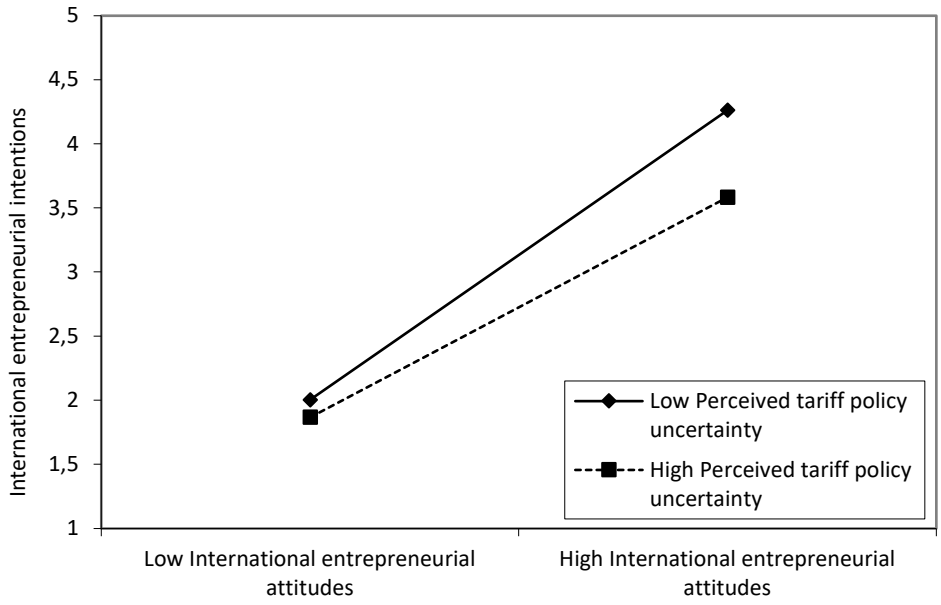

Figure 5. Interacted impact of TPU and ATI on IEI
Source: own elaboration.

Table 5. Mediation analyses

Indirect coefficients	Effects	BootSE	Bootstrap 95% CIs	
			LLCI	ULCI
AIE → PD → ATI	0.093	0.023	0.025	0.107
AIE → PD → ATI → IEI	0.042	0.014	0.018	0.074
AIE → PF → ATI	0.061	0.021	0.025	0.107
AIE → PF → ATI → IEI	0.029	0.010	0.012	0.053
AIC → PD → ATI	0.066	0.017	0.035	0.101
AIC → PD → ATI → IEI	0.032	0.011	0.013	0.056
AIC → PF → ATI	0.040	0.015	0.015	0.074
AIC → PF → ATI → IEI	0.018	0.007	0.006	0.035
AIK → PD → ATI	0.128	0.025	0.082	0.179
AIK → PD → ATI → IEI	0.059	0.017	0.030	0.095
AIK → PF → ATI	0.070	0.023	0.031	0.121
AIK → PF → ATI → IEI	0.028	0.010	0.012	0.052
PD → ATI → IEI	0.209	0.049	0.119	0.309
PF → ATI → IEI	0.100	0.025	0.053	0.149
BV → ATI → IEI	0.263	0.069	0.121	0.391

Notes: N = 336, BV: Block variables; results are based on trimmed scales. LLCI: Lower level of confidence interval. ULCI: Upper level of confidence interval. SE: Standard errors.
Source: own study.

DISCUSSION

Key Findings

This study revealed several key patterns regarding international entrepreneurial intentions in a technology-driven, uncertain environment. Firstly, all three AI-related enablers, *i.e.*, self-efficacy, competency, and knowledge, positively shaped students' perceptions of international entrepreneurship. Greater confidence in engaging with AI technologies enhanced both desirability and feasibility evaluations, consistent with the EEM's emphasis on these appraisals (Shapero & Sokol, 1982) and TPB's per-

ceived behavioural control (Ajzen, 1991). Thus, AI self-efficacy serves as a psychological resource fostering control, echoing findings by Duong (2024) on digital self-efficacy in entrepreneurship. Beyond this, technological competence, particularly fluency with AI tools, emerges as a 'cognitive co-founder,' reducing cognitive load and sharpening strategic clarity in cross-border venturing.

Secondly, consistent with both EEM and TPB, the results confirm that perceived desirability and feasibility significantly shape entrepreneurial attitudes and, subsequently, intentions. This supports prior work (Esfandiar *et al.*, 2019) showing that opportunity attractiveness and perceived capability are central to entrepreneurial intent, and extends these effects into international contexts. Crucially, I identified a congruence effect: attitudes and intentions were strongest when both desirability and feasibility were high, lending empirical support to Duong (2025) on their joint influence. By contrast, incongruence weakened outcomes, reflecting the cognitive dissonance entrepreneurs experience when aspirations exceed perceived capabilities (Sassetti *et al.*, 2022).

Thirdly, the study demonstrates that attitude constitutes the central mediator in intention formation, in line with TPB's view of attitude as the most proximal predictor of intention. Mediation analysis revealed that AI drivers influenced intention indirectly, through desirability and feasibility influencing attitude. This highlights that technological confidence alone is insufficient; action requires a favourable evaluative judgment. Extending this principle to high-tech, global contexts, the findings confirm that entrepreneurial intentions depend on attitudinal assessments shaped by cognitive precursors.

Fourth, the study underscores the moderating role of boundary conditions, *i.e.*, global mindset and tariff policy uncertainty, in the attitude-intention link. Students with a strong global mindset were more effective at translating favourable attitudes into international entrepreneurial intentions, echoing (Shahzad & Xu, 2024) that global orientation enhances responsiveness in volatile contexts. By contrast, perceived tariff policy uncertainty significantly weakened this link, consistent with Shapero and Sokol's (1982) view that external shocks reshape entrepreneurial pathways. This finding extends research on policy uncertainty (McMullen & Shepherd, 2006; Zayadin *et al.*, 2022), showing that macroeconomic threats, such as 'Trump 2.0' tariffs, act as psychological barriers that suppress entrepreneurial momentum, even among motivated individuals.

Theoretical Contributions

This study advances international entrepreneurship (IE) literature by extending the EEM and TPB with digital and political dimensions, enriching classical intention models for contemporary contexts. By incorporating AI self-efficacy, competencies, and knowledge into the EEM-TPB framework, I showed that technology-specific cognitions significantly shape perceived desirability and feasibility, *i.e.*, the core antecedents of entrepreneurial intention. These findings highlight digital confidence as a critical cognitive resource in evaluating cross-border ventures. This aligns with recent work highlighting the rising role of digital skills in shaping entrepreneurial intentions (Abaddi, 2023) and extends evidence that digital transformation reshapes entrepreneurial cognition. Our findings modernise Shapero and Sokol (1982) and Ajzen (1991) by showing that entrepreneurial perceptions are now under the strong influence of familiarity with and mastery of emerging technologies.

