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The role of entrepreneurial intention in the institution and entrepreneurial activity linkage: Cross-country evidence

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ABSTRACT

Objective: The objective of the article is to integrate the theory of planned behaviour (TPB) to argue that entrepreneurial intention plays a moderating role in the relationship between institutions and entrepreneurial activity.

Research Design & Methods: The article uses panel data analysis conducted on a sample of 112 countries from 2001 to 2021, using data from the Global Entrepreneurship Monitor. Various panel regression techniques estimate the total early-stage entrepreneurial activity (TEA) conditional upon institutions and entrepreneurial intention.

Findings: The study found evidence of moderating effects of entrepreneurial intention in the institution and entrepreneurial activity linkage. Results revealed a negative impact of institutions on total entrepreneurial activity, with pre-existing entrepreneurial intention at the country level mitigating this impact by 4% to 50%, depending on institution dimensions. Notably, the moderating effect of entrepreneurial intention weakens over time, lasting up to two years.

Implications & Recommendations: To promote entrepreneurship, policymakers should prioritize initiatives that nurture and shape entrepreneurial intention, recognizing that the moderating effect of entrepreneurial intention weakens over time.

Contribution & Value Added: This article is the first attempt to consider entrepreneurial intention as a key construct to examine the potential moderating mechanisms between institutions and entrepreneurship, drawing on the TPB. The study uncovers a new role of entrepreneurial intention in navigating the institutional context for entrepreneurial activity.

Article type:	research article
Keywords:	institutions; entrepreneurship; entrepreneurial intention; theory of planned behaviour; GEM data
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INTRODUCTION

Formal and informal institutional environments are integral to economic development and business formation (Chowdhury *et al*., 2019). Formal institutions encompass the legislative, political, and economic structures of a country, while informal institutions consist of norms, customs, traditions, and culture. Countries with well-developed institutional systems generally exhibit higher levels of entrepreneurial activity due to the incentives and legal frameworks they provide for businesses. In contrast, weak institutions tend to encourage individuals or firms to exploit political or legal processes for competitive advantage, leading to unproductive entrepreneurship (Baumol, 1996; Sobel, 2008). Extensive evidence confirms the positive relationship between formal institutions and entrepreneurial activity, highlighting institutions as a key driver of entrepreneurial success across countries (Baumol, 1996; Bosma *et al*., 2018; Chambers & Munemo, 2019; Chowdhury *et al.*, 2019; Hanoteau & Vial, 2020; Khyareh, 2023; Sobel, 2008). However, there is also evidence suggesting a negative

relationship between strong institutions and entrepreneurial activity, influenced by factors such as stringent regulatory requirements (Miao *et al.*, 2022), fiscal freedom linked to reduced necessity entrepreneurship (Nikolaev *et al*., 2018), and the observation that corruption appears to facilitate entrepreneurial activity in adverse investment climates (Dutta & Sobel, 2016).

The relationship between institutions and entrepreneurship is complex (Salimath & Cullen, 2010) and often studied through the lens of average entrepreneurial rates across countries. However, to better understand the impact of institutions on entrepreneurship, it is essential to consider additional factors. Lv *et al*. (2021) highlighted the significance of entrepreneurship distribution, showing that countries with varying levels of entrepreneurship may respond differently. Heterogeneous impacts also arise from moderator variables influencing the institution-entrepreneurship linkage, an aspect often overlooked in current research. Exceptions, like Miao *et al.* (2022), found religiosity moderating government effectiveness's influence on political freedom, affecting the relationship with entrepreneurship. Anokhin and Schulze (2009) revealed that foreign direct investment (FDI) can moderate corruption's link to entrepreneurial activity. As entrepreneurial activity is very much an individual endeavour, psychological factors such as spirit and intention likely shape institutions' effects on entrepreneurship. Countries with differing entrepreneurial spirits and intention levels may significantly differ in their responses to institutional factors that either stimulate or hinder entrepreneurship. Entrepreneurial activities are considered a long-term process with entrepreneurial intention serving as an initial step (Krueger, 1993). The theory of planned behaviour (TPB) asserts that entrepreneurial intention plays a crucial role in determining entrepreneurial outcomes, as it drives proactive commitments and plans necessary for the entrepreneurial journey (Radipere & Ladzani, 2014). These commitments and behaviours enable nascent entrepreneurs to overcome challenges and barriers posed by contextual factors such as institutions, market competition, and technological dynamics. To the best of our knowledge, no studies have investigated the potential moderating role of entrepreneurial intention in the relationship between institutions and entrepreneurial activity.

We aimed to investigate the relationship between formal institutional factors and entrepreneurial activity with a specific focus on the role of entrepreneurial intention in shaping this relationship. Using panel data analysis from 2001 to 2021 across 112 countries with data from reputable secondary sources, this study explores how entrepreneurial intention moderates the influence of institutions on entrepreneurial activity at the country level. It examines the duration of these moderating effects and how they evolve considering specific contexts where the role of entrepreneurial intention is more prominent. Drawing on the TPB, we hypothesize that pre-existing entrepreneurial intention can serve as a buffer, alleviating institutional challenges, or as an enabler, leveraging the positive impact of institutions.

This study offers three key contributions to the existing entrepreneurship literature. Firstly, it investigates the influence of prior entrepreneurial intention on the institution-entrepreneurship linkage, extending beyond previous research on intention determinants. While existing literature has examined a few moderating factors, such as religiosity (Miao *et al*., 2022) and FDI (Anokhin & Schulze, 2009), this research provides novel insights by examining how entrepreneurial intention translates into action, interacting with institutional factors to drive entrepreneurial outcomes. Secondly, it enhances our understanding of the complex relationship between institutions and entrepreneurship, highlighting the role of multiple factors in shaping their impact. This nuanced understanding has important policy implications, emphasizing the need for initiatives addressing both formal institutions and entrepreneurial intention to promote entrepreneurship globally. Lastly, the study integrates theoretical foundations from the TPB, adopting a holistic approach to examining entrepreneurship outcomes on a global scale.

The subsequent section provides a comprehensive review of the interplay between institutions, entrepreneurship, and entrepreneurial intention within the framework of the TPB. Section 3 introduces the data sources employed in our analysis and outlines the empirical strategies adopted. This is followed by a detailed discussion of the results in Section 4. Finally, Section 5 concludes the paper by presenting policy implications derived from the findings and suggesting avenues for future research in this domain.

Literature Review and Hypothesis Development

The existing body of literature has consistently emphasized the significance of institutional factors in shaping entrepreneurial activity. Institutions play a crucial role in establishing and enforcing the 'rule of the game' (Busse & Hefeker, 2007; North, 1990), both through formal and informal mechanisms, which in turn influence entrepreneurs' behaviours by incentivizing certain activities and discouraging others (North, 1990). Institutions monitor individuals' attitudes (Fuentelsaz *et al*., 2015) and provide regulatory frameworks, policies, and incentives to guide entrepreneurial activities, foster new business formation, and facilitate economic interactions (North, 1990). Within the context of entrepreneurship and innovation endeavours, in this article, we focus on formal institutions, which, in the existing research, commonly capture six dimensions: government effectiveness, rule of law, political stability, voice and accountability, regulatory quality, and control of corruption (Friedman, 2011).

