

The Effect of CEO Insomnia on Entrepreneurial Orientation: The Mediating Role of CEO Persistence, the Moderating Role of CEO Tenure

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Motivation

In modern business environment, characterized by constant change, complexity and contradictions (Kuratko & Audretsch, 2009), traditional management methods are inadequate to the need to quickly respond to unforeseen situations (Tajeddini, Mueller, 2019). Consequently, companies are compelled to incorporate entrepreneurial spirit into their overall business strategy success (Tajeddini, Altinay, and Ratten, 2017; Etemad 2015). Therefore, entrepreneurial orientation (EO) becomes one of the most important factors in the survival and success of a firm, and finding factors that influence EO becomes crucial.



Motivation

While sleep problems can increase risk-taking behavior (Killgore, 2010), they also negatively affect creative performance (Wagner et al., 2004), such as innovative idea-generating performance (Harrison and Horne, 1999) and creative problem solving (Cai et al., 2009). The reduction in performance due to the lack of physiological and psychological resources is particularly evident for performance in complex, unpredictable, cognitively demanding activities (Meijman and Mulder, 1998), such as innovative behavior (Levasseur et al., 2019).

Nevertheless, the research on the effects of insomnia on CEO's behavior and firm's strategic orientation remains limited.



Definition of constructs

Entrepreneurial (entrepreneurial-conservation) orientation of a firm is demonstrated by the extent to which the top managers are inclined to take *business-related risks*, to favor *change and innovation* in order to obtain a competitive advantage for their firm, and to *compete aggressively* with other firms (Miller, 1983).

Insomnia is clinically defined as difficulty initiating or maintaining sleep for at least 4 weeks (American Psychiatric Association, 1994). We concentrate on such insomnia indicators as *difficulty falling asleep* and *difficulty maintaining sleep*. Also, since insomnia tends to be strongly related to feelings of *sleepiness and well-being the next day* compared to sleep duration (Pilcher, Ginter, & Sadowsky, 1997), we are interested in this measurement as well.

Persistence is understood as personal tendency to endure through hardships to achieve goals (Howard & Crayne, 2019). The dimensions of the overall construct of persistence include *Persistence Despite Difficulties* (the tendency to continue efforts towards goals regardless of perceived difficulties), *Persistence Despite Fear*, and *Inappropriate Persistence* (persistence towards an unrewarding or worthless goal). "*Positive persistence*" does not include Inappropriate Persistence.



Theoretical background

- Strategic leadership theory – to explain the relationship between insomnia and EO and positive persistence and EO;
- Effort-recovery model (ERM) – to explain the relationship between insomnia and positive persistence (and thus the indirect effect of insomnia);
- Agency theory – to explain the moderating role of CEO tenure.



Hypotheses

H1: Insomnia negatively relates to Entrepreneurial orientation.

H2: Insomnia negatively relates to Positive CEO persistence.

H3: Positive CEO persistence strengthens Entrepreneurial orientation.

