

# The effects of institutions, firm-level factors and rational decision-making on entrepreneurial behaviors of MSMEs: lessons and opportunities for transition communities

Opportunities  
for transition  
communities

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## Abstract

**Purpose** – This study aims to examine the impact of regulatory, normative and cultural cognitive institutions and firm and individual factors on entrepreneurial behavior.

**Design/methodology/approach** – Using the quantitative research method, the authors collected data from 316 micro, small and medium enterprises (MSMEs) in Kosovo, a transition economy, through a cross-sectional research design. The authors performed exploratory factor analyses, correlation and regression analyses on the data using SPSS 26 and STATA software.

**Findings** – The research findings indicate that, within transition economies, normative and cultural-cognitive institutions have a positive impact on entrepreneurial behaviors. The authors could not determine the effect of regulatory institutions on entrepreneurial behavior. The authors also discovered that young firms are more inclined toward entrepreneurial behavior than older firms, and micro firms display a stronger entrepreneurial behavior than small firms. Furthermore, family businesses showed a greater tendency for



entrepreneurial behavior than nonfamily firms. Interestingly, when the rational decision-making interacts with regulatory institutions, the effect on entrepreneurial behavior is negative.

**Research limitations/implications** – This study employed a cross-sectional approach to investigate the influence of macro, meso, and micro-level factors on entrepreneurial behavior within a transitioning community across three industries. Future studies could replicate these findings within comparable institutional contexts, employing longitudinal studies that include additional variables beyond those considered in our present study.

**Practical implications** – Considering the importance of MSMEs for a country's economic and sustainable development, the authors provide some policy implications. The authors recommend managers carefully evaluate the information gathered while they decide and also increase their capabilities concerning digitalization, which is crucial for their firm's survival, growth and sustainable competitive advantage.

**Originality/value** – This paper contributes to the literature and shows and analyses entrepreneurial behavior at institutional (macro), firm-level factors (meso) and managers' rational decision-making (micro), providing evidence from a transition community.

**Keywords** Entrepreneurial behavior, Institutions, Firm-level factors, Rational decision-making, MSMEs  
**Paper type** Research paper

## 1. Introduction

In transition economies, institutions often exhibit different characteristics, spurring scientific interest in their impact on entrepreneurial behavior (Welter, 2005; Welter and Smallbone, 2011; Ahlstrom and Bruton, 2002; Busenitz *et al.*, 2000). Given their importance of institutions in these contexts, institutions are not just background conditions as they determine the rules of the game in the economy (Peng *et al.*, 2009; Peng and Luo, 2000). Studies indicate that institutional factors significantly influence firm behavior (Bowen and De Clercq, 2008; De Clercq *et al.*, 2010; Manolova *et al.*, 2008). Depending on the nature of the institution, firm behavior can be guided toward either productive or unproductive entrepreneurial activities (Boettke and Coyne, 2009). A weak institutional environment augments uncertainty, thereby altering the course of firm behavior due to the unpredictable actions of formal institutions (Welter, 2005). Consequently, firms devise response strategies to mitigate the negative impacts, often relying on networks as a strategic reaction to institutional settings (Peng and Luo, 2000; Peng *et al.*, 2008; Peng *et al.*, 2009). The influence of institutions on firm behavior manifests in several ways, including firm growth (Krasniqi and Desai, 2016; Krasniqi and Mustafa, 2016), performance (Shu *et al.*, 2019; Ramadani *et al.*, 2019; Carney *et al.*, 2019) and international performance (Coşkun *et al.*, 2022; LiPuma *et al.*, 2013; Krammer *et al.*, 2018).

Entrepreneurial behavior arises from the interplay between internal factors, such as firm and individual level characteristics, and external factors, such as the institutional environment (Welter, 2005). Within this context, we can consider entrepreneurial behavior as an activity shaped by the interaction of factors at multiple levels of analysis. Institutional factors can both facilitate and hinder entrepreneurial behavior through laws and regulations (Krasniqi and Mustafa, 2016; Ahlstrom and Bruton, 2010; Bowen and De Clercq, 2008; Kryeziu *et al.*, 2022a; Kryeziu *et al.*, 2022b; Bogatyreva *et al.*, 2022). Moreover, the impact of firm-level responses, such as product development and innovation capabilities, on entrepreneurial behavior is also examined (Ramadani *et al.*, 2019; Coşkun *et al.*, 2022; Kryeziu *et al.*, 2022b). Furthermore, it has been proposed that entrepreneurial skills (Akter and Iqbal, 2022) or the capacity of entrepreneurs to make decisions as a fundamental entrepreneurial activity and to respond to risks stemming from the institutional environment, also influence entrepreneurial behaviors (Melović *et al.*, 2022; Gibcus *et al.*, 2009; Alexandrova, 2004).

Past research examining the entrepreneurial behavior of micro, small and medium enterprises (MSMEs) has often overlooked evidence from countries at different levels of economic development and analyses at multiple levels. In recent years, there has been an increasing call from scientists for research on entrepreneurial behavior in countries with varying levels of development and from multiple levels of analysis (Kim *et al.*, 2016; Sun *et al.*, 2020; Schade and Schuhmacher, 2022; Xu *et al.*, 2021). Furthermore, research on this topic garners growing scientific curiosity (Boudreaux *et al.*, 2019; Dileo and Garcia Pereiro, 2019; Bağış *et al.*, 2023a; Bağış *et al.*, 2023b). Based on these discussions, we argue that institutional, firm and individual variables will contribute to a deeper understanding of the entrepreneurial behavior of MSMEs.

This study examines the effects of institutional, firm and individual-level factors on the entrepreneurial behavior of MSMEs. The impact of institutions on entrepreneurial behavior is analyzed based on regulatory (RI), normative (NI) and cultural cognitive (CCI) dimensions. These institutional profile dimensions stem from Scott's (1995) definition of an institution and are widely used in the literature (Busenitz *et al.*, 2000; Spencer and Gómez, 2004; Valdez and Richardson, 2013). The effects of firm-level variables, such as firm age, size and ownership type, on entrepreneurial behavior are also examined. The influence of managers' rational decision-making processes (Scott and Bruce, 1995) on entrepreneurial behaviors is assessed at the individual level.

The contributions of this research can be grouped under two main headings. First, in transition economies such as Kosovo, institutional factors influence firms' entrepreneurial behavior more than firm-level factors. In this regard, the results reveal the impact of institutions on the entrepreneurial behavior of firms in transition economies and enhance the entrepreneurship literature with arguments grounded in institutional theory. Second, this research offers findings at multiple levels of analysis by uncovering the effects of institutions (macro), firms (meso) and individual (micro) level factors on entrepreneurial behavior. In doing so, it provides a modest contribution to criticisms (Casson, 2005; Gruber and MacMillan, 2017), arguing that research on the subject has stagnated, despite progress at the macro-micro analysis level relating to entrepreneurship research. Our study is structured into four parts in addition to the introduction. Section 2 encompasses the theoretical background and hypothesis development. In Section 3, we detail the research method; in Section 4, we present the research findings. Finally, in Section 5, our study provides several theoretical and practical implications.