Competing theoretical views exist on the significance of institutions for business creation and entrepreneurial activity. According to Pigou's public interest theory, regulations aim to protect the public by addressing market failures and ensuring product quality for overall public welfare. Institutions, in this context, distinguish 'bad' entrepreneurs from 'good' ones, providing fair conditions and promoting welfare gains (Audretsch *et al*., 2019). Strong, inclusive institutions with clear, trustworthy regulatory frameworks support a well-functioning business environment, enabling smoother business formation and entrepreneurial activity (Baumol, 1996; Dau & Cuervo-Cazurra, 2014; Sobel, 2008). These institutions exhibit traits such as low bureaucracy, transparency, and minimal corruption, which encourage the establishment of new businesses, investments, and innovation (Fu *et al*., 2020; Urbano *et al*., 2019; Dau & Cuervo-Cazurra, 2014). Conversely, bureaucratic systems with high entry costs discourage individuals from initiating start-ups (Nyström, 2008). A corrupt environment and weak property protection impede the dissemination of information, increase transaction costs, and hinder entrepreneurship (Fogel *et al*., 2006). In this sense, institutions appear to have a positive impact on business formation and entrepreneurial activity.

The literature also presents counterarguments to the relationship between institutions and entrepreneurial activity, as navigated by the public choice theory (Audretsch *et al*., 2019; Djankovet *et al*., 2002; Peltzman, 1976; Tullock, 1967). The public choice theory argues that regulation, as socially inefficient, stems from two strands. Stigler's argument asserts that regulations are often acquired by industries for their benefit, acting as barriers to entry, excluding competitors and boosting profits for established players (Stigler, 2021; Djankov *et al*., 2002; Tullock, 1967). The second strand suggests that regulations are exploited by powerful politicians for personal economic gains, creating opportunities for corruption (Audretsch *et al*., 2019; Djankov *et al*., 2002; De Soto, 1989). Complex regulations can lead to direct revenues and corruption opportunities for politicians, potentially diminishing firms' profitability (Wood *et al.*, 2016). In environments, where bribery can help 'grease' the business wheel (Dutta & Sobel, 2016), strengthening institutions for less corruption may create tough barriers to new business entry (Friedman, 2011; Miao *et al*., 2022), particularly evident in emerging economies (Chowdhury *et al*., 2015). The existing literature provides a thorough documentation of these negative impacts notably associated with strong regulations and corruption control (Miao *et al*., 2022; Audretsch *et al*., 2019; Chambers & Munemo, 2019; Djankov *et al*., 2002).

Existing evidence supports the positive relationship between institutions and entrepreneurship across various dimensions. Chambers and Munemo (2019) observed low start-up rates in countries with excessive barriers to entry and low institutional quality. Nyström (2008) found a 1.2% increase in self-employment rates for each one-unit improvement in the institutional quality index in OECD countries. Dean and Brown (1995) associated increased paperwork and procedures for business start-ups with reduced new business formation. Political stability and freedom have been shown to foster private investment, entrepreneurship, and business formation (Audretsch & Fiedler, 2021; Dutta & Sobel, 2016; Feng, 2001; Munemo, 2012). Furthermore, better control of corruption has been linked to increased innovation and entrepreneurial activity globally (Anokhin & Schulze, 2009; Bowen & Clercq, 2008; Khyareh, 2017). To a lesser extent, several empirical studies confirm the negative link between

institutions and entrepreneurship, using country-level data across Europe or worldwide (Chambers & Munemo, 2019; Friedman, 2011; Miao *et al.*, 2022) or firm-level data in the US (Wood *et al*., 2016). A U-shaped relationship between business regulations and entrepreneurship is found in cross-sectional data from developed and selected countries (Djankov *et al*., 2002). Interestingly, recent research by Khalilov and Yi (2021) revealed a two-way causal relationship between institutions and entrepreneurship: the regulatory environment fosters entrepreneurial activity, and entrepreneurship, as institutional entrepreneurs, shapes and modifies the regulatory dimension of institutions.

Given the contrasting perspectives within existing theories regarding the impact of institutions on entrepreneurship and the inconclusive evidence, we sought to re-examine the influence of institutional factors on entrepreneurial activity for a global sample of 112 countries.

H1: Institutional factors impact (positively or negatively) entrepreneurial activity.

Indeed, the relationship between institutions and entrepreneurship is complex, influenced by competing theoretical arguments and contextual factors that can either strengthen or moderate their effects. Understanding moderation effects helps provide insights into the differentiated impact of institutions on entrepreneurial activity. However, existing entrepreneurship literature has largely overlooked moderation effects. One exception is the study by Miao *et al*. (2022), who found that religiosity moderates the relationship between government effectiveness and political freedom, affecting total entrepreneurial activities. Religiosity influences human behaviour and decision-making, leading individuals to connect their personal and professional decisions with their religion. Another study by Anokhin and Schulze (2009) demonstrated that the positive relationship between corruption and entrepreneurial innovation activities is moderated by the level of FDI inflow. They argue that corruption affects the type of FDI and reduces technology spill-overs, resulting in limited technology investment in corrupt countries.

In this article, we examined how institutions affect entrepreneurship, focusing on moderating effects. We argued that entrepreneurial intention, a critical factor in entrepreneurial decisions, played a significant moderating role in shaping the influence of institutional factors on entrepreneurial activity.

The theory of planned behaviour (TPB), proposed by Ajzen (1991), asserts the significance of entrepreneurial intention in shaping the influence of institutions on entrepreneurial activity. According to TPB, intention revolves around action plans and encompasses motivational factors that drive specific behaviours. Motivational factors indicate an individual's willingness to attempt and the effort exerted to engage in the behaviour (Ajzen, 1991). Previous entrepreneurship research has demonstrated that starting and growing a business, as well as other entrepreneurship-related behaviours, are all planned behaviours, and many of these behaviours are rooted in entrepreneurial intention (Kolvereid & Isaksen, 2006; Krueger Jr *et al.*, 2000.). Entrepreneurial intention refers to 'the intention to start a new business' and serves as the initial step in the long-term entrepreneurial process. Previous studies have extensively explored entrepreneurial intention's key antecedents across various dimensions, emphasizing cognitive factors like self-efficacy (Zhao *et al*., 2005) and outcome expectations (Krueger *et al*., 2000). Farashah's (2015) social-cognitive model reveals that, in addition to cognitive and demographic factors, country-level institutional conditions play an important role in fostering entrepreneurial intention. De Pillis and Reardon (2007) and Krueger *et al.* (2000) concluded that intentions are the most reliable predictor of planned behaviours, including entrepreneurship, while Kautonen *et al.* (2013) confirmed a causal relationship between the intention to engage in business and specific actions undertaken for venture preparation.

