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CHAPTER 1

The Algorithmic Turn in Internationalization: How Artificial Intelligence and Platforms Reshape International Management

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Abstract

The internationalization of firms is increasingly shaped by digital technologies, algorithmic decision-making, and human-centric principles, challenging the explanatory power of classical internationalization models. This study introduces the concept of the algorithmic turn in internationalization. It develops an integrative framework encompassing three complementary dimensions: AI-driven internationalization, platform-orchestrated internationalization, and Industry 5.0 human-centric internationalization. Adopting a mixed-methods research design, the study combines four in-depth case studies with contrasting digital profiles and a survey of 218 internationalized firms to examine how these dimensions reshape foreign market entry decisions, the configuration of management accounting and control systems, and international performance outcomes. The findings show that AI maturity

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accelerates international expansion and fosters hybrid entry modes, that platform dependence entails a trade-off between scale and managerial control, and that algorithmic and human-centric governance mechanisms enhance the reliability and adaptability of management accounting and control systems in digitally mediated international contexts. The study contributes to international management research by extending classical internationalization theories to account for algorithmic and platform-based dynamics, and by highlighting the role of governance and control architectures in enabling responsible, resilient, and human-centred digital internationalization strategies.

Keywords: Algorithmic Internationalization, Artificial Intelligence, Digital Platforms, International Management, Management Accounting and Control Systems, Human-Centric Governance

Introduction:

Classical models of internationalization, including the Uppsala Model (U-Model), the Innovation Model (I-Model), the Born Global perspective, Network Theory, the Product Life Cycle model, non-sequential models, pre-export activities, and integrated frameworks, have played a central role in explaining firms' international trajectories. These theoretical approaches have helped to elucidate critical dimensions of the internationalization process, such as gradual progression into foreign markets, the level of resource commitment, mechanisms of operational control, and the management of risk associated with international expansion (Johanson & Vahlne, 1977; Cavusgil, 1980; Oviatt & McDougall, 1994; Roque et al., 2019). However, these models were developed in informational and technological contexts that differ substantially from those prevailing today, characterized by limited access to data, low levels of digitalization, and still incipient international interconnectedness. As a result, their explanatory power has become increasingly constrained by contemporary internationalization dynamics, which are shaped by data-intensive digital environments, real-time, data-driven decision-

making, and highly interconnected global ecosystems. Over the past two decades, the acceleration of digital transformation, driven by advances in artificial intelligence (AI), the proliferation of digital platforms, and the emergence of global digital ecosystems, has profoundly altered the conditions under which firms design and implement their internationalization strategies (Verbeke & Ciravegna, 2018; Stallkamp & Schotter, 2021). In parallel, the industry 5.0 agenda promoted by the European Commission (European Commission, 2021) explicitly emphasizes human-centric, sustainable, and resilient approaches, reinforcing the need to align technological efficiency with social, ethical, and environmental values. This new Accordingly, this study pursues a dual objective. First, it seeks to develop a conceptual framework that extends classical internationalization models by integrating the three aforementioned digital and human-centric layers (AI-IM, POI, and I5-HCI). Second, it aims to empirically test this framework by examining how these layers reconfigure foreign market entry decisions, the design and use of MACS, and firms' international outcomes. To this end, the study adopts a mixed-method research design that combines multiple case studies with a survey of 218 internationalised firms, enabling the articulation of deep causal mechanisms with large-scale statistical evidence. This study makes three contributions to international management literature. First, it extends classical internationalization theories by conceptualizing the algorithmic turn in internationalization and by integrating artificial intelligence, platform-mediated dynamics, and human-centric principles into a coherent explanatory framework. Second, it advances research on international management control by highlighting the role of algorithmic governance mechanisms in reshaping management accounting and control systems (MACS) under digitally mediated internationalization. Third, it provides robust mixed-method empirical evidence, combining multiple case studies and survey data analysed through PLS-SEM, to substantiate the proposed framework and to explain how algorithmic and platform-based dynamics influence foreign market entry decisions and international outcomes.

Literature Review

Classical Models of Internationalization Classical models of internationalization continue to provide a foundational theoretical reference for understanding firms' expansion into foreign markets. Among the most influential models, the Uppsala Model (U-Model) conceptualises internationalization as a process of incremental learning, characterised by a gradual increase in international commitment as firms accumulate experiential knowledge of foreign markets (Johanson & Vahlne, 1977, 2009). Complementarily, the Innovation Model (I-Model) interprets internationalization as a sequence of progressive stages, aligned with the logic of innovation diffusion and the gradual adoption of international practices (Bilkey & Tesar, 1977; Cavusgil, 1980).

Additionally, the Product Life Cycle model associate's internationalization patterns with the dynamics of innovation, production, and product maturity across different geographical contexts, highlighting the progressive relocation of productive activities over the product life cycle (Vernon, 1966). Taken together with non-sequential models, pre-export approaches, and integrated frameworks, these contributions form a consolidated body of theory that captures multiple logics and trajectories of firm internationalization (Andersen, 1993; Rialp et al., 2005). In this study, these models are adopted as the baseline analytical layer, insofar as they synthesize the core logics underlying the internationalization process, namely, sequential versus nonsequential pathways, incremental learning versus strategic leaps, the centrality of networks and knowledge, and the relationship between innovation and the product life cycle, with direct implications for operational control, resource commitment, and international risk management (Roque et al., 2019; Verbeke & Ciravegna, 2018). This theoretical foundation thus provides the necessary reference framework for comparing, contextualizing, and interpreting contemporary internationalization trajectories. Despite their explanatory relevance, literature reveals several significant gaps. In particular, three limitations can be identified. First, there is limited integration between classical internationalization models

and emerging mechanisms associated with artificial intelligence and digital platforms, with traditional process-based models often struggling to capture digital dynamics, rapid scalability effects, and data- and algorithm-driven decision-making (Liesch & Welch, 2024; Kim, 2025). Second, there is a near absence of studies that explicitly connect these dynamics with MACS, despite growing recognition that digital internationalization requires specific configurations of control, coordination, and risk management (Merchant & Van der Stede, 2017; Justin et al., 2023; Appelbaum et al., 2020). Third, there is a scarcity of mixed-method empirical research that simultaneously examines the role of AI, digital platforms, Industry 5.0, and management control systems in internationalization processes; existing evidence remains fragmented and is predominantly conceptual or based on isolated case studies (Yang et al., 2023; Tortorella et al., 2021; Schmeisser et al., 2025). These gaps justify the need for an expanded conceptual framework that incorporates the digital and human-centric layers that characterize contemporary internationalization.

Artificial Intelligence and AI-Driven Internationalization (AI-IM) Building on this shift, recent studies have examined how artificial intelligence (AI) reshapes internationalization processes by enabling data-driven market selection, entry mode configuration, and pricing decisions, particularly in market selection, entry mode configuration, and pricing decisions (Menzies et al., 2024; Chishty et al., 2