

Knowledge and Sustainability Management under Ethical Pressure: Triggering Sustainability-oriented Management Practices in European Firms

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Abstract: Sustainability-oriented management practices are increasingly important for firms seeking to respond to environmental and institutional pressures. This study examines how tax-related informal payment pressure, innovation capability, and performance-oriented management practices influence sustainability-oriented management practices in European firms. Drawing on the resource-based view and knowledge-based view, the paper argues that internal knowledge-management-related capabilities may support firms in adopting sustainability-related practices, even in environments affected by institutional ethical constraints. Using firm-level data from the World Bank Enterprise Survey 2024 for Czechia, Poland, and Latvia, the study applies Partial Least Squares Structural Equation Modeling. The findings show that innovation capability and performance-oriented management practices have positive and significant effects on sustainability-oriented management practices. However, tax-related informal payment pressure has no statistically significant direct or indirect effect in the model. These results suggest that sustainability-oriented practices are driven more strongly by internal organizational capabilities than by tax-related ethical pressure alone. The study contributes to knowledge management and sustainability research by showing the importance of innovation and structured managerial routines in supporting firm-level environmental practices. It also offers practical implications for managers and policymakers by highlighting the need to strengthen firm-level innovation and management capabilities alongside institutional governance reforms.

Keywords: Knowledge management, Sustainability management, Innovation capability, Environmental practices, Ethical pressure.

1. Introduction

In recent years, sustainability has become a central strategic concern for organizations seeking long-term competitiveness, resilience, and improved performance (Thun et al., 2024). Firms are increasingly expected to integrate environmental and social considerations into strategy and operations through sustainability-oriented management practices (SOMP) (Simionescu et al., 2023). However, firms do not operate in a vacuum, and their ability to adopt and implement such practices is shaped not only by internal managerial choices but also by the institutional environments in which they function. In many economies, firms face governance-related challenges such as corruption, bribery, and informal payment pressures, while weak institutional quality may discourage investment in transparent and long-term managerial systems. Under such conditions, institutional ethical constraints can distort incentives, increase uncertainty, and reduce firms' willingness to develop structured sustainability-oriented practices (Liu et al., 2021). At the same time, knowledge management has been recognized as an important organizational capability that enables firms to respond to environmental complexity and strategic uncertainty (Abdullah, 2023). Through processes of knowledge acquisition, sharing, and utilization, firms are better able to support innovation, organizational learning, and informed decision-making (Mahmoud, 2022). In the context of sustainability, these capabilities may help firms recognize environmental risks, identify opportunities for improvement, and implement practices such as emissions monitoring and energy management. Although prior research has established that knowledge management supports sustainability-related outcomes, less attention has been devoted to whether such capabilities can mediate the relationship between institutional ethical constraints and SOMP.

This issue is particularly relevant in Central and Eastern Europe, where firms in countries like the Czechia, Poland, or Latvia operate in environments characterized by institutional transition, uneven governance quality, and increasing pressure to align business activities with sustainability-related objectives (Brozkova et al., 2025; Klimova et al., 2025; Zhu et al., 2026). Although these countries differ economically, they share a regional context where firms face both sustainability demands and institutional imperfections. Against this backdrop, the paper is to examine whether institutional ethical constraints influence SOMP directly and indirectly through knowledge-management-related capabilities. More specifically, the paper investigates the relationships among tax-related informal payment pressure, innovation capability, performance-oriented management practices, and SOMP by using firm-level data from the World Bank Enterprise Survey 2024 for the Czechia, Poland, and

Latvia. In doing so, the study examines whether sustainability-oriented practices are shaped primarily by external ethical pressures or by firms' internal managerial and innovation-related capabilities. The remainder of the article presents the theoretical background, data and methods, empirical results, and conclusion.

2. Theory Background and Hypotheses Development

This study is grounded in the resource-based view (RBV) and the knowledge-based view (KBV) of the firm. The RBV argues that firms achieve sustained competitive advantage through valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). Building on this logic, the KBV identifies knowledge as a key strategic resource supporting learning, coordination, innovation, and adaptive decision-making (Grant, 1996). In the context of sustainability, these perspectives suggest that firms are more likely to adopt sustainability-oriented management practices when they possess internal capabilities that enable them to process information, coordinate action, and respond effectively to external pressures (Hart, 1995). From this perspective, knowledge management can be understood as a strategic organizational capability that helps firms transform external demands into structured managerial responses. However, firms do not implement SOMP in isolation from their institutional environment. Institutional conditions shape the incentives, constraints, and uncertainties under which firms make strategic choices. In environments characterized by corruption, bribery, informal payments, and weak enforcement of formal rules, firms may become less willing to invest in transparent, structured, and long-term management systems, as corruption can weaken formal managerial practices and reduce management quality (Lee, Wang and Ho, 2020). At the same time, internal knowledge-related capabilities may help firms cope with such pressures by supporting learning, coordination, innovation, and problem solving (Huynh, Nguyen and Vo, 2024). Thus, the adoption of SOMP can be viewed as an outcome of the interaction between external institutional ethical constraints and internal knowledge-management-related capabilities, while knowledge management may also help translate organizational conditions into sustainability-related outcomes (Hossain et al., 2022).

