



# **Intrapreneurs are Laterborns: Exploring the Effects of Birth Order on Managers' Entrepreneurial Intentions and Risk Taking**

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**Abstract.** This paper investigates the effects of birth order on entrepreneurial intention (EI) and risk taking propensity of managers. Data from 230 managers from different industries in Kosovo were collected through self-report questionnaires. The results show that laterborns demonstrate a higher EI and risk taking propensity compared to their firstborn counterparts. Our findings have important implications for practitioners and researchers since we investigate the EI and risk taking propensity of managers in a non-Western culture. Moreover, given that individual characteristics cannot be changed, the knowledge of the impact of birth order on managers' attitudes towards intrapreneurship and risk taking is indispensable for organizations. Information about managers' EI and risk taking related to their birth order can be useful for fostering an entrepreneurial climate for managers of certain birth orders to act intrapreneurially rather than spin out.

**Keywords:** birth order, entrepreneurial intention, risk taking, managers, intrapreneurship, Eastern Europe.

## **1. Introduction**

While the debate whether entrepreneurs are born or made is all but terminated, the birth order thesis is vivid among entrepreneurship researchers as well. Entrepreneurship research has been dominated by endeavors to answer the question 'who is the entrepreneur', providing a plethora of factors and antecedents that predict or influence entrepreneurial behavior (Stanworth, et al., 1989). The

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question of what spurs entrepreneurship in people is a burning one, igniting researchers to ‘move heaven and earth’ in pursuit of the answer. Entrepreneurship literature protrudes entrepreneurial intention (EI) as the single best predictor of entrepreneurship (Krueger Jr, Reilly and Carsrud, 2000), and risk taking propensity as the hallmark of the entrepreneurial personality (Zhao, Seibert and Lumpkin, 2010). The ongoing quest for the factors that explain or predict entrepreneurship through EI and risk taking propensity has produced countless candidates, which can be grouped into personal, environmental, social, and cultural (Ozaralli & Rivenburgh, 2016). Two of the most applied intention-based models for understanding and predicting entrepreneurship are Ajzen’s (1991) Theory of Planned Behavior and Shapero and Sokol’s (1982) Entrepreneurial Event Theory (Krueger Jr, et al., 2000). However, the most classic topic in entrepreneurship research is the impact of personal characteristics on EI (Sun, et al., 2020) and risk taking propensity (Slovic, 1964), which remains actual to this day. Like any individual social behavior, entrepreneurship has been explained as a function of the person and the environment (Lewin, 1936). One of the most important contributions in the entrepreneurship literature is the entrepreneurial process model proposed by Shane (2003). The framework indicates that both environmental and individual attributes influence the entrepreneurial process. Shane distinguishes between psychological and demographic factors. Most of the research on individual factors as predictors of EI was undertaken independently of any established conceptual framework, leaving the choice of the characteristics studied to the authors’ preferences.

Personality traits and demographic information are the two most common theoretical and methodological approaches used in researching the characteristics of entrepreneurs (Robinson, et al., 1991). According to Wickham (2006), a combination of innate, acquired, and social factors contribute to the development of entrepreneurial attitudes. The author purports that innate personality develops through acquired experiences in social interactions, thus viewing entrepreneurship from a social development perspective. One important social factor that has been linked to entrepreneurship is birth order (Vladasel, 2021).

Birth order has been used as a predictor variable in management and entrepreneurship research; however, to the best of our knowledge, none of the previous studies has investigated the relationship between birth order and the entrepreneurial behavior of managers or intrapreneurship. The birth order hypothesis in EI and risk taking propensity remains inconclusive (Black, Grönqvist and Öckert, 2018; Hisrich, 2000; Vladasel, 2019), whereas in management literature, it has been largely neglected (Berisha, Krasniqi and Lajçi, 2022; Jaskiewicz, et al., 2017). As managers largely influence organizational outcomes, it is essential to understand what drives their entrepreneurial intention and risk taking propensity, which are the prerequisites for attention and action (Bird, 1988). Whether they strive to improve and innovate organizational processes by acting intrapreneurially or incline toward the exit is important for

companies (Klotz, et al., 2021). We investigate whether birth order influences entrepreneurial intention and risk taking propensity using a sample of managers in an emerging economy context. Drawing on the existing literature, we outline the conceptual framework of our research (Figure 1).

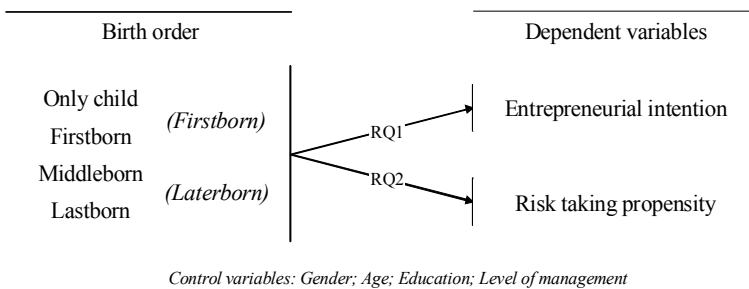
Our current understanding of the influence of birth order on entrepreneurial and managerial outcomes and entrepreneurial behavior of managers is shaped by Western context scholarship (Björklund & Salvanes, 2010). Given the limited focus (Liu, et al., 2021) and prevailing calls for further investigation in the non-Western context (Campbell, Jeong and Graffin, 2019), we explore birth order in a sample of managers from Kosovo, an emerging economy. With our study we strive to answer the following research questions:

*RQ: Does birth order impact the entrepreneurial intention (RQ1) and the risk taking propensity (RQ2) of managers?*

In this quest, we explore new research avenues by providing a threefold contribution. First, we test the birth order hypothesis in management, which is largely unexplored. Second, we explore whether birth order predicts if managers will act entrepreneurially, looking into the relationship between EI and risk taking propensity. Third, we look into this unexplored relationship in an emerging economy’s context, providing an emerging economy perspective to the overwhelming Western traditional body of research.

The remainder of the paper is organized as follows. A literature review on birth order research is featured, focusing on managerial entrepreneurship. Then, the birth order-EI and risk taking propensity relationships are outlined, followed by the research context. Methods and results are presented, followed by the discussion and implications section. Subsequently, limitations and avenues for future research are drawn.

**Figure 1:** Conceptual model and research questions



## 2. Birth Order Research

Early life family experiences of individuals contribute to the development of habits, traits, and behaviors, including entrepreneurship (Reitan & Stenberg, 2019). Experiences and personality traits associated with birth order are of interest to researchers. Considerable effort has been put into birth order research from different perspectives (Eckstein, et al., 2010). Since the introduction by Sir Francis Galton (1874) and the consolidation by Adler (1928), birth order research has kindled in almost every field of science. However, given the conceptual and methodological shortcomings, birth order research has not matured into a comprehensive theory (Hartshorne, Nancy and Hartshorne, 2009; Robinson & Hunt, 1992). Notwithstanding the critique (Ernst & Angst, 1983), birth order research draws considerable and continued attention among social science scholars.

The most prominent proponent of birth order research, Sulloway (1996), maintains that birth order is the best predictor of social attitudes. The overwhelming majority of research uses the ordinal position instead of psychological order (Eckstein, et al., 2010). We adopt the former position, which is an Adlerian perspective. Birth order is operationalized as firstborn, middleborn, lastborn, and only child.

*Firstborns* are typically more organized, conforming, and identified with parents (Sulloway, 1996), but the least creative (Herrera, et al., 2003) and least spontaneous (Berisha, et al., 2022) than their siblings. *Middleborns* enjoy less in terms of parental investments (Stewart, 2004) and are always in a race with firstborns to develop a role in the family (Gfroerer, et al., 2003) which makes them good mediators, negotiators, and diplomatic, emphasizing compromising and peace (Groessl, 2022; Leman, 2009). *Lastborns* are typically portrayed as more extroverted, disobedient, and creative (Herrera, et al., 2003) and they are often perceived to be highly altruistic, warm, and tender-minded (Saroglou & Fiasse, 2003). *Only children* tend to be ultra perfectionists, logical, and they never have to compete with siblings for parental attention or resources (Leman, 2009); however, sibling deprivation negatively affects their social competence (Kitzmann, Cohen and Lockwood, 2002).

The four categories of birth order have been alternatively operationalized and investigated in pairs. The practice of grouping birth orders into two birth order categories is well established in the literature (Paulhus, Trapnell and Chen, 1999). Specifically, adjusting sibships into two groups and contrasting firstborns with laterborns is a customary tactic in birth order research (Freese, Powell and Steelman, 1999). For instance, the extant literature has evidenced similarities between middle borns and lastborns and systematically grouped them into the laterborn category (Salmon & Daly, 1998). While firstborns have an already established role in the family and focus on building a stable career, laterborns are more easygoing, sociable, creative, and are more likely to be self-employed

(Black, et al., 2018). Laterborns need to fill the family and occupational niche; therefore, they take over the reins of their life, take risks, and are willing to do things differently (Leman, 2009).

### **3. Birth Order as a Predictor of Entrepreneurship Among Managers**

Management literature has been reluctant to exploit how family aspects (including birth order) impact individuals and organizations (Jaskiewicz, et al., 2017). Birth order has rarely been employed as an individual difference or a demographic characteristic (Hudson, 1990). The birth order concept has been employed in management and entrepreneurship research, linking birth order to family firm succession and R&D investments (Cavicchioli, Bertoni and Pretolani 2018; Li et al., 2021; Schenkel, Yoo and Kim, 2016), entrepreneurship (Robinson & Hunt, 1992), risk taking (Campbell et al., 2019; Gilliam & Chatterjee, 2011; Krause et al., 2014; Lejarraaga et al., 2019), leadership (Black et al. 2018; Dagenais, 1979; Hardy, 1972), managerial achievement (Berger & Ivancevich, 1973; Popp & Davis, 1976), decision making and conflict handling styles (Berisha, et al., 2022) and emotional intelligence (Venkateshwar & Warriar, 2017). Whereas the simultaneous interplay between birth order, EI, and risk taking has been largely overlooked. This holds true especially in the non-Western context, an area of research we shed light on with our study.