The TPB posits that when an entrepreneur possesses the intention to engage in entrepreneurial activities, it drives a thorough planning process (Davila *et al.*, 2006), instils confidence, and fosters proactive commitment towards achieving success (Bandura, 2001). Launching a start-up is a process consisting of exploring business ideas and turning an entrepreneurial opportunity into a reality. The start-up process is therefore risky and easily fails. Many entrepreneurs make the decision to start a business long before they delve into entrepreneurial opportunities (Krueger, 2000). Throughout this long-term process, various contextual factors, including institutions, industry competition, technological dynamics, and other external elements, pose challenges that entrepreneurs must overcome. In this context, entrepreneurial intention drives effective planning, resource allocation, and the ac-

quisition of necessary expertise to surmount barriers hindering entrepreneurial activities (Andriopoulos, 2003). Bandura (2001) argues that entrepreneurial intention is not merely an anticipation of future behaviour. Rather, it signifies a proactive commitment involving significant time investment, extensive planning, and extensive cognitive processing to bring it into fruition. While Farashah (2015) and Khalilov and Yi (2021) acknowledged the influence of institutional factors in shaping entrepreneurial intention, it is essential to highlight that entrepreneurial intention likely interacts with these institutional factors to drive entrepreneurial activity.

In an environment characterized by institutional obstacles to entrepreneurial activity, such as rigorous requirements and time-consuming administrative processes, the role of entrepreneurial intention becomes more critical. Nascent entrepreneurs with strong entrepreneurial intentions exhibit greater persistence and strategic planning, enabling them to overcome institutional challenges and realize their entrepreneurial endeavours.

Overall, supportive institutions provide aspiring entrepreneurs with resources for successful business establishment and growth. For entrepreneurs with strong entrepreneurial intentions, the positive association between institutions and entrepreneurial activity becomes stronger. Moreover, entrepreneurs with strong entrepreneurial intentions are better equipped to overcome institutional challenges and achieve entrepreneurial outcomes. Based on this discussion, we formulated the following hypothesis to test the possible moderating role of entrepreneurial intention.

H2: Entrepreneurial intention strengthens the effects of institutional factors on entrepreneurial activity.

In light of the TPB framework, entrepreneurial intention stands out as a key predictor of entrepreneurial outcomes, supported by existing literature. However, literature has yet to address the influence of entrepreneurial intention on how nascent entrepreneurs navigate the institutional context in their pursuit of entrepreneurial activity. Our study aims to fill this gap in order to shed light on the complex interplay between entrepreneurial intention, institutions, and entrepreneurial endeavours.

Research Methodology

To examine the institution-entrepreneurial activity nexus and the moderating role of entrepreneurial intention, we employed a panel dataset spanning twenty years (2001-2021) and comprising 112 countries. Our data sources include the World Development Indicators (WDI), World Governance Indicators (WGI), Human Development Index (HDI) from UNDP, and the Global Entrepreneurship Monitor (GEM). The Adult Population Surveys within the GEM dataset provide country-level entrepreneurship data aggregated from over 2000 individuals surveyed per country, including information on entrepreneurial activity and intention. The WGI dataset measures institutions across six dimensions, and we construct an average index of these indicators for the countries in our sample.

Our key outcome variable, total early-stage entrepreneurial activity (TEA), represents the percentage of the population aged 18-64 engaged in nascent entrepreneurship or owning new businesses. Table 1 presents the summary statistics of our variables. The range of values for TEA is wide, varying from 1.5% in Japan (2004) to 52.1% in Vanuatu (2010). The institution indicators (GI), representing institutional quality, exhibit considerable variation as well, with values ranging from -1.7 in Sudan (2018) to 1.97 in Finland (2003). Entrepreneurial intention (EI), our moderating variable, is defined as the percentage of the population aged 18-64 who are latent entrepreneurs with the intention to start a business within three years. The distribution of EI is right-skewed, with a median value of 15% across countries. Control variables such as unemployment, trade openness, private credit, and HDI display appropriate skewness and kurtosis values without requiring additional data transformation. We assessed multicollinearity for our main independent variables using a random effects model. As presented in Table 1, the VIF test provides values below 2, indicating no significant multicollinearity.

To explore the possible moderating role of entrepreneurial intention in the institution-entrepreneurial activity linkage, we proposed the following model estimating the TEA conditional upon institutions, entrepreneurial intention, and lagged explanatory variables.

$$tea_{it} = \beta_0 + \beta_1 gi_{it} + \beta_2 ei_{i,t-1} + \beta_3 (gi_{it} * ei_{i,t-1}) + \Theta' X_{it-1} + \eta_i + \mu_t + \epsilon_{it} \quad (1)$$

Subscripts i and t index country and time, in which tea_{it} is the level of total early-stage entrepreneurial activity (TEA); gi_{it} is one of the six institution indicators and its average; ei_{it} is the level of entrepreneurial intention; X_{it} is a vector of control variables; η_i is a time-invariant country-specific effect; μ_t is time-specific effects that capture common time shocks to entrepreneurship; and ϵ_{it} is the usual normally distributed error term. We provide a table of Variable definition in the Appendix Table A1.

To address potential reverse causality between entrepreneurial intention and entrepreneurship, we employed lagged values of entrepreneurial intention (Leszczensky & Wolbring, 2022), considering the time delay between changes in independent variables and their effect on TEA. Lagged values also help mitigate endogeneity issues, as TEA may affect other variables, leading to biased estimates. By incorporating lagged values, we could obtain more reliable estimates of the influence of control variables on TEA.

We included in the analysis selected time-varying control variables that underlie entrepreneurial activity, as suggested by previous studies. For instance, local financial development, represented by domestic credit significantly impacts domestic entrepreneurial activities (Dutta & Meierrieks, 2021; Kerr & Nanda, 2011). Trade openness stimulates business creation in response to increasing demand, as suggested by Herrera-Echeverri *et al.* (2014). Moreover, human capital, measured by human development index, are a crucial determinant of entrepreneurial success (Dutta & Sobel, 2018; Marvel *et al*., 2016). We also included unemployment as an important control variable as suggested by Khalilov and Yi (2021). Lastly, Tsai *et al*. (2016) observed a connection between fear of failure (FFR), perceived opportunity (PO), and entrepreneurial intention in the China and Taiwan GEM samples. By accounting for FFR and PO, we could isolate the relationship between EI and TEA without the confounding influence of FFR and PO on both EI and TEA.

To test the moderating role of entrepreneurial intention, we used the interaction term between lagged entrepreneurial intention and institution indicators in predicting entrepreneurial outcomes. An expected positive coefficient for the interaction term indicates that entrepreneurial intention leverages positive effects and at the same time moderates negative effects of institutional factors on entrepreneurial activity.

To address potential endogeneity concerns associated with institutions, we employed the fixed effects two-stage least squares (2SLS) method. We note that as an aggregate index, TEA represents the percentage of the national population engaged in nascent entrepreneurial activity. Various groups within the national population may participate in TEA in different years. This year's fluctuations in the TEA rate are not contingent on the previous year's rate; instead, they are largely influenced by new groups of entrepreneurs entering TEA and other driving factors. Hence, the TEA variable does not exhibit a lag property and does not require the use of a GMM method. We acknowledge this important point raised by one of the reviewers.

