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INSIDE ENTREPRENEURIAL ORIENTATION: DO RISK-TAKING AND INNOVATIVENESS INFLUENCE PROACTIVENESS?

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ABSTRACT. The article focuses on the interdependencies within entrepreneurial orientation. The objective of the study was to verify the relationship between risk-taking and innovativeness, on the one hand, and proactiveness on the other hand, as three elements of entrepreneurial orientation of internationalized firms. The main research question the article answers is: In what way do risk-taking and innovativeness influence proactiveness within the interrelated three-dimensional construct of entrepreneurial orientation? The article employs structural equation modelling (CB-SEM) to analyse survey results based on a stratified sampling of 355 internationalized firms from Poland. The empirical findings demonstrate the positive impact of risk-taking (RISK) and innovativeness (INNO) on proactiveness (PROACT) within the interrelated three-dimensional construct of entrepreneurial orientation. Moreover, the level of risk-taking (RISK) and innovativeness (INNO) accounts for 36% of the variation in proactiveness (PROACT), which is considered high in social sciences, including business studies.

Keywords: entrepreneurial orientation, innovativeness, risk-taking, proactiveness, international entrepreneurship, internationalization of the firm, Poland, SEM

Introduction

Because entrepreneurship is a very elusive concept, empirical studies define it broadly, by its basic attributes (Gawęł, 2022), as entrepreneurial orientation (EO). This solution primarily helps to conceptualize entrepreneurship and, then, to facilitate the application of entrepreneurship theory in internationalization and business studies. Most researchers refer to Miller's (1983) concept of entrepreneurial orientation, later developed by Covin and Slevin (1989). This understanding of entrepreneurial orientation typically includes three dimensions – proactiveness, risk-taking, and innovativeness – which makes it doubtlessly the most widespread approach to EO in the entrepreneurship literature (Etemad, 2021; Anderson *et al.*,

2015; Wach, 2015). The three-dimensional construct is used for investigating firms' cross-border behaviours, in particular in international entrepreneurship research (Hernández-Perlines & Ribeiro-Soriano, 2023). For example, according to McDougall and Oviatt (2000, p. 903), "international entrepreneurship is a combination of (i) innovative, (ii) pro-active, and (iii) risk-seeking behavior that crosses national borders and is intended to create value in organizations."

In general, there are three terms used interchangeably in the literature to describe the equivalent generalized concept (Matsuno *et al.*, 2002): entrepreneurial proclivity (EP; *e.g.*, Pellissier & Van Buer, 1996), entrepreneurial orientation (EO; *e.g.*, Lumpkin & Dess, 1996) and entrepreneurial management (EM; *e.g.*, Stevenson & Jarillo, 1990). Admittedly, the real consensus in the entrepreneurship literature pertains to the three basic dimensions of organizational aptitude for these processes: innovation, risk-taking, and proactiveness (Zhou *et al.*, 2010; Matsuno *et al.*, 2002). These dimensions are usually examined together in the context of their importance for the development of entrepreneurship (Meekaewkunchorn *et al.*, 2021; Akbar *et al.*, 2020; Korpysa, 2019), albeit some empirical studies treat the three dimensions of entrepreneurial orientation separately (Özsomer *et al.*, 1997; Markin *et al.*, 2018; Wach, 2018). The results of numerous empirical studies prove that the appropriate use of the EO dimensions puts the firm ahead of its competitors and, what is more, that the relationships between these dimensions of entrepreneurial orientation can also be necessary for the firm (Cámara, 2018; Akbar *et al.*, 2020). Prior research results also show a positive relationship between innovation and proactiveness (Droge *et al.*, 2008; Cannavale & Nadali, 2019; Onwe *et al.*, 2020). Innovation is sometimes perceived as the basis for taking advantage of market opportunities or securing market niches (Wadood *et al.*, 2022), while proactiveness is an essential element of this process. Proactiveness is often associated with radical innovations in manufacturing companies (Dembek *et al.*, 2009). Maciejewski *et al.* (2023) demonstrated the positive effect of proactiveness and risk-taking on innovativeness as the interrelated three-dimensional construct of entrepreneurial orientation. The above observations inspired us to investigate the relationship between the individual dimensions – the influence of innovativeness and risk-taking on proactiveness – in the context of Polish firms' internationalization.