The first account of birth order as a variable in entrepreneurship research dates from 1977. In a study among women in managerial positions, Hennig and Jardim (1977) found that they tend to be firstborns. Ever since, entrepreneurship research has used birth order as a predictor of outcomes with mixed and inconclusive results (Black, et al., 2018).

There is a growing body of research investigating individual-level characteristics of managers as antecedents of corporate entrepreneurship/intrapreneurship (Luc et al., 2018; Wei & Ling, 2015). In a study of Dutch consultant workers, De Jong et al. (2015) investigate the relationship between entrepreneurial behavior and several individual characteristics (proactive personality, educational attainment, age, gender, and tenure). Hornsby et al. (2009) find that entrepreneurial action among managers is influenced by their managerial level, with senior and middle-level managers more likely to exert intrapreneurship than first-level managers. Karadağ and Şahin (2021) maintain that managers have largely been ignored in entrepreneurship research thus far. Using a sample of 190 Turkish respondents, the authors investigate the relationship between entrepreneurial knowledge and intention among middlelevel managers. According to Karadağ and Şahin (2021), managers as decision-makers play entrepreneurial roles in sensing and exploiting opportunities, orchestrating resources, allocating R&D investments, and developing new business models to achieve sustainable competitive advantage.

The central hypotheses in the entrepreneurs' birth order research are that firstborns are equipped with some characteristics that predispose them to manifest entrepreneurial behavior (Bowen & Hisrich, 1986; Neider, 1987), and lastborns are rebellious and therefore prone to opt for entrepreneurial ventures (Sulloway, 1996). Entrepreneurship-focused studies using birth order as a predictor variable overwhelmingly rely on EI as a proxy for actual entrepreneurial behavior (De Pillis & Reardon, 2007; Ozyilmaz, 2011). Our endeavor is to test whether EI is a firstborn or a laterborn matter. We focus on two of the most prevalent indicators of entrepreneurship, namely EI and risk taking propensity.

### 3.1. Birth Order and EI

Many studies (Björklund & Salvanes, 2010; Vladasel et al., 2021) have exposed that shared factors or experiences of siblings explain a notable amount of likelihood of becoming entrepreneurs. Vladasel et al. (2021) purport that families create differences between siblings that help explain their entrepreneurial proclivities, with the impact increasing as the birth order effect is accounted for. Han and Greene (2016) found that lastborns from non-entrepreneurial families are more likely to be self-employed, whereas Tognazzo, Gubitta, and Gianecchini (2016) found that having older siblings increases the EI of laterborns. Ozyilmaz (2011) found no evidence of birth order effect on EI in the pre-venture stage of entrepreneurship. EI is the best predictor of entrepreneurship (Paulhus, et al., 1999). EI is directed not only towards new venture creation but also new value creation in existing ventures (Bird, 1988), which has come to be known as corporate entrepreneurship (Kuratko, Ireland and Hornsby, 2004) or intrapreneurship. Among the most extensively used individual characteristics in intrapreneurship are gender, age, education, and tenure (Adachi & Hisada, 2017; De Jong et al., 2015; Henao-García, Arias-Pérez and Lozada-Barahona, 2015; Urbano & Turró, 2013), which is not the case with birth order.

### 3.2. Birth Order and Risk Taking Propensity

Research on the relationship of birth order with risk taking precedes its introduction in entrepreneurship research (Eisenman, 1987). Birth order has been associated with risk taking propensity, which is the single most important determinant of entrepreneurial interest. The birth order-risk taking relationship is tested predominantly in social behaviors other than entrepreneurship (Averett, Argys and Rees, 2011). In a meta-analysis of studies involving birth order and preference for dangerous sports, Sulloway and Zweigenhaft (2010) found that laterborn offsprings are more likely to demonstrate risk taking behavior. Examining a German household survey, Lejarraga et al. (2019) found no birth-

order effects on risk taking. In a rare non-Western context study, Botzet, Rohrer, and Arslan (2021) found no birth-order effects on risk aversion. Campbell et al. (2019) have investigated how birth order relates to the strategic risk taking of CEOs in South Korean family businesses and US public firms. Their findings suggest that laterborns are more prone to engage in risk taking.

Risk taking propensity is considered the single most distinguishing characteristic of entrepreneurs (Brockhaus Sr, 1980; Kesidou & Carter, 2018) and a powerful antecedent of EI (Barbosa, Gerhardt and Kickul, 2007). Wang, Wang, and Mu (2022) postulate that risk taking is the explanatory mechanism in the relationship between birth order and entrepreneurship.

#### **4. Research Context**

The majority of research investigating the birth order effect has been conducted in the USA and other Western countries (Björklund & Salvanes, 2010). None of the theoretical models of birth order effects (resource dilution, confluence model, family niche model) take into account cultural specificity (Botzet, et al., 2021). Given that contextual and cultural differences hamper generalization of research to other countries, it is valuable to explore birth order in non-Western cultures (Steelman, et al., 2002). To date, birth order research in an emerging economy context has been sparse. Lotz and Buys (2006) have investigated whether heritage factors predict entrepreneurial behavior in the South African context. Their findings suggest that there is no significant relationship between birth order and the likelihood of becoming high-technology entrepreneurs. In another study using a student sample, Ozyilmaz (2011) investigated how individual EI is shaped by demographic characteristics, birth order being one of them. The author found no support for the birth order argument, likely denoting the cultural context. It is suggested that the Turkish cultural value of high in-group family collectivism explains why there are no birth order differences when it comes to entrepreneurship (Ozyilmaz, 2011). Whereas a recent study by Wang et al. (2022) shows that in the Chinese context, birth order positively influences entrepreneurship and emphasizes the role of risk taking as the underpinning mechanism.

