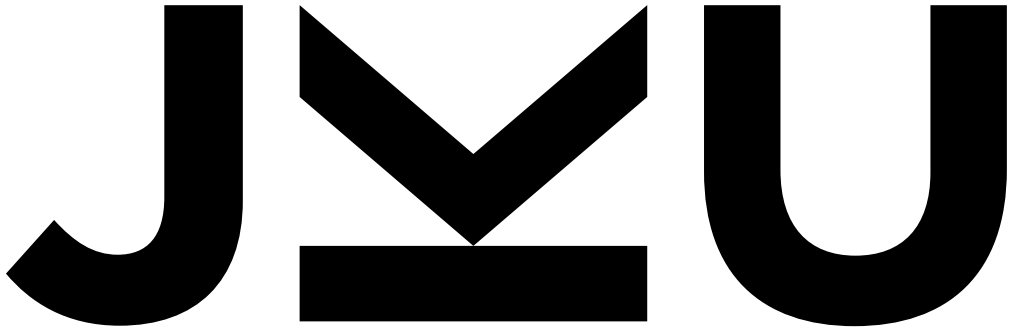

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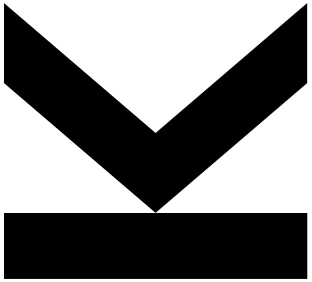
Enterprise risk management maturity and organizational ambidexterity:

Evidence from German Mittelstand firms



12th Annual Conference on Risk Governance

Ass.-Prof. Dr. Thomas Brunner-Kirchmair
Univ.-Prof. Dr. Martin Hiebl

JOHANNES KEPLER
UNIVERSITY LINZ
Altenberger Straße 69
4040 Linz, Austria
jku.at

Introduction (1)

- **Enterprise Risk Management** (ERM) takes a holistic approach to identifying, assessing, and managing risks across the entire organization. (Beasley et al. 2015; Bromiley et al. 2015)
- ERM tends to have a positive effect on firm performance. (e.g., Baxter et al. 2013; Callahan and Soileau 2017; Farrell and Gallagher 2015; Florio and Leoni 2017; Hoyt and Liebenberg 2011; Lechner and Gatzert 2018)
- **Research gap:**
  - What are the mechanisms behind this relationship? What are more direct consequences of ERM?
  - Outcomes of ERM need to be studied more intensively (Bedford 2020; Braumann et al. 2024)
  - What is the effect of ERM on innovation capabilities, which, if managed effectively, may culminate in high organizational ambidexterity?

Introduction (2)

- **Organizational ambidexterity** refers to a company's ability to balance exploration and exploitation at high levels.
  (Asif 2017; Moreno Luzon and Valls Pasola 2011; O'Reilly and Tushman 2013)
- **Explorative** innovation involves the development of new products and services and therefore requires flexibility and experimentation.
  (Levinthal and March 1993; Tushman and O'Reilly 1996)
- **Exploitation** refers to innovation that is more interested in refining existing products, services, and processes, thus raising efficiency.
  (He and Wong 2004)
- High organizational ambidexterity is positively connected to higher performance and firm survival.
  (O'Reilly and Tushman 2013)

Theoretical foundation

- The **resource-based view** emphasizes that acquiring valuable, rare, inimitable, and non-substitutable (VRIN) resources is crucial for achieving and maintaining a competitive advantage.
  (Barney 1991; Barney et al. 2001; Kraaijenbrink et al. 2010)
- **Dynamic capabilities perspective** offers a nuanced evolution of this theory with dynamic capabilities encompassing *"the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments."*
  (Bogodistov and Wohlgemuth 2017; Peteraf et al. 2013; Teece et al. 1997, p. 516)
- **ERM is a dynamic capability** that not only leverages but also shapes an organization's resource base, thereby influencing its competitive positioning and survival.
  (Mishra et al. 2019; Nair et al. 2014)