## 2. Theoretical background and hypothesis development

The interrelationship between entrepreneurial behavior and the institutional environment has been a prevalent topic of discussion in transition economies. This attention stems from the unique context these countries experience during the transition from a centrally planned economy to a market economy, resulting in institutional voids at the national level (Peng *et al.*, 2009; Bosma *et al.*, 2018; Bruton *et al.*, 2010; Valdez and Richardson, 2013; Kryeziu and Coşkun, 2018). Two prevailing institutional theoretical approaches have emerged from economic (North, 1990) and sociological (Scott, 1995) perspectives, elucidating the impact of institutions on entrepreneurship in transition economies. The former defines institutions as "the rules of the game," encompassing formal and informal institutions (North, 1990). In contrast, the latter identifies institutions as regulative, normative and culturally cognitive constructs that provide stability and are integral to social life (Scott, 1995). Our study draws on Scott's perspective to examine the influence of institutional settings on firm entrepreneurial behavior. Due to institutional voids stemming from unsuccessful institutional reforms, firms' behavior aligns with reactions to institutional settings, creating uncertainty for their survival

and growth in these countries. Consequently, firms often attempt to fill these institutional voids and rely on informal ties (Mair *et al.*, 2012; Mair and Marti, 2009). Our study adopts the latter's definition to investigate the impact of these three institutional pillars on entrepreneurial behavior.

### *2.1 Institutions and entrepreneurial behavior*

*2.1.1 Regulatory institutions.* Differences in entrepreneurial development across countries can be attributed to how regulatory institutions facilitate and encourage entrepreneurial activities (Scott, 1995; Busenitz *et al.*, 2000). The regulatory dimension of institutions gauges entrepreneurs' perceptions of the quality of laws, regulations and policies provided by the government (Busenitz *et al.*, 2000). The essential role of regulatory institutions is seen in assessing business progress, influencing strategic choices and shaping entrepreneurial behavior to enhance performance and the overall business environment (Peng, 2003; Meyer *et al.*, 2009; Peng, 2004; Dickson and Weaver, 2008; Yu *et al.*, 2023; Dong *et al.*, 2022). Regulatory environments in transition economies are characterized by uncertainty resulting from the government's inability to adopt laws and regulations, thereby creating an uncertain business environment (Ahlstrom and Bruton, 2010). This uncertainty is connected to the importance of this dimension as the government attempts to intervene in the private sector, thereby influencing entrepreneurial behavior (Bosma *et al.*, 2018). When regulatory institutions are weak, they lead to changes in entrepreneurial behavior. While this may be viewed as unproductive from a macroeconomic perspective, from an entrepreneurial standpoint, it is the most suitable behavior to ensure firm survival (Welter, 2005).

The degree of entrepreneurship development and establishment at the country level depends largely on the quality of laws and regulations (Chowdhury *et al.*, 2019; Urbano and Alvarez, 2014; Jusufi *et al.*, 2022; Stojčić, 2012). In our study, we anticipate that positive perceptions of firm managers or owners regarding laws, regulations and the predictability of the regulatory framework at the national level will positively influence firm entrepreneurial behavior. This expectation stems from the critical role of the regulatory framework, specifically government policies, in fostering entrepreneurship (Aparicio *et al.*, 2016; Monteiro *et al.*, 2021; Li *et al.*, 2020). Furthermore, enhancements in laws and regulations often lead to behavioral modifications within firms. These laws and regulations encompass entry barriers, market exits, and opportunities created at the national level through government policies and enforcement mechanisms (Welter, 2005). Research indicates that the quality of laws and regulations and the tax system positively influence entrepreneurial behavior, with the impact varying based on firm size and age (Guerrero and Marozau, 2023), as well as the characteristics and motives of the entrepreneur, namely, opportunity-based vs necessity-based entrepreneurship (Li *et al.*, 2020). Therefore, based on the above discussion, we propose the following hypothesis:

*H1.* Regulatory institutions positively affect the entrepreneurial behavior of firms.

*2.1.2 Normative institutions.* As Scott (1995) described, the normative dimension encompasses values and norms. It measures the degree to which individuals at the country level value entrepreneurship, creativity and innovative thinking (Busenitz *et al.*, 2000). Values are ideals of desired or necessary actions, providing standards that allow individuals to compare and evaluate current structures or behaviors. In contrast, norms prescribe the appropriate actions within a given societal setting by defining legitimate actions to foster certain behaviors. Therefore, norms and values collectively act as a normative system that outlines firms' objectives and suggests optimal means of achieving these goals (Scott, 1995). Norms and values can directly or indirectly influence entrepreneurial behavior by prescribing codes of conduct at different societal levels, thereby aiding entrepreneurs in gaining legitimacy in unfamiliar business and institutional

environments (Welter, 2005). This dimension operates on three levels: macro, meso and micro. At the macro level, norms and values delineate the extent to which entrepreneurship is acceptable in society. At the meso level, they focus on the codes of conduct defined by business associations and professionals. At the micro level, they pertain to elements like religion, kinship and ethnic groups (Welter, 2005). Consequently, the normative dimension constrains and facilitates behavior, shaping societal actions (Scott, 1995).

Scholars have acknowledged the significant influence of the normative dimension on entrepreneurial behavior (Autio *et al.*, 2013; Nguyen and Rose, 2009; Bowen and De Clercq, 2008). We propose that entrepreneurs' positive perception of entrepreneurship significantly fosters firm entrepreneurial behavior. This dimension is critical as it legitimizes entrepreneurship and influences individuals' decisions to embark on entrepreneurial journeys (Urban, 2013; Urbano and Alvarez, 2014; Manolova *et al.*, 2008; Chen *et al.*, 2023). For instance, cultural norms prevalent in society can affect how firms are accepted for generating profits from their activities (Welter, 2005). Occasionally, the regional culture can even impact the financial performance of small- and medium-sized enterprises (Weerasekara and Bhanugopan, 2022). Societal and cultural norms shape the mechanisms regulating the feasibility and desirability of economic opportunity costs and the decision to initiate and expand a firm, thereby influencing entrepreneurial behavior (Autio *et al.*, 2013). These informal institutions also dictate the level of entrepreneurial engagement demonstrated by individuals, affecting the differential participation of men and women in entrepreneurial activities (Pidduck *et al.*, 2023). According to a cross-cultural study by Lang *et al.* (2014), the characteristic of the normative dimension in transition economies, including large communities, revolves around norms of place attachments and individual norms.

However, the normative dimension influences the nature of entrepreneurial activity. Li *et al.* (2020) study suggest that while the normative dimension negatively impacts opportunity-driven entrepreneurial activity, it positively influences necessity-driven entrepreneurship. These findings also highlight that societal rule, including the extent to which they value private ownership rights and formal rules such as a constitution, shape entrepreneurial activities. Specifically, these norms influence the behavior of entrepreneurs, prompting them to engage in either productive or nonproductive entrepreneurial activities (Welter and Smallbone, 2011). Given the above discussion, we propose the following hypothesis:

H2. Normative institutions positively affect the entrepreneurial behavior of firms.

