

Information Governance Orientation Towards a Proactive Environmental Strategy:

The case of SMEs in an emerging economy

Abstract

Information governance orientation (IGO) underscores the importance of a strategic approach to information asset utilisation, orchestration and more importantly, security and protection (Tallon et al., 2013, Marchand et al., 2002, Kettinger et al., 2011, Bennett and Raab, 2017, Hsieh et al., 2006, Abraham et al., 2019, Gillan et al., 2021). The increasingly important role of IGO in the small and medium-sized enterprises (SMEs) context is amplified by the most recent reports on the vulnerability of SMEs in data breaches and cybersecurity threats (TheAsiaFoundation, 2022, PWC, 2022). In parallel, environmental challenges such as climate change exert increasing pressures on SMEs to demonstrate their enduring commitment to contribute to ecological sustainability such as protection and re-generation of the natural environment (Wang et al., 2022, Roxas, 2021). There is yet a robust empirical study that examines how SMEs develop and demonstrate their strategic proclivity and engagement to leverage their information assets towards sustainability and, to safeguard these strategic resources consistent with sound corporate governance practices.

Drawing on the dynamic capability theory (DCT) (Teece, 2018) and knowledge-based view of the firm (KBV) (Grant, 1996, Nonaka et al., 1995, Nonaka et al., 2008), IGO, as a firm-level construct, drives and enables a firm's dynamic knowledge management capabilities (KMC) that are pre-requisites to developing and demonstrating a well-articulated proactive strategy towards environmental sustainability (i.e., proactive eco-strategy). There is a paucity of research on well SMEs are able to demonstrate their information governance orientation or strategic proclivity to organise, utilise and protect their information assets (Mikalef et al., 2020, Bergeron et al., 2020, Raymond et al., 2019, Silva et al., 2020) as well as the drivers, enablers

and impact of such strategic orientation. Hence, this study examines *an SME's information governance orientation (IGO) or its strategic orientation towards efficient utilisation, orchestration, protection, and risk management of the firm's information assets.*

Conceptualisation and Hypothesis development

This study articulates the rationale for its three main hypotheses. The conceptual model is presented in Figure 1 (Appendix).

IGO and PES

Information assets play an essential role in addressing resource constraints in order to develop and sustain environmental sustainability strategies and initiatives. Based on knowledge-based view (Nonaka et al., 1995), SMEs rely on information assets to compensate for their lack of traditional capital such as finance and technology in pursuing environmental sustainability in business. Leveraging their access to information assets enables small firms like SMEs to carve their environmental management strategies that are fit for purpose (Chatzistamoulou and Tyllianakis, 2022). Therefore, how well an SME institutes an effective governance system over information assets largely determines their capability to leverage these knowledge-based resources towards adopting a proactive eco-strategy. In line with the strategic orientation literature (Venkatraman, 1989), a firm's IGO as a strategic orientation, serves as a primary driver in leveraging information assets to create value within the firm. Previous studies have noted the significant impact of various strategic orientations such as entrepreneurial and marketing orientations in shaping the sentimental management strategies of firm (Roxas, 2021, Jansson et al., 2017, O'Regan and Ghobadian, 2005). In this study, we draw from the KBV in arguing that an SME's IGO demonstrates their strategic commitment and drive to shape and orchestrate their proactive eco-strategy that is aligned with their capability configurations. Hence, this study posits that:

H1: IGO is positively and significantly associated with an SMEs' proactive eco-strategy.

DKMC and PES

The DCT (Teece, 2014) suggests that firms develop and sustain various strategies towards their competitive advantage by utilising and leveraging their dynamic capabilities. These capabilities enable a firm to continuously adapt to the changing internal and external demands. A firm's PES is an evolutionary and adaptive response to internal pressures such as the need to mitigate the negative externalities of business operations and external pressures such as market and community demands a more sustainable way of doing business (Roxas, 2022). Hence, an SME's dynamic capability allows for continuously sensing information about these pressures, waste management, clean and green technology, and novel ways to address climate change. The capability to seize information and integrate them into the value-creating processes within the firm demonstrates how well a firm can leverage and exploit these information assets about environmental sustainability towards creating value. Furthermore, an SME's organising and orchestrating capability demonstrates how well it can transform these information assets into inputs for green innovations that are required in proactively developing one's eco-strategy (Jansson et al., 2017, Chatzistamoulou and Tyllianakis, 2022). Various studies have noted the role of adaptive and dynamic capabilities to exploit information assets to support the strategic commitment of firms to become environmentally sustainable (Jansson et al., 2017, Ko and Liu, 2017, Khan et al., 2021). Hence this study posits that:

H2: DMC are positively and significantly associated with an SME's proactive eco-strategy.

