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The Effect of Organizational Innovation Orientation on Responsible AI Governance Use: An Empirical Study in German-speaking Europe

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"From insight to impact"

Introduction

- AI is driving the **next great wave of innovation** (Davenport & Ronanki, 2018) and could upend industries, radically change many professions, and reshape our labor markets (Holtel, 2016)
- AI comes with **risks**, such as **mass unemployment** (Harari, 2017), unfair **discrimination** (Bérubé et al., 2021; Smit et al., 2022), and lack of **transparency** and **trust** (Hornung & Smolnik, 2022; Stahl et al., 2022)
- **Responsible AI governance** entails using management controls and other tools to ensure the use of AI in organizations **addresses these risks**
- Several frameworks have been developed for use in organizations (e.g. from the US NIST or Singaporean PDPC) and the **prospect of regulation** is becoming more present in the **EU (AI Act)**
- We explore whether **radical or incremental innovativeness** is more likely to **predict responsible AI governance use** in organizations

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Innovation orientation

- Most organizations exist on a spectrum between incremental and radical innovation but the ability to **innovate with ambidexterity** has been shown to **benefit financial performance** (Oduro & De Nisco, 2023; Van De Wetering et al., 2022) and **increase sales growth** (He & Wong, 2004).
- **Incrementally innovative organizations** are:
  - associated with low degree of new knowledge (Dewar & Dutton, 1986),
  - improvement processes that focus on efficiency and exploiting technological gains (Grover et al., 2007),
  - environmental instability (Chao & Kavadias, 2008),
  - and market competition (Zschocke et al., 2014).
- **Radically innovative organizations** are:
  - associated with a high degree of new knowledge (Dewar & Dutton, 1986),
  - larger organizations and centralization (Dewar & Dutton, 1986),
  - environmental complexity (Chao & Kavadias, 2008)
  - and hiring younger managers (Acemoglu et al., 2020).
- **Radical innovation requires high risk-tolerance**, while **incremental innovation** in firms is associated with **risk aversion** (McLaughlin et al., 2008; Tellis et al., 2009).

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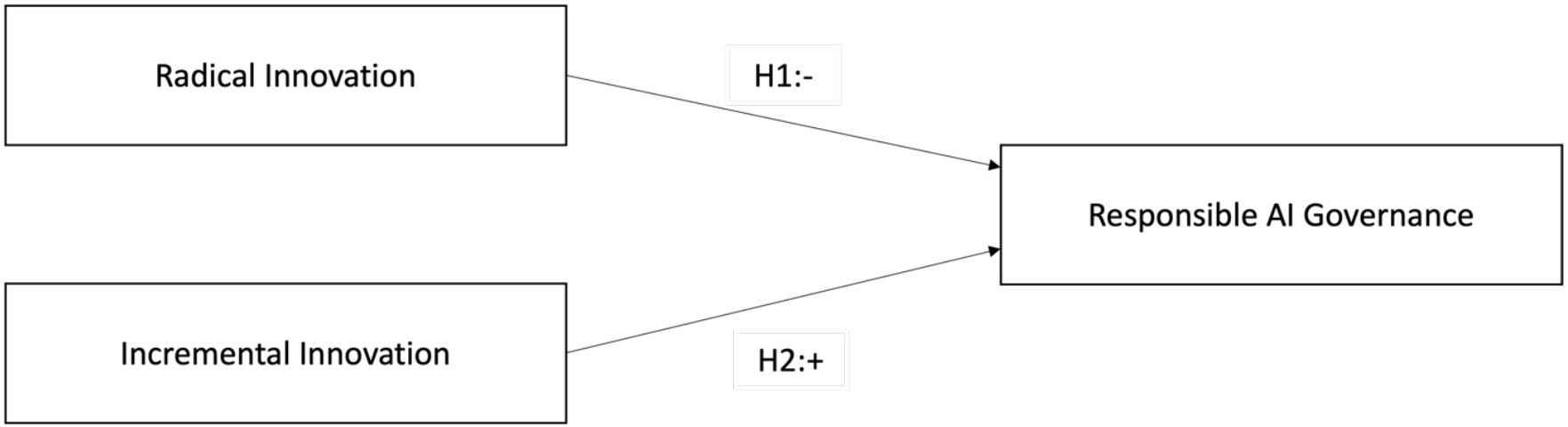
Hypotheses

- Radical innovations are more associated with interactive systems use (Mccarthy & Gordon, 2011), boundary systems (Chiesa et al., 2009), and increased autonomy and risk-acceptance (Chandrasekaran et al., 2015; Glaeser et al., 2023; Menguc & Auh, 2010).
- H1: **Radical innovativeness** will have a **negative impact on responsible AI governance use** in organizations.
- Incremental innovation is associated with formalized, explicit systems of controls, diagnostic controls, and lack of risk-tolerance (Chandrasekaran et al., 2015; Chiesa et al., 2009; Menguc & Auh, 2010).
- H2: **Incremental innovativeness** will have a **positive impact on responsible AI governance use** in organizations.