2.1 Institutional Ethical Constraints and Sustainability-oriented Management Practices

In this study, sustainability-oriented management practices are understood specifically as firm-level environmental management practices, reflected in CO₂ emissions monitoring and the adoption of energy management measures to reduce emissions, waste, or pollution. Rather than treating environmental practices only as regulatory compliance, firms may adopt more proactive approaches by embedding emissions monitoring, energy management, and resource-efficiency actions into their operational routines (Longoni & Cagliano, 2015). However, the adoption of these environmental management practices is not determined solely by internal managerial intention. Institutional conditions also influence whether firms are willing and able to invest in transparent, structured, and long-term environmental management systems. In environments characterized by corruption, bribery, informal payments, and weak enforcement of formal rules, firms may face distorted incentives that reduce accountability and discourage investment in transparent and structured managerial practices. Evidence from firm-level research shows that corruption can deteriorate management quality, while weak institutional settings limit the effectiveness of firm-level commitments against corruption (Priya et al., 2023). Other research further suggests that transparency itself may become costly in weak institutional environments, as credible reporting can expose firms to greater rent-seeking behavior by corrupt officials (Du et al., 2022). Under such conditions, institutional ethical constraints may undermine the adoption of SOMP by increasing uncertainty, weakening formal controls, and shifting managerial attention away from long-term sustainability investment (Nam et al., 2021; Wen, Zhang and Fleisher, 2023). Therefore, while sustainability-oriented management practices can cover broader environmental, social, and governance dimensions, this study focuses on the environmental pillar through emissions monitoring and energy management indicators. Based on this reasoning, the following hypothesis is proposed:

H1: Institutional ethical constraints negatively influence sustainability-oriented management practices.

2.2 Institutional Ethical Constraints and Knowledge Management

Knowledge management refers to the organizational processes through which firms create, store, share, and apply knowledge in support of strategic objectives. As a firm-level capability, knowledge management helps organizations improve coordination, strengthen problem solving, and enhance decision-making, while also supporting organizational learning and innovation (Antunes & Pinheiro, 2020). However, the development of knowledge management practices is shaped not only by internal capabilities but also by the broader institutional environment. In settings where corruption and informal practices are widespread, firms may face weaker incentives to invest in transparent information systems, formalized procedures, and systematic performance

monitoring. Evidence from firm-level research shows that corruption negatively affects the likelihood of firms' innovation, and that this negative effect is stronger in contexts with worse governance (Dokas et al., 2023). Since innovation, information use, and formalized organizational routines are closely linked to knowledge-based capabilities, these findings suggest that institutional ethical constraints can hinder the development of knowledge management practices by weakening trust, discouraging openness, and reducing incentives to institutionalize knowledge-based routines (Martinangeli et al., 2024). Accordingly, the following hypothesis is formulated:

H2: *Institutional ethical constraints negatively influence knowledge management practices.*

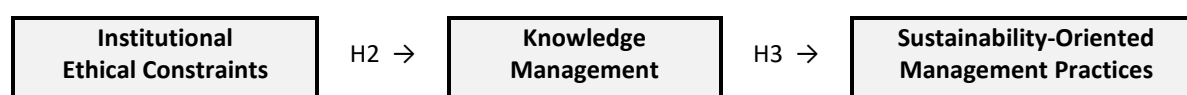
2.3 Knowledge Management and Sustainability oriented Management Practices