IGO-PES: The mediating effects of DMC

The foregoing discussion underscores the mediating role of DMC in the IGO-PES nexus. This study posits that the relationship between IGO and PES may not be necessarily direct. IGO drives the systemic acquisition, development and deployment of resources and capabilities

towards specific strategic goals such as engagement in environmental sustainability. Consequently, the orchestration of such dynamic capabilities to leverage information assets empowers an SME to adopt a proactive eco-strategy. From the KBV and DCT perspectives, organisational strategies such as PES can only be implemented if these are well-supported by the firm's resources and capabilities, especially in the exploitation of information assets. Furthermore, these dynamic knowledge-management capabilities can only be shaped by the first strategic orientation that supports a culture of efficient acquisition, astute exploitation, and robust protection of information assets. Hence, this study posits that:

H3: DMC mediates the positive effects of IGO on an SME's proactive eco-strategy.

Data and Methods This study uses survey data of 322 manufacturing SMEs in Philippines as an exemplar of a developing economy in Southeast Asia. We draw on previous studies and relevant literature in developing or adopting measures. The control variables include size and age of firms. We performed the preliminary analyses and the endogeneity test following the Gaussian Copula method (Hult et al., 2018, Eckert and Hohberger, 2022). We conducted the two-stage process of path analysis process using PLS-SEM (Kock, 2010, Hair et al., 2019) and the confirmatory factor analysis (CFA).

Discussion The summary of results is shown in Figure 1. The results of the path analysis undertaken in this study demonstrate the important role of IGO in the formulation and development of a well-articulated PES. The results show that both IGO and DKMC are significantly and positively associated with PES among the sample SMEs. These findings support the first two hypotheses. The mediation analysis suggests the significant and positive mediating effects of DKMC between the IGO-PES relationship, hence supporting H3. This study notes the significant confounding effects of firm size and age which have been shown to

have a positive and significant influence on the PES of the sample SMEs amidst the direct and indirect effect of IGO and mediating effects of DKMC.

Implications and Limitations The study highlights the need to expand theoretical discussions on the roles of strategic orientations in SMEs' environmental sustainability, particularly their effective utilization and governance of information assets. Specifically, the debates should examine how firms like SMEs develop their strategic orientation towards effective utilization and functional governance of information assets, which are crucial in addressing climate change at the enterprise level. IGO is a novel strategic orientation in the digital age that may explain SMEs' sustainable competitive advantage. The study suggests further exploration of IGO's relevance, reliability, and generalizability, as well as its institutionalization as a key driver of capability development for long-term environmental management. Policymakers and government regulators can support SMEs in adopting effective governance systems for information asset utilization and protection. Future studies can examine IGO drivers across diverse firms and industries, compare IGO between developed and emerging economies, and track its evolution and impact on strategic performance variables.

Conclusion Information assets are the primary foundation of competitive advantage in the digital era, especially among SMEs with inherent constraints in their traditional forms of capital. When SMEs take a strategic approach to manage, leverage, and protect their information assets, they are likely to benefit by way of capability development and enhancements that are essential to their sustainable competitive advantage. IGO as a strategic amidst climates.

Key words: information governance orientation, knowledge management, Environmental Strategy