Moreover, this research contributes to theory by identifying a global mindset as a meaningful boundary condition. While prior studies have recognised the role of cross-cultural competence in entrepreneurship (Giacomin *et al.*, 2022), my results empirically establish global mindset as a moderator that strengthens the relationship between attitude and intention. This is consistent with calls in the IE literature to better capture how international orientation and cognitive frames influence venture creation across borders (Shahzad & Xu, 2024). This suggests that internationally oriented individuals are better able to translate positive attitudes into intentions, even in uncertain situations, which constitutes a nuance often overlooked in TPB models. By incorporating tariff policy uncertainty as a contextual 'fence,' this study shows how political volatility can disrupt established cognitive pathways: even when desirability, feasibility, and attitude are strong, unpredictable macroeconomic policies (*e.g.*, U.S. tariffs) weaken the attitude-intention link. These findings underscore the need for entrepreneurship theory to incorporate geopolitical uncertainty, particularly in global or export-sensitive contexts.

Finally, this study expands the empirical scope of EEM-TPB by situating the research in Vietnam, an emerging and export-dependent economy. In doing so, the study contributes evidence from a non-Western, underrepresented context, demonstrating that entrepreneurial cognition is shaped not only by individual and technological factors but also by institutional and policy environments. This responds to long-standing calls for diversifying the geographic scope of entrepreneurship research (Knight *et al.*, 2025), thereby affirming the relevance of intention-based models beyond mature economies. This contextual extension reaffirms the relevance of intention-based models beyond mature economies and underscores the need for theory to evolve in tandem with digitalisation and geopolitical flux.

Practical Implications

This study offers valuable implications for educators, policymakers, and entrepreneurs in Vietnam and other emerging economies navigating rapid technological change and policy uncertainty.

The findings indicate that AI-related confidence enhances perceptions of desirability and feasibility, thereby influencing international entrepreneurial intentions. Therefore, higher education institutions should embed AI literacy into entrepreneurship and business curricula, combining theory with hands-on projects, real-world case studies, and digital innovation challenges. Moreover, programs should foster a global mindset through international case studies, cultural immersion, and exchange opportunities, thereby building the cross-cultural agility necessary to act effectively in uncertain situations.

From a policy perspective, this study highlights the negative impact of tariff uncertainty on entrepreneurial intention. Policymakers in export-dependent economies, such as Vietnam, should recognise that volatile trade signals can discourage even highly motivated young people. Transparent communication, diversification of export markets, and instruments such as bilateral trade agreements, export guarantees, or digital market-entry support can reduce uncertainty and sustain international engagement.

For practitioners and aspiring founders, the findings emphasise the importance of investing in both AI capabilities and global competencies. Practical AI skills gained through coursework, innovation labs, or experiential learning empower entrepreneurs to identify opportunities and manage cross-border challenges more effectively. Simultaneously, global orientation fostered through international networking, partnerships, and mentorship enhances the ability to act on positive entrepreneurial attitudes amid turbulence. For instance, in Vietnam, entrepreneurs could use AI-driven analytics to explore alternative export destinations or redesign supply chains to mitigate risks from shifting tariff regimes.

CONCLUSIONS

This study shows how AI-related capabilities and tariff policy uncertainty jointly shape international entrepreneurial intentions through the EEM-TPB framework. Furthermore, AI knowledge, self-efficacy, and competency enhance perceptions of desirability and feasibility, which in turn strengthen attitudes and intentions. Importantly, congruence between desirability and feasibility amplifies outcomes, while incongruence weakens clarity and commitment. At the same time, perceived tariff uncertainty acts as a contextual barrier, dampening the attitude-intention link and underscoring the influence of macro-level constraints.

Several limitations merit acknowledgment. Firstly, the cross-sectional design limits causal inference, suggesting that future longitudinal work is necessary to assess temporal dynamics. Secondly, the student-based sample from Vietnam limits generalisability (Huynh *et al.*, 2025; Ip, 2025). Expanding to broader geographic and demographic contexts would enhance external validity. Finally, while this study focuses on tariff uncertainty, future research could examine other macro-level forces, such as economic volatility, political instability, or technological disruption, that similarly shape entrepreneurial intentions.

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Author

Cong Doanh Duong

Duong Cong Doanh, Assoc. Prof., PhD, MBA, MSc, has been working as a lecturer at the Faculty of Business Management, National Economics University (NEU), Vietnam since 2011. His area of scientific interest includes entrepreneurship, corporate social responsibility, and sustainable development. His research has appeared in some journals, including the Journal of Retailing and Consumer Services, Personality and Individual Differences, Asia Pacific Journal of Marketing and Logistics, Education and Training, Management Decision, etc. He is an associate editor and a member of the editorial board of some journals, such as Entrepreneurial Business and Economics Review, Oeconomia Copernicana, The International Journal of Management Education, and International Entrepreneurial Review.

Correspondence to: Doanh Duong Cong, Assoc. Prof, PhD, Department of General Management, Faculty of Business Management, National Economics University, 207 Giai Phong, Hanoi, Vietnam, e-mail: doanhdc@neu.edu.vn

ORCID https://orcid.org/0000-0003-4431-9761

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The determinants of economic integration among Ukrainian forced and economic migrants in Poland

Jan Brzozowski, Konrad Pędziwiatr, Marcin Stonawski, Michał Wanke, Svitlana Luchik-Musiyezdova

ABSTRACT

Objective: The article aims to analyse the key determinants of multiple dimensions of economic integration among Ukrainians in Poland, including employment status, job quality, skill matching, job satisfaction, and perceived financial situation, with a comparison between forced and economic migrants.

Research Design & Methods: The study draws on a large cross-sectional CAWI survey of Ukrainians living in Poland (1 082 observations), conducted between March and April 2025. We designed the survey to enable comparisons of the economic performance of individuals across economic/forced migration status and urban/central/rural/remote areas. We constructed post-stratification weights to enhance representativeness and reliability of the study results according to voivodship, sex, and age based on the Polish PESEL register. The econometric analysis employed logit models.

Findings: In line with the expectations, the study demonstrates that the Ukrainian forced migrants exhibit lower levels of integration than economic migrants. Employment is particularly constrained for women with young children, despite overall high participation rates. Social networks exert positive effects: Polish contacts enhance employment prospects and job-skill matching.