Knowledge management is increasingly recognized as an important organizational capability that supports sustainability-related action within firms (Cegarra-Navarro et al., 2024). Through knowledge creation, sharing, integration, and application, firms can identify environmental risks, recognize opportunities for improvement, and develop routines that support sustainability-oriented decision-making. Prior research shows that knowledge management is closely linked to green innovation and corporate sustainable development, while review evidence also indicates that knowledge management has become an increasingly important theme in sustainability research (Abbas et al., 2019). In this study, knowledge management is understood in a practical firm-level sense, reflected in organizational routines, innovation-related activities, and performance-monitoring practices that support informed managerial action. Because SOMP is measured through CO₂ emissions monitoring and energy management, the discussion focuses on the environmental pillar. Firms with stronger knowledge management capabilities are expected to be better able to translate information into concrete SOMP, such as emissions monitoring and energy management. Recent empirical studies likewise show that knowledge management positively supports green innovation and sustainable performance, reinforcing the view that it provides the internal capacity needed to develop and maintain sustainability-oriented management systems (Achmad et al., 2025). Knowledge management may also play a mediating role in the relationship between institutional ethical constraints and SOMP (Rehman et al., 2024). Even when firms face adverse institutional conditions, internal knowledge capabilities may help them interpret external demands, maintain organizational routines, and implement sustainability-related actions. Consistent with this argument, recent evidence suggests that knowledge management can function as a mediating mechanism in explaining how organizational conditions are translated into corporate sustainability outcomes (Juicharoen et al., 2025). Therefore, the following hypotheses are proposed:

H3: *Knowledge management positively influences sustainability-oriented management practices.*

H4: *Knowledge management mediates the relationship between institutional ethical constraints and sustainability-oriented management practices.*

The conceptual framework of the study is presented in Figure 1.



H1 direct effect: Institutional Ethical Constraints → Sustainability-Oriented Management Practices

H4 mediated effect: Institutional Ethical Constraints → Knowledge Management → Sustainability-Oriented Management Practices

Note: In the empirical model, institutional ethical constraints are operationalized through tax-related informal payment pressure, while knowledge management is represented by innovation capability and performance-oriented management practices (for more details, see next Section).

Figure 1: Conceptual framework of the study

3. Research Methodology

3.1 Data

The analysis is based on firm-level data from 2,252 enterprises operating in three Central and Eastern European countries, namely Latvia (259), Poland (1725), and Czechia (268). This sample provides an appropriate empirical basis for examining the relationships among institutional ethical constraints, knowledge-management-related

capabilities, and sustainability-oriented management practices in the Central and Eastern European context (Kolar et al., 2025; Namazov & Bassabi, 2025; Tetreanova et al., 2025). The data were drawn from the World Bank Enterprise Survey (WBES) 2024, which offers detailed information on firms' business environment, innovation activities, management practices, and sustainability-related actions. In line with the conceptual framework of this study, the analysis works with four latent constructs presented in Table 1.

Table 1: Constructs used in the model

Tax-related Informal Payment Pressure	TIPP
In any of inspections or meetings was a gift or informal payment expected or requested?	TIPP1
Performance-Oriented Management Practices	POMP
Over fiscal year, what best describes what happened at this establishment when a problem in the production process arose / when a problem in the provision of services arose?	POMP1
Over fiscal year, did this establishment have performance bonuses for managers?	POMP2
Over fiscal year, what was the primary way non-managers were promoted at this establishment?	POMP3
Over fiscal year, when was an under-performing non-manager reassigned or dismissed?	POMP4
Innovation Capability	INCAP
During the last three years, has this establishment introduced new or improved products or services?	INCAP1
During the last three years, has this establishment introduced any new or improved process?	INCAP2
"During fiscal year, did this establishment spend on research and development activities, either in-house or contracted with other companies, excluding market research surveys?"	INCAP3
Sustainability-Oriented Management Practices	SOMP
Over the last three years, did this establishment monitor its CO ₂ emissions?	SOMP1
Over the last three years, did this establishment adopt any energy management measures to reduce emissions, waste, or pollution?	SOMP2

Source: WBES 2024

3.2 Methods

Partial least squares structural equation modeling (PLS-SEM) is a widely used multivariate method in business and social science research, including marketing, accounting and finance, human resource management, and information systems (Guenther et al., 2023; Mondal et al., 2024; Ingusci et al., 2023; Sabol et al., 2023). Therefore, PLS-SEM was selected for this study. The analysis proceeded in three steps. First, the measurement model was evaluated to assess the reliability and validity of the constructs. Internal consistency reliability was examined through Cronbach's alpha and composite reliability (ρ_c), while convergent validity was assessed using the average variance extracted (AVE) and outer loadings. Discriminant validity was checked by means of the heterotrait-monotrait ratio (HTMT) and the Fornell-Larcker criterion. Collinearity was further assessed through variance inflation factor (VIF) values. Second, the structural model was examined by analyzing path coefficients, coefficients of determination (R^2), and effect sizes (f^2). The significance of the estimated relationships was tested using the bootstrapping procedure, which generated standard errors, t-values, p-values, and confidence intervals for each hypothesized path. Third, mediation effects were assessed by examining both specific indirect effects and total indirect effects. This made it possible to test whether the two dimensions of knowledge-management-related capability, namely performance-oriented management practices and innovation capability, transmit the effect of tax-related informal payment pressure to SOMP.