We used General Expenditure Final Consumption from the World Development Indicators (WDI) and Size of Government from Fraser Economic Freedom as instruments for institutions in our fixed effects two-stage least squares (2SLS) model. There exists a clear relationship between government spending and institutions' quality and design (Primo, 2007). Therefore, these variables serve as relevant instruments for our model. It is important to note that this spending does not directly target entrepreneurs, as it is a general-level expenditure for a country. Even if there is an impact, it will be channelled through the institutions and their policies and affect entrepreneurs in the future but not immediately.

Table 2 presents a comparison of the equation (1) model with the pooled ordinary least squares (OLS), random effects, fixed effects, and fixed effects 2SLS models. The significance of the Hausman Chi-squared test in column (2) indicates that a fixed effects model is a better choice than a random effects model. The fixed effects OLS and fixed effects 2SLS models performed similarly among control variables, while the impact of institutions and the entrepreneurial intention's moderating effect was more evident in the latter model. The significance of the F-test indicated that the chosen instruments are relevant, as suggested by the cited literature. The significance of the Wu-Hausman test suggests

that the fixed effects 2SLS model is an improvement in addressing endogeneity. Finally, the non-significance of the Sargan test indicates that the instruments were not correlated with the error terms and hence the model was correctly specified. We employed the fixed effects 2SLS model for the results of equation specifications 1-3 presented in Tables 3-5.

Table 1. Summary statistics

Variables	n	mean	sd	median	min	max	range	skew	kurtosis	se	VIF test
po	1082	42.5	17.4	42.4	2.9	95.4	92.5	0.2	-0.4	0.5	1.12
ffr	1081	35.7	9.7	35.2	7.1	75.4	68.3	0.2	0.3	0.3	1.07
ei	1054	20.4	15.6	15.1	0.8	91	90.2	1.2	1.1	0.5	1.29
tea	1082	11.7	7.7	9.4	1.5	52.1	50.6	1.6	2.8	0.2	–
pv	1041	0.2	0.8	0.4	-2.8	1.8	4.6	-0.6	-0.3	0	–
va	1041	0.5	0.9	0.7	-1.8	1.8	3.6	-0.8	-0.4	0	–
ge	1041	0.7	0.9	0.6	-1.7	2.3	4	-0.1	-1	0	–
rq	1041	0.6	0.9	0.7	-2	2.2	4.3	-0.4	-0.5	0	–
cc	1041	0.5	1	0.4	-1.7	2.5	4.1	0.2	-1.2	0	–
rl	1041	0.5	0.9	0.6	-2.2	2.1	4.3	-0.1	-1.2	0	–
gi	1041	0.5	0.8	0.6	-1.7	1.9	3.7	-0.2	-1.1	0	1.96
une	1069	7.9	5.2	6.9	0.1	33.9	33.8	1.7	3.8	0.2	1.05
trade	1045	87.1	59.6	69.6	4.1	425.4	421.2	2.6	9.5	1.8	1.21
pc	979	81.2	48.5	73.3	0.2	304.6	304.4	0.7	0	1.6	1.33
hdi	1013	0.8	0.1	0.8	0.4	1	0.6	-1.1	1	0	1.86

Note: We conducted the VIF test using a random effects model, considering all lag one values of the main independent variables on the current tea_{it}, as shown in equation (1).
Source: own study.

Possible moderating effects of entrepreneurial intention may take some time to materialize. Kinnunen *et al*. (2021) used fuzzy time series and the vector error correction model to analyse the influential factors at the micro and meso levels on entrepreneurial activity from 2011 to 2019. Their findings indicate that both contextual and motivational factors exhibit lagged effects on TEA with a lag of one to three years. This suggests that the impact of these factors is not immediate but rather delayed. This lag contributes to a more comprehensive understanding of how the relationship between motivational factors such as entrepreneurial intention and entrepreneurial activity manifests over various time periods. We augmented equation (1) by introducing three lagged values of entrepreneurial intention to explore the duration of moderating effects (equation 2). In equation (1), we assumed a one-year lag for the effects of entrepreneurial intention to manifest.

$$tea_{it} = \beta_1 gi_{it} + \beta_2 ei_{i,t-0,1,2,3} + \beta_3\left(gi_{it} * ei_{i,t-0,1,2,3}\right) + \Theta' X_{it-1} + \eta_i + \mu_t + \epsilon_{it} \quad (2)$$

In equation (3) below, we assessed how moderating effects vary across different levels of institution indices, both above and below average. Through interaction terms at median institutional levels, we analysed how entrepreneurial intention influences entrepreneurial activity differently based on institution levels, providing a nuanced understanding of the institutions-entrepreneurship linkage. This methodology enhances insights into the influence of institutions on the entrepreneurial process and its interaction with entrepreneurial intention. This approach contributes to a more comprehensive understanding of the dynamics between institutions and entrepreneurship, providing robust evidence for informed policy-making.

$$tea_{it} = \beta_1 gig_{it} + \beta_2 ei_{i,t-1} + \beta_3\left(gig_{it} * ei_{i,t-1}\right) + \Theta' X_{it-1} + \eta_i + \mu_t + \epsilon_{it} \quad (3)$$

in which gig_{it} indicates one of the six-institution indicators and its average for countries with above-average institutions.

Table 2. Methods comparison

Variables	(1)	(2)	(3)	(4)
	Pooled OLS	Random effects	Fixed effects	Fixed effects 2SLS
Dependent variable is total early-stage entrepreneurial activity (TEA)				
Institutions (GI)	-2.04***	-3.46***	-1.92	-11.53***
	(0.43)	(0.20)	(1.25)	(3.72)
Entre. Intention (L1)	0.22***	0.13***	0.07*	0.07***
	(0.02)	(0.005)	(0.02)	(0.02)
Trade (L1)	0.003	-0.002	-0.01*	-0.04***
	(0.003)	(0.002)	(0.01)	(0.01)
Credit (L1)	0.01**	0.0003	-0.005	-0.002
	(0.004)	(0.002)	(0.01)	(0.01)
HDI (L1)	-4.07	4.10***	8.96**	18.62***
	(2.83)	(0.98)	(4.22)	(6.62)
UNE (L1)	-0.10***	-0.004	-0.01	0.01
	(0.03)	(0.01)	(0.04)	(0.06)
Perceived Opp. (L1)	0.11***	0.11***	0.05***	0.06***
	(0.01)	(0.003)	(0.01)	(0.02)
Fear of Failure (L1)	-0.10***	-0.02***	-0.01	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)
GI * EI (L1)	0.03*	0.01*	0.05**	0.50***
	(0.02)	(0.01)	(0.02)	(0.18)
Obs.	887	887	887	829
Hausman Chi^2			50.37***	
Instruments: Gov. Expenditure, Gov. Size	No	No	No	Yes
F-test (1^{st} stage)				3.82**
Wu-Hausman				10.0***
Sargan				1.2

Note: Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.
Source: own study.