Literature review

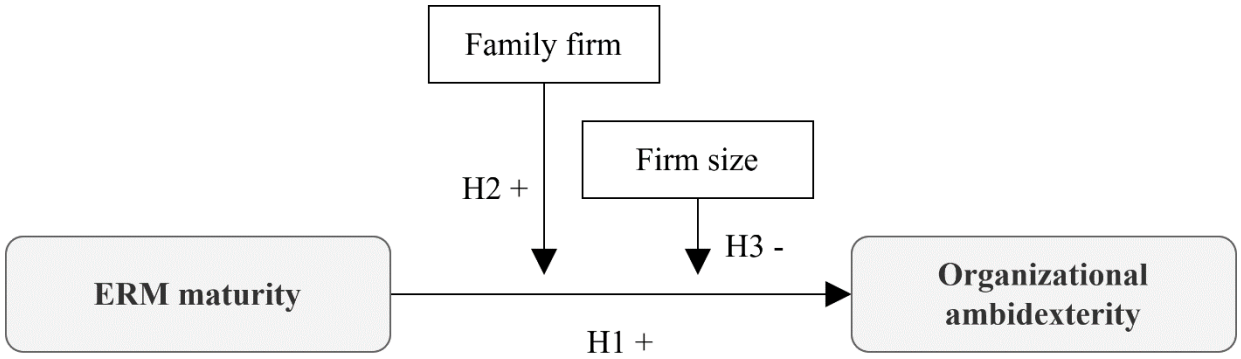
Prior literature has shown that…

- firms with better ERM manage risks more effectively.
  (Ellul and Yerramilli 2013; Florio and Leoni 2017; Lundqvist and Vilhelmsson 2018; Khan et al. 2024)
- balanced organizational ambidexterity is maximized at medium levels of risk exposure.
  (Chandrasekaran et al. 2012; Severgnini et al. 2019)
- organizational ambidexterity is positively connected to higher performance and firm survival.
  (O'Reilly and Tushman 2013)

Research hypotheses

Consequently, firms with higher ERM maturity are likely to manage risks more effectively and select innovation activities with a higher chance of success, outperforming firms with lower ERM development.

- **H1:** Higher ERM maturity is correlated with higher organizational ambidexterity.
- **H2:** The positive relationship between ERM maturity and organizational ambidexterity is more pronounced in family firms than in non-family firms.
- **H3:** The positive relationship between ERM maturity and organizational ambidexterity is less pronounced in large firms than in small firms.



Sample (1)

- Survey-based approach
- German Mittelstand companies with 50 to 3,000 employees (Becker and Ulrich 2011)
- Highest ranking financial manager was contacted
- Data collection: two rounds in 2018 and 2019
- Initial sample: 233 questionnaires

Sample (2)

- **Data cleansing process**
  - „Assistant to the CEO“ (-1)
  - Fewer than 50 or more than 3,000 employees (-13)
  - Incomplete data (-103)
  - → final sample: 117 cases

- **Adressing survey bias**
  - Comparison of respondents and non-respondents (Whitehead et al. 1993)
  - Comparison of first and second wave respondents (Bedford et al. 2019)
  - Pretesting; separation of dependent and independent variable (Podsakoff et al. 2003, 2024)
  - Harman’s single-factor test → largest factor was 31,32% (Eichhorn 2014)
  - Marker variable technique (Lindell and Whitney 2001)

Data (1)

- **Organizational ambidexterity** using a 12 item construct proposed by Lubatkin et al. (2006) with six items for *exploratory* orientation and six items for *exploitative* orientation.
  - One item was excluded due to low loadings
  - Cronbach's Alpha for exploratory orientation is 0.830 and 0.785 for exploitative orientation.
  - Confirmatory factor analysis showed a well-fitted model ($\chi^2 = 77.87$, $p = 0.001$; CFI = 0.905; TLI = 0.878; SRMR = 0.075; RMSEA = 0.094)
  - $Aggregate\ organizational\ ambidexterity = (7 - |Exploitation - Exploration|) * (Exploration * Exploitation)$

Data (2)

- **ERM maturity** using a three-item index following Beasley et al. (2015)
- Moderators
  - **Family firm status** based on respondents' self-assessment
  - **Firm size** based on number of employees using archival data
- Controls
  - Industry dummy (manufacturing vs. non-manufacturing)
  - Environmental uncertainty (Govindarajan 1984; Gul and Chia 1994)
  - Venture capital financing (Hiebl 2015)
  - Strategic orientation (Bedford et al. 2016)