*2.1.3 Cognitive-cultural institutions.* The cognitive dimension of institutions refers to the cognitive structures that assist entrepreneurs in understanding and interpreting the external environment. The cultural-cognitive dimension pertains to the conceptions encompassing social reality's characteristics and the frameworks through which individuals attribute meaning to them. Studying entrepreneurs' cognitive processes, including information processing, problem-solving abilities, decision-making and sense-making in complex environments, provides critical insights into what differentiates them from others and enhances our understanding of entrepreneurial behavior (Brigham and De Castro, 2003). Moreover, it is crucial to consider both the objective circumstances and the individual's subjective interpretation when seeking to understand or explain entrepreneurial actions. Scott (1995: 57) further elucidates the connection between cognitive frames and cultures, asserting that "internal" interpretive processes are influenced by "external" cultural frameworks. Thus, the elements constituting the cultural-cognitive dimension refer to an individual's understanding (Welter, 2005) of the business environment surrounding the firm. The cognitive dimension primarily centers on an individual's knowledge and skills related to entrepreneurship (Bosma *et al.*, 2018).

Several studies acknowledge the importance of the cultural-cognitive dimension for entrepreneurship (Bowen and De Clercq, 2008; Urbano and Alvarez, 2014; Oftedal *et al.*, 2018). Cultural cognition is essential in explaining entrepreneurial activities and behaviors (Valdez and Richardson, 2013). For instance, when firm behavior differs between organizations, one explanation is tied to cognitive differences that lead them to make distinct strategic choices (Busenitz and Lau, 1996). This dimension is vital, as instances where entrepreneurs believe they possess the necessary skills, knowledge and experience can spur behavioral change and encourage them to recognize and exploit new opportunities (Shane and Venkataraman, 2000). For example, Dickson and Weaver (2008) study indicates that firm managers and entrepreneurs who perceive general and technological uncertainty tend to alter their behavior. Other studies demonstrate that the cultural-cognitive dimension influences firm behavior by stimulating investments in new ventures (Farashah, 2015). Urbano and Alvarez (2014) assert that creating new firms is crucial within a robust cultural-cognitive environment. This is due to cognitive patterns assisting entrepreneurs in discovering and guiding new opportunities (Baron, 2007). These studies suggest that cultural-cognitive institutions in a society can influence firm entrepreneurial behavior.

The ability of entrepreneurs to acquire knowledge and business opportunities, along with the way this knowledge is processed, influences their decision-making and performance (Busenitz and Lau, 1996) and their behavior. Dispositional beliefs about entrepreneurship and opportunities elucidate the mechanisms through which individuals are predisposed to interact with specific opportunities, offering a more refined understanding of entrepreneurial behavior (Aljarodi *et al.*, 2022). Therefore, based on the discussion above, we propose the following hypothesis:

*H3.* Cognitive-cultural institutions positively affect the entrepreneurial behavior of firms.

### *2.2 Firm-level factors and entrepreneurial behavior*

This study considers firm age, size and ownership type as firm-level factors. Past research has seldom investigated the extent to which factors like firm age, size and ownership type contribute to firms' entrepreneurial behavior on a grand scale. To address this gap, we examined the impact of firm age, size and ownership type on firms' entrepreneurial behavior. Prior research acknowledges the significant influence of age on firms' strategy and performance (Cowling *et al.*, 2015; Grazzi and Moschella, 2018; Coad *et al.*, 2018). Given that entrepreneurial behaviors enhance firm performance, it can be postulated that a firm's age will impact its entrepreneurial behaviors. A handful of studies on this topic have shown that the effect of firm size on the level of entrepreneurial marketing behavior becomes apparent only when the firm's age is considered (Kilenthong *et al.*, 2016).

Furthermore, research related to the adoption of new technologies (Nooteboom *et al.*, 2007), innovation activities (Katila and Shane, 2005; Withers *et al.*, 2011), market internationalization (Naldi and Davidsson, 2014) and use of social networks (Nooteboom *et al.*, 2007; Watson, 2007) indicates that newer firms possess advantages over older ones. These studies suggest that younger firms exhibit higher entrepreneurial behaviors than older firms. This could be because younger firms, unlike older ones, do not possess established routines (Kilenthong *et al.*, 2016) and do not suffer from core rigidities (Leonard-Barton, 1992). Based on this evidence, we posit that firm age affects firms' entrepreneurial behavior and that entrepreneurial behavior is more prevalent in younger firms than in older ones. In this context, we propose the following hypothesis:

*H4a.* Younger firms engage in a higher level of entrepreneurial behaviors than older firms.



The existing literature suggests that firm size influences entrepreneurial behavior. It has been established that firm size effectively contributes to a high degree of strategic planning and a superior competitive position (de Jorge Moreno *et al.*, 2010). Studies indicate that smaller enterprises surpass larger firms in terms of the number of significant challenges in survival, growth in sales rates and employment figures (Cooper *et al.*, 1989). Small firms are better equipped to establish direct and sincere customer relations due to their more horizontal organizational structures than larger firms. This advantage facilitates small firms' access to market information (Carson and McCartan-Quinn, 1995; Kilenthong *et al.*, 2016) and allows them to display more entrepreneurial behaviors. Research has shown that small firms outperform larger ones by using less expensive and varied export strategies (Coviello *et al.*, 2000). However, other studies have identified that firm size plays a significant role in the relationship between firm entrepreneurship and longevity performance (Ha-Brookshire, 2009). In light of the evidence demonstrating that small firms are more entrepreneurial than large ones, we propose that firm size impacts entrepreneurial behavior and that such behavior is more prevalent in small firms than larger ones. In this context, we offer the following hypothesis:

*H4b.* Micro and small firms exhibit higher entrepreneurial behavior than medium-sized firms.

The influence of family versus nonfamily firms on entrepreneurial behavior is discussed in the literature. Some studies have concluded that strategic planning in small family businesses encompasses a specific “entrepreneurial spirit” that directly affects the extent of entrepreneurial behavior (Weismeier-Sammer, 2011). Additionally, it has been found that factors tied to management cultures, such as strategic decision-making, participatory governance, long-term orientation and human capital in family businesses, influence the entrepreneurial behavior of these enterprises (Eddleston *et al.*, 2012). The results of a study on Indian family businesses identified the impact of willingness to change and perceived technological opportunities on entrepreneurial behavior while concluding that the role of generational participation was insignificant (Chatterjee *et al.*, 2023). Despite these studies indicating the propensity of family businesses toward entrepreneurial behaviors, inconsistent results have been obtained in comparing entrepreneurial behaviors between family and nonfamily firms. For instance, using the resource-based view, a study examining the relationship between the four dimensions of organizational culture and entrepreneurship in family and nonfamily businesses found that each of these dimensions had a significantly more significant impact on entrepreneurship in family businesses compared to nonfamily companies (Zahra *et al.*, 2004).