Results and discussions

Table 3 presents the regression results examining the moderating effect of pre-existing entrepreneurial intention on the relationship between institutions and TEA. The findings confirm a negative relationship between institutions and total entrepreneurial activity, after controlling for other factors. This negative impact is observed for most of individual institution dimensions such as control of corruption, government effectiveness, political stability, regulatory quality and rule of law. Our findings support the public choice theory and align with several existing studies (Miao *et al*., 2022; Audrestch *et al*., 2019; Chambers & Munemo, 2019; Friedman, 2011; Djankov *et al*., 2002). This negative impact of institutions on entrepreneurial activity can be attributed to several factors. Firstly, burdensome regulations and institutional barriers increase entry costs and opportunity costs, dissuading individuals from starting new businesses (Miao *et al*., 2022; Friedman, 2011). Secondly, countries with low institutional quality may offer limited access to paid job opportunities, thereby encouraging entrepreneurial ventures (Nikolaev *et al*., 2018). Moreover, in less efficient governments, entrepreneurs may 'grease the wheels' through bribery to facilitate business formation (Dutta & Sobel, 2016).

This study contributes to the existing literature by examining how entrepreneurial intention interacts with formal institutions to drive entrepreneurial outcomes. The results show a significant 4% to 50% increase in TEA, depending on the institution dimension, when entrepreneurial intention moderates the negative relationship between institutions and TEA. The coefficient for the average institution's index

(GI), moderated by entrepreneurial intention was 50%, emphasizing the substantial role of entrepreneurial intention in mitigating the negative influence of institutions on TEA. The moderating effects of entrepreneurial intention vary across institution dimensions, such as corruption control, regulatory quality, and rule of law indicators, resulting in a 4% increase in TEA. These results support the TPB, suggesting that in countries with higher levels of pre-existing entrepreneurial intention, the negative impact of institutions on TEA is less severe. Entrepreneurial intention fosters commitment and enables the formulation of strategies to overcome institutional challenges, including regulatory barriers and bureaucratic hurdles, in pursuit of entrepreneurial endeavours. Moreover, Table 3 confirms the important role of underlying factors that impact TEA, for instance, trade openness, HDI, and perceived opportunity.

The regression results in Table 4 offer insights into the relationship among pre-existing entrepreneurial intention, institutions, and TEA, incorporating three lagged variables of entrepreneurial intention. The Table reveals a persistent moderating effect of entrepreneurial intention on the link between institutions and TEA, indicating that the duration of moderating effects matters. Specifically, the results suggest a short-term moderating effect of up to two years, implying that entrepreneurial intention moderates the influence of institutions on TEA in the same year (lag 0) and the next year (lag 1) but not beyond that. These findings align with prior research by Kinnunen *et al.* (2021), who demonstrated that drivers of entrepreneurial activity, including entrepreneurial intention, exhibit a short-term moderating impact within a range of one to three years. This implies that the beneficial moderating effect of entrepreneurial intention on the institution-entrepreneurship relationship endures for up to two years and fades out over the longer term.

Table 4 results robustly confirm our moderation hypothesis aligning with the defined measure of entrepreneurial intention related to latent entrepreneurs planning to start a business within three years. Policymakers should acknowledge the short-term impact of entrepreneurial intention on the institution-entrepreneurship nexus when devising entrepreneurship promotion policies. It is important to recognize that the moderating effect of entrepreneurial intention diminishes over time with other factors potentially becoming more critical determinants of entrepreneurial activity.

Table 5 further explores the moderating effect of entrepreneurial intention, analysing variations across countries categorized as above-average and below-average in institutional quality. The results indicate that in countries with above-average institutions, especially in control of corruption and political stability, entrepreneurs with pre-existing intentions are more likely to engage in entrepreneurial activities compared to entrepreneurs in countries with below-average institutional components. This significant finding suggests a stronger moderating effect of entrepreneurial intention in countries with higher corruption control and political stability. This contributes significantly to the literature on the institution- entrepreneurship relationship, as previous studies did not confirm this positive influence of entrepreneurial intention. For policy considerations, in countries with above-average institution quality, especially in the above dimensions, efforts should focus on nurturing entrepreneurial intention through mentorship, networking, and resource accessibility. On the other hand, countries with below-average institution quality should prioritize improving the business environment while encouraging entrepreneurial intention. This may involve simplifying bureaucratic processes, reducing entry barriers, and enhancing access to finance and other resources for entrepreneurs.

Table 3. The moderating role of entrepreneurial intention in the linkage of institution and entrepreneurial activity across 112 countries (2001-2021)

Variables	Dependent variable is total early-stage entrepreneurial activity (TEA)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Institutions (GI)	-11.53***						
	(3.72)						
Control Corruption		-2.94***					
		(0.89)					
Gov. Effectiveness			-1.18				
			(0.88)				
Political Stability				-1.69**			
				(0.70)			
Regulatory Quality					-1.27		
					(0.89)		
Rule of Law						0.58	
						(1.04)	
Voice & Account.							-0.03
							(1.19)
Entre. Intention (EI) (L1)	0.07***	0.07***	0.08***	0.08***	0.07***	0.08***	0.08***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Trade (L1)	-0.04***	-0.02**	-0.01*	-0.02**	-0.01*	-0.01*	-0.01*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Credit (L1)	-0.002	-0.003	-0.003	-0.01	-0.002	-0.004	-0.003
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
HDI (L1)	18.62***	7.82*	7.67*	9.35**	7.55*	7.28*	8.30*
	(6.62)	(4.29)	(4.30)	(4.41)	(4.29)	(4.30)	(4.40)
UNE (L1)	0.01	-0.05	-0.03	-0.03	-0.03	-0.01	-0.02
	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Perceived Opp. (L1)	0.06***	0.06***	0.06***	0.06***	0.06***	0.06***	0.06***
	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Fear of Failure (L1)	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
GI * EI (L1)	0.50***						
	(0.18)						
CC * EI(L1)		0.04**					
		(0.02)					
GE * EI(L1)			0.02				
			(0.02)				
PV * EI(L1)				0.01			
				(0.02)			
RQ * EI(L1)					0.04**		
					(0.02)		
RL * EI(L1)						0.04*	
						(0.02)	
VA * EI(L1)							0.02
							(0.02)
Obs.	829	829	829	829	829	829	829
R^2	0.02	0.09	0.07	0.08	0.08	0.08	0.07
F Stat.	44.53***	66.42***	55.86***	61.24***	58.73***	59.89***	54.81***

Standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01.
Source: own study.

