# DEVELOPING AN INTEGRATED RISK MANAGEMENT AND SUSTAINABILITY TYPOLOGY FOR SMES

BY FARES GETZIN & THOMAS HENSCHEL

12TH RISK GOVERNANCE CONFERENCE SIEGEN

htw. Hochschule für Technik und Wirtschaft Berlin
*University of Applied Sciences*

# AGENDA

- MOTIVATION FOR RESEARCH
- RESEARCH AIM & QUESTIONS
- LITERATURE & CONCEPTUAL MODEL
- RESEARCH METHODOLOGY
- EMPIRICAL FINDINGS & CONCLUSION
- LIMITATIONS & FURTHER RESEARCH

# MOTIVATION FOR RESEARCH

- Shortage of research concerning the current state of enterprise risk management (ERM) and Corporate Social responsibility (CSR) implementation in SMEs

- Lack of practical frameworks  for evaluating  the ERM – CSR relationship in SMEs

- No studies directly investigating the ERM  - CSR performance relationship in German SMEs
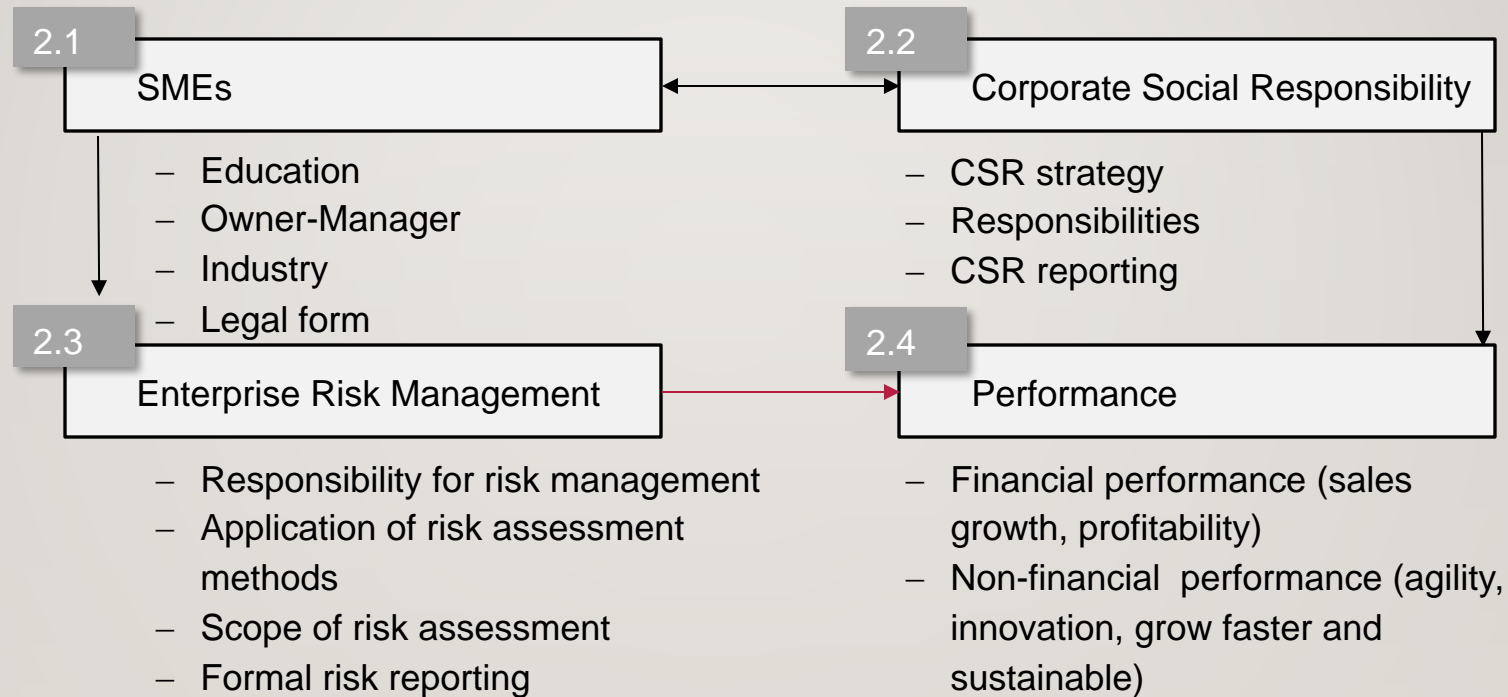
# RESEARCH AIM & QUESTIONS