4. Results

4.1 Model Validation

To assess the measurement model, construct reliability and validity were examined using Cronbach's alpha, composite reliability, and average variance extracted (AVE). As presented in Table 2, all multi-item constructs achieved acceptable levels of composite reliability, with ρ_c values ranging from 0.757 to 0.867, exceeding the recommended threshold of 0.70. Likewise, the AVE values ranged from 0.611 to 0.722, which are above the recommended minimum of 0.50, confirming convergent validity. Although the Cronbach's alpha for Innovation Capability is relatively low at 0.371, this result should be interpreted with caution. Cronbach's alpha assumes

equal indicator loadings, which may make it conservative in PLS-SEM contexts (Hair et al., 2022). In this study, Innovation Capability includes product/service innovation, process innovation, and research and development expenditure, which capture related but not identical dimensions of innovation activity. Therefore, the lower alpha may reflect multidimensionality rather than poor measurement quality. In PLS-SEM, composite reliability is generally considered a more appropriate reliability indicator because it accounts for differences in indicator loadings. The composite reliability value for Innovation Capability is 0.757, which exceeds the recommended threshold of 0.70, while its AVE value is 0.611, above the recommended threshold of 0.50. These results indicate acceptable internal consistency and convergent validity. For this reason, Innovation Capability was retained in the model. TIPP was treated as a single-item construct and therefore was not assessed through internal consistency measures.

Table 2: Model Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
INCAP	0.371	0.386	0.757	0.611
POMP	0.796	0.802	0.867	0.620
SOMP	0.617	0.617	0.839	0.722

Source: Own Analysis

Discriminant validity was then assessed using the heterotrait-monotrait ratio (HTMT) and the Fornell-Larcker criterion. As shown in Table 3, all HTMT values were below the conservative threshold of 0.85, with the highest value being 0.631 between INCAP and SOMP. This indicates that the constructs are empirically distinct from one another.

Table 3: Discriminant Validity – Heterotrait-Monotrait (HTMT)

Construct	INCAP	POMP	SOMP	TIPP
INCAP				
POMP	0.347			
SOMP	0.631	0.453		
TIPP	0.032	0.010	0.021	

Source: Own Analysis

The Fornell-Larcker criterion further supported discriminant validity. Table 4 shows that the square root of AVE for each construct was greater than its correlations with the other constructs. Therefore, the measurement model demonstrates adequate discriminant validity.

Table 4: Fornell-Larcker Criterion

Construct	INCAP	POMP	SOMP	TIPP
INCAP	0.782			
POMP	0.204	0.787		
SOMP	0.307	0.320	0.850	
TIPP	-0.016	0.004	0.016	1.000

Source: Own Analysis

Overall, the results confirm that the measurement model satisfies the main criteria for reliability, convergent validity, and discriminant validity, and can therefore be used for structural model interpretation.

4.2 Direct and Indirect Effects

The structural model was assessed by examining the path coefficients and their significance through bootstrapping. The results in Table 5 indicate that both INCAP → SOMP and POMP → SOMP are positive and statistically significant. Specifically, INCAP had a positive effect on SOMP ($\beta = 0.112$, $t = 11.641$, $p < 0.001$), while POMP had an even slightly stronger positive effect on SOMP ($\beta = 0.119$, $t = 12.982$, $p < 0.001$). These findings suggest that both INCAP and POMP support SOMP.

By contrast, the effects of TIPP on the endogenous constructs were not statistically significant. The path from TIPP → INCAP was negative but insignificant ($\beta = -0.016$, $t = 1.217$, $p = 0.224$), the path from TIPP → POMP was nearly zero and insignificant ($\beta = 0.004$, $t = 0.198$, $p = 0.843$), and the direct path from TIPP → SOMP was also insignificant ($\beta = 0.008$, $t = 0.745$, $p = 0.456$). These results indicate that TIPP does not directly influence the core outcome variable or its mediating constructs in this model.

Table 5: Bootstrapping Test on Path Coefficients

Path	Original Sample (O)	Sample Mean (M)	STDEV	T Statistic	P Value
INCAP → SOMP	0.112	0.113	0.010	11.641	0.000***
POMP → SOMP	0.119	0.120	0.009	12.982	0.000***
TIPP → INCAP	-0.016	-0.016	0.013	1.217	0.224
TIPP → POMP	0.004	0.004	0.019	0.198	0.843
TIPP → SOMP	0.008	0.008	0.011	0.745	0.456

Source: Own Analysis

The effect size analysis showed that INCAP and POMP had small but meaningful contributions to SOMP, with f^2 values of 0.073 and 0.082, respectively. In contrast, the effect of TIPP on SOMP was negligible ($f^2 = 0.000$), reinforcing the finding that TIPP does not play a substantial direct role in explaining SOMP.