Table 4. Timeframes of the moderating effects of entrepreneurial intention

Variables	Dependent variable is total early-stage entrepreneurial activity (TEA)			
	(1)	(2)	(3)	(4)
Institutions (GI)	-18.74***	-11.53***	-2.39	37.32
	(6.50)	(3.72)	(20.73)	(77.77)
Entre. Intention (EI)	0.21***			
	(0.02)			
EI (L1)		0.07***		
		(0.02)		
EI (L2)			0.02	
			(0.28)	
EI (L3)				0.92
				(1.73)
Trade (L1)	-0.02**	-0.04***	-0.01	-0.08
	(0.01)	(0.01)	(0.01)	(0.12)
Credit (L1)	0.01	-0.002	-0.004	-0.03
	(0.01)	(0.01)	(0.02)	(0.07)
HDI (L1)	-7.89	18.62***	1.75	55.25
	(5.84)	(6.62)	(15.73)	(105.15)
UNE (L1)	-0.09	0.01	-0.06	-0.25
	(0.06)	(0.06)	(0.11)	(0.45)
Perceived Oppo. (L1)	0.01	0.06***	0.06	0.18
	(0.02)	(0.02)	(0.05)	(0.24)
Fear of Failure (L1)	-0.03	-0.01	-0.02	-0.07
	(0.02)	(0.02)	(0.04)	(0.14)
GI* EI(L0)	0.81***			
	(0.31)			
GI* EI(L1)		0.50***		
		(0.18)		
GI* EI(L2)			0.004	
			(1.07)	
GI* EI(L3)				-2.10
				(4.06)
Obs.	856	829	829	829
R^2	0.12	0.02	0.05	0.004
F Stat.	117.84***	44.53***	36.95***	1.83

Standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01.

Source: own study.

Table 5. The moderating effects of entrepreneurial intention in countries with above-average and below-average institutions

Variables	Dependent variable is total early-stage entrepreneurial activity (TEA)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GI P2	-17.63						
	(17.28)						
CC P2		-8.25**					
		(4.17)					
GE P2			-7.22				
			(4.49)				
PV P2				-6.59**			
				(2.79)			
RQ P2					42.99		
					(66.96)		
RL P2						-12.92	
						(8.72)	
VA P2							-18.33
							(12.71)
Entre. Intention (EI) (L1)	-0.26	-0.09	-0.07	-0.04	0.62	-0.10	-0.24
	(0.30)	(0.09)	(0.08)	(0.06)	(0.87)	(0.11)	(0.21)
Trade (L1)	-0.06	-0.03**	-0.01	-0.03**	0.05	-0.02*	-0.04*
	(0.04)	(0.01)	(0.01)	(0.01)	(0.10)	(0.01)	(0.02)
Credit (L1)	-0.01	-0.005	0.001	-0.004	0.04	-0.005	-0.02
	(0.02)	(0.01)	(0.01)	(0.01)	(0.07)	(0.01)	(0.01)
HDI (L1)	16.55	13.44**	6.69	15.02**	13.04	-2.41	18.90*
	(11.37)	(5.97)	(4.88)	(5.96)	(17.24)	(7.42)	(10.40)
UNE (L1)	0.04	-0.01	-0.04	-0.04	-0.04	0.02	0.09
	(0.08)	(0.05)	(0.05)	(0.05)	(0.15)	(0.06)	(0.10)
Perceived Oppo. (L1)	0.05**	0.06***	0.06***	0.06***	0.08	0.04**	0.04*
	(0.02)	(0.01)	(0.01)	(0.01)	(0.05)	(0.02)	(0.02)
Fear of Failure (L1)	-0.04	-0.03	-0.02	-0.01	0.01	-0.04	-0.05
	(0.04)	(0.02)	(0.02)	(0.02)	(0.07)	(0.03)	(0.04)
GI P2 * EI(L1).	1.21						
	(1.07)						
CC P2 * EI(L1).		0.55*					
		(0.30)					
GE P2 * EI(L1).			0.56*				
			(0.29)				
PV P2 * EI(L1).				0.38**			
				(0.18)			
RQ P2 * EI(L1).					-2.35		
					(3.76)		
RL P2 * EI(L1).						0.77*	
						(0.46)	
VA P2 * EI(L1)							1.24
							(0.83)
Obs	829	829	829	829	829	829	829
R^2	0.03	0.03	0.03	0.01	0.02	0.04	0.02
F Stat.	22.80***	45.46***	47.89***	48.40***	5.69	40.19***	23.17***

Note: P1 is the below-average indicator (the reference group) while P2 is the above-average indicator.
Standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01.
Source: own study.

CONCLUSIONS

We examined the role of entrepreneurial intention in the context of formal institutions and entrepreneurship, using GEM data from 2001 to 2021 across 112 economies. We explored how pre-existing entrepreneurial intention mitigates adverse institutional effects of entrepreneurial activity, providing new insights into the moderating role of entrepreneurial intention in the institution-entrepreneurship nexus.

This study offers several notable features. Firstly, it captures comprehensive institutional factors across six dimensions, *i.e.* government effectiveness, rule of law, political stability, voice and accountability, regulatory quality, and control of corruption, extending previous research that often focuses on selected dimensions. Secondly, it considers the timeframes for the moderating impact of entrepreneurial intention. Lastly, the study integrates the theory of planned behaviour, a renowned management theory, to explore potential drivers of entrepreneurial outcomes in relation to institutional factors.

This study's distinctive findings challenge expectations and reveal a counterintuitive result that good institutions do not always foster entrepreneurship across various dimensions. The negative impact is linked to stringent regulatory framework and bureaucratic hurdles in countries with high institutional quality (Miao *et al*., 2022), in support of the public choice theory. Interestingly, the influence of institutions on entrepreneurship varies based on pre-existing entrepreneurial intention levels at the country level. The study emphasizes the role of entrepreneurial intention in mitigating the negative impact of institutions, ranging from 4% to 50% on average, depending on the institution's dimension. In countries with above-average institution quality, especially in control of corruption and political stability, latent entrepreneurs are approximately more likely to translate intentions into actual outcomes compared to those in lower-quality institutional environments. Notably, the moderating effect of entrepreneurial intention is short-term, lasting up to two years and diminishing over the longer term.

The study's key findings highlight the importance of individual-level factors in the institution-entrepreneurship relationship, emphasizing the need to consider such factors in policy interventions. To promote entrepreneurship, policies should focus on nurturing and shaping entrepreneurial intentions. For example, training programs can motivate individuals to pitch business ideas and engage in entrepreneurial ventures. Prior research suggests that university education significantly influences young people's entrepreneurial intention by developing attitudes, perceived behavioural control, and entrepreneurial self-efficacy (Doanh, 2021; Wach & Wojciechowski, 2016). These implications are particularly relevant for countries with high institutional quality, where strong entrepreneurial intention can drive commitment and efforts to overcome institutional challenges, as confirmed by our study.