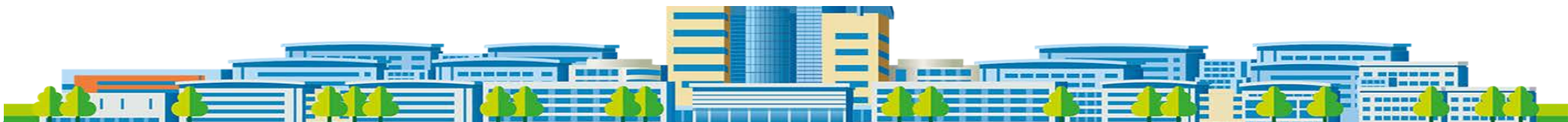
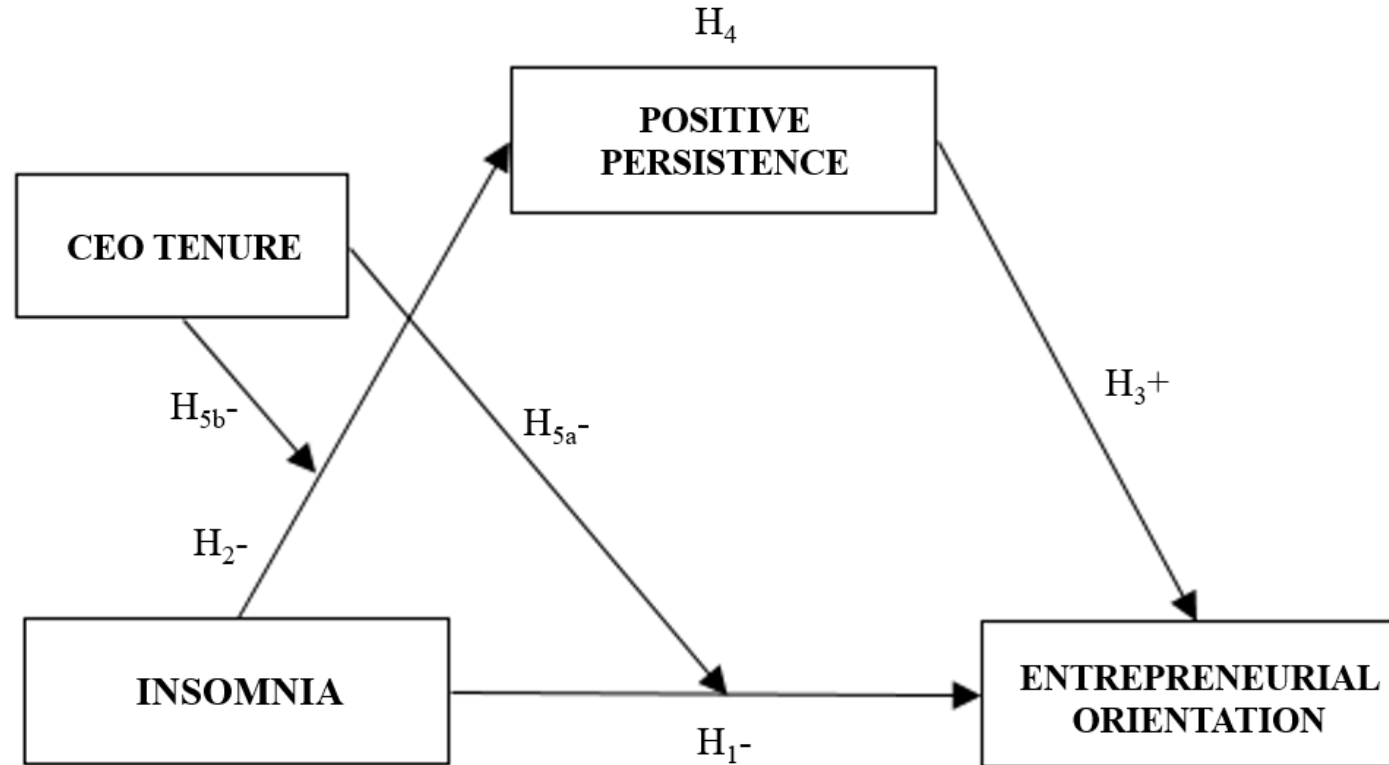
H4: Positive CEO persistence mediates the relationship between CEO insomnia and Entrepreneurial orientation.

H5a: CEO tenure negatively moderates the relationship between insomnia and Positive CEO persistence.

H5b: CEO tenure negatively moderates the relationship between insomnia and Entrepreneurial orientation.



Research framework



Data

Russian SMEs surveyed in 2019 (randomly selected).

An intermediary professional agency was hired to administer a survey for effective data collection.

The final sample includes 368 observations (CEOs of Russian SMEs).

Entrepreneurial orientation was measured by leveraging the 9-item 7-point Likert scale by Covin and Slevin (1989).

Insomnia was measured by 4-item 7-point Likert scale (Scott & Judge, 2006).

Positive Persistence was measured by 10-item 7-point Likert scale, which includes two dimensions: 5 items - Persistence Despite Difficulty (“I keep on going when the going gets tough”), and 5 items - Persistence Despite Fear (“I tend to face my fears”) by Howard and Crayne (2019).