Notwithstanding the ongoing discussions, recent studies have shown contrasting results regarding the risk-taking behavior of family-owned companies compared to nonfamily firms during new product introductions (Naldi *et al.*, 2007; Weismeier-Sammer, 2011). Further, another significant finding indicates that firm performance tends to decline as family ownership increases, reaching its lowest point (Minh Ha *et al.*, 2022). Upon examining the debates in the literature, it appears that family businesses are more inclined to engage in entrepreneurial behavior than nonfamily firms. Based on these discussions, we propose the following hypothesis:

*H4c.* Family businesses are more engaged in entrepreneurial behavior than nonfamily businesses.

### *2.3 Rational decision-making and entrepreneurial behavior*

Rational decision-making is characterized by “controlled, demanding, logical, systematic, explicit, analytical, conscious, and slow thinking” (Thaler and Sunstein, 2009; Kahneman, 2011).

Within this cognitive style, managers make decisions based on objective and complete information, necessitating intellectual reasoning and without time pressure (Akinci and Sadler-Smith, 2013). Unlike developed countries, transition economies, which form the context of our research, are often marked by weak and inadequate regulatory institutions and rapid institutional changes. In such economic contexts, it is challenging for entrepreneurs to make rational decisions based on information (Krasniqi and Desai, 2016). Research on this subject reveals that entrepreneurs, considering economic development levels, national culture and intuition important when making business decisions, are more likely to opt for risky rather than rational choices (Melović *et al.*, 2022). Despite this result, some transition countries are likely to avoid risk and forego many entrepreneurial behaviors due to their institutional change and highly volatile environment (Van Doorn *et al.*, 2017). Entrepreneurial behavior and risk-taking are avoided in turbulent transition economies where political instability is intense and legal regulations on the economy are not on solid ground (Ahlstrom and Bruton, 2010; Krasniqi and Desai, 2016).

Consequently, entrepreneurs in transition economies can be risk-averse and reactive, exhibiting low self-confidence toward entrepreneurial behavior, in contrast to the entrepreneurial characteristics of independence, self-confidence and proactivity in developed countries (Tyszka *et al.*, 2011). This can lead them to prioritize their well-being and their comfort zone. Such a situation may emphasize the emotional dimension over the rational dimension in the managerial decisions of companies in transition economies and reduce entrepreneurial behaviors (Chelariu *et al.*, 2008). Based on these discussions, we anticipate that the interplay of rational decision-making processes and regulatory institutions in the context of a transitional economy like Kosovo will negatively impact the entrepreneurial behavior of firms. In this context, we propose the following hypothesis:

- H5.* The interaction between the regulatory institutions and the rational decision-making behavior of managers negatively affects the entrepreneurial behavior of firms.

### 3. Methodology

We conducted this study using quantitative research methods. We obtained a snapshot of MSMEs' entrepreneurial behaviors in the data collection process using a cross-sectional research design. Although cross-sectional data present a limitation in understanding the phenomenon under study compared to longitudinal data, they have been used in many studies (Hair *et al.*, 2010; Palalić *et al.*, 2023; Aloulou *et al.*, 2023; Hajdari *et al.*, 2023). We analyzed the collected data using SPSS 26 and STATA software. We performed descriptive statistics, exploratory factor analyses, correlation and regression analyses on the study's data.

#### 3.1 Questionnaire design and pilot survey

The research scale used in this study consists of four parts. The first section covers gender, education, managerial position, firm size and industry information. The second part includes regulatory, normative and cultural-cognitive elements related to institutions. In the third part, general decision-making style (GDMS) and in the fourth part, entrepreneurial behavior was evaluated.

*3.1.1 Independent variables.* To test institutional profiles, we selected three scales from studies that had undergone validity and reliability testing – these studies were conducted by Busenitz *et al.* (2000), Manolova *et al.* (2008) and Farashah (2015). Initially, Busenitz *et al.* (2000) tested this scale in developed economies, providing a tool for researchers aiming to investigate institutions. Later, Manolova *et al.* (2008) confirmed the scale's validity and



reliability in developing economies, specifically Lithuania, Bulgaria and Hungary. We also used the scale in Farashah's (2015) global entrepreneurship monitor (GEM) study to gain more detailed insights into regulatory, normative and cultural-cognitive institutions. We finalized the institutional scale by incorporating additional items from this scale. The final version of our institutional scale comprises seven items, each for the regulatory and normative dimensions and four for the cultural-cognitive dimensions. This scale has been applied in various recent studies (Bağış *et al.*, 2023a).

To assess the impact of firm-level factors on entrepreneurial behavior, we considered firm age, size and ownership type as independent variables. We categorized the company's age into the following groups: 0–5 years, 6–10 years, 11–15 years, 16–20 years and 21 years and over. We classified firms with 1–9 employees as microenterprises, those with 10–49 employees as small businesses and firms with more than 50 workers as medium-sized businesses. Regarding ownership type, we analyzed firms as family businesses and nonfamily firms.

To assess the impact of rational decision-making on entrepreneurial behavior, we used the GDMS scale developed by Scott and Bruce (1995). The authors established the scale's high internal consistency, face validity and robust factor structure. Comprising 25 items, the scale evaluates five decision-making styles: avoidant, dependent, intuitive, rational and spontaneous. From this scale, we used four items specifically related to rational decision-making.

*3.1.2 The dependent variable.* We used the scale Mair (2005) developed to measure entrepreneurial behavior. The eight-item scale gauges the principal defining facets of entrepreneurial activity, including innovation, autonomy and opportunity recognition, primarily focused on enhancing organizational processes and structures.

The questionnaire was translated into Albanian using the translation-back-translation method. We conducted a pilot study by randomly selecting 40 MSMEs to assess the questionnaire's reliability within the specific context of our investigation. Based on the feedback, we finalized the survey and fine-tuned the language to match local usage in Kosovo. While refining the survey, feedback was sourced from business professionals, academics and consultants. For this study, a seven-point Likert-type scale was used to gauge each statement, with "1" indicating "strongly disagree" and "7" indicating "strongly agree."

### 3.2 Sample and data collection

This study's sample comprised MSMEs in Kosovo. We specifically targeted the owners and managers of these MSMEs to understand the impact of institutional, firm and individual-level factors on entrepreneurial behavior. Accordingly, our sample selection criteria were based on convenience sampling, given the study's aims. Before data collection, we trained survey collectors who commenced the process between January and February 2023. Before administering the questionnaire, survey collectors informed the firm managers and entrepreneurs about the following points:

- Participation in the study is voluntary;
- The data collected is solely for scientific purposes;
- The information provided will not be shared with third parties; and
- The legal process concerning data protection.

To enhance data quality, we provided questionnaires in a convenient format for the participants, either online or via a physical questionnaire. Subsequently, we scanned and organized the completed questionnaires. During this phase, 45 participants or more than 20% of the total, did not respond to the questionnaire. Consequently, we selected 316 completed questionnaires from the MSMEs for analysis.