Table 6: Bootstrapping Test – Specific Indirect Effects

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (O/STDEV)	P Values
TIPP → POMP → SOMP	0.000	0.000	0.002	0.197	0.844
TIPP → INCAP → SOMP	-0.002	-0.002	0.002	1.204	0.229

Source: Own Analysis

Similarly, the total indirect effect of TIPP on SOMP was not significant ($\beta = -0.001$, $t = 0.424$, $p = 0.671$), as shown in Table 7. This confirms that TIPP has no meaningful indirect influence on SOMP through the mediating mechanisms included in the model.

Table 7: Bootstrapping Test – Total Effects

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (O/STDEV)	P Values
INCAP → SOMP	0.112	0.113	0.010	11.641	0.000***
POMP → SOMP	0.119	0.120	0.009	12.982	0.000***
TIPP → INCAP	-0.016	-0.016	0.013	1.217	0.224
TIPP → POMP	0.004	0.004	0.019	0.198	0.843
TIPP → SOMP	0.007	0.007	0.012	0.593	0.553

*** significant at $P < 0.01$; ** significant at $P < 0.05$; * significant at $P < 0.10$

Source: Own analysis

5. Conclusion

Our findings confirm that innovation capability and performance-oriented management practices positively affect SOMP, while tax-related informal payment pressure does not exert a statistically significant direct or indirect effect in the estimated model. In this study, SOMP is understood specifically as sustainability-oriented environmental management practices, reflected in CO₂ emissions monitoring and energy management measures. This highlights the main message of the study: firms are more likely to implement SOMP when they possess internal capabilities supporting innovation, structured problem solving, performance monitoring, and sustainability-related action. Therefore, the findings are interpreted in relation to the environmental pillar of sustainability rather than the full social, economic, and governance dimensions of sustainability. In this respect, the results are consistent with prior research showing that knowledge management and operations-related routines play an important role in translating organizational resources into green innovation and sustainable performance (Khan et al., 2024). In doing so, this study extends existing research by showing that internal organizational capabilities matter more for SOMP than tax-related ethical pressure alone in the present model. More specifically, the findings suggest that innovation capability and performance-oriented management practices provide an immediate pathway to sustainability-oriented action than the external ethical-pressure variable examined here. This interpretation is in line with studies indicating that corruption and weak institutional conditions may discourage formal managerial development and distort firms' incentives, but that the organizational consequences of such pressures depend on firms' internal capacities and strategic responses (Zhang et al., 2024; Park et al., 2021). The insignificant effect of tax-related informal payment pressure suggests that institutional ethical constraints may not automatically reduce environmental management engagement. Their effect may depend on the type of pressure measured, sectoral context, or other firm-level capabilities. Moreover, our findings also have practical implications. From a managerial perspective, firms should not treat SOMP as isolated compliance activities, but as part of a broader organizational system that includes innovation support, performance monitoring, continuous improvement, and structured knowledge use. Managers can strengthen sustainability-oriented environmental management by supporting product and process innovation, R&D activities, and routines for monitoring performance and operational problems. Research suggests that sustainability outcomes improve when formal management routines are connected to operational capabilities and when knowledge management supports green innovation and sustainable performance (Sancha et al., 2023). From a policy perspective, the findings imply that anti-corruption reforms remain important, but they should be complemented by measures that strengthen firm level managerial and innovation capabilities. In other words, improvements in governance alone may not automatically translate into stronger SOMP unless firms also develop the internal routines and knowledge-based capabilities needed to implement sustainability-related practices effectively (Handoyo, 2024). The study acknowledges several limitations. First, the cross-sectional nature of the WBES 2024 data limits strong causal inference. Second, the reliance on standardized survey items restricts the ability to capture richer organizational and contextual dimensions of knowledge management and SOMP. Third, the study focuses on one specific proxy for institutional ethical constraints, namely tax-related informal payment pressure, which does not fully reflect the broader range of corruption-related and governance-related pressures that may affect firms. Fourth, the pooled sample of Latvia, Poland, and Czechia does not allow a more detailed comparison across national settings. Future research could therefore employ longitudinal data, incorporate broader measures of institutional ethical constraints, and examine additional determinants of SOMP such as firm size, ownership structure, export orientation, sectoral conditions, and country-level governance quality.

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