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Joint research activities of AI between Kobe and Kiel-University in Germany

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Recently, Artificial Intelligence (AI) is becoming a buzzword. It transforms empirical management research. In this, large language models (LLMs) and natural language processing (NLP) now let researchers infer complex organizational capabilities from digital corporate texts at unprecedented scale. Yet one question is unanswered: do AI-enabled text measures capture genuine capabilities, or merely country-specific language, communication styles, and institutional context? Until this is resolved, their international applicability remains uncertain.

The joint research with Kiel University tries to answer that question. It develops and cross-nationally validates the first multilingual AI-enabled measure of absorptive capacity (AC) - a firm's ability to recognize, assimilate, and exploit new knowledge (Cohen & Levinthal, 1990). AC is an ideal test case: highly influential in innovation and strategic management, yet notoriously difficult to operationalize, with existing measures relying on R&D expenditures, patents, or surveys that capture only selected facets (Lane, Koka & Pathak, 2006).

The project builds on groundwork in Germany, where the team in Kiel developed an AI-enabled Text-AC prototype (LLMs, prompt engineering, dictionary development, longitudinal website analysis) on more than 800,000 website snapshots from 164 firms (2008-2024). As a central contribution, Kobe and Kiel university want to cross-nationally validate the new AC measure. In this, Germany is the development environment and Japan the critical validation environment.

Both teams, Kobe and Kiel, are essential: the German side brings in the methodological expertise, while the Kobe side brings in the expertise of Japanese firm behavior and organizational practices. That makes it possible to interpret how AC is enacted in Japanese firms. The project adopts an abductive mixed-methods design combining longitudinal website analysis with semi-structured interviews. Drawing on the Kobe network, the project engages in 10-15 firms and 20-30 interviews across multiple informants. Indicators will be compared against the routines through which firms absorb external knowledge. These insights advance multilingual AI-enabled AC measures.

The project connects three research streams: absorptive capacity, AI-enabled text analysis, and innovation research. Most AI text-analysis studies use English-language data or Chinese

firms and examine financial, governance, or ESG outcomes (Li et al., 2025; Tian et al., 2025); none establishes the cross-national construct validity of AI-enabled text measures. This gap is particularly consequential for Japanese research, where non-English corporate text remains outside such methods' reach. By validating an AC measure across two contrasting linguistic and institutional settings, the project contributes a general framework for validating AI-enabled measures of latent organizational capabilities across languages and institutions.

Kiel University and Kobe University jointly try to receive financial support for this project. It will clarify whether organizational capabilities can be measured reliably from digital corporate texts beyond a single setting. Across Germany and Japan, it will determine whether AI-enabled indicators correspond to the learning routines observed inside firms, and distinguish universal manifestations of absorptive capacity from context-specific expressions. The outcome is a cross-nationally validated instrument with an account of its scope and limits, advancing both measurement theory and innovation research.

The research question requires bilateral collaboration no single-country team can provide. The project rests on an established Kobe-Kiel partnership, which has already produced several joint publications (Bebenroth, Lielienthal & Massmann, 2024; Massmann & Bebenroth 2024; Bebenroth & Wolf, 2023), combining the Kiel team's methodological expertise with the Kobe team's domain expertise in Japanese firms and firm-level access. Germany and Japan are particularly suitable: both are advanced, export-oriented manufacturing economies whose competitiveness depends on organizational learning, yet they differ substantially in language, communication, organizational traditions, and institutions. This combination of similarity and difference creates a demanding setting of the international validity of AI-enabled organizational measurement.

To sum up, the project establishes the first multilingual AI-enabled measure of absorptive capacity. Its practical value lies in a scalable, low-cost instrument that assesses firms' learning and innovation capabilities from public information. Its absorptive capacity underpins competitiveness amid the digital and green transitions. In case the project gets financed, it can inform SME-support policy and managerial practice in both economies at a fraction of survey costs.

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