### 3.3 Descriptive statistics

The sample for this study consists of managers or founders of MSMEs. A breakdown of the participants reveals that 73.4% are male, while 26.6% are female, indicating a majority of male participants. Regarding the roles of the participants, 65.5% are company owners and 34.5% hold managerial positions. Regarding education, 41.8% of the participants hold a bachelor's degree, while 24.7% have a master's degree. Regarding firm size, 31.3% of companies have 1–9 employees, another 31.3% have 10–49 employees and 6.6% employ more than 50 people. When assessing firm age, 23.1% of the companies fall in the 16–20 years category, followed by firms over 20 years at 21.2%. Firms aged 11–15 constitute 19.6% of the sample, while those between 6 and 10 years represent 16.8%. The smallest group, at 19.3%, are firms in the 0–5 years range. From a sectoral standpoint, 3.8% of the firms are in real estate, 22.2% in construction, and the majority, 74.1%, are in manufacturing, suggesting that the sample primarily consists of manufacturing firms. Regarding ownership type, 78.5% of the firms are family-owned and 21.5% are nonfamily firms. Descriptive statistics for the sample are presented in [Table 1](#).

## 4. Findings

### 4.1 Empirical strategy

Our empirical approach relies on a two-step methodology: the data reduction technique and ordinary least square (OLS) estimation. This strategy draws from prior research ([Aidis et al., 2012](#); [Krasniqi and Desai, 2016](#); [Lajqi and Krasniqi, 2017](#)) that used principal component analysis (PCA) to minimize the number of variables from the scales used in our study. To ensure the consistency of the questionnaires, we carried out an exploratory factor analysis using Varimax rotation with Kaiser normalization. Five factors derived from the PCA were generated from the rotated matrix, showing an acceptable measure of sampling adequacy (Kaiser–Meyer–Olkin [KMO] measure = 0.874,  $p = 0.000$ ). [Table 2](#) displays these five factors along with their loadings. The PCA suggests that formal and informal institutional barriers are conceptually and empirically distinct.

We performed an exploratory factor analysis to verify the appropriateness of the data with the subscales used in our research. The results, as shown in [Table 2](#), indicate that the KMO coefficient is 0.874, which signifies that the sample size is suitable for the study ([Bağış et al., 2023a](#); [Bağış et al., 2023b](#); [Kryeziu et al., 2022a](#)). The Barlett test of sphericity shows a statistically significant  $p$ -value of less than 0.01 ( $p = 0.000$ ), further affirming the data's multiple normal distribution criteria ([Bağış et al., 2023b](#)) as validated by the factor loadings. The total explained variation for all items was 62.286, with the entrepreneurial behavior factor yielding the highest eigenvalues and explained variances, followed by the other factors. We also examined the reliability of the subscales. The results showed that Cronbach's alpha was very high for all subscales, except for the normative institutions subscale, which was lower but still within the acceptable range according to the literature ([Krasniqi et al., 2021](#)). The results of the exploratory factor analysis are presented in [Table 2](#).

Results from the factor analysis revealed that the items are classified into five-factor loadings. The lowest factor loading is 0.460, and the highest is 0.847. During the factor analysis, three items from the normative institutions were removed due to their low factor loadings and one item from rational decision-making was also removed. The values derived from the factor loadings reflect the relationship between the items and the respective factor to which they are loaded ([Wood et al., 2014](#); [Kryeziu et al., 2022a](#)). Final results from the factor analysis show that the first item, entrepreneurial behavior and regulatory institutions, each have seven items, whereas normative institutions, cultural-cognitive institutions and rational decision-making

Variables	Number	%	Opportunities for transition communities
<i>Gender</i>			
Male	232	73.4	
Female	84	26.6	
<i>Position</i>			
Owner	207	65.5	
Manager	109	34.5	
<i>Level of education</i>			
Bachelor	132	41.8	
Master	78	24.7	
Other	43	13.6	
<i>Firm size/number of employees</i>			
Micro 1 to 9	99	31.3	
Small 10 to 49	196	62	
Medium 50 and over	21	6.6	
<i>Firm age</i>			
0 to 5	61	19.3	
6 to 10	53	16.8	
11 to 15	62	19.6	
16 to 20	73	23.1	
21 and over	67	21.2	
<i>Industry</i>			
Real estate	12	3.8	
Construction	70	22.2	
Manufacturing	234	74.1	
<i>Ownership type</i>			
Family firms	248	78.5	
Nonfamily firms	68	21.5	
<i>Total</i>	<i>316</i>	<i>100</i>	

**Source:** Author's own work

**Table 1.**  
Descriptive statistics

consist of four items. It is crucial to underscore that all items were congruent with their original scale.

#### 4.2 Estimation of the model

In the second step of our empirical strategy, we use the OLS estimation to assess the impact of institutional quality on entrepreneurial behavior. To test our hypotheses, we estimate an econometric model which includes three institutional pillars – regulatory, cognitive and normative – or institutional factors generated by PCA, along with other control variables (gender, university education, firm age, firm size, sector and family business). The model used is as follows:

$$Y_i = \beta_0 + \beta_1 X_i + \dots + \beta_n n + \varepsilon_i$$

In this equation, the dependent variable  $Y_i$  represents entrepreneurial behavior,  $\beta_0$  is the intercept,  $X_i$  represents the vector of independent variables, and  $\varepsilon_i$  is the error term. The explanatory variables are assumed to be independent of disturbances, and observations are

Factors	Factor loadings	Explained variation	Eigen value	Reliability
<i>Entrepreneurial behavior (EB)</i>				
Encouraging employees to come up with their own solutions to problems	0.846	19.594	7.544	0.928
Proactively approach new customers	0.844			
Encouraging your employees to develop new ideas on how to do business	0.843			
Actively investigating new market opportunities within the rayon	0.814			
Developing tailor-made bonus systems to honor commercial efforts of employees within your rayon	0.779			
Initiating marketing campaigns in addition to the ones promoted by head office	0.677			
Promoting entrepreneurial behavior of employees with initiatives that went beyond the ones suggested by head office	0.512			
<i>Regulatory institutions (RI)</i>				
The support for new and growing firms is a high priority for policy at the local government level	0.778	13.586	3.400	0.826
There is an adequate number of government programs for new and growing businesses	0.768			
There are sufficient government subsidies available for new and growing firms	0.720			
Government programs aimed at supporting new and growing firms are effective	0.715			
Coping with government bureaucracy, regulations and licensing requirements is not unduly difficult for new and growing firms	0.687			
Government policies (e.g. public procurement) consistently favor new firms	0.640			
Taxes and other government regulations are applied to new and growing firms in a predictable and consistent way	0.562			
<i>Cultural-cognitive institutions (CCI)</i>				
Most people think of entrepreneurs as competent, resourceful individuals	0.815	11.673	2.229	0.865
Many people know how to start and manage a small business	0.786			
Many people have experience in starting a new business	0.736			
Many people can react quickly to good opportunities for a new business	0.723			
<i>Normative institutions (NI)</i>				
The national culture encourages creativity and innovativeness	0.721	7.537	1.219	0.528
Most people think of entrepreneurs as competent, resourceful individuals	0.634			
The creation of new ventures is considered to be an appropriate way to become rich	0.627			
Most people view becoming an entrepreneur as a desirable career choice	0.460			
<i>Rational decision-making (RDM)</i>				
My decision-making requires careful thought	0.847	9.895	1.802	0.783