Implications & Recommendations: The evidence underscores that women with young children face particular barriers to entering the labour market. Therefore, expanding access to preschools and maintaining child benefits are essential policy measures for fostering economic mobility and supporting refugee employment.

Contribution & Value Added: This study provides new insights into the economic integration of Ukrainians in Poland, an increasingly important destination country within the EU. It contributes to the literature by comparing economic migrants and forced migrants from the same ethnic group within a single national context, while explicitly incorporating the urban-rural settlement dimension.

Article type: research article

Keywords: immigrants; refugees; forced migrants; Poland; Ukrainians; economic integration

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INTRODUCTION

Before 2015, Poland, with less than 150 thousand registered immigrants, was a largely homogeneous country with one of the lowest numbers of immigrants in the European Union (UDSC, 2025). Foreign-born individuals represented less than 0.05% of its total population (Brzozowski & Pędziwiatr, 2014). However, after the Revolution of Dignity in 2014 and the subsequent Russian military aggression in the Donetsk, Luhansk and Crimea regions, the economic situation in Ukraine began to deteriorate. Consequently, in the following years, Poland began receiving substantial inflows of predominantly economic migrants from Ukraine, complemented with some persons formerly internally displaced by the Russian invasion. The situation intensified after the Russian full-

scale invasion on Ukraine on 24 February 2022, which triggered a mass influx of Ukrainian forced migrants. Currently, Poland hosts approximately 2.1 to 2.3 million Ukrainians (Duszczyk *et al.*, 2023; Wiśniewski *et al.*, 2024), comprising both economic migrants who arrived before 2022 and forced migrants displaced by the full-scale invasion of Russia on Ukraine.

The successive arrival of two distinct migrant groups (*i.e.*, including voluntary and forced migrants) from the same country represents a highly unusual experience worldwide. Most of the host countries have typically received either economic migrants or refugees, but rarely both groups in such close succession (Jasemi & Gottardo, 2023). For Poland, this situation is entirely unprecedented. Historically, Poles have been a nation of emigration, with the most recent large-scale emigration occurring after accession to the European Union (circa 2004-2015, cf. Anacka & Fihel, 2016). As a result, Poland has not yet developed a coherent framework for immigration and integration. Therefore, authorities have managed the large-scale inflow of Ukrainians largely on *ad hoc* basis and continue to rely on temporary legal arrangements (Kubiciel-Lodzińska & Solga, 2023). The recent decision to extend legislation concerning support for Ukrainians under temporary protection in Poland only until March 2026 illustrates this trend. The welfare measures introduced in spring 2022 by the Polish government are now regarded as outdated, at least by right-wing political actors, also with the growing support of the radicalising Polish society (Cap, 2018; Czapnik & Mazurkiewicz, 2024). On the other side, at the time of writing this article, the violent conflict in Ukraine continues, and the aggressor shows little if any signs of halting the invasion and starting peace negotiations. Therefore, the establishment of a more stable, long-term strategy to host and integrate Ukrainians in Poland and other EU countries has become an urgent political challenge.

This study contributes to the ongoing public debate on the economic integration of immigrants in Europe (Dorn & Zweimüller, 2021; Fasani *et al.*, 2022; Kubiciel–Lodzińska *et al.*, 2024) by examining the recent large-scale influx of Ukrainians and the determinants of economic integration of newcomers. It also contributes to the emerging field of research on Poland's (lack of) preparedness and long-term vision in response to becoming an immigration country beyond the Ukrainian forced mobility (Ślęzak & Bielewska, 2022). The study distinguishes between two phases of their international mobility: the predominantly voluntary, economically motivated migration before 2022, and the more forced displacement triggered by the full-scale Russian invasion of 24 February 2022. We relied on a large, cross-sectional CAWI survey conducted in Poland between March and April 2025. The main aim of the study was to identify the factors that facilitate the successful integration of both economic and forced migrants from Ukraine.

This empirical study contributes to the economics of international migration in several important respects. Firstly, it enables direct comparisons between forced and voluntary migrants from the same national group who arrived in the same destination within a relatively short time frame. This is an approach that remains uncommon, as most studies focus exclusively on either economic or forced migrants. Secondly, it examines the recent mobility of Ukrainians, who currently constitute one of the largest and most consequential migrant populations in the European Union and globally. Thirdly, we situated the analysis in the Polish context, a newly emerging yet highly significant destination country in Central and Eastern Europe. Fourthly, in contrast to much of the existing literature on economic integration (Naseh *et al.*, 2024), we adopted a multidimensional perspective by incorporating both objective indicators of economic performance (*e.g.*, full-time employment) and subjective outcomes (*e.g.*, job satisfaction). This approach frames economic integration as a multifaceted and inherently complex process. Finally, the study explicitly examines the role of place of residence, enabling systematic urban-rural comparisons of economic integration.

The findings show that the recently arrived Ukrainian forced migrants exhibit lower integration scores than the economic migrants. This result is not surprising, as the economic immigrants were mostly favourably self-selected and were able to prepare in advance to move. On the other hand, for forced migrants, the international mobility was imposed, but also unexpected. Still, there are also some additional, less evident findings. Firstly, the health of migrants, both mental and physical, matters a lot in their subsequent integration. In this regard, policymakers tend to overlook the fact that migrants often come with family members, some of whom may not be healthy enough to sustain themselves in a new environment. Secondly, the traditional family model in Ukraine, where women

are mostly responsible for care obligations, greatly impacts the integration prospects (Andersson, 2021). Women living with children under 18 in the same household are less likely not only to be full-time employed, but to get any form of employment. Finally, the socio-cultural integration is very much connected to an economic one. Fluency in Polish and the share of Polish acquaintances or friends are two of the most important predictors of success in economic integration.

The article is structured as follows. Section 2 outlines the theoretical foundations and formulates the hypotheses. Section 3 describes the data collection process, presents summary statistics, and introduces the main variables of interest. Section 4 reports the results of the empirical analysis and discusses the findings in a broader context. Finally, Section 5 concludes the article by highlighting key policy implications and identifying avenues for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this section, we examine the key theoretical and empirical literature on the economic integration of immigrants and forced migrants in host countries, providing the foundation for formulating hypotheses.