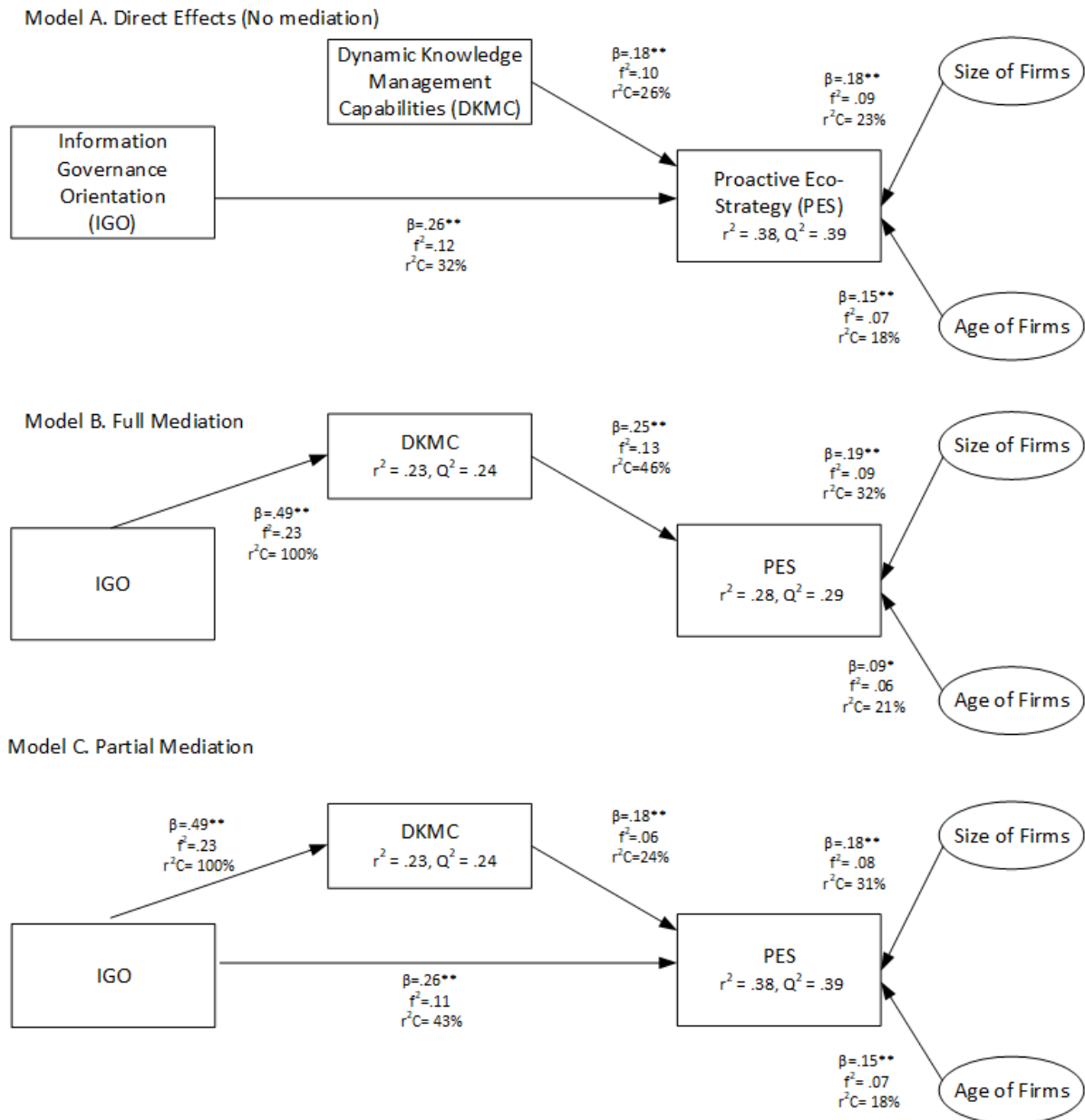
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Appendix.

Figure 1 The conceptual model of this study



Measures of Predictive Quality of the Models

Average Path Coefficients (APC)
 Average r^2 (ARS)
 Average Variance Inflation Factor (AVIF) (*good if <3.3*)
 Tenenhaus Goodness of Fit (TGOF) *small* $\geq .1$, *medium* $\geq .25$, *large* $\geq .36$
 Standardised root mean squared residual (SRMR) *good if* $\leq .1$

	Models		
	A	B	C
APC	.19**	.28**	.25**
ARS	.38**	.26**	.31**
AVIF	1.18	1.06	1.15
TGOF	.42	.45	.49
SRMR	.11	.11	.07

Legend:
 β : standardised path (beta) coefficient
 Q^2 : Stone-Geisser coefficient
 f^2 : Cohen's effect size
 r^2C : r-squared Contribution
 *: significant at $p < .05$
 **: significant at $p < .01$