(continued)

**Table 2.**  
Results of  
exploratory factor  
analysis

Factors	Factor loadings	Explained variation	Eigen value	Reliability
When making a decision, I consider various options in terms of a specified goal	0.776			
I usually have a rational basis for making decisions	0.714			
I double-check my information sources to be sure I have the right facts before making decisions	0.599			

*Evaluation criteria*  
 Kaiser–Meyer–Olkin measure of sampling adequacy: 0.874  
 Approx. Chi-square: 4,406.004  
 Bartlett’s test of sphericity: 0,000  
 Extraction method: principal components  
 Rotation method: varimax  
 Total explained variation: 62.286

Source: Author’s own work

Table 2.

presumed to have been drawn from the same population. Regarding diagnostics, the model demonstrates a robust model fit, as measured by the adjusted *R*-square, which ranges from 0.163 (Model 1) to 0.558 (Model 4). Given the cross-sectional nature of the data, which may be subject to heteroscedasticity, we used the “robust standard error” method based on Huber-White sandwich estimates. This method does not depend on the assumption that error terms exhibit a uniform distribution. Additionally, we used STATA’s variance inflation factor and correlation matrix to test for multicollinearity, and the results suggest that this was not an issue in our estimates. This is reinforced by the correlation matrix, presented in Table 3, which shows relatively low individual variable correlations (all less than 0.3).

We used OLS estimation to assess the impact of the three institutional pillars (regulatory, cognitive and normative) and control variables on the entrepreneurial behavior of MSME owners. Four separate econometric models were estimated. Model 1 is the base model that includes variables related to the entrepreneur and the firm (such as gender, university education, firm age, firm size, sector and whether it is a family business). Model 2 incorporates three variables produced by PCA, which are categorized as regulatory, cognitive and normative institutions. Model 3 introduces a variable that denotes the entrepreneur’s rational decision-making. Finally, Model 4 adds interaction variables of rational decision-making and institutional pillars to examine the significance of rational behavior in navigating the transitional institutional environment. The findings from these four estimations, presented in Table 4, are consistent across the equations.

Findings from Model 1 illustrate the relationship between entrepreneur and firm-level variables and entrepreneurial behavior. On average, male entrepreneurs exhibit less entrepreneurial behavior than their female counterparts ( $-0.314, p < 0.05$ ). Entrepreneurs who have completed a university degree or higher, on average, display more entrepreneurial behavior compared to those with lower education levels ( $0.331, p < 0.05$ ). Firm-level variables demonstrate a statistically significant and positive relationship with entrepreneurial behavior. The findings identify an inverted U-shaped correlation between firm age and entrepreneurial behavior. This implies that age has a positive association with entrepreneurial behavior up to a certain age (which may act as a proxy for experience). However, beyond a certain point, a negative relationship is indicated. This may suggest that age can reflect an accumulation of experience, which yields diminishing returns over time,

**Table 3.**  
Correlation analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Entrepreneurial behavior	1.000						
(2) Gender_dv	-0.247*** (0.000)	1.000					
(3) University education	0.073 (0.195)	-0.013 (0.813)	1.000				
(4) Firm age	-0.218*** (0.000)	0.201*** (0.000)	0.033 (0.560)	1.000			
(5) Firm age_sq	-0.246*** (0.000)	0.216*** (0.000)	0.072 (0.201)	0.962*** (0.000)	1.000		
(6) Micro	0.256*** (0.000)	-0.258*** (0.000)	-0.073 (0.197)	-0.414*** (0.000)	-0.371*** (0.000)	1.000	
(7) Small	-0.233*** (0.000)	0.238*** (0.000)	0.034 (0.548)	0.313*** (0.000)	0.261*** (0.000)	-0.863*** (0.000)	1.000
(8) Medium	-0.022 (0.703)	0.017 (0.767)	0.070 (0.218)	0.161*** (0.004)	0.181*** (0.001)	-0.180*** (0.001)	-0.341*** (0.000)
(9) Manufacturing	-0.110* (0.052)	0.134** (0.017)	0.247*** (0.000)	0.079 (0.161)	0.130** (0.021)	0.026 (0.641)	-0.091* (0.105)
(10) Family business	0.167*** (0.003)	-0.106* (0.060)	-0.030 (0.595)	-0.192*** (0.001)	-0.179*** (0.001)	0.088 (0.118)	-0.108* (0.055)
(11) Regulatory	0.040 (0.481)	-0.019 (0.742)	0.026 (0.641)	-0.089 (0.115)	-0.071 (0.207)	-0.051 (0.370)	-0.019 (0.739)
(12) Cognitive	0.576*** (0.000)	-0.086 (0.127)	0.075 (0.185)	-0.220*** (0.000)	-0.225*** (0.000)	0.240*** (0.000)	-0.236*** (0.000)
(13) Normative	0.393*** (0.000)	-0.126** (0.025)	-0.022 (0.701)	-0.063 (0.261)	-0.104* (0.064)	0.025 (0.655)	-0.060 (0.290)
(14) Rational decision-making	0.434*** (0.000)	-0.097* (0.087)	0.127** (0.024)	-0.149*** (0.008)	-0.161*** (0.004)	0.216*** (0.000)	-0.192*** (0.001)

Notes: \*\*\* $p < 0.01$ ; \*\* $p < 0.05$  and \* $p < 0.1$

Source: Author's own work

(continued)



Variables	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Entrepreneurial behavior							
(2) Gender_dv							
(3) University education							
(4) Firm age							
(5) Firm age_sq							
(6) Micro							
(7) Small							
(8) Medium	1.000						
(9) Manufacturing	0.129** (0.022)	1.000					
(10) Family business	0.047 (0.405)	-0.117** (0.038)	1.000				
(11) Regulatory	0.131** (0.020)	0.042 (0.454)	-0.023 (0.682)	1.000			
(12) Cognitive	0.012 (0.835)	-0.055 (0.326)	0.124** (0.028)	0.000 (1.000)	1.000		
(13) Normative	0.069 (0.218)	-0.076 (0.179)	0.1107* (0.057)	0.000 (1.000)	0.000 (1.000)	1.000	
(14) Rational decision-making	-0.027 (0.632)	0.003 (0.951)	0.037 (0.508)	0.128** (0.023)	0.375*** (0.000)	0.106* (0.059)	1.000

Table 3.