Economic research on immigrants and refugees employs a wide range of measures and indices of economic integration, ranging from standard indicators such as income and employment to broader measures including subjective well-being (Kubiciel-Lodzińska *et al.*, 2026). However, as highlighted in a recent literature review (Naseh *et al.*, 2024), most empirical studies remain limited in their use of integration indicators and rely on a narrow set of outcomes. Only a small number adopt a more nuanced, multidimensional approach that simultaneously includes both immigrants and refugees and incorporates multiple dimensions of economic integration. In response to these limitations, the present study contributes to the literature by analysing both forced and economic migrants from the same ethnic group and by employing a set of heterogeneous yet complementary indicators, including employment status, job quality, skill matching, job satisfaction, and perceived financial situation.

Górny and van der Zwan (2024) analysed the forced migration of Ukrainians to Poland following the Russian invasion after 2014 and did not find evidence of less successful integration of forced migrants into the Polish labour market. They attributed this to the interconnectedness of economic and humanitarian reasons for moving to Poland. As Stonawski and Brzozowski (2025) demonstrate, a mix of political and economic factors influenced the international mobility of Ukrainians before 2022: while most of them came to Poland voluntarily, some individuals were internally displaced due to the Russian aggression within Ukraine, and then decided to move to Poland.

As for the case of the post-2022 Ukrainian migration to Poland, these motivations are still intermingling, but the two cohorts (*i.e.*, pre-2022 economic migrants and post-2022 forced migrants) differ starkly in terms of gender, age, family status, and ways of searching for and aspiring to employment (Kubiciel-Lodzińska *et al.*, 2024). According to the study by Kubiciel-Lodzińska *et al*. (2024), two-thirds of the forced migrants had completed tertiary education. However, fewer than one-third of them speak Polish, which makes their labour market integration more difficult. Early research on post-2022 migration also found that Ukrainian forced migrants tend to self-select when it comes to the choice of the host country. Those with higher skills (including previous work experience and foreign language competences) and thus a greater likelihood of labour market integration tend to move to Western EU countries rather than stay in Poland (Kohlenberger *et al.*, 2023). Conversely, Poland's temporary yet productive migration infrastructure, including the efforts of NGOs, INGOs, labour intermediaries, and central and local governments, has facilitated the transition of forced migrants to employment (Matuszczyk & Kowalska, 2024). Economic integration seems to be more challenging in smaller Polish towns than in big cities. The stakeholders in the smaller towns arguably perceive the presence of Ukrainian forced migrants as temporary, focusing on providing *ad hoc* humanitarian aid. In contrast, urban centres tend to engage in more comprehensive integration efforts, including job-seeking assistance (Bielewska *et al.*, 2025). Consequently, we formulated hypotheses 1 and 2:

H1: The forced migrants from Ukraine are less successfully integrated in the economic aspect than economic migrants.

H2: Both economic and forced migrants from Ukraine living in larger cities are more successfully integrated in the economic aspect than individuals living in small cities and rural areas.

Another important dimension of our study is the role of gender in economic integration. The positive reception of Ukrainian forced migrants after 2022 likely resulted from the gender composition of the group. Women with children tend to generate more 'promising victimhood,' which results in the attribution of 'deservingness' of assistance (Welfens, 2022). However, this same gender dimension can cause structural issues that reception policies may not address, such as mental health, violence, stable housing, and general integration into society (Szpakowicz *et al.*, 2025). Furthermore, the lack of oversight in the integration of labour market strategies for migrant women in Poland, or the informalization of these strategies, could lead to the exacerbation of their vulnerability and result in their marginalisation (Slany *et al.*, 2024). Recent studies on Syrian refugees (Hannafi & Marouani, 2023) and economic immigrants in Germany (Brzozowski & Lasek, 2019) consistently demonstrate that both female gender and having children in the host country (implying care obligations) are associated with a negative likelihood for obtaining full-time employment. Respectively, we formulated hypothesis 3:

H3: Ukrainian women are less successfully integrated economically than males.

Studies on migrant capital and the circulation of intangible remittances in the transnational spaces demonstrate that individuals with higher initial resources, ranging from education and networks to cognitive skills and psychological resilience, can acquire and enhance capital through migration (Saksela-Bergholm *et al.*, 2019; Winogrodzka *et al.*, 2025). In the case of Ukrainian women forced to migrate, Grabowska (2025) has found that they show a high propensity to acquire 'intangible remittances' (knowledge, norms, competences), thus benefiting from the 'cumulative advantage effect.'

However, previous studies have shown that Ukrainian migrants in Poland usually tend to lack social ties and capital (Kindler & Wójcikowska-Baniak, 2019). Once they gain such access to social ties in the host country, they benefit from both weak and strong ties. They have access to diverse job opportunities through weak ties and jobs that match their competencies through strong ties (Górny *et al.*, 2025). Kyliushyk *et al.* (2025) analysed the mobility capital of Ukrainian forced migrants and demonstrated the ambivalence of the factors affecting capital conversion. Factors such as personal resources, existing capital, free access to the labour market, the ability to start and run a business, and financial support can increase mobility capital (Kyliushyk *et al.*, 2025, p. 15). However, other factors may hinder the conversion of mobility capital. For instance: 'The experience of trauma, language barriers, lack of support for working mothers caring for their children alone, systemic barriers preventing people from working according to their skills, and lack of long-term integration policies' (Ibidem, p. 15). Consequently, we formulated hypothesis 4 and 5:

H4: Ukrainians with access to social and cultural capital in Poland exhibit higher economic integration outcomes.

H5: Ukrainians with poor mental and physical health exhibit lower economic integration outcomes.

RESEARCH METHODOLOGY

We utilised data from our own survey of Ukrainians residing in Poland. We conducted the survey within the Horizon Europe project entitled 'Policy Recommendations to Maximise the Beneficial Impact of Unexplored Mobilities in and beyond the European Union' (PREMIUM_EU, Grant Agreement number: 101094345). The University Ethics Committee for Scientific Research at the Krakow University of Economics [decision no. KEBN/71/0044/D40/2024] and The Ethics Review Committee of the Royal Netherlands Academy of Arts and Sciences (KNAW) [project coordinator] [decision no. FAO/AKo/149], approved the survey in accordance with ethical principles, data protection regulations and good practice in scientific research.

We conducted the fieldwork between 15 March and 17 April 2025 among Ukrainian citizens aged between 18 and 64 years residing in Poland using the individual Computer Assisted Web Interview (CAWI) method. We collected the interviews in the form of an online survey, with the script

prepared in the QUALTRICS software (available languages: Ukrainian, Russian, and English). The sample reached 1 082 respondents. The research team commissioned fieldwork at the Centre of Migration Research (CMR) at the University of Warsaw. The sampling for our study was based on the CMR representative panel of Ukrainian migrants in Poland, 'Between Ukraine and Poland,' established originally in 2022, using quotas related to:

- migrant status: economic migrants – those who arrived in Poland before 24 February 2022, forced migrants – those who arrived on 24 February 2022 or later;
- place of residence in Poland: large cities – those with a population over 100 thousand inhabitants, small and medium-sized towns – those with a population below 100 thousand.