What holds true for birth order research in a non-Western context is even more salient in the Balkans context. Fletcher, Huggins, and Koh (2008) argue that small business owners in Western Balkans (WB) are autonomous and engage in entrepreneurship to generate livelihood for their families or households. Once employed, with an imperfect job market plagued by a labor shortage, employees tend to stick to their jobs. Little research is devoted to the EI of employees in the WB context. We investigate EI and risk taking propensity of managers in Kosovo, the youngest Balkan and European country, with the highest percentage of youth population.

## **5. Methodology**

### **5.1. Procedure and Participants**

This research belongs to a larger study of individual differences as predictors of organizational practices of managers. The questionnaire contained demographic questions and self-report measures adopted by previous research. A back-translation procedure was followed to ensure appropriate translation of the items into Albanian (Brislin, 1970). The data were collected through a survey of managers of Kosovan companies varying in size and industry. We utilized a database of businesses provided by Kosovo's Chamber of Commerce, and we targeted 256 companies randomly. Since our study is not on the firm level, our inquiry implied that we want to survey individuals in managerial positions. Of the companies approached, 140 responded positively and gave us permission to contact and survey managers. Since no sampling frame for managers exists in Kosovo, non-probability sampling is used (Cumming, 1990). Upon acceptance to take part in the study, questionnaires were dropped off to managers personally. No more than ten managers were surveyed from a single company. We collected 261 questionnaires, of which 230 were valid.

Table 1 summarizes the characteristics of the sample. Most respondents were male (74.3 %) and between 25 and 44 years old (67.4 %). Concerning birth order, middleborns are the most represented with 46.1 %. Firstborns and lastborns comprise 26.1 % and 21.3 % of the sample, respectively, whereas only children only 6.5 %. The majority of managers surveyed had a university degree (82.6 %) and a top-level position (60.0 %).



**Table 1:** Demographic characteristics

	N=230	%
<b>Gender</b>		
Male	171	74.3
Female	59	25.7
<b>Age</b>		
18-24 years old	24	10.4
25-34 years old	86	37.4
35-44 years old	69	30.0
45-54 years old	41	17.8
55+ years old	10	4.3
<b>Birth order</b>		
Only child	15	6.5
Firstborn	60	26.1
Middleborn	106	46.1
Lastborn	49	21.3
<b>Education</b>		
Non-University Education	40	17.4
University Education	190	82.6
<b>Level of management</b>		
Top Management	138	60.0
Middle/Low Management	92	40.0

## 5.2. Measures

*Birth order.* Respondents were asked to indicate their birth order by stating whether they are an only child, firstborn, middle born, or lastborn. Initially, we analyzed the effect of birth order on the dependent variables by distinguishing the former into four categories. Then, for particular model tests, we omitted only children and constructed a new birth order variable with two categories: firstborn and laterborn (grouping middleborn and lastborn). We followed the approach of previous authors who have contrasted firstborns with laterborns (Custódio & Siegel, 2020; Sulloway & Zweigenhaft, 2010; Lejarraga et al., 2019) and excluded only children as they are considered different from other birth orders on many dimensions (Suitor & Pillemer, 2007).

*Entrepreneurial intention.* The EI of managers was measured using six items from the Entrepreneurial Intentions Questionnaire (EIQ) (Liñán & Chen, 2009). According to the authors, there is strong evidence of the applicability of the EI measure regardless of cultural differences and sample characteristics. The questionnaire items were scored on a 5-point Likert scale indicating the level of

agreement. A sample item is “*I am ready to do anything to be an entrepreneur*” (1 = strongly disagree to 5 = strongly agree). Liñán and Chen’s (2009) study supports the psychometric properties of the measure, reporting a Cronbach’s alpha above 0.9. Previous studies (Berisha et al., 2022; Bullough, Renko and Myatt, 2014; Krasniqi, Berisha and Shiroka Pula, 2019; Ozaralli & Rivenburgh, 2016) have adopted the EI scale and support its psychometric properties. Cronbach’s alpha ( $\alpha$ ) was 0.88 in the current study.

*Risk taking propensity.* We measured managers’ risk propensity utilizing five items from the Dahlbäck Risk Propensity Scale (DRPS; Dahlbäck, 1990). Dahlbäck indeed is among the only researchers who investigates the link between individual differences and risk taking propensity. However, the originally planned scale showed low reliability in the current study ( $\alpha=0.55$ ) and led us to use only one item which comes reasonably close to the general risk taking question considered by Dohmen et al. (2011). The selected item was “*I often dare to do risky things which other people are reluctant to do*”. The respondents were asked to evaluate the pertinency of this statement (true=2 points; false=1 point; Palmer, et al., 2013).