**Research aim:** The study aims to investigate the influence of an ERM and CSR system on improving the performance in SMEs. To develop a comprehensive typology to measure the ERM and CSR sophistication in SMEs.
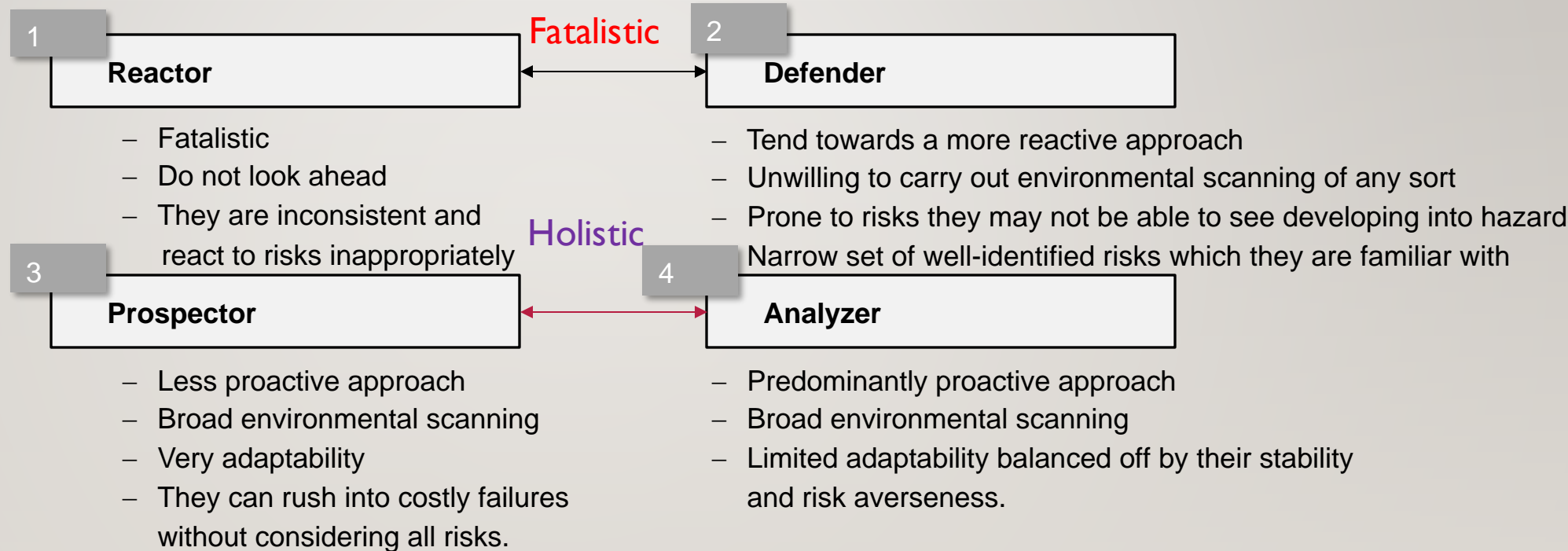
**Research questions:**

(1) What are the crucial components for a sound ERM and CSR system that can improve financial and non-financial performance ?

(2) Can we distinguish between different types of ERM and CSR practices in SMEs?