Thus, there were four subgroups. The participants were randomly selected to participate in the study and received invitations to complete the questionnaire via SMS and e-mail. To complete the established quotas, CRM conducted additional web-based recruitment to complement the panel-based sampling. Post-stratification weights were constructed to enhance representativeness and reliability of the study results according to voivodship, sex and age based on the central Polish PESEL register, which is used to keep the population records.

To present the sample and economic integration of Ukrainian migrants, we employed descriptive statistics and constructed several logistic regression models to verify the importance of chosen characteristics on the economic integration of the group under consideration.

To verify the hypotheses put forward in this study, we selected four dependent indicator variables that are widely accepted measures of economic integration:

- employment on the labour market – describing labour force status of the respondent at the moment of the interview, included in two specifications: (a) some employment (variable: somemp) coded as 1 if the respondent is either full-time, part-time, self-employed or works occasionally, and 0 otherwise, (b) full employment (variable: fullemp) coded as 1 if he/she has a full-time employment, and 0 otherwise;
- occupational skills matching (variable: skill matched) – respondent's self-assessed match between own qualifications and requirements of a current job, coded 1 when the respondent declares that one's skills or competences are well matched with current occupation (ranked from 6 to 10 on 0-10 scale);
- satisfaction from respondent's job (variable: job satisfaction) – measure of the respondent's overall satisfaction with their present employment, based on self-assessment, coded 1 when the respondent declares that is satisfied with their current occupation (ranked from 6 to 10 on a 0-10 scale);
- financial situation of respondent in Poland (variable: good financial situation PL) – measure of the respondent's perceived financial well-being in Poland, based on self-evaluation of current economic situation, coded 1 when the respondent declares good or very good financial situation in Poland (ranked 4 to 5 on 1-5 scale).

By applying these measures, we could exploit the heterogeneous dimensions of economic integration, including both objective factors as employment and more nuanced and subjective ones, based on self-assessments of respondents. The main independent variables related to the formulated hypotheses were:

- refugee status (variable: refugee) – indicator variable measured using date of arrival to Poland, coded as 1 when the individual arrived in Poland on 24 February 2022 or later, and 0 otherwise;
- respondent's sex (variable: female) – coded as 1 when the respondent was female;
- presence of children in household in Poland (variable: child in household) – coded as 1 if the respondent was accompanied by his own children or children under the age of 18 years in his/her household in Poland;
- education (variable: years of education) – level of respondent's education measured in years of formal education;
- Polish language proficiency (variable: proficient in Polish) – indicator variable indicating that the respondent had a high level of proficiency in Polish, coded as 1;
- English language proficiency (variable: proficient in English) – indicator variable indicating that the respondent had a high level of proficiency in English, coded as 1;

– Polish friends (variable: share of Polish friends) – categorical variable representing a share of Polish friends among all friends in Poland (None=1, 1–25%=2, 26–50%=3, 51–75%=4, 75+=5).
– remittances (variable: receives remittances) – indicator variable showing if the respondent or respondent's household received any cash remittances, coded as 1.

Furthermore, we included a set of individual-level control variables to enhance the comparability of individuals with disparate socio-economic backgrounds. These variables encompassed age, marital status, health condition, labour status in Ukraine before migration, economic situation in Ukraine before migration, size of place of residence in Ukraine before migration, and size of place of residence in Poland at the moment of interview.

Table 1. Descriptive statistics

Variables	N	Mean	SD	Min	Max
Economic migrants					
fullemp	447	0.694	0.462	0	1
female	447	0.718	0.450	0	1
childhousehold	447	0.353	0.479	0	1
partnerHD_PL	447	0.644	0.479	0	1
otherperson18HD_PL	447	0.199	0.400	0	1
age	447	39.629	10	19	64
married	447	0.450	0.498	0	1
yearsedu	447	14.734	3.744	2	30
goodPolish	447	0.680	0.467	0	1
goodEnglish	447	0.208	0.406	0	1
bad health condition	447	0.179	0.384	0	1
Forced migrants					
fullemp	635	0.398	0.490	0	1
female	635	0.847	0.360	0	1
childhousehold	635	0.620	0.486	0	1
partnerHD_PL	635	0.471	0.5	0	1
otherperson18HD_PL	635	0.298	0.458	0	1
age	635	42.398	9.472	18	64
married	635	0.535	0.499	0	1
yearsedu	634	15.309	3.356	2	30
goodPolish	635	0.381	0.486	0	1
goodEnglish	635	0.187	0.391	0	1
bad health condition	635	0.293	0.455	0	1

Source: own study.

As Table 1 demonstrates, female respondents comprised 84.7% of refugees and 71.8% of economic migrants, which is much above the share in the general UKR PESEL register (approximately 58.8% of women). Unfortunately, as in many previous surveys on Ukrainian populations in Poland, but also other countries (Kohlenberger *et al.*, 2023), the share of men willing to participate was much smaller than for women. From the descriptive statistics table, we can also see that in the case of the most typical measure for economic integration, full-time employment, the differences between forced and economic migrants were indeed substantial (69.4% for economic migrants and 39.8% for forced ones). To make our findings more robust and representative, we applied post-stratification weights according to voivodship, sex, and age based on the Polish PESEL register in our empirical analysis.

RESULTS AND DISCUSSION

Employment

Regarding labour market indicators of economic integration, the results are quite straightforward and robust for all model specifications. Forced migrants are consistently less likely to have full-employment

status; the same holds true even for some form of employment (somemp variable). Therefore, the refugee status is associated with some penalty when it comes to the entry on the Polish labour market. As most of the forced migrants are women, we also wanted to investigate what role gender plays in economic integration. Interestingly, it is not the gender *per se* that matters in this aspect, but rather that the female individuals with small children are in the most difficult situation (see the interaction term female x child in the household). This effect is partially offset by the presence of other adult members of the household, probably because such individuals can help women in reconciling work with childcare obligations (Lutz & Palenga-Möllenbeck, 2012).