Variables	Model 1	Model 2	Model 3	Model 4
<i>Entrepreneur and firm-level variables</i>				
Gender_dv	-0.314** (0.133)	-0.262** (0.103)	-0.258** (0.101)	-0.251** (0.100)
University education	0.331** (0.136)	0.164 (0.113)	0.108 (0.112)	0.101 (0.115)
Firm age	0.0546** (0.0238)	0.0213 (0.0189)	0.0154 (0.0182)	0.0120 (0.0186)
Firm age_sq	-0.00216*** (0.000699)	-0.000688 (0.000557)	-0.000498 (0.000536)	-0.000372 (0.000549)
Small	-0.448*** (0.133)	-0.200* (0.106)	-0.139 (0.104)	-0.142 (0.103)
Medium	-0.275 (0.253)	-0.355 (0.218)	-0.272 (0.211)	-0.282 (0.214)
Manufacturing	-0.195 (0.128)	-0.0879 (0.100)	-0.0903 (0.0993)	-0.0769 (0.101)
Family business	0.273** (0.120)	0.106 (0.0841)	0.114 (0.0791)	0.110 (0.0783)
<i>Institutional-level variables and rational decision-making</i>				
Regulatory		0.0510 (0.0342)	0.0254 (0.0343)	0.0609 (0.0520)
Interaction_RIxRDM				-0.0582* (0.0336)
Cognitive		0.530*** (0.0417)	0.470*** (0.0404)	0.459*** (0.0454)
Interaction_CIxRDM				-0.0131 (0.0316)
Normative		0.366*** (0.0440)	0.348*** (0.0435)	0.339*** (0.0501)
Interaction_NIxRDM				-0.0160 (0.0526)
Rational decision-making			0.183*** (0.0397)	0.203*** (0.0488)
Constant	-0.0150 (0.276)	0.0693 (0.221)	0.0974 (0.215)	0.123 (0.214)
Observations	316	316	316	316
R <sup>2</sup>	0.163	0.526	0.553	0.558

**Table 4.**  
Regression analysis

**Notes:** Robust standard errors in parentheses; \*\*\* $p < 0.01$ ; \*\* $p < 0.05$  and \* $p < 0.1$   
**Source:** Author's own work

consistent with Jovanovic's learning theory (Hashi and Krasniqi, 2011; Krasniqi and Lajqi, 2018). Regarding firm size, small firms exhibit less entrepreneurial behavior compared to micro firms, while the variable representing medium-sized firms was not significant. The sector dummy was also insignificant, indicating no differences in entrepreneurial behavior across various sectors. As for the ownership type of firms, we find that family-owned firms display more entrepreneurial behavior than nonfamily firms (0.273,  $p < 0.05$ ).

Regarding the impact of institutions on entrepreneurial behavior within firms, findings from the three levels of institutions (Model 2) demonstrate that only normative and cognitive institutions have a statistically significant effect compared to regulatory institutions (0.530,  $p < 0.01$  and 0.366,  $p < 0.01$ , respectively). In addition to institutional pillar variables, we introduced the variable of rational decision-making by entrepreneurs (Model 3). The rational decision-making variable shows a statistically significant and positive relationship with entrepreneurial behavior (0.183,  $p < 0.01$ ). Finally, in Model 4, we formulated interaction terms between institutional pillars and rational decision-making. Findings reveal that rational decision-making is statistically significant but negatively affects entrepreneurial behavior when interacting with regulatory institutions. Other interactions with cognitive and normative institutions are not statistically significant. This might imply that, despite the uncertain business environments in transitional economies, rational decision-making by managers does not significantly influence entrepreneurial behavior ( $-0.058$ ,  $p < 0.10$ ). This suggests that rational decision-makers exhibit less entrepreneurial behavior.

## 5. Implications and conclusions

### 5.1 Theoretical implications

This study investigated the impact of institutions (regulatory, normative and cognitive-cultural), firm-level factors (firm age, size, ownership type), and rational decision-making on entrepreneurial behavior. Our research used a sample of 316 MSMEs in Kosovo.

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Our study enriches the institutional theory and rational decision-making literature in transitional economies.

First, our study contributes to our understanding of the impact of institutional settings on entrepreneurial behavior in firms compared with firm-level and individual-level factors. These findings align with previous research suggesting that institutions play a crucial role in influencing the survival and growth of firms in transitional economies (Bowen and De Clercq, 2008; Bosma *et al.*, 2018; Kafouros *et al.*, 2022). Our research results indicate that it is challenging for firms operating in uncertain institutional environments to exhibit entrepreneurial behavior, mainly due to the inability of regulative institutions to foster a stable institutional environment (Kryeziu and Coşkun, 2018). Our study thus reinforces the importance of the institutional theory as a vital lens to examine firm entrepreneurial behavior in uncertain business environments (Welter, 2005; Dickson and Weaver, 2008; Peng *et al.*, 2008; Bruton *et al.*, 2010). Given the nature of the institutional environment in transition economies, where the formal and informal “rules of the game” dictate firm actions and behaviors (Peng *et al.*, 2008), our findings are crucial. Our research expands the literature by demonstrating that to understand the impact of institutions on entrepreneurial behavior fully, it is essential to concentrate on the complexity and interrelationship between national-level institutions and entrepreneurship (Welter and Smallbone, 2011).

Our study’s second contribution relates to the impact of normative and cultural-cognitive institutions on entrepreneurial behavior, in contrast with regulative institutions. According to these results, while *H2* and *H3* were supported, *H1* was not. These findings are intriguing, especially considering the crucial role regulatory institutions play in influencing firm behavior through government policies, which is fundamental for the survival and growth of firms (Ahlstrom and Bruton, 2010). However, these findings contrast with previous studies examining the influence of regulatory institutions on firms (Guerrero and Marozau, 2023; Aparicio *et al.*, 2016; Bosma *et al.*, 2018). The lack of impact of regulatory institutions on entrepreneurial behavior that we observe might be context-specific (Busenitz *et al.*, 2000; Spencer and Gómez, 2004), and hence we recommend exploring this in other institutional settings. One potential explanation for our results is that political and economic settings may influence entrepreneurial behavior in the short term through policies and enforcement mechanisms.

Meanwhile, institutions’ cultural-cognitive and normative dimensions likely have a long-term impact on entrepreneurial behavior (Welter, 2005). Furthermore, as firms understand the uncertainties stemming from regulatory institutions, such as fiscal policy, weak protection of property rights and contractual behavior, they may rely on social networks. This can serve as the primary strategy for firms to mitigate the negative impact on their entrepreneurial behavior (Kryeziu *et al.*, 2022b). Another area worth exploring is the potential connection between our study and the research conducted by Smith and Lanivich (2023). They found that a national business system reflecting market logic tends to stimulate opportunity entrepreneurship among individuals with lower incomes, which could potentially extend to the entrepreneurs in our study presumed to have higher incomes. Moreover, our findings align with previous research on the effects of normative and cultural-cognitive institutions on entrepreneurial behavior, further emphasizing the importance of these dimensions for firms operating in uncertain institutional contexts (Valdez and Richardson, 2013; Li *et al.*, 2020). Our research contributes to understanding the significance of proximity dimensions, as highlighted by Boschma (2005), particularly in the context of transition economies. We focus on cognitive, institutional and social dimensions, which significantly influence firm entrepreneurial behavior. Cognitive proximity facilitates knowledge exchange and collaboration between firms, fostering innovation and growth.