Results – Main results

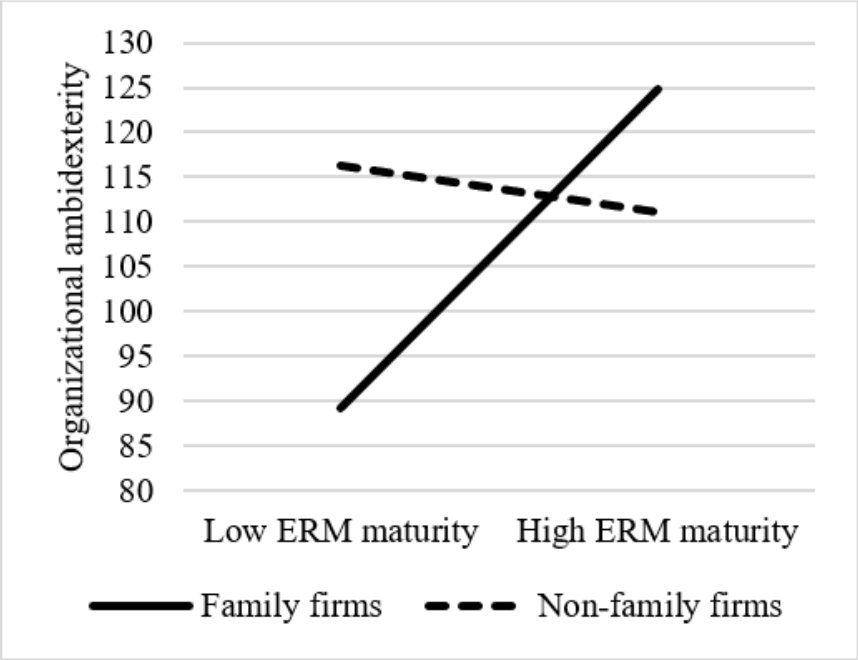
	Organizational ambidexterity [1]				Organizational ambidexterity [2]			
	Coef.	**t-value**	**p-value**	**VIF**	**Coef.**	**t-value**	**p-value**	**VIF**
Constant		2.93	0.00***			3.30	0.00***	
ERM maturity	0.03	0.29	0.77	1.28	-0.05	-0.35	0.73	2.84
Family firm	-0.07	-0.73	0.47	1.32	-0.50	-2.12	0.04**	7.77
Firm Size	0.06	0.63	0.53	1.03	0.40	2.11	0.04**	5.08
Industry	0.11	1.27	0.21	1.07	0.09	0.99	0.32	1.12
Environmental uncertainty	-0.00	-0.01	0.99	1.08	-0.02	-0.18	0.86	1.09
Strategic orientation	0.39	4.35	0.00***	1.10	0.35	3.95	0.00***	1.14
Venture capital financing	0.12	1.30	0.20	1.08	0.10	1.10	0.28	1.10
ERM maturity x family firm					0.42	1.96	0.05*	6.53
ERM maturity x firm size					-0.39	-1.95	0.05*	5.67
n	117				117			
R^2 (adj.)	0.15				0.19			
F	3.84 (p = 0.00***)				3.93 (p = 0.00***)			

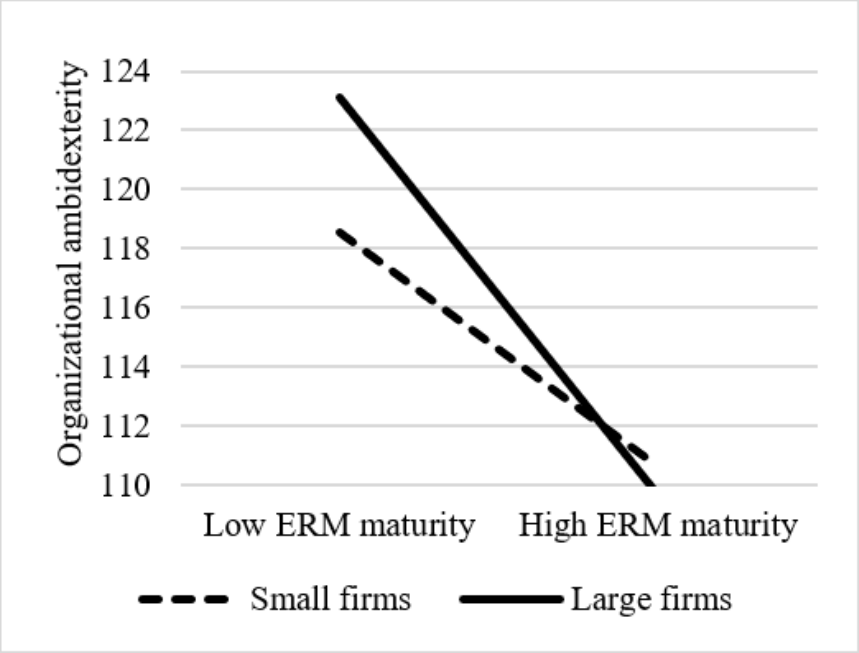
Notes: * p < 0.10; ** p < 0.05; *** p < 0.01. The regression analysis provides the standardized regression coefficients.