The article seeks to verify the relationship between innovativeness and risk-taking, on the one hand, and proactiveness on the other hand, understood as the three components of entrepreneurial orientation of internationalized Polish firms. We believe such an approach will deepen the understanding of the role of entrepreneurial orientation and its dimensions. In fact, prior studies refer to dimensions of entrepreneurial orientation only to a limited extent. Particular dimensions of entrepreneurial orientation may affect firm performance in different ways. Moreover, the dimensions relate to many various aspects of firm activities, while these relations and effects might differ over time and depend on multiple determinants (Chowdhury & Audretsch, 2021; Dembek *et al.*, 2009; Jambulingam *et al.*, 2005). So far, only limited research has been done to explain how entrepreneurial orientation dimensions imply each other. Tang *et al.* (2009) postulate scholars examine the nature of the relationship underlying the various dimensions of EO. Moreover, Zhao and Smalbone (2019, p. 318) argue that proactiveness "is an underestimated component of most entrepreneurial orientation models." Thus, we treat this study as a starting point for further, in-depth research in this area, focusing firstly on the dependence and relationship between innovativeness and risk-taking in relation to proactiveness. Furthermore, we develop the problem of entrepreneurial orientation in the international context (internationalization of firms), which as modern research shows (Etemad, 2022), requires up-to-date observations. Therefore, based on the research sample of internationalized businesses from Poland and the self-evaluation of their entrepreneurial orientation, we will answer the following research questions:

RQ: In what way do innovativeness and risk-taking influence proactiveness as the interrelated three-dimensional construct of entrepreneurial orientation?

RQ1: Is innovativeness positively related to proactiveness?

RQ2: Is risk-taking positively related to proactiveness?

We will analyse the above research questions using structural equation modelling and the results of the survey conducted among 355 firms from Poland.

1. Literature review

1.1. Entrepreneurial orientation construct

Two parallel concepts coexist in the entrepreneurship literature: corporate entrepreneurship (CE) and entrepreneurial orientation (EO). Glinyanova *et al.* (2021) underscore that CE represents a firm's actual entrepreneurial actions (strategic renewal, innovation, corporate venturing), while EO reflects a firm's potential entrepreneurial attitudes and intentions (in three, five, or more dimensions). Onwe *et al.* (2020) indicate that EO deals with rare and inimitable firm assets that consist of willingness to launch new products in the market, propensity for innovating, and proactive attitude towards competitors. Furthermore, cooperation with competitors in general networking is essential for the internationalization process (Maciejewski *et al.*, 2022). Current EO studies focus on identifying and comprehending firm entrepreneurial behaviours (Onwe *et al.*, 2020; Wadood *et al.*, 2022). Moreover, EO focuses on specific mechanisms and practices that form the footing for entrepreneurial decisions by combining entrepreneurial processes with subsequent entrepreneurial operations. Firstly, EO refers to operational activities (operations) that comprise running a firm and making entrepreneurial decisions. Secondly, EO captures specific methods and means of developing strategic initiatives that decision-makers utilize to achieve a firm's overall goal, shaping its business model to sustain a strategic market advantage.

Researchers struggle to devise a single, precise definition of EO. The literature contains many descriptions of EO, and various scholars investigate the matter (Basso *et al.*, 2009). Miller (1983) proposed the initial measures, and then Covin and Slevin (1989) developed one of the most popular and widely used concepts of EO. Their three-dimensional construct of EO includes three core attributes of the entrepreneurial firm: (i) proactiveness, (ii) innovativeness, and (iii) risk-taking. Later, Lumpkin and Dess (1996) expanded this concept to five dimensions, although the scholarship views this construct as a parallel one, as it additionally includes (iv) competitive aggressiveness and (v) autonomy. Moreover, Covin and Lumpkin (2011) – the authors of the two previous concepts – postulated that these two constructs (three- and five-dimensional) do not contradict each other, as they should instead be perceived from different and independent perspectives. Of course, there emerged other approaches to the conceptualization of EO in the literature. For example, Anderson *et al.* (2015) view EO in two non-interchangeable dimensions: (i) entrepreneurial behaviour and (ii) managerial attitudes towards risk. Most recently, some argue that EO has no dimensions and is a complex unidimensional construct (Covin & Wales, 2012; Bhatt *et al.*, 2020). Others postulate to treat EO as a firm attribute or characteristic defined as autonomous and proactive action, aggressive risk-taking, and innovativeness simultaneous with taking advantage of future business opportunities caused by entrepreneurial windows (Al-Mamary & Alshallaqi, 2022). Despite the multitude of approaches to EO, the three-dimensional EO construct remains the most widespread one (Aguinis & Gabriel, 2022; Semrau *et al.*, 2016). Hence, most of the empirical investigations published over the last two decades utilize the EO measures proposed by Miller