# LITERATURE REVIEW

**2.1** SMEs

– Education
– Owner-Manager
– Industry
– Legal form

**2.2** Corporate Social Responsibility

– CSR strategy
– Responsibilities
– CSR reporting

**2.3** Enterprise Risk Management

– Responsibility for risk management
– Application of risk assessment methods
– Scope of risk assessment
– Formal risk reporting

**2.4** Performance

– Financial performance (sales growth, profitability)
– Non-financial performance (agility, innovation, grow faster and sustainable)

# ORGANIZATION TYPES AND RISK PARADIGMS

**1**

**Fatalistic**

**Reactor**

– Fatalistic
– Do not look ahead
– They are inconsistent and
   react to risks inappropriately

**2**

**Defender**

– Tend towards a more reactive approach
– Unwilling to carry out environmental scanning of any sort
– Prone to risks they may not be able to see developing into hazard
– Narrow set of well-identified risks which they are familiar with

**Holistic**

**3**

**Prospector**

– Less proactive approach
– Broad environmental scanning
– Very adaptability
– They can rush into costly failures
   without considering all risks.

**4**

**Analyzer**

– Predominantly proactive approach
– Broad environmental scanning
– Limited adaptability balanced off by their stability
   and risk averseness.

Source: Smallman (1996); Smallman and Weir (1999); Elkington and Smallman (2002); Ash and Smallman (2010)
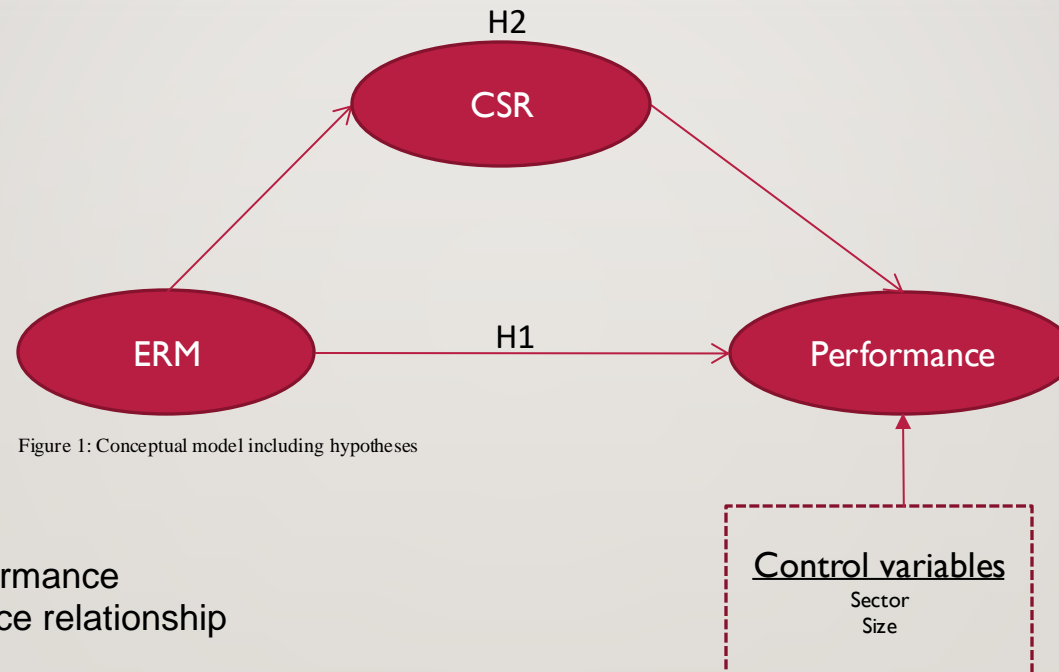
# CONCEPTUAL MODEL



Figure 1: Conceptual model including hypotheses

H1: ERM will be positively related to Performance
H2: CSR will mediate the ERM performance relationship

# RESEARCH METHODOLOGY 1/2

Approach of data collection:

- *Questionnaire* to SMEs in Germany
    - Development of online questionnaire with an email link to participants sent out in summer 2023.

- *Sample Construction*
    - Creditreform and Firmenwissen databases for Germany.
    - Cluster sampling; enterprises with the number of employees covered by the EU definition were selected.
    - For processing the statistical operations, the software packages SPSS and SMART-PLS were used.