CEO tenure shows for how many years the CEO worked in that position in given company.

Control variables: business age (years since founding), business size (amount of employees), industry, perceived environmental dynamism, CEO age, CEO gender.

Hayes (2022) PROCESS function (model 8) for RStudio was used for analysis of moderated mediation. Bootstrapping was used as a robust method.



Descriptive statistics

		Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9
1	EO	4.13	0.95	1	7	1.00								
2	Insomnia	3.19	1.02	1	6,75	0.02	1.00							
3	Positive Pers.	4.44	1.03	2,7	7	0.32***	-0.25***	1.00						
4	Inappropr. Pers.	4	1.20	1	7	0.16***	-0.01	0.25***	1.00					
5	CEO tenure	8.67	5.66	1	30	0.01	-0.01	0.11**	-0.06	1.00				
6	Dynamism	4.00	0.86	1	6,2	0.22***	0.21***	-0.07	0.26***	-0.03	1.00			
7	Business Age	12.39	7.18	1	63	-0.03	-0.05	0.02	-0.01	0.49***	-0.16***	1.00		
8	Business Size	22.68	39.445	4	400	0.05	-0.05	0.10*	-0.04	0.07	-0.10**	0.10*	1.00	
9	CEO Age	47.26	9.48	25	79	0.00	0.04	0.06	0.04	0.47***	-0.02	0.30***	0.13**	1.00
10	CEO Gender	0.32	0.47	0	1	-0.04	0.11**	0.01	-0.01	-0.05	0.03	0.00	-0.06	-0.05



Results

Variable	Dependent variable: Positive Persistence			Dependent variable: Entrepreneurial orientation		
	Estimate	SE	95% CI	Estimate	SE	95% CI
Insomnia	-.245***	.054	[-.35; -.139]	.086*	.048	[-.009; .181]
Positive Persistence				.324***	.046	 [.233; .415]
CEO tenure X Positive Persistence	-0.003	.009	[-.020; .014]			
CEO tenure X Insomnia				-.023***	.008	[-.038; -.008]
Controls						
Dynamism	-0.019	.063	[-.142; .104]	.276***	.055	[.168; .384]
Business age (log)	-0.095	.103	[-.299; .108]	.037	.091	[-.141; .216]
Size (log)	.100	.060	[-.017; .218]	.058	.052	[-.045; .161]
CEO age	.002	.006	[-.010; .014]	-0.002	.006	[-.012; .009]
Gender (male)	.078	.114	[-.014; .081]	-.140	.100	[-.336; .057]
Industry	0.033	0.024	[-0.014; 0.081]	0.011	0.021	[-0.031; 0.053]
Constant	4.172***	.515	[3.16; 5.184]	1.399***	.490	[0.435; 2.363]
R2		0.089			0.191	
F		3.862***			8.450***	

Note: N = 372. SE = Standard error; Bootstrapping = 1000; CI = confidence of interval 95%. *p<0.05; **p<0.01; ***p<0.001



Results

Conditional direct effect of Insomnia on EO

CEO tenure	Effect	SE
Low	.216***	.070
Mean	.086	.048
High	-.045	.058

Insomnia's indirect effect on EO – moderated mediation

CEO tenure	Indirect Effect	SE	95% CI
Low	-.073*	.034	[-.146; -.013]
Mean	-.079*	.027	[-.139; -.031]
High	-.085*	.035	[-.161; -.021]

Index of moderated mediation:

	-.001
CEO tenure	[-.008; .008]

SE = Standard error, Bootstrapping = 1000, CI = confidence of interval 95%

Findings

We find evidence that CEO insomnia indirectly influences EO by having a negative effect on positive CEO persistence, which tends to be positively related with EO. When CEO tenure is added as a moderator, insomnia also has a significant positive direct effect on EO. Our findings suggest that CEO tenure weakens the influence of insomnia on EO, but this effect is observed only when CEO tenure is low. Regardless, the indirect effect of insomnia through CEO persistence as mediator is always negative.



Thank you
for your attention!