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Methods

- We conducted an online survey of **large companies** (250+ employees, 40m+ CHF revenue) in **German-speaking Europe**
- **118 responses** were collected from financial leaders (team leaders to CFO)
- **Robustness checks** (CA, AVE, PC, VIF)
- Controls
  - Age, industry, tenure(s), gender
- The data were analyzed in R using **simple linear regression** with the Lavaan package

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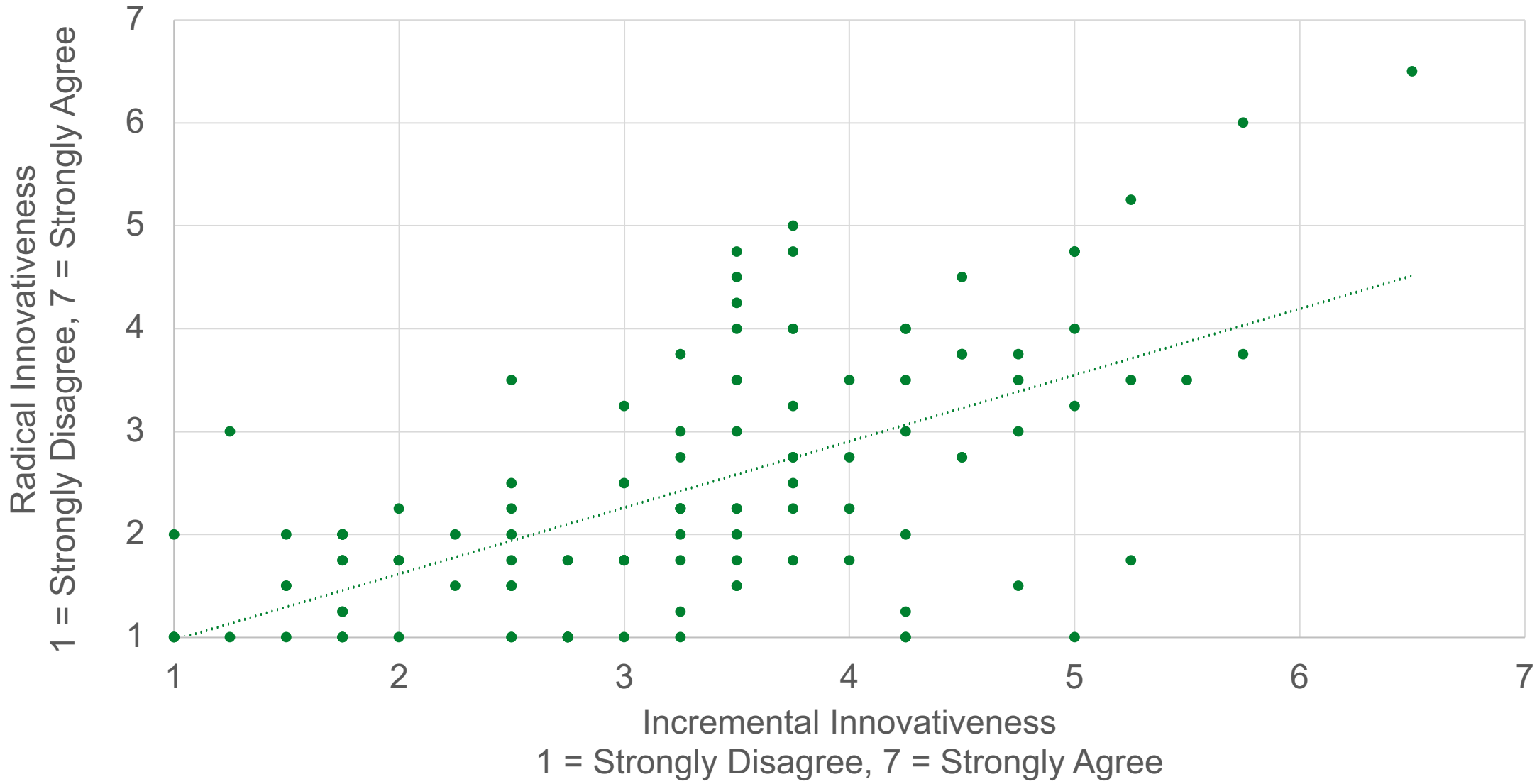
Radical Innovativeness vs Incremental Innovativeness



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Results

Construct	Model 1	Model 2	Model 3	Model 4
Incremental Innovation	0.41***	0.44***	0.43***	0.42***
Radical Innovation	-0.17	-0.20*	-0.19	-0.18
Size	0.01	0.00	0.00	0.00
Ownership	0.05	0.04	0.05	0.05
Job Tenure	-0.00	0.00	-	-
Organizational Tenure	0.00	-	0.00	-
Dyadic Tenure	0.00	-	-	0.01
AI Tenure	-0.01	-0.01	-0.01	-0.01
Gender	0.03	0.02	0.03	0.02
Age	0.00	0.00	0.00	-0.01
Education	0.05	0.06	0.05	0.06

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Discussion

- Organizations that are more incrementally innovative are more likely to voluntarily use responsible AI governance
- It isn't clear that radically innovative organizations will or will not be more likely to voluntarily use responsible AI governance
- The results point to **only risk-averse organizations voluntarily adopting responsible AI governance** – who are also less likely to be using AI radically
- This points suggests that **self-regulation will not be enough to ensure the responsible use of AI** and that **regulation will likely be necessary to level the playing field**
- Certain regulatory measures, such as regulatory sandboxes, could provide for risk-tolerant companies to still innovate and test the boundaries of regulation

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Limitations & further research

- The **study relied on pre-existing constructs** – more fitting constructs for innovation orientation and AI governance might yield different or better results
- The study was **limited to German-speaking Europe**, which has its own idiosyncrasies around digitalization, AI use, and risk aversion
- Further studies could dive more deeply into the **MCS/LoC literature** to identify specific levers that had might have more effect

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