- *Responses*
    - The survey rendered 983 eligible responses, which translates to a final response rate of 1.76%.
    - *Non-response bias test and robustness tests provided no concerns*

# RESEARCH METHODOLOGY 2/2

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**Structural Equation Modeling assesment is a two step process:**

1. Evaluation of the reflective measurement (outer) model convergent validity of constructs
   Reliability: Most construct indicators have significant outer weights (p < 0.05) and/or significant loadings ( > 0.5)
   Validity: All VIFs < 5 (conservative threshold); no multicollinearity violations left after dropping 3 items
2. Evaluation of the structural (inner) model
   All latent constructs have good Cronbach`s alpha (> 0.7)
   All inner VIFs < 3 (conservative threshold)
3. Additional analyses (validity)
   Model-fit: SRMR for the estimated model is 0.079 (for PLS models threshold <0.09)

# DEMOGRAPHIC PROFIL OF RESPONDENTS

Table 1: Demographic Data of Respondents

| | N=983 | % |
|---|---|---|
| Sector | | |
| Service | 451 | 45.9% |
| Engineering | 146 | 14.9% |
| Trade & Logistic | 114 | 11.6% |
| Information Technology | 79 | 8.0% |
| Construction Industry | 193 | 19.6% |
| Company Age (classed) | | |
| <= 10 | 89 | 9.1% |
| 10 - 20 | 182 | 18.5% |
| 20 - 30 | 259 | 26.3% |
| >30 | 453 | 46.1% |
| | | |
| Size (Number of employees) | | |
| < 10 | 248 | 25.2% |
| 10 - 49 employees | 581 | 59.0% |
| 50 - 149 employees | 95 | 9.7% |
| 150 - 249 employees | 50 | 5.1% |
| Type of management | | |
| Owner-managed | 794 | 80.8% |
| employed management | 189 | 19.2% |

# EMPIRICAL FINDINGS – MEASUREMENT MODEL

Table 2: Results - Measurement Model

| | Measurement Model | | |
| --- | --- | --- | --- |
| | Factor loadings | Cronbach's alpha | AVE |
| CSR | | | |
| Social responsibility within CSR strategy | 0,778 | | |
| Social apsects within CSR approach | 0,849 | 0,754 | 0,67 |
| Ecological apects within CSR approach | 0,827 | | |
| ERM | | | |
| Consideration of risks and integration into planing | 0,579 | | |
| ERM approach | 0,735 | | |
| Crisis management planing | 0,7 | 0,72 | 0,473 |
| Monitoring of risks | 0,778 | | |
| Formal risk reporting | 0,628 | | |
| Performance | | | |
| Agility | 0,769 | | |
| Reaction to change of the competitive environment | 0,774 | | |
| Innovativeness | 0,816 | 0,787 | 0,539 |
| Sustainability | 0,743 | | |
| Profitability | 0,536 | | |

Note: AVE = average variance extracted. Standardized loadings significant at   p<0.001.

# STRUCTURAL MODEL I: ERM - PERFORMANCE
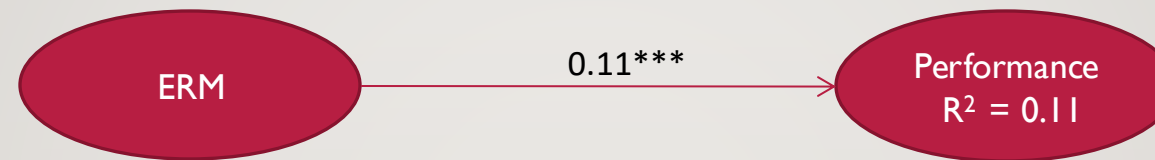


Level of significance *p<0.05; **p<0.01; ***p<0.001

Figure 2: Structural equation model - Quality of risk management and corporate social responsibility

Table 3: Test of the hypothesis H1

| Hypothesis H1 | Path Coefficient | Standard error | t-Value | Outcome |
|---|---|---|---|---|
| Enterprise Risk Management system → Performance | 0.119*** | 0.024 | 4.96 | Confirmed |
| Note: Level of significance *p<0.05; **p<0.01; ***p<0.001 | | | | |