*Control variables.* Gender (male and female), age (18–24 years old, 25–34 years old, 35–44 years old, 45–54 years old, and 55+ years old), education (non-university education and university education), and level of management (top management and middle/low management) are the four control variables in this study (Black, et al., 2018; Lejarraga, et al., 2019). The absence of control for sibship size is not uncommon in birth order research (Blake, 1989) and birth order effects are often consistent even in studies that do not account for sibship size (Sulloway, 1995).

### 5.3. Analytical Approach

We employed the linear regression model using STATA software to estimate the effect of birth order and other variables in EI and risk taking propensity. Linear regression is the prevailing approach in birth order studies (Zajonc & Sulloway, 2007). We run several cross-section regression analyses to reveal the impact of birth order and other variables (Table 3). In Models 1, 3 and 5, EI serves as the dependent variable, whereas in Models 2, 4 and 6, the dependent variable is risk taking propensity. The equations depicting the regression analyses can be written as:

$$(1) \text{ Entrepreneurial intention} = \beta_0 + \beta_1 X_i + \varepsilon_i$$

$$(2) \text{ Risk taking propensity} = \beta_0 + \beta_1 X_i + \varepsilon_i$$

EI is measured with six items taking values between 6 and 30.  $X_i$  represents the vector of independent variables and  $\varepsilon_i$  is the error term.  $X_i$  consists of independent variables influencing EI, such as birth order and other control variables (gender, age, education, and level of management). The second equation consists of the same set of explanatory variables to examine the impact of birth order on risk taking propensity. The proclivity towards risk taking is measured with one true/false item, taking values 1 or 2.

Models 1 and 2 test the full direct effect of birth order on EI and risk taking, respectively, controlling for gender and age only. In Models 3 and 4, two additional control variables were entered, namely education and level of management. Hitherto, the effect of birth order on the outcome variables is tested by operationalizing the former as a four-category variable, including firstborn, middleborn, and lastborn (only children are set as a reference category). Whereas in Models 5 and 6, we omitted only children, lumped middleborns with lastborns, and conducted a full set of analyses comparing firstborns and laterborns. Given their distinct characteristics evidenced by the previous literature and the small number of observations in the current study ( $N=15$ ), only children were excluded in Models 5 and 6. To conduct the tests, firstborns are set as a reference category. As a result, the estimate precision and robustness increased significantly. In order to check whether risk taking lies on the causal path from birth order to EI, risk taking propensity is also included in Models 3 and 5 for EI.

Despite common issues that characterize cross-section studies (e.g., lower R-squares; Koeber & Oberwittler, 2019), particular empirical results indicate a good fit of data and specified models. For instance, EI yields a satisfactory explanatory power in Model 5 ( $R^2 = 0.128$ ) and 3 ( $R^2 = 0.098$ ). Additionally, for each regression, the F-statistic indicates that the null hypothesis that the coefficients are jointly equal to zero can be rejected.

To address the heteroscedasticity, we have used the White-Huber standard error option; a technique used when facing minor problems arising from non-normality or large residuals in observations (Hamilton, 2012). In addition, we tested for multicollinearity using the Variance Inflation Factor ( $VIF < 2$ ), implying that multicollinearity was not a problem in our estimation.

## 6. Results

Table 2 contains descriptive statistics, correlations, and reliability coefficients of the study variables. Gender is negatively correlated with both EI (-0.07) and risk taking (-0.07), suggesting a negative (albeit non-significant) relationship between females and propensity towards intrapreneurship and risk taking. EI shows a significant negative correlation with the level of management (-0.17), implying a positive relationship between top-level managers and EI.

**Table 2:** Descriptive statistics, correlations, and reliability scores for study variables

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender <sup>a</sup>	.26	.44	-									
2. Age <sup>b</sup>	2.68	1.02	-.21**	-								
3. Education <sup>c</sup>	1.83	.38	.16*	-.11	-							
4. Level of management <sup>d</sup>	1.40	.49	.15*	-.22**	-.02	-						
5. Only child	.07	.25	.13	.05	.12	.00	-					
6. Firstborn	.26	.44	-.05	-.02	-.04	.00	-.16*	-				
7. Middleborn	.46	.50	.10	.09	-.04	.01	-.24**	-.55**	-			
8. Lastborn	.21	.41	-.14*	-.12	.01	-.01	-.14*	-.31**	-.48**	-		
9. EI	22.68	5.28	-.07	-.12	.02	-.17*	-.01	-.10	.05	.04	(.88)	
10. Risk taking propensity	1.84	.37	-.07	-.09	-.04	-.08	-.12	.07	-.02	.03	.10	-

Note: Cronbach's alpha reliabilities are in parentheses on the diagonal.

\* $p < 0.05$ ; \*\* $p < 0.01$

<sup>a</sup> (0 = male, 1 = female); <sup>b</sup> (1 = 18-24 years old, 2 = 25-34 years old, 3 = 35-44 years old, 4 = 45-54 years old, 5 = 55+ years old); <sup>c</sup> (1 = non-university education, 2 = university education); <sup>d</sup> (1 = top management, 2 = middle/low management); Birth order = dichotomous.