Table 2. Economic integration outcomes (1): Employment on the labour market (logistic regression, outcomes, some form of employment, and full-employment status)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	somemp	fullemp	somemp	fullemp	somemp	fullemp
refugee (dummy)	-1.046***	-0.828***	-1.014***	-0.709***	-0.849***	-0.839***
	-0.24	-0.197	-0.265	-0.211	-0.205	-0.161
female (dummy)	-0.36	-0.295	-0.306	-0.198	-0.535*	-0.285
	-0.332	-0.257	-0.331	-0.262	-0.3	-0.233
child in household (dummy)	0.621	0.073	0.666	0.169	0.528	0.036
	-0.527	-0.369	-0.542	-0.381	-0.472	-0.356
female=1 # childho~1	-0.994*	-0.983**	-1.028*	-1.110***	-0.76	-0.803**
	-0.553	-0.393	-0.567	-0.408	-0.488	-0.377
partner in household (dummy)	-0.039	0.078	-0.077	0.07	-0.377*	-0.26
	-0.24	-0.217	-0.239	-0.221	-0.199	-0.17
other person aged 18+ HD (dummy)	0.573**	0.047	0.568**	-0.001	0.453**	-0.017
	-0.244	-0.205	-0.237	-0.211	-0.191	-0.168
age	0.225***	0.299***	0.216***	0.302***	0.261***	0.295***
	-0.073	-0.063	-0.071	-0.065	-0.062	-0.059
age squared	-0.003***	-0.004***	-0.003***	-0.004***	-0.003***	-0.004***
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
married (dummy)	-0.594**	-0.115	-0.565**	-0.075	-0.418**	-0.043
	-0.235	-0.218	-0.237	-0.218	-0.2	-0.177
years of education	0.012	-0.036	0.012	-0.037	0.014	-0.022
	-0.025	-0.023	-0.025	-0.023	-0.026	-0.022
proficient in Polish (dummy)	0.494**	0.322*	0.493**	0.311	0.117	0.231
	-0.217	-0.187	-0.221	-0.192	-0.196	-0.162
proficient in English (dummy)	-0.504*	-0.813***	-0.359	-0.668***	-0.437*	-0.741***
	-0.276	-0.242	-0.266	-0.244	-0.241	-0.195
bad health condition (dummy)	-0.857***	-0.715***	-0.883***	-0.777***	-0.712***	-0.481***
	-0.225	-0.216	-0.227	-0.225	-0.18	-0.17
worked in UA (dummy)			0.352	0.285		
			-0.238	-0.23		
self-employed in UA (dummy)			0.106	-0.171		
			-0.342	-0.335		
entrepreneur in UA (dummy)			0.344	-0.008		
			-0.685	-0.575		
bad economic situation in UA (dummy)			0.462*	0.614***		
			-0.27	-0.214		
comes from oc. territories (dummy)			0.453*	0.208		
			-0.24	-0.228		
comes from large city in UA (dummy)			-0.282	0.215		
			-0.255	-0.242		
comes from small city in UA (dummy)			-0.25	0.254		
			-0.308	-0.277		

lives in Eastern PL (dummy)					-0.474*	-0.466*
					-0.256	-0.24
lives in city500k+ (dummy)					0.570*	0.574**
					-0.308	-0.274
lives in city 100_499k (dummy)					0.167	0.44
					-0.334	-0.306
lives in city 50_99 (dummy)					0.296	0.115
					-0.335	-0.305
lives in a small city (dummy, ref. rural areas)					0.332	0.750***
					-0.315	-0.291
share of Polish friends					0.254***	0.201***
					-0.091	-0.068
receives remittances (dummy)					-0.510*	-0.139
					-0.263	-0.247
Constant	-1.503	-3.845***	-1.669	-4.642***	-3.054**	-4.626***
	-1.472	-1.298	-1.454	-1.368	-1.269	-1.216
Observations	1081	1081	1081	1081	1081	1081

Note: post-stratification weights according to voivodship, sex and age based on the Polish PESEL register have been applied.
Source: own study.

Regarding the role of human capital, it turns out that the formal education does not matter much for economic integration. On the other hand, the proficiency in the host country language (in this case: Polish) is crucial. This result is consistent with the previous studies conducted in other host countries, for instance study of Brzozowski and Lasek (2019) for Germany that demonstrates the importance of the acquisition of host country language. Bojarczuk and associates also claim that there are serious obstacles in successful human capital transfer between Ukraine and Poland (Bojarczuk *et al.*, 2025). However, the results of the study by Stonawski and Brzozowski (2025) on Venezuelan migrants in Peru demonstrates that in the case of countries with quite similar educational systems and the same language, the higher/post-secondary education helps in economic integration, at least when it comes to full-time employment. Unfortunately, this is not a case for Ukrainian immigrants and forced migrants living in Poland, as Poland and Ukraine have very different educational systems (Herbst & Sitek, 2023), and language proximity creates significant obstacles regarding expectations of understanding, resulting in de facto miscommunication and exclusion (Wanke *et al.*, 2026). English proficiency is negatively associated with employment probability. This likely reflects both the low demand for English in jobs available to Ukrainian migrants and the fact that foreign language skills proxy middle-class status in Ukraine, which reduces the likelihood of accepting low-prestige employment.

In contrast to what we expected, the previous experience when it comes to economic activity in Ukraine does not matter much for employment prospects in Poland. Only those who were in a poor economic situation in Ukraine are more likely to work full-time in Poland, which is probably influenced by sheer necessity, as those individuals might not have any other source of income, nor savings left.

Finally, the place of residence in the host country matters a lot in economic integration. Those individuals living in Eastern Poland, historically peripheral economic region, are less likely to find employment. For Ukrainians, it is obviously easier to find employment when living in the largest metropolitan areas. However, regarding full-time employment, we found a positive and strong effect of small cities (with population below 50 thousand). We may explain this effect by the fact that in more local labour markets the employee is a scarcer good, therefore the likelihood to work full-time instead of occasional or part-time employment is higher. Another competing explanation for this effect could be the fact that in small cities reside only those Ukrainians who were able to obtain full-time employment. On the other hand, Ukrainians residing in larger cities have greater opportunities to learn Polish and acquire additional skills or knowledge.

Skill Match and Job Satisfaction

Another dimension of economic integration involves individuals who are already economically active. Consequently, we analysed the determinants of occupational skills matching (variable: skill matched) and job satisfaction (variable: job satisfaction). Surprisingly, the forced migrants are not significantly different from economic ones when it comes to skill match, which implies that the peculiar characteristics of the Polish labour market where most of the vacancies are available in unskilled occupations might be the decisive factor. Men do not experience a higher likelihood of skill matching than Ukrainian females. However, when it comes to the case of satisfaction derived from the respondent's job, the effects of refugee status and gender are significant: forced migrants from Ukraine and Ukrainian women are less satisfied with their performed economic activity than economic migrants and Ukrainian men, *ceteris paribus*.