(1983) and further developed by Covin and Slevin (1989) by applying a three-dimensional construct of EO (Table 1).

Table 1. Three elements of entrepreneurial orientation

Dimension	Characteristics	References
Proactiveness	Taking advantage of new opportunities. Recognition of future needs, problems, and changes. Anticipation.	Lumpkin and Dess (1996); Zahra (1996); Bhuian <i>et al.</i> (2005); Avlonitis and Salavou (2007); Zellveger and Sieger (2012)
Risk-taking	Ready to take bold action. Engaging with an uncertain outcome.	Stevenson and Jarillo (1990); Hornsby <i>et al.</i> (1993); Lumpkin and Dess (1996); Wiklund and Shepherd (2005); Kropp <i>et al.</i> (2008)
Innovativeness	Creativity, ingenuity, and willingness to experiment. Openness to technical progress. Upgrading and improvements.	Covin and Slevin (1989); Yeoh and Jeong 1995; Lumpkin and Dess (1996); Pitt <i>et al.</i> (1997); Laforet (2013); Kropp <i>et al.</i> (2008)

Source: own elaboration of Wach (2017) and Głodowska (2019).

Miller (1983, p. 771) underscores that “[t]he interactive inter-relations of the three prominent attributes of innovativeness, risk-taking, and proactiveness are the highly significant characteristics that collectively characterize EO.” We should nevertheless state that not all three dimensions of EO must always appear at a high level, as the strict theoretical approach is questioned (Wach, 2017). Different levels of the three dimensions can equally shape EO of a particular firm (Kreiser *et al.*, 2002). Moreover, there are some interdependences between particular elements of entrepreneurial orientation. Finally, Civek *et al.* (2022) observed that even in Europe, the perception or risk-taking and innovativeness differ across cultures and countries.

1.1.1. Entrepreneurial orientation: Proactiveness

Proactiveness is the component of EO that allows for a clear division of firms into proactive and reactive. A covetable modern business feature is proactiveness, which enables taking advantage of unimaginable market opportunities (Al-Mamary & Alshallaqi, 2022). Therefore, entrepreneurial endeavours are often caused by proactiveness in the innovations’ involvement (Angelova & Pastarmadzhieva, 2020). Proactiveness is a firm’s ability to react to entrepreneurial opportunities in a hypercompetitive and hyper-turbulent environment. It enables firms to adapt to new market circumstances and new products and services. Instead, the reactive actions happen after an event and are forced, not anticipated. Proactiveness refers to a firm’s desire to utilize new market opportunities, which means an anticipating identification of future needs (Wach *et al.*, 2022).

1.1.2. Entrepreneurial orientation: Risk-taking

Risk-taking is another element of EO, which means a firm’s tendency and readiness to engage in risky ventures with uncertain outcomes (Al-Hakimi *et al.*, 2020). Akbar *et al.* (2020) state that risk-taking happens in an unpredictable situation that exploits market opportunities, which is when firms invest many resources with little knowledge about the new situation. Al-Mamary and Alshallaqi (2022) underscore that risk tolerance and an entrepreneurial spirit are strongly linked. Vu and Nwachukwu (2021) found the moderating impact of risk-taking on the entrepreneurial alertness-profitability relationship. Moreover, risk-taking means entrepreneurs’ and managers’ eagerness to commit resources in defiance of a possible costly failure (Teles &

Schachtebeck, 2019). Not to mention that resources and competences significantly impact the internationalization process (Głodowska *et al.*, 2022).

1.1.3. Entrepreneurial orientation: Innovativeness

Innovativeness is an element of EO that boils down to creativity and willingness to experiment in launching new products (Wach *et al.*, 2022). These activities supported within the human capital management systems are recognized as crucial for competitiveness ensuring (Mishchuk *et al.*, 2022). Innovativeness is a firm's penchant for active support for the creation and implementation of innovative insights, experimenting with alternative strategies, and improving current products or services (Al-Mamary & Alshallaqi, 2022). Many scholars recognize innovations, innovative potential, and innovativeness as drivers for the growth of firms and a key stimulus for internationalization of firms (Akbar *et al.*, 2020; Bigos & Wach, 2021). Innovativeness and broader entrepreneurial orientation are considered parts of firm strategy and corporate culture, the starting points of proactiveness culture (Boojihawon *et al.*, 2007). Particularly, support for the innovativeness of the employees, especially those of younger groups, became an important feature of the corporate culture and employer brand, especially as this is typical for international firms (Samoliuk *et al.*, 2022). This trend is supported also within corporate intrapreneurship based on the involvement of entrepreneurial employees, and the creation of a working climate conducive to undertaking entrepreneurial initiatives (Piecuch & Szczygieł, 2021).

1.2. Overview of prior studies

Recent years have seen dynamic developments in firm internationalization and international business theories, which resulted in numerous extensive studies on international entrepreneurship (IE). Prior studies show that entrepreneurial orientation (EO) is one of the key success factors enhancing firm internationalization processes (Akbar *et al.*, 2020; Chowdhury & Audretsch, 2021; Głodowska *et al.*, 2019; Kusa, 2020; Hernández-Perlines & Ribeiro-Soriano, 2023; Wach *et al.*, 2018). Territorial expansion is undoubtedly an essential market opportunity for development and growth, especially beyond home country borders. Internationalization as a response to a market opportunity naturally proceeds in different ways. Research results from the perspective of entrepreneurial orientation and recognition of market opportunities show new insights into firm internationalization processes. Entrepreneurship is a multithreaded, multifaceted, heterogeneous, and above all, ambiguous concept, which is difficult to quantify and include in economic research. Nevertheless, in a broad sense, entrepreneurship conceptualized as EO helps us to operationalize entrepreneurship and enables entrepreneurship theory's application to international business investigations.

In previous studies, the impact of entrepreneurial orientation on firm operations – including internationalization – has been extensively documented (Wach *et al.* 2023; Raats & Krakauer, 2020). This research field seems recognized and obvious. Moreover, it seems evident that EO dimensions imply each other, although there is no clear research evidence for this. Linton (2019) concurs that EO studies show no clarity regarding mutual implications between its dimensions. Therefore, we do not know whether the dimensions are related or act independently of each other (Covin & Miller, 2014). Miller (2011) suggests not to look at entrepreneurial orientation as a uniform construct but as a component of such sub-components as risk-taking, proactiveness, and innovation.

The EO construct can be compared to communicating vessels. In the original description of proactiveness, Miller (1983, p. 771) indicates that it is related to innovative activity: “inventing proactive innovations.” This approach highlights certain links between proactiveness and innovativeness. Based on the literature review, Dembek *et al.* (2009) built a

conceptual model assuming that company innovativeness can be supported by the other four dimensions of EO (risk-taking, proactiveness, autonomy, and aggressiveness). Maciejewski *et al.* (2023) proved that proactiveness and risk-taking stimulate the innovativeness of internationalized firms. In turn, on a sample of 227 SMEs operating in 14 industries from four countries (Australia, Sweden, Mexico, and the Netherlands), Tang *et al.* (2009) verified that innovation and risk-taking are fundamentally driven by proactiveness and perception of opportunity in the industry. Overall, their study indicates that proactiveness is the key causative factor in the entire construct of entrepreneurial orientation. Thus, there emerges a hierarchical structure between the three dimensions of EO.

The relationship between risk, innovativeness, and proactiveness is particularly important in the case of born globals and global start-ups. Thanks to this proactiveness, these firms can take advantage of their inherent features: risk-taking and innovativeness (Casillas & Moreno-Menéndez, 2014; Messina & Hewitt-Dundas, 2021). In our approach, we pay special attention to proactiveness. Proactiveness is defined in every EO approach, but research places insufficient emphasis to the matter (Zhao & Smallbone, 2019). If we define proactiveness as reacting to entrepreneurial market opportunities, it moves to the centre of entrepreneurial focus. The literature on the subject confirms that EO is of great importance for recognizing and exploiting market opportunities (Wach *et al.*, 2023). Moreover, research demonstrates that risk-taking and innovativeness impact the recognition of opportunities (Sanhokwe, 2022). For example, Kropp *et al.* (2007) believe that in the case of internationalization, decision-making occurs under conditions of uncertainty, so the recognition of opportunities is more evident in organizations characterized by risk-taking. The ability to identify opportunities depends on the readiness and alertness to changes in the environment. Organizations characterized by innovativeness and risk-taking are better predisposed to identify and more effective in engaging opportunities (Anwar *et al.*, 2022).

2. Methodological approach

2.1. Research sample

Our empirical research employed a qualitative approach and a survey. The official Polish National Business Register REGON was used to select the research sample. We applied random stratification sampling based on the following criteria: (i) only internationalized firms, (ii) firms of all sizes but with a small share of microenterprises (as the least internationalized) and large enterprises (as the smallest group in the population). Both of them made up to 10–15% of the final sample, while small and medium-sized enterprises made to 25–45% of the final sample.

At first, we drew 7100 business units from the register for the further study. It was impossible to contact 3787 firms due to incomplete, old, or missing information. We decided to collect the questionnaires using the computer-assisted telephone interview technique (CATI). All telephone interviews were conducted by pollsters from a professional market research agency. Finally, we received 355 fully completed questionnaires. It means that the response rate was 10.7%. The research sample was diversified (Table 2).

Table 2. Characteristics of the research sample

Criteria	Categories	Measures
Size of the firms (in %)	micro	14.1
	small	43.1
	medium-sized	29.8
	large	13.0
Sector of the economy (in %)	agriculture	1.7
	manufacturing	56.4
	construction	1.9
	trade	22.4
	service	17.6
Familianness (in %)	family firms	45.0
	non-family firms	55.0
Age of the firms (in years)	Average	24
	Min	1
	Q1	14
	Median	20
	Q3	25
	Max	183

Source: own elaboration of the survey ($n=355$).

2.2. Structural equation modelling

We used structural equation modelling (SEM) in this study. The method is typically used to explain multiple statistical relationships simultaneously through visualization and model validation. This method combines factor analyses and multiple regression analyses (Dash & Paul, 2021), enabling the verification and testing of hypotheses about relationships between observed and latent (unobserved) variables. Notably, latent variables are not measured directly, so their values are (indirectly) estimated from observed variables. In the covariance-based analysis (CB-SEM), latent variables are reflective. The observed indicators stem from the latent variable that manifests itself in their form.

Among CB-SEM estimators, the literature favours the maximum likelihood method (ML; Hair & Alamer, 2022). However, we applied this method only for small deviations from the normal distribution, because footing for the use of the estimators was the assumption of a multivariate normal distribution of observed variables. When the distribution of observed variables does not meet this criterium, the asymptotically distribution-free (ADF) or generalized least squares (GLS) methods should be used to estimate the model. However, the ADF method requires a sample size of at least 200–500 observations, while the GLS method requires a larger sample of more than 2500 observations (Konarski, 2014).

The use of latent variables first requires the construction of a measurement model to determine the impact of the observed variables. In the next step, a structural model is built that captures the strength and direction of the interaction of the latent variables.

The measurement model requires a reliability analysis of the observed variables, which determine the value of particular latent variables. Measurement reliability is determined by Cronbach's alpha coefficients and composite reliability (CR). Most studies assume that the value of CR coefficients for particular latent variables should be more than 0.70. If this condition is not met, the observed variables with the smallest factor loadings should be removed from the model in order to achieve greater internal consistency of the latent variables.

Several indicators are usually used to assess the goodness of fit of the CB-SEM model (Kacprzak, 2018; Dash & Paul, 2021). First and foremost, this is the Chi-squared test of the

degree of freedom (CMIN/df) relationship. The index value below 5 is considered a good model fit measure. Another one is the goodness of fit index (GFI), which should exceed 0.90 for a well-fitted model. The same threshold value (0.90) applies to the adjusted goodness of fit index (AGFI), which adjusts the GFI with degrees of freedom. Root mean square error of approximation (RMSEA) is considered the most informative indicator of fit. A satisfactory model fit should have an RMSEA value of less than 0.08. A good fit requires an RMSEA value of less than 0.05. Another indicator is the comparative fit index (CFI), whose value in a well-fitted model should exceed 0.90. An additional measure is the parsimonious comparative fit index (PCFI), which should show values above 0.5.

2.3. Variables

In our study, we used the three-dimensional construct of entrepreneurial orientation introduced by Miller (1983), along with its operationalized by Covin and Slevin (1989) and Covin and Miller (2014). In addition to the EO construct, we used its three subconstructs: (i) innovativeness (INNO); (ii) proactiveness (PROACT); and (iii) risk-taking (RISK). In total, we used nine detailed variables (see Table 3). For all calculations, we used SPSS Amos 26 computer software.

Table 3. Observed indicators of the dimensions of entrepreneurial orientation

Latent variable	Observed variable
Proactiveness (PROACT)	The company typically initiates activities to which competitors then respond (PROACT1)
	The company is very often a leader introducing new products/services, management techniques, or technologies (PROACT2)
	The company usually adopts a very competitive posture of running ahead of competitors (PROACT3)
Risk-taking (RISK)	Managers have a strong inclination towards high-risk projects (RISK1)
	Managers believe that bold and large-scale opportunity discovery is essential to achieving company goals (RISK2)
	Under conditions of uncertainty, decisions are made boldly and aggressively (RISK3)
Innovativeness (INNO)	Managers prefer strong emphasis on R&D, technology leadership and innovation (INNO1)
	The company has launched a very large number of new product lines or services over the past five years (INNO2)
	Changes in product or service lines have typically been significant over the past five years (INNO3)

Source: own elaboration.

3. Conducting research and results

Using SPSS Amos 26, we assessed the impact of two dimensions of entrepreneurial orientation (EO) – innovativeness and risk-taking – on the third dimension of EO: proactiveness. The EO dimensions are reflective latent variables that manifest their presence through observed indicators. We determined the values of observed indicators based on managers' responses to three questions for each EO dimension. We asked managers to indicate on a seven-point Likert scale the degree to which they agree or disagree with the statements listed in Table 3.

Firstly, we determined, that the observed variables do not have a multivariate normal distribution. Thus, the asymptotically distribution-free method (ADF) should be used to estimate the model.

The measurement model estimated based on this method is presented in Figure 1. The double-sided arrows between the latent variables indicate the strength of the correlation between the variables. The variables *innovativeness* (INNO) and *proactiveness* (PROACT) are the most strongly correlated, with a correlation coefficient value of 0.63 between them.

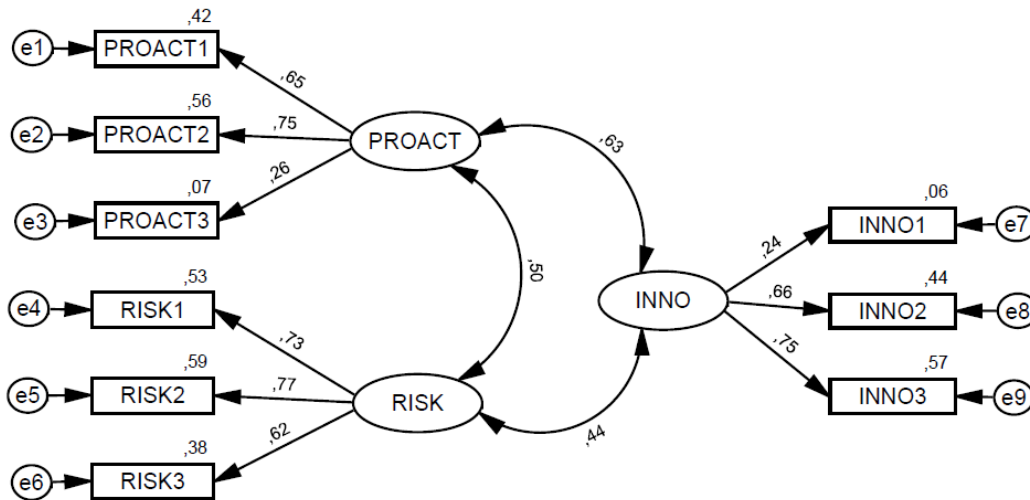


Figure 1. Measurement model of the dimensions of entrepreneurial orientation

Note: All coefficients are standardized.

Source: own elaboration of the survey ($n=355$) in SPSS Amos 26.

Moreover, Figure 1 shows the values of factor loadings of observed variables in the construction of latent variables. The resulting values of Cronbach's alpha coefficients and composite reliability (CR) are shown in Table 4. CR was calculated according to the following formulas:

$$CR = \frac{(\sum_{i=1}^n \lambda_i)^2}{(\sum_{i=1}^n \lambda_i)^2 + (\sum_{i=1}^n \varepsilon_i)^2},$$

in which λ is the standardized factor loading for item i ($i=1,2,3$) for each observed variable and ε is the respective error variance for item i . The error variance (ε) is estimated based on the value of the standardized factor loading (λ) as:

$$\varepsilon_i = 1 - \lambda_i^2.$$

Table 4. Estimated parameters of the confirmatory factor analysis and composite reliability

Latent variable	Observed variable	Factor loadings	Errors	Composite reliability (CR)
PROACT	PROACT1	0.647	0.581	0.585
	PROACT2	0.750	0.438	
	PROACT3	0.261	0.932	
RISK	RISK1	0.728	0.470	0.748
	RISK2	0.765	0.415	
	RISK3	0.620	0.616	
INNO	INNO1	0.237	0.944	0.586
	INNO2	0.662	0.562	
	INNO3	0.755	0.430	

Source: own elaboration of the survey ($n=355$) in SPSS Amos 26.

The data in Table 4 indicated that the composite reliability (CR) values for the INNO and PROACT variables were too low (below 0.70). Therefore, the observed variables INNO1 and PROACT3, which had the lowest factor loadings, were removed from the model. The remaining variables were used to create a structural model, which is shown in Figure 2.

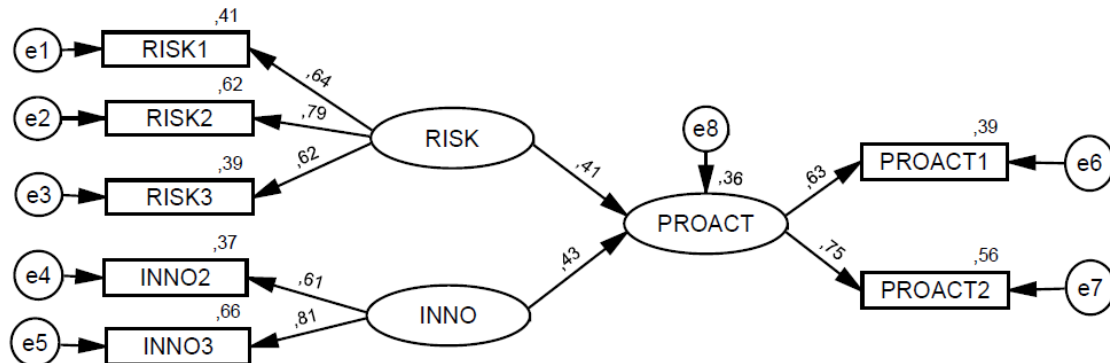


Figure 2. Effect risk and innovativeness taking to proactiveness

Note: all coefficients are standardized.

Source: own elaboration of the survey ($n=355$) in SPSS Amos 26.

The standardized path coefficients (β) seen in Figure 2 and Table 4 suggest the positive effect of *innovativeness* (INNO) and *risk-taking* (RISK) on *proactiveness* (PROACT). Thus, we can positively answer the main research question and two detailed research questions (RQ1 and RQ2). The unstandardized values of path coefficients (b) shown in Table 4 have better interpretative utility. We can use them because the same seven-point Likert scale was assigned to all observed variables. They reveal by how many scale units will the value of the explanatory variable (PROACT) change if the values of the explanatory variables (RISK and INNO) change by one unit. A one-point higher level of *risk-taking* (RISK) explains a 0.45-point higher level of *proactiveness* (PROACT). In contrast, a one-point increase in *innovativeness* (INNO) explains a 0.41-point shift in *proactiveness* (PROACT) level on the scale. Both explanatory variables are statistically significant ($p < 0.001$). The R^2 value (0.36) means that the level of *risk-taking* (RISK) and *innovativeness* (INNO) explain 36% of the variation in *proactiveness* (PROACT). In the social sciences, this represents a relatively high value, as levels as low as 10% are usually considered acceptable, and those exceeding 20% are considered high (Hair, *et al.*, 2012).

Table 5. Path coefficients of the model and their level of significance: measures of model fit

		Path coefficients			
Dependent variable	Independent variable	β	b	p	
PROACT	RISK	0.41	0.45	<0.001	
	INNO	0.43	0.41	<0.001	
R^2		0.36			
Measures of model fit					
Fit indices	Threshold value	Model			
CMIN/df	<5.00	1.914			
GFI	>0.90	0.972			
AGFI	>0.90	0.935			
RMSEA	<0.08	0.051			
CFI	>0.90	0.943			
PCFI	>0.50	0.539			

Source: own elaboration of the survey ($n=355$) in SPSS Amos 26.

As shown in Table 5, the model is a good fit, as evidenced by all the fit measures used in the study. Therefore, the obtained results are statistically significant.

We should keep in mind that proactiveness is an important dimension of entrepreneurial orientation. Organizations distinguished by proactiveness are not passive recipients of environmental stimuli, but they themselves create the environment in which they operate (Zhao & Smallbone, 2019). Our research shows that proactiveness is driven by innovativeness (RQ1) and risk-taking (RQ2). Our findings allow for an affirmative answer to both questions posed in the introduction of the article. We believe that these attributes are especially important today. In the face of a highly uncertain situation in the environment, proactiveness stimulated by the lack of risk aversion allows firms to control environmental pressures. Moreover, proactiveness determined by innovativeness allows them to use randomness as an opportunity, trying to take advantage of it instead of avoiding it. Similar to Tang *et al.* (2009) and Dembek *et al.* (2009), have we provided evidence that interactions between EO dimensions matter. Our findings indicate that a firm's proclivity for proactiveness is determined by the other two dimensions of EO. According to Tang *et al.* (2009), proclivity for proactiveness influences innovativeness and risk-taking behaviours. Both these approaches are consistent with treating a proactive organization as desiring self-achievement and rent-seeking.

Conclusion

Entrepreneurial orientation seems to be an important contribution for the internationalization of firms considered from the perspective of international entrepreneurship. Moreover, a separate consideration of the different dimensions of EO allows us to understand even more. Our research proves that risk-taking, proactiveness, and innovativeness are not some averaged components of EO, but they imply each other. Our calculations using CB-SEM confirmed the positive effect of *innovativeness* (INNO) and *risk-taking* (RISK) on *proactiveness* (PROACT). Notably, the level of *innovativeness* (INNO) and *risk-taking* (RISK) explained 36% of the variation in *proactiveness* (PROACT), which is viewed as high in social sciences, including business studies.

The results reported in the article have practical and policy implications. Firstly, we should understand the role of each of the EO dimensions and approach them more individually. We may assume that organizations characterized by lower innovativeness can be less proactive, therefore less effective in identifying market opportunities and responding to changes in the environment. The same can be said about risk aversion. The stronger the risk-taking attitude, the more proactive the organization. Thus, we suggest that organizations should implement innovative and risk-taking behaviours to enhance their core feature of proactiveness. This will allow firms to set proactive objectives and adopt proactive business models. Increasing proactiveness can bring many benefits, including financial performance, organization development, and strategic advantages. Moreover, we should include these insights into future managers' and entrepreneurs' educational processes.

Like all empirical research, this too is not without some important limitations. Firstly, the sample is not random and representative of the whole population. Therefore, it is not possible to absolutize the results to the whole population of Polish businesses. Therefore, future research should focus on the relationship in a diversified research sample. An interesting approach would be to conduct international comparative research. Scholarship agrees that cultures differ, for example, in their approach to risk, so future studies could verify whether this transfers to firms and affects their proactiveness. Moreover, we see the need for studies that document the specific effects of the identified relationship between EO dimensions. In this

approach, proactiveness should be treated as a mediating variable between risk-taking, innovativeness, and various effects of firms' entrepreneurial activities.

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