Table 3 shows the regression analysis results of the two research questions concerning the relationship of birth order with EI and risk taking. Initially, the first two models measure the effect of birth order on EI and risk taking, respectively, controlling for gender and age. In Model 1, the results show that lastborns (0.245) demonstrate a higher EI, followed by middleborns (0.172) and firstborns (0.0457). Whereas according to Model 2, middleborns (0.157) show a higher propensity for risk taking, followed by lastborns (0.131) and firstborns (0.109). Nevertheless, the results are not statistically significant.

Further, the results suggest that male managers tend to be more intrapreneurially (0.226) and risk taking (0.0627) inclined than their female counterparts, yet the results are not statistically significant. The results suggest that as managers age, EI tends to increase, whereas risk taking proclivity fades. Managers 55+ years old show a higher EI than younger cohorts (0.578). On the other hand, the youngest cohort of managers, between 18 and 24 years, show a higher tendency to take risks, whereas the older cohorts of managers have a less positive attitude towards risk taking. In both cases, the results are statistically significant.

In Models 3 and 4, education and level of management are entered as covariates. The results indicate that managers with a university degree show a lower EI (-0.155) and are less inclined to take risks (-0.0345), yet these are not statistically significant. Moreover, the empirical results yield a significant negative relationship between middle/low-level management and EI (-0.479),

indicating that managers in top managerial positions are more intrapreneurially inclined.

In Models 5 and 6, we analyzed the same set of explanatory and outcome variables; however, in these cases, we omitted only children and operationalized birth order as a two-category construct comparing firstborns and laterborns. Consequently, Model 5 for EI shows a positive and significant relationship of laterborns with EI (0.338). Moreover, Model 6 for risk taking yields a positive and significant relationship of laterborns with risk taking propensity (0.107).

In two EI models (Model 3 and 5), risk taking propensity is also included as a predictor. Despite a positive relationship between the two (0.204 and 0.154), the results in both models show no statistical significance, implying that risk taking does not lie in the causal path from birth order to EI.

### 6.1. Robustness Test

As mentioned earlier, linear regression is the prevailing approach in birth order studies (Zajonc & Sulloway, 2007). However, as explained in Section 5.2, in our data sample the five-item Dahlbäck Risk Propensity Scale showed a low Cronbach alpha, and therefore we based our risk taking propensity measure on a single item, where respondents could answer with true or false. This makes the variable essentially a binary variable, and hence logistic regression would be the more appropriate estimator for our models 2, 4 and 6 in Table 3 in which risk taking propensity is the dependent variable. Therefore, we have also estimated these models using logistic regression. As is the usual practice when conducting logistic regression, we recoded the responses of the item (true=1; false=0) and specified the new models accordingly. By and large, results were qualitatively similar to those reported in Table 3. In particular, for model 6, variable *Laterborn* had a logit coefficient of 0.826 which was significant at 95% level. Full logit model results for models 2, 4 and 6 can be found in Table 4 in the Appendix.

**Table 3:** Regression analysis of the impact of birth order on entrepreneurial intention and risk taking propensity

Variables	Model 1 Entrepreneurial intention	Model 2 Risk taking propensity	Model 3 Entrepreneurial intention	Model 4 Risk taking propensity	Model 5 Entrepreneurial intention	Model 6 Risk taking propensity
<b>Gender:</b> Reference = Female						
Male	0.226 (0.176)	0.0627 (0.0613)	0.208 (0.175)	0.0578 (0.0617)	0.210 (0.178)	0.0686 (0.0639)
<b>Age:</b> Reference = Age 18-24						
Age 25-34	-0.000987 (0.238)	-0.152** (0.0637)	0.0739 (0.249)	-0.160** (0.0635)	0.178 (0.256)	-0.153** (0.0622)
Age 35-44	-0.179 (0.241)	-0.133** (0.0666)	-0.114 (0.249)	-0.142** (0.0678)	-0.123 (0.253)	-0.126* (0.0673)
Age 45-54	-0.156 (0.292)	-0.0712 (0.0667)	-0.0923 (0.300)	-0.0813 (0.0682)	-0.0348 (0.291)	-0.0760 (0.0714)
Age 55+	0.578* (0.340)	-0.457*** (0.170)	0.749** (0.308)	-0.470*** (0.174)	0.984*** (0.271)	-0.364* (0.214)
<b>Education:</b> Reference = Non-university education						
University education			-0.155 (0.176)	-0.0345 (0.0643)	-0.165 (0.173)	-0.0359 (0.0625)
<b>Level of management:</b> Reference = Top management						
Middle/Low management			-0.479*** (0.136)	0.0391 (0.0521)	-0.412*** (0.136)	0.0503 (0.0491)
<b>Risk taking:</b> Reference = Non-risk taker						
Risk taker			0.204 (0.184)		0.154 (0.180)	
<b>Birth order:</b> Reference = Only child						
Firstborn	0.0457 (0.345)	0.109 (0.128)	-0.106 (0.318)	0.101 (0.132)		
Middleborn	0.172 (0.333)	0.157 (0.130)	0.143 (0.313)	0.158 (0.132)		
Lastborn	0.245 (0.352)	0.131 (0.134)	0.122 (0.325)	0.132 (0.136)		
<b>Birth order:</b> Reference = Firstborn						
Laterborn (middleborn + lastborn)					0.338** (0.142)	0.107** (0.0600)
Constant	3.285*** (0.364)	1.803*** (0.126)	3.458*** (0.461)	1.830*** (0.146)	3.261*** (0.355)	1.856*** (0.0982)
Observations	230	230	230	230	215	215
R-squared	0.039	0.073	0.098	0.077	0.128	0.066