Institutional proximity shapes firms' ability to compete in domestic and international markets, necessitating adaptation to the local environment. Social proximity emphasizes the importance of firms building social relations, sharing knowledge and establishing trust. In the context of transition economies like the Western Balkans, tailored policies leveraging these dimensions are vital to promote innovation and competitiveness. An evidence-based approach by policymakers can further enhance the region's development.

Third, regarding firm-level factors, our study provides several contributions. We found that younger firms are more entrepreneurial than older firms, thereby supporting *H4a*. Our findings align with previous studies (Katila and Shane, 2005; Withers *et al.*, 2011; Nooteboom *et al.*, 2007; Watson, 2007; Naldi and Davidsson, 2014; Kilenthong *et al.*, 2016). This supports Jovanovic's learning theory, where age can indicate the accumulation of experience with a diminishing rate of return from this experience (Hashi and Krasniqi, 2011; Krasniqi and Lajqi, 2018). Furthermore, younger firms may lack routines (Kilenthong *et al.*, 2016) and core rigidities (Leonard-Barton, 1992) compared to older firms, making them more willing to take risks and engage in entrepreneurial behavior.

In terms of firm size, we found that small firms exhibited less entrepreneurial behavior than micro firms, while there was no significant difference for medium-sized firms. This supports *H4b*. Our findings contribute to earlier research (Cooper *et al.*, 1989; Carson and McCartan-Quinn, 1995; Kilenthong *et al.*, 2016; Coviello *et al.*, 2000). Small firms may be more advantageous than larger ones due to less hierarchical organizational structures and direct communication with customers, enabling them to access market information and respond immediately to market needs quickly. Small firms' flexible organizational structures and ambition may drive their entrepreneurial orientation.

Regarding ownership type, we found that family-owned firms demonstrated more entrepreneurial behavior than nonfamily-owned firms, supporting *H4c*. Our results validate past research (Zahra *et al.*, 2004; Eddleston *et al.*, 2012; Chatterjee *et al.*, 2023). The organizational culture of family firms may confer certain advantages over nonfamily firms and influence strategic behavior (Zahra *et al.*, 2004). Another possible reason for more entrepreneurial behavior in family firms could be the process of negotiation and reification, influenced by family responses to critical incidents, which facilitates the continuation of these behaviors across generations (Clinton *et al.*, 2022). This suggests that organizational culture is a value-creating factor in family businesses. Given our sample, another possible factor could be the participatory management approach (Eddleston *et al.*, 2012), which promotes entrepreneurial behaviors in micro and small family businesses. Such organizations generally lack a bureaucratic structure, giving them a competitive edge.

Finally, our study contributes to understanding rational decision-making's impact on entrepreneurial behavior. Notably, when we formulated Model 4 with interaction terms between institutional pillars and rational decision-making, we found that rational decision-making was statistically significant but had a negative effect on entrepreneurial behavior when interacting with regulatory institutions. Meanwhile, interactions with cognitive and normative institutions were not statistically significant. These results are consistent with prior studies suggesting a negative relationship between regulatory institutions, rational decision-making and entrepreneurial behavior (Ahlstrom and Bruton, 2010; Melović *et al.*, 2022). Consequently, these findings lend support to *H5*. This negative effect may be attributed to the nature of transition economies, often characterized by weak and insufficient institutions, as well as rapid institutional changes (Krasniqi and Desai, 2016). In such economic contexts, it can be challenging for entrepreneurs to make rational decisions based on available information. Instead, firms may rely on informal connections in these institutional contexts (Kryeziu *et al.*, 2022b).

### 5.2 Practical implications

Given the importance of MSMEs to a country's economic and sustainable development, our study offers several policy implications. The first policy implication relates to the crucial role of institutions, which should support MSMEs by adopting policies to enhance their competitiveness and promote growth. The second implication underscores the growing importance of digitalization for MSMEs, a trend that COVID-19 has accelerated. The government should implement policies that encourage MSMEs to adopt new technologies, drive digital transformation and develop digital skills, enabling them to become more competitive in both domestic and international markets (Kryeziu *et al.*, 2022a; Krasniqi *et al.*, 2021). Third, MSMEs in transitional economies continue to face challenges in accessing finances. Therefore, governments must provide additional financial incentives to support these firms and incentivize the enhancement of their capabilities.

In addition to these policy implications, our study presents some managerial insights. We have demonstrated that rational decision-making influences firm entrepreneurial behavior, though its impact diminishes when interacting with regulatory institutions. As a result, we recommend that managers carefully evaluate the information upon which they base their decisions. This is particularly important given the unpredictability of governmental decisions in transition economies, which may directly affect firm behavior. Consequently, firm managers must rely on trusted, diverse sources of information, all of which should be critically evaluated by the management team. Finally, we advise firm managers to augment their digitalization capabilities, as this is crucial for their firm's survival, growth and sustainable competitive advantage.

### 5.3 Limitations and future research

This study does have certain limitations that could be addressed in future research. First, our research focused on MSMEs in transition economies. As such, the findings related to the effects of institutions, firm-level factors, and rational decision-making processes on firms' entrepreneurial behavior might not apply to developed and developing economies. Consequently, future research could focus on replicating this study in developed and developing economies using similar variables. Moreover, as micro and small businesses generally represent necessity-driven enterprises (comprising 93.3% of our sample), our results might not fully capture the entrepreneurial behavior of opportunity-oriented businesses. Future research could uncover the antecedents of opportunity-oriented entrepreneurial behavior in larger firms. Second, this study's design was cross-sectional and concentrated on a single country, which could limit our understanding of the evolution of firms' entrepreneurial behavior over time. Future studies could adopt a longitudinal research design and make comparisons across different countries to enrich our understanding of the dynamics of entrepreneurial behavior.

Third, this research was constrained to institutions, firm-level factors and rational decision-making. Future studies can delve deeper into institutional subvariables in the context of a single country or multiple countries. For instance, how do factors like tax laws, corruption, firm incentives, legal regulations and bankruptcy laws – within the scope of regulatory institutions in transition economies – impact firms' entrepreneurial behavior? Comparing findings from such studies across different transition economies would be particularly insightful. Finally, our study confined firm-level factors to firm age, size and type of ownership. Future research could examine the influence of macro-level dynamic capabilities (Teece *et al.*, 1997) on entrepreneurial behavior. Additionally, our study was limited to analyzing the impact of rational decision-making on entrepreneurial behaviors at the micro level. Future research could explore the effects of dynamic managerial capabilities

on entrepreneurial behavior, such as managerial cognition, managerial human capital, managerial social capital (Adner and Helfat, 2003), sensing, seizing and reconfiguring capabilities (Teecce, 2007). It would also be beneficial to study the influence of proactive and dark tetrad personality traits on firms' entrepreneurial behavior. Previous studies have emphasized the need to explore the impact of proactive and dark triad personality traits on entrepreneurial orientations (Kraus *et al.*, 2018). We, therefore, encourage researchers to examine these limitations and future research proposals.

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