Regarding formal human capital (measured by years of education), it is not significantly associated with either outcome. Surprisingly, the importance of language skills: both proficiency in Polish and English was statistically insignificant for job satisfaction. However, poor health status played a vital (negative) role both for skill match and job satisfaction.

Table 3. Economic integration outcomes (2): Self-perceived skill match and job satisfaction

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	skill matched	Job satisfaction	skill matched	Job satisfaction	skill matched	Job satisfaction
refugee (dummy)	-0.149	-0.406**	-0.136	-0.409**	-0.129	-0.572***
	-0.212	-0.187	-0.22	-0.194	-0.17	-0.161
female (dummy)	-0.292	-0.485**	-0.274	-0.438*	-0.460**	-0.436**
	-0.251	-0.24	-0.256	-0.244	-0.233	-0.222
child in household (dummy)	0.073	0.407	0.06	0.459	-0.313	0.238
	-0.369	-0.36	-0.375	-0.368	-0.352	-0.336
female=1 # childho~1	-0.435	-0.62	-0.438	-0.684*	0.085	-0.342
	-0.393	-0.381	-0.396	-0.389	-0.375	-0.36
partner in household (dummy)	-0.087	-0.155	-0.095	-0.191	-0.106	-0.127
	-0.221	-0.207	-0.22	-0.206	-0.176	-0.169
other person aged 18+ HD (dummy)	0.271	0.487**	0.262	0.510**	0.242	0.428**
	-0.236	-0.21	-0.235	-0.211	-0.183	-0.168
age	0.077	0.094	0.073	0.07	0.088	0.126**
	-0.069	-0.062	-0.071	-0.064	-0.058	-0.054
age squared	-0.001	-0.001*	-0.001	-0.001	-0.001*	-0.002**
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
married (dummy)	-0.218	-0.175	-0.197	-0.132	0.108	-0.069
	-0.218	-0.21	-0.22	-0.214	-0.186	-0.175
years of education	0.034	0.005	0.038	0.004	0.032	0.016
	-0.029	-0.025	-0.029	-0.026	-0.024	-0.021
Proficient in Polish (dummy)	0.315	0.450**	0.316	0.447**	0.196	0.179
	-0.197	-0.186	-0.2	-0.189	-0.173	-0.161
Proficient in English (dummy)	-0.212	-0.224	-0.135	-0.199	-0.174	-0.194
	-0.247	-0.228	-0.248	-0.227	-0.198	-0.191
bad health condition (dummy)	-0.894***	-1.133***	-0.919***	-1.158***	-0.751***	-0.817***
	-0.249	-0.212	-0.245	-0.214	-0.201	-0.176
worked in UA (dummy)			0.055	0.460**		
			-0.239	-0.224		
self-employed in UA (dummy)			-0.152	0.427		
			-0.359	-0.321		

entrepreneur in UA (dummy)			0.238	0.383		
			-0.542	-0.605		
bad economic situation in UA (dummy)			0.195	0.211		
			-0.21	-0.194		
comes from oc. territories (dummy)			0.098	0.13		
			-0.248	-0.216		
comes from large city in UA (dummy)			-0.34	-0.509**		
			-0.247	-0.221		
comes from small city in UA (dummy)			-0.531*	-0.425*		
			-0.278	-0.254		
lives in Eastern PL (dummy)					-0.189	-0.442*
					-0.264	-0.232
lives in city500k+ (dummy)					0.112	-0.114
					-0.294	-0.262
lives in city 100_499k (dummy)					-0.291	-0.15
					-0.324	-0.288
lives in city 50_99 (dummy)					-0.174	0.013
					-0.339	-0.294
lives in a small city (dummy, ref. rural areas)					-0.113	0.234
					-0.304	-0.274
share of Polish friends					0.164**	0.178***
					-0.066	-0.065
receives remittances (dummy)					-0.132	0.048
					-0.281	-0.249
Constant	-1.988	-0.941	-1.806	-0.53	-2.542**	-2.164*
	-1.377	-1.24	-1.415	-1.275	-1.192	-1.13
Observations	1081	1081	1081	1081	1081	1081

Note: post-stratification weights according to voivodship, sex and age based on the Polish PESEL register have been applied.
Source: own study.

In our sample, place of residence in Poland did not appear to play a significant role in skill matching or job satisfaction. However, the role of social capital was very important: individuals who had Polish friends and acquaintances exhibited better occupational skills matching and higher job satisfaction.

Financial Situation in Poland

The final dimension of economic integration that we scrutinised was the perceived financial well-being in Poland, as evaluated by individuals' assessment of their current economic situation. In this aspect, forced migrants were clearly in a significantly worse position than economic migrants from Ukraine. However, in this aspect, the gender did not play a significant role, even when controlled for women with (children) care obligations. Individuals with proficiency in Polish were better off than other individuals, albeit this effect was smaller and less significant than in previously analysed dimensions of economic integration. What remains consistent across all models and specifications was the health condition: those respondents who had reported bad (mental or physical, or both) health status were in a much worse financial situation than healthier counterparts. Surprisingly, the place of residence in Ukraine before moving to Poland was not associated in a significant way with the financial situation. This could be either explained by a higher economic resilience of Ukrainian forced migrants or by the inadequate representation of those individuals who have lost most of their wealth during the Russian invasion. Their current place of residence in Poland was not statistically significant. The role of social capital in Poland (having Polish friends) was mildly significant, but only at 10% level.

Table 4. Economic integration outcomes (3): The current financial situation in Poland

Variables	(1)	(2)	(3)
	good financial situation PL	good financial situation PL	good financial situation PL
refugee (dummy)	-0.601***	-0.634***	-0.474**
	-0.226	-0.235	-0.201
female (dummy)	-0.079	-0.107	0.025
	-0.276	-0.278	-0.251
child in household (dummy)	0.59	0.566	0.304
	-0.376	-0.378	-0.367
female=1 # childho~1	-0.579	-0.54	-0.508
	-0.422	-0.425	-0.4
partner in household (dummy)	0.634**	0.652**	0.286
	-0.262	-0.258	-0.204
other person aged 18+ HD (dummy)	0.017	0.014	-0.145
	-0.273	-0.273	-0.235
age	-0.165**	-0.173**	-0.063
	-0.074	-0.075	-0.069
age squared	0.002**	0.002**	0.001
	-0.001	-0.001	-0.001
married (dummy)	-0.078	-0.121	0.049
	-0.262	-0.264	-0.214
years of education	0.024	0.021	0.018
	-0.03	-0.03	-0.024
Proficient in Polish (dummy)	0.451**	0.440*	0.265
	-0.229	-0.228	-0.211
Proficient in English (dummy)	1.125***	1.086***	0.763***
	-0.243	-0.247	-0.217
bad health condition (dummy)	-1.604***	-1.616***	-1.425***
	-0.304	-0.309	-0.279
worked in UA (dummy)		-0.009	
		-0.261	
self-employed in UA (dummy)		0.039	
		-0.383	
entrepreneur in UA (dummy)		-0.371	
		-0.731	
bad economic situation in UA (dummy)		-0.09	
		-0.237	
comes from oc. territories (dummy)		-0.231	
		-0.281	
comes from large city in UA (dummy)		0.21	
		-0.27	
comes from small city in UA (dummy)		-0.084	
		-0.324	
lives in Eastern PL (dummy)			0.116
			-0.276
lives in city 500k+ (dummy)			-0.062
			-0.334
lives in city 100_499k (dummy)			-0.103
			-0.359