While this study sheds new light on the relationship between institutions and entrepreneurship through the moderating effects of entrepreneurial intention, certain limitations provide avenues for future research when data becomes available. Firstly, the sample size was limited to 112 countries, representing approximately 58% of countries worldwide. It would be valuable to examine the moderating effect of entrepreneurial intention on a broader scale. Secondly, the literature suggests that institutional factors impact entrepreneurial activity differently based on entrepreneurship types, such as opportunity vs. necessity, formal vs. informal, and small-scale vs. large-scale. Due to data limitations, we did not explore classifications of entrepreneurial activity in connection to institutions and the role of entrepreneurial intention. The third limitation is that our model did not incorporate informal institutions such as cultural and social norm variables due to a lack of consistent and reliable data sources. Including these variables could provide further insights into their influence on the relationship between institutions and entrepreneurial activity.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Andriopoulos, C. (2003). Six paradoxes in managing creativity: An embracing act. *Long Range Planning*, *36*, 375-388. https://doi.org/10.1016/S0024-6301(03)00071-2

Anokhin, S., & Schulze, W.S. (2009). Entrepreneurship, innovation, and corruption. *Journal of Business Venturing*, *24*(5), 465-476. https://doi.org/10.1016/j.jbusvent.2008.06.001

Audretsch, D.B., Belitski, M., & Desai, S. (2019). National business regulations and city entrepreneurship in Europe: A multilevel nested analysis. *Entrepreneurship Theory and Practice*, *43*(6), 1148-1165. https://doi.org/10.1177/1042258718774916

Audretsch, D.B., & Fiedler, A. (2021). The Vietnamese entrepreneurship paradox: How can entrepreneurs thrive without political and economic freedom?. *The Journal of Technology Transfer*, 1-19. https://doi.org/10.1007/s10961-021-09873-2

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*(1), 1-26. https://doi.org/10.1111/1467-839X.00024

Baumol, W.J. (1996). Entrepreneurship: Productive, unproductive, and destructive. *Journal of Business Venturing*, *11*(1), 3-22. https://doi.org/10.1016/0883-9026(94)00014-X

Belitski, M., Chowdhury, F., & Desai, S. (2016). Taxes, corruption, and entry. *Small Business Economics*, *47*, 201-216. https://doi.org/10.1007/s11187-016-9724-y

Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics*, *51*, 483-499. https://doi.org/10.1007/s11187-018-0012-x

Bowen, H.P., & Clercq, D. (2008). Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies*, *39*(4), 747-767. https://doi.org/10.1057/palgrave.jibs.8400343

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European Journal of Political Economy*, *23*(2), 397-415. https://doi.org/10.1016/j.ejpoleco.2006.02.003

Chambers, D., & Munemo, J. (2019). Regulations, institutional quality and entrepreneurship. *Journal of Regulatory Economics*, *55*, 46-66. https://doi.org/10.1007/s11149-019-09377-w

Chowdhury, F., Audretsch, D.B., & Belitski, M. (2019). Institutions and entrepreneurship quality. *Entrepreneurship Theory and Practice*, *43*(1), 51-81. https://doi.org/10.1177/1042258718780431

Davila, T., Epstein, M.J., & Shelton, R.D. (2006). *The creative enterprise: Managing innovative organizations and people*. Greenwood Publishing Group. Connecticut, USA.

De Pillis, E., & Reardon, K.K. (2007). The influence of personality traits and persuasive messages on entrepreneurial intention: A cross-cultural comparison. *Career Development International*, *12*(4), 382-396. https://doi.org/10.1108/13620430710756762

Dean, T.J., & Brown, R.L. (1995). Pollution regulation as a barrier to new firm entry: Initial evidence and implications for future research. *Academy of Management Journal*, *38*(1), 288-303. https://doi.org/10.5465/256737

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *The Quarterly Journal of Economics*, *117*(1), 1-37. https://doi.org/10.1162/003355302753399436

Doanh, D.C. (2021). The role of contextual factors on predicting entrepreneurial intention among Vietnamese students. *Entrepreneurial Business and Economics Review, 9*(1), 169-188. https://doi.org/10.15678/EBER.2021.090111

Dutta, N., & Meierrieks, D. (2021). Financial development and entrepreneurship. *International Review of Economics & Finance*, *73*, 114-126. https://doi.org/10.1016/j.iref.2021.01.002

Dutta, N., & Sobel, R. (2016). Does corruption ever help entrepreneurship?. *Small Business Economics*, *47*, 179-199. https://doi.org/10.1007/s11187-016-9728-7

Dutta, N., & Sobel, R.S. (2018). Entrepreneurship and human capital: The role of financial development. *International Review of Economics & Finance*, *57*, 319-332. https://doi.org/10.1016/j.iref.2018.01.020

Farashah, AD. (2015). The effects of demographic, cognitive and institutional factors on development of entrepreneurial intention: Toward a socio-cognitive model of entrepreneurial career. *Journal of International Entrepreneurship, 13*, 452-476.

Feng, Y. (2001). Political freedom, political instability, and policy uncertainty: A study of political institutions and private investment in developing countries. *International Studies Quarterly*, *45*(2), 271-294. https://doi.org/10.1111/0020-8833.00191

Fogel, K., Hawk, A., Morck, R., & Yeung, B. (2006). *Oxford Handbook of Entrepreneurship*. Oxford University Press. Oxford, UK.

Fredström, A., Peltonen, J., & Wincent, J. (2021). A country-level institutional perspective on entrepreneurship productivity: The effects of informal economy and regulation. *Journal of Business Venturing*, *36*(5), 106002. https://doi.org/10.1016/j.jbusvent.2020.106002

Friedman, B.A. (2011). The relationship between governance effectiveness and entrepreneurship. *International Journal of Humanities and Social Science*, *1*(17), 221-225. Retrieved from https://www.academia.edu/66330156/ on December 6, 2023.

Fu, K., Wennberg, K., & Falkenhall, B. (2020). Productive entrepreneurship and the effectiveness of insolvency legislation: A cross-country study. *Small Business Economics*, *54*, 383-404. https://doi.org/10.1007/s11187-018-0040-6

Fuentelsaz, L., González C., Maícas, JP., & Montero, J. (2015) How different formal institutions affect opportunity and necessity entrepreneurship. *BRQ Business Research Quarterly 18*(4), 246-258, https://doi.org/10.1016/j.brq.2015.02.001

Herrera-Echeverri, H., Haar, J., & Estévez-Bretón, J.B. (2014). Foreign direct investment, institutional quality, economic freedom and entrepreneurship in emerging markets. *Journal of Business Research*, *67*(9), 1921-1932. https://doi.org/10.1016/j.jbusres.2013.11.020

Hanoteau, J., & Vial, V. (2020). Institutional quality, conforming and evasive entrepreneurship. *Eurasian Business Review*, *10*(1), 97-121. https://doi.org/10.1007/s40821-020-00151-z

Kautonen, T., Gelderen, V.M., & Fink, M. (2013). Robustness of the Theory of Planned Behavior in Predicting Entrepreneurial Intentions and Actions. *Entrepreneurship Theory and Practice*, *39*(3), 655-674. https://doi.org/10.1111/etap.12056

Kerr, W.R., & Nanda, R. (2011). Financing constraints and entrepreneurship. *NBER* working paper. https:/doi.org/10.3386/w15498h

Khalilov, L., & Yi, C.D. (2021). Institutions and entrepreneurship: Empirical evidence for OECD countries. *Entrepreneurial Business and Economics Review*, *9*(2), 119-134. https://doi.org/10.15678/EBER.2021.090208

Khyareh, M.M. (2017). Institutions and entrepreneurship: The mediating role of corruption. *World Journal of Entrepreneurship, Management and Sustainable Development*, *13*(3), 262-282. https://doi.org/10.1108/WJEMSD-09-2016-0045

Khyareh, M.M. (2023). Entrepreneurship and Economic Growth: The Moderating Role of Governance Quality. *FIIB Business Review*, 23197145231154770. https://doi.org/10.1177/23197145231154767

Kinnunen, J., Georgescu, I., & Hosseini, Z. (2022). Drivers of entrepreneurial activity at micro and meso levels: a fuzzy time-series analysis. In *Intelligent and Fuzzy Techniques for Emerging Conditions and Digital Transformation: Proceedings of the INFUS 2021 Conference, held August 24-26, 2021. Volume 2* (pp. 423-430). Springer International Publishing.