→ Rejection of H1

→ Preliminary support for H2 and H3

Results – Interaction effects





→ Differences between family firms and non family firms, supporting H2.

→ OA decreases stronger with increasing ERM maturity in larger firms, rejecting H3.

Results – Robustness checks

- Repeating tests using balanced and combined OA measures as dependent variables
- Repeating tests using an alternative measure of family firm status (equity share > 50 % or board/TMT participation)
- Repeating tests using aggreate OA measure with the original 12 items.

These findings qualitatively corroborate prior research outcomes.

Results – Further analysis

- Exploration and exploitation as dependent variables

	Exploration [1]				Exploration [2]			
	Coef.	**t-value**	**p-value**	**VIF**	**Coef.**	**t-value**	**p-value**	**VIF**
Constant		5.61	0.00***			5.74	0.00***	
ERM maturity	0.03	0.26	0.79	1.28	-0.08	-0.55	0.59	2.84
Family firm	-0.06	-0.59	0.56	1.32	-0.46	-1.91	0.06*	7.77
Firm size	0.01	0.15	0.89	1.03	0.24	1.23	0.22	5.08
Industry	0.09	0.99	0.32	1.07	0.06	0.69	0.49	1.12
Environmental uncertainty	-0.07	-0.73	0.47	1.08	-0.08	-0.85	0.40	1.09
Strategic orientation	0.34	3.74	0.00***	1.10	0.32	3.43	0.00***	1.14
Venture capital financing	0.10	1.08	0.28	1.08	0.08	0.87	0.38	1.10
ERM maturity x family firm					0.40	1.81	0.07*	6.53
ERM maturity x firm size					-0.25	-1.22	0.23	5.67
n		117				117		
R^2 (adj.)		0.11				0.13		
F		2.99 (p = 0.01***)				2.88 (p = 0.00***)		

Notes: * p < 0.10; ** p < 0.05; *** p < 0.01. The regression analysis provides the standardized regression coefficients.

	Exploitation [1]				Exploitation [2]			
	Coef.	**t-value**	**p-value**	**VIF**	**Coef.**	**t-value**	**p-value**	**VIF**
Constant		6.98	0.00***			6.17	0.00***	
ERM maturity	0.15	1.55	0.12	1.28	0.25	1.76	0.08*	2.84
Family firm	0.11	1.12	0.27	1.32	0.08	0.33	0.74	7.77
Firm size	0.07	0.78	0.43	1.03	0.42	2.20	0.03**	5.08
Industry	0.22	2.46	0.02**	1.07	0.23	2.55	0.01**	1.12
Environmental uncertainty	0.01	0.09	0.93	1.08	-0.01	-0.07	0.95	1.09
Strategic orientation	0.35	3.94	0.00***	1.10	0.32	3.54	0.00***	1.14
Venture capital financing	-0.01	-0.10	0.92	1.08	-0.01	-0.12	0.91	1.10
ERM maturity x family firm					0.02	0.11	0.91	6.53
ERM maturity x firm size					-0.42	-2.06	0.04**	5.67
n		117				117		
R^2 (adj.)		0.15				0.16		
F		3.81 (p = 0.00***)				3.50 (p = 0.00***)		

Notes: * p < 0.10; ** p < 0.05; *** p < 0.01. The regression analysis provides the standardized regression coefficients.

Summary and discussion

- Higher ERM maturity is not associated with higher organizational ambidexterity.
- Higher ERM maturity goes in hand with higher exploitation orientation.
- Family firms profit more from mature ERM systems in terms of achieving higher organizational ambidexterity than non-family firms, particularly in their exploration activities.
- Our analysis of the moderating role of firm size indicate that the ERM maturity–exploitation relationship is context-driven and particularly pronounced in smaller entities.

Contributions and limitations

- **Contributions**
  - Literature on ERM outcomes
  - Literature on the context-dependent benefits of ERM
  - Literature on the antecedents of organizational ambidexterity in family firms

- **Limitations**
  - Focus on privately held German Mittelstand firms
  - Bias due to underlying research design?

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