lives in city 50_99 (dummy)			-0.059
			-0.382
lives in a small city (dummy, ref. rural areas)			0.097
			-0.361
share of Polish friends			0.136*
			-0.077
receives remittances (dummy)			0.343
			-0.308
Constant	1.063	1.353	-0.444
	-1.453	-1.476	-1.455
Observations	1081	1081	1081

Note: post-stratification weights according to voivodship, sex and age based on the Polish PESEL register have been applied.
Source: own study.

CONCLUSIONS

Our study sheds light on the process of economic integration of a major group of immigrants in Europe: namely, economic and forced migrants from Ukraine. Based on the perspective of the second largest host country (after Germany), our findings demonstrate that forced migrants are less likely than economic migrants to become employed, experience high job satisfaction and good financial situation, which is in line with our hypothesis 1. We also provide some support for hypothesis 2 which suggests that big cities play a significant role in economic integration.

Ukrainians residing in the largest urban agglomerations exhibit higher employment probabilities than those living in rural areas. Simultaneously, the likelihood of obtaining full-time employment is also higher among individuals residing in smaller towns. Our findings did not support hypothesis 3, which posited a negative effect of gender on economic integration. Lower integration outcomes among women appear to be driven primarily by childcare responsibilities rather than gender per se. In contrast, we found strong support for hypothesis 4, highlighting the importance of social and cultural capital in economic integration. Ukrainians with higher proficiency in the Polish language and those who maintain social ties with Polish nationals demonstrated more favourable integration outcomes. Finally, the study confirmed hypothesis 5 concerning the role of health: both economic and forced migrants reporting poor health status exhibit significantly lower levels of integration across all dimensions examined in this study.

These findings have clear and straightforward policy implications. Firstly, countries hosting large refugee and immigrant populations need to provide support with childcare to enable women to successfully enter the labour market. Secondly, we should not forget that forced migrants often arrived traumatised by the war operations in their home country. Consequently, for many individuals, poor health may pose a serious obstacle to successful integration. Finally, despite these issues, our study demonstrates that most economic migrants and forced migrants are relatively well-integrated economically in Poland. Nevertheless, we should bear in mind the limitations of our study. It is quite probable that more integrated individuals demonstrate a high willingness to participate in the online survey. Simultaneously, people with an uncertain position in terms of the legality of stay (e.g., men) or psycho-emotional state are more reluctant to participate in our research project. Another important limitation is the cross-sectional nature of the survey, which precludes dynamic analyses and raises endogeneity concerns. For example, English proficiency may also capture pre-migration middle-class status in Ukraine, thereby reflecting individuals' financial situation before departure.

Regarding future research directions, the use of panel data would be highly valuable. In particular, analysing changes in outcomes following the modification of the legal framework governing the residence of Ukrainians from 4 March 2026 onward would offer important insights.

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Authors

The contribution share of authors is equal and amounted to 20% for each of them.
JB – conceptualisation, KP – literature writing, MS – methodology, MW – discussion, SL-M – introduction.

Jan Brzozowski (corresponding author)
Associate professor at the Institute of European Studies at Jagiellonian University (Poland). His research interests include socio-economic integration of migrants and return migrants, immigrant & refugee entrepreneurship.
Correspondence to: Institute of European Studies, Jagiellonian University, Reymonta 4, Kraków, Poland, e-mail: jan.brzozowski@uj.edu.pl
ORCID https://orcid.org/0000-0001-8517-3485

Konrad Pędziwiatr
Professor at the Department of International Relations (Krakow University of Economics) and Deputy Director of the Center for Advanced Studies of Population and Religion (CASPAR). His research interests include religious, ethnic and health dimensions of migration studies and social movements in Europe and the Middle East.
Correspondence to: CASPAR, Kraków University of Economics, Rakowicka 27, Kraków, Poland, e-mail: konrad.pedziwiatr@uek.krakow.pl
ORCID https://orcid.org/0000-0002-7547-6789

Marcin Stonawski
Professor at the Center for Advanced Studies of Population and Religion (CASPAR), Kraków University of Economics (Poland), and associated with Statistics Denmark. His research interests include population ageing and its socioeconomic implications, migration, demographic and human capital projections, and global trends in religion and religiosity His research interests include the process of population ageing and its socioeconomic consequences, demographic projections, human capital, ageing of the labour force, the adjustment of companies and institutions to future changes in the labour market, and changes in religion and religiosity around the World.
Correspondence to: CASPAR, Kraków University of Economics, Rakowicka 27, Kraków, Poland, e-mail: caspar@uek.krakow.pl
ORCID https://orcid.org/0000-0003-4550-2824

Michał Wanke
Assistant Professor at the University of Opole (Poland) and Research Fellow at the Center for Advanced Studies of Population and Religion (CASPAR) at Krakow University of Economics (Poland). His research interests include cannabis users, cultures of psychoactive substance use, migration, intercultural communication, transnationalism and social remittances.
Correspondence to: CASPAR, Kraków University of Economics, Rakowicka 27, Kraków, Poland, e-mail: wankem@uek.krakow.pl
ORCID https://orcid.org/0000-0003-0413-9838

Svitlana Luchik-Musiyezdova

Research assistant at the Center for Advanced Studies of Population and Religion (CASPAR) at Krakow University of Economics (Poland). Her research interests include immigrant and refugee social integration, migration intentions, migrants' access to healthcare and education.
Correspondence to: CASPAR, Kraków University of Economics, Rakowicka 27, Kraków, Poland, e-mail: luchiks@uek.krakow.pl
ORCID https://orcid.org/0000-0001-8867-8614

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Use of Artificial Intelligence

The authors declare that they did not use AI tools in writing this article and in data analysis.

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