# STRUCTURAL MODEL II: ERM – CSR - PERFORMANCE



Level of significance *p<0.05; **p<0.01; ***p<0.001
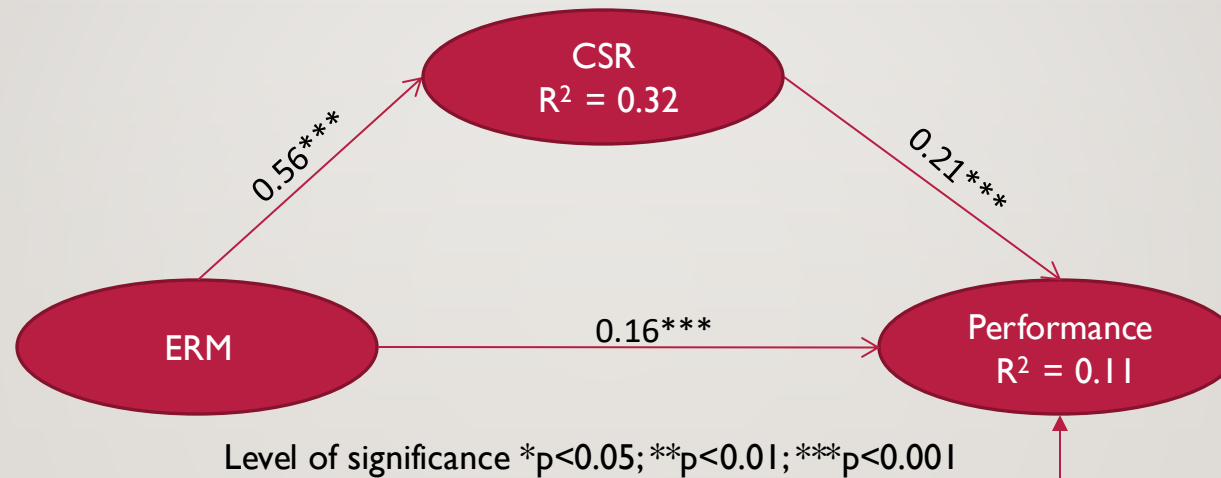
Figure 3: Structural equation model – Influence of ERM and Risk Attitude

**Indirect effect:** 0.56 * 0.21 = 0.1176

**Total effect:** 0.16 + 0.1176 = 0.2776 → Mediation effect H2 confirmed

Control variables
Sector ·······················0.259
Size ·······················0.966

# FIMIX-POS – CLUSTERING

Table 3: Results – FIMIX POS Segmentation (SUM of MEAN Values)

| | Defender | Prospector | Reactor | Analyzer |
|---|---|---|---|---|
| N | 777,000 | 76,000 | 96,000 | 34,000 |
| CSR | 8,3 | 8,6 | 7,9 | 8,1 |
| ERM | 11,1 | 10,3 | 10,2 | 9,3 |
| Performance | 17,3 | 16,9 | 17,2 | 17,3 |
| CV | 5,5 | 5,3 | 5,4 | 5,7 |

A one-way MANOVA showed a statistically significant difference between the group segmentation by FIMIX POS on the combined dependent variables, $F (24, 2819) = 2.885$, $p < .001$, partial $\eta^2 = .023$, Wilk's $\Lambda = .932$.

# CONCLUSION

• No empirical studies on ERM practices in German SMEs exist, following a broader perspective rather than dealing with isolated topics.

•It is important to integrate sustainability into the ERM process to gain a broader perspective on the company's environment.

•We also stress with our findings the relevance of the interrelationship between ERM and CSR in terms of performance. Our findings highlight this interrelationship and show that it is beneficial for firms to combine both views when it comes to achieving a better company's performance.

•This initial research model might be a good starting point for developing more comprehensive frameworks for evaluating ERM and CSR systems in SMEs.

•The proposed framework can also be used by consultants and SME-supporting agencies to evaluate the ERM and CSR activities in SMEs and help them better tailor their training to their needs.

# LIMITATIONS & FURTHER RESEARCH

**Limitations**

- Cross-sectional research design

- Potential self-presentation bias

- SEM analysis tests for associations and only assumes a certain direction of the relations based on our theoretical model.

**Further research**

- Further testing with longitudinal data is necessary to corroborate our findings.

- Application of our findings to SMEs in other cultural contexts?

# TIME FOR YOUR QUESTIONS