Kolvereid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing*, *21*(6), 866-885. https://doi.org/10.1016/j.jbusvent.2005.06.008

Krueger Jr, N.F., Reilly, M.D., & Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, *15*(5-6), 411-432. https://doi.org/10.1016/S0883-9026(98)00033-0

Krueger, N. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship Theory and Practice*, *18*(1), 5-21. https://doi.org/10.1177/104225879301800101

Leszczensky, L., & Wolbring, T. (2022). How to deal with reverse causality using panel data? Recommendations for researchers based on a simulation study. *Sociological Methods & Research*, *51*(2), 837-865. https://doi.org/10.1177/0049124119882473

Lv, Z., Rodríguez-García, M., & Sendra-García, J. (2021) Does institutional quality affect the level of entrepreneurial success differently across the entrepreneurship distribution?. *Review of Managerial Science, 15*, 937-955. https://doi.org/10.1007/s11846-020-00383-3

Marvel, M.R., Davis, J.L., & Sproul, C.R. (2016). Human capital and entrepreneurship research: A critical review and future directions. *Entrepreneurship Theory and Practice*, *40*(3), 599-626. https://doi.org/10.1111/etap.12136

Miao, C., Gast, J., Laouiti, R., & Nakara, W. (2022). Institutional factors, religiosity, and entrepreneurial activity: A quantitative examination across 85 countries. *World Development*, *149*, 105695. https://doi.org/10.1016/j.worlddev.2021.105695

Munemo, J. (2012). Entrepreneurship in developing countries: Is Africa different?. *Journal of Developmental Entrepreneurship*, *17*(01), 1250004. https://doi.org/10.1142/S1084946712500045

Nikolaev, B.N., Boudreaux, C.J., & Palich, L. (2018). Cross-country determinants of early-stage necessity and opportunity-motivated entrepreneurship: Accounting for model uncertainty. *Journal of Small Business Management*, *56*, 243-280. https://doi.org/10.1111/jsbm.12400

North, D.C. (1990). A transaction cost theory of politics. *Journal of Theoretical Politics*, *2*(4), 355-367. https://doi.org/10.1177/0951692890002004001

Nyström, K. (2008). The institutions of economic freedom and entrepreneurship: Evidence from panel data. *Public Choice*, *136*, 269-282. https://doi.org/10.1007/s11127-008-9295-9

Primo, D.M. (2008). Rules and restraint: Government spending and the design of institutions. University of Chicago Press.

Radipere, N.S., & Ladzani, W. (2014). The effects of entrepreneurial intention on business performance. J*ournal of Governance and Regulation*, *3*(4), 190-202. Retrieved from https://uir.unisa.ac.za/handle/10500/20091 on December 6, 2023.

Salimath, M.S., & Cullen, J.B. (2010). Formal and informal institutional effects on entrepreneurship: A synthesis of nation-level research. *International Journal of Organizational Analysis*. https://doi.org/10.1108/19348831011062175

Sobel, R.S. (2008). Testing Baumol: Institutional quality and the productivity of entrepreneurship. *Journal of Business Venturing*, *23*(6), 641-655. https://doi.org/10.1016/j.jbusvent.2008.01.004

Stigler, G.J. (2021). The theory of economic regulation. In *The political economy: Readings in the politics and economics of American public policy* (pp. 67-81). Routledge.

Tsai, K.H., Chang, H.C., & Peng, C.Y. (2016). Refining the linkage between perceived capability and entrepreneurial intention: Roles of perceived opportunity, fear of failure, and gender. *International Entrepreneurship and Management Journal*, *12*(4), 1127-1145. https://doi.org/10.1007/s11365-016-0383-x

Urbano, D., Aparicio, S., & Audretsch, D. (2019). Twenty-five years of research on institutions, entrepreneurship, and economic growth: What has been learned?. *Small Business Economics*, *53*, 21-49. https://doi.org/10.1007/s11187-018-0038-0

Wach, K., & Wojciechowski, L. (2016). Entrepreneurial Intentions of Students in Poland in the View of Ajzen's Theory of Planned Behaviour. *Entrepreneurial Business and Economics Review, 4*(1), 83-94. https://doi.org/10.15678/EBER.2016.040106

Wood, M.S., Bylund, P., & Bradley, S. (2016). The influence of tax and regulatory policies on entrepreneurs' opportunity evaluation decisions. *Management Decision*, *54*(5), 1160-1182. https://doi.org/10.1108/MD-10-2015-0446

Xu, L.C. (2011). The effects of business environments on development: Surveying new firm-level evidence. *The World Bank Research Observer*, *26*(2), 310-340. https://doi.org/10.1093/wbro/lkq012

Appendix:

Table A1. Variable definition

Abbreviation	Variable	Definition	Source
TEA	Total early-stage entrepreneurial activity (TEA) rate	Percentage of population aged 18-64 who are either nascent entrepreneurs or owner-manager of a new business	GEM
EI	Entrepreneurial intention	Percentage of the population aged 18-64 who are latent entrepreneurs with the intention to start a business within three year	GEM
PO	Perceived opportunity	Percentage of the population aged 18-64 (excluding those engaged in any stage of entrepreneurial activity) who see good opportunities to start a firm in the area where they live	GEM
FFR	Fear of failure	Percentage of the population aged 18-64 (excluding those engaged in any stage of entrepreneurial activity) who indicate that fear of failure would prevent them from setting up a business	GEM
GI	Institutions	The average of the six institutions indices	Own calculation from WGI
CC	Control of corruption	Perceptions of public power misuse for private gain, including both petty and grand corruption, and state 'capture' by elites and private interests	WGI
GE	Government effectiveness	Perceptions of the quality of public services	WGI
PV	Political stability and absence of violence	Perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism	WGI
RQ	Regulatory quality	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development	WGI
RL	Rule of law	Perceptions of the extent to which agents have confidence in and abide by the rules of society	WGI
VA	Voice and accountability	Perceptions on government participation, freedom of expression, association, and media freedom	WGI
HDI	Human development	Human Development Index	UNDP
UNE	Unemployment	Unemployment, total (% of total labour force) (modelled ILO estimate)	WDI
Trade	Trade openness	Sum of exports and imports divided by GDP	WDI
Credit	Private credit	Domestic credit to private sector (% of GDP)	WDI

Note: for more information about institutional indicators,
see https://www.worldbank.org/en/publication/worldwide-governance-indicators
Source: own study.

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