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 7. Discussion

The purpose of this paper was to reveal the birth order hypothesis in an intrapreneurial context. We test whether birth order impacts EI and risk taking propensity of managers in Kosovan companies. The underlying assumption is that the position in the family may influence the position people hold in organizations.

Our study shows that birth order influences EI and risk taking propensity of managers. Research question 1 investigated the relationship between birth order and EI. Contrary to some previous studies (Hisrich & Brush, 1984; Neider, 1987; Watkins & Watkins, 1983), we find that laterborns are more entrepreneurially inclined than firstborns. Laterborns are more adventurous and open to experience as they have to find a family and occupational niche not yet occupied by older siblings (Custódio & Siegel, 2020). That is, laterborns might want to do something that firstborns do not do, namely create their own ventures.

Laterborns', especially middleborns' proclivity towards entrepreneurship could be explained by their childhood experience, characterized as more difficult, discouraging, and unpredictable, as they tend to enjoy less in terms of parental investments (Stewart, 2004) and are constantly competing with firstborns to establish a role in the family (Gfroerer, et al., 2003). Therefore, middleborns are willing to do things differently and on their own (Leman, 2009) which in turn explains their intention to engage in entrepreneurial activities. EI is high also among lastborns, which in our study fall within the laterborn category as well. As they are portrayed as ill-disciplined and disobedient (Herrera, et al., 2003; Rosenblatt & Skoogberg, 1974), they are willing to break the rules in order to bring novelty. At the same time, they are characterized as more artistic, less scientific, and people-oriented (Eckstein, et al., 2010), which are traits that usually typify individuals with entrepreneurial attitudes.

Our findings support the 'born to rebel thesis', which depicts laterborns as more entrepreneurial (Han & Greene, 2016; Sulloway, 1996; Tognazzo et al., 2016). This can be explained by the different contexts they were raised in, and the socioeconomic shifts brought to Eastern Europe (Sauka & Chepurenko, 2017). As laterborns enter the more open labor market, they express higher EI compared to older brothers and sisters (Mustafa & Krasniqi, 2018).

Our results suggest that firstborns manifest lower intentions to engage in entrepreneurship. Firstborns generally occupy higher leadership roles and are portrayed as individuals who comply with the rules (Leman, 2009). As managers, they are organized, careful, conscientious, planful, rational, and perfectionistic (Leman, 2009; Rink, 2010; Sulloway, 1996). This explains why they are inclined for what they have and are less willing to change. Having had more attention and resources for upbringing and education (Downey, 1995), they are more disposed to be responsible, preserve the pleasing status and status quo they built, and serve as role models for laterborns (Black, et al., 2018). In this state of their career, they lack the intention toward intrapreneurship, which is more evident among laterborns. Firstborns in Kosovo, and other emerging economies, second parents in relation to laterborns in the family, helping them grow up and become successful (De Haan, 2010). Therefore, in organizational contexts, firstborns, who are already settled, tend to reach out to others and provide opportunities for them to be expressive, creative, and entrepreneurial.

Research question 2 tested the relationship of birth order with risk taking propensity. The results indicate that laterborns show a higher propensity for risk taking compared to their firstborn counterparts. Our findings are consistent with previous literature (Campbell et al., 2019; Gilliam & Chatterjee, 2011; Sulloway & Zweigenhaft, 2010). Since firstborns have already established family roles, they prefer the status quo because it helps them to stay in control. However, laterborns, especially the middle children, never had that much control growing up; therefore, they are more resilient (Leman, 2009). Sulloway (1996) suggests that because laterborns are disadvantaged when competing with firstborns for parental resources, it pays for them to take risks. Finally, the risk taking propensity tends to be higher whenever individuals seek to increase their social status (Ermer, Cosmides and Tooby, 2008). This holds true especially for lastborns who are attention seekers, and being laterborns, they are often not taken very seriously by their family and friends (Leman, 2009). Therefore, they strive to make important contributions and prove others wrong.

Since entrepreneurship represents a risky behavior, a translation of risk taking propensity into entrepreneurship attitudes can be expected in countries with high power distance (Antonicic, et al., 2018), as is the case with the Balkans context, specifically Kosovo (Berisha, 2013). In non-Western cultures, firstborns have a sense of duty and provide parental care for their younger siblings (Su, et al., 2014). Furthermore, they enjoy more parental investments, which could hinder their EI. This might explain why laterborns show a higher propensity for risk taking and subsequently manifest EI.

Given that laterborns suffer a competitive handicap when they are young (Lejarraga, et al., 2019) and struggle to make it in the labor market in the early stages, they grow EI. This is especially true in Kosovo, where youth unemployment is highest (topping 50 percent; World Bank, 2020), and the youngest in the family struggle to find a job. However, once they are employed, they demonstrate a higher risk taking propensity and engage more in entrepreneurial activities to prove their worth because of a lack of job security.

## **8. Implications**

Our research has some important theoretical and practical implications. This paper adds important evidence to the existing literature supporting the laterborn-entrepreneurship nexus. We contribute to the call for extending studies on birth order effects on outcomes in the Eastern-European context (Berisha, et al., 2022). Moreover, we test the birth order hypotheses in a sample of managers, which has been largely ignored by management and entrepreneurship scholars.

Our research offers an important contribution for executives. It is beyond their power to change the employees' birth order positions; however, they can assign them to positions that fit best their characteristics. Birth order should be



used to ensure person-job fit in organizations (Jaskiewicz, et al., 2017), which in turn nurtures their retention (Berisha & Lajçi, 2020). It is paramount for companies to assign laterborns to more entrepreneurial tasks and projects in order to boost corporate entrepreneurship. On the contrary, laterborns might leave and set up their own ventures, most probably becoming competitors in the same market. Moreover, given the similar characteristics and preferences that middleborns and lastborns jointly show as laterborns towards EI and risk taking, they can be teamed together in projects and tasks, which in turn will boost firm innovativeness.

## **9. Limitations and Future Research**

Although the study provides some interesting and original findings, several limitations should be noted. Our study focuses on the Kosovan context, which constrains the generalizability of our findings. The sample was obtained from a single country, which may pose a geographic bias in experiences of a particular birth order (Su, et al., 2014) and managers' propensity towards entrepreneurship and risk taking driven by national characteristics. Future knowledge about birth order and sibling characteristics across cross-cultural samples would be useful.

Moreover, some parameter estimates of the present study showed no statistical significance, which might be rooted in the sample size. Therefore, future studies should operate with a larger sample in order to offer more robust results. Our findings do not generalize beyond our sample.

This study is limited to the extent that it focuses on birth order only and does not consider spacing between children and family size, socioeconomic status, parent occupation, or family size (Zajonc & Markus, 1975). A recurring theme in between family birth order research is the confounding effect of other family characteristics, especially family size (Black, Devereux and Salvanes, 2005; Black et al., 2018). However, appropriate controls are rarely available in research concerning birth order (Paulhus, et al., 1999). Furthermore, extant evidence exists that family size does not affect the relationship of birth order with different outcomes (Sulloway, 1995).

Finally, the study is conducted with self-reported measures, which are criticized for producing inherently flawed data (Chan, 2009) since they are based on respondents' judgments, and thus, they are prone to biases and distortions. Denoting the reluctance of particular birth orders to describe themselves unfavorably, future research should utilize a direct sibling comparison approach (Sulloway, 2001).

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### Appendix

**Table 4:** Logistic regression analysis of the impact of birth order on risk taking propensity

Variables	Risk taking propensity					
	Model 2		Model 4		Model 6	
	Logit coefficient	Odds ratio	Logit coefficient	Odds ratio	Logit coefficient	Odds ratio
<b>Gender:</b> Reference = Female						
Male	0.469 (0.411)	1.598 (0.657)	0.433 (0.411)	1.542 (0.634)	0.535 (0.435)	1.708 (0.744)
<b>Age:</b> Reference = Age 18-24						
Age 25-34	-1.740* (1.058)	0.175* (0.186)	-1.815* (1.047)	0.163* (0.171)	-1.723 (1.050)	0.179 (0.188)
Age 35-44	-1.615 (1.073)	0.199 (0.213)	-1.689 (1.067)	0.185 (0.197)	-1.532 (1.083)	0.216 (0.234)
Age 45-54	-1.048 (1.151)	0.351 (0.404)	-1.135 (1.152)	0.321 (0.370)	-1.048 (1.160)	0.351 (0.407)
Age 55+	-3.228*** (1.160)	0.0396*** (0.0460)	-3.339*** (1.163)	0.0355*** (0.0413)	-2.922** (1.324)	0.0538** (0.0712)
<b>Education:</b> Reference = Non-university education						
University education			-0.251 (0.550)	0.778 (0.427)	-0.324 (0.563)	0.723 (0.407)
<b>Level of management:</b> Reference = Top management						
Middle/Low management			0.334 (0.395)	1.397 (0.552)	0.442 (0.412)	1.556 (0.641)
<b>Birth order:</b> Reference = Only child						
Firstborn	0.581 (0.620)	1.787 (1.108)	0.549 (0.631)	1.731 (1.091)		
Middleborn	1.006 (0.702)	2.733 (1.920)	1.036 (0.703)	2.817 (1.980)		
Lastborn	0.744 (0.710)	2.105 (1.495)	0.791 (0.727)	2.206 (1.604)		
<b>Birth order:</b> Reference = Firstborn						
Laterborn (middleborn + lastborn)					0.826** (0.413)	2.283** (0.942)
Constant	2.239** (1.129)	9.380** (10.59)	2.419* (1.294)	11.23* (14.54)	2.449** (1.220)	11.57** (14.12)
Observations	230	230	230	230	215	215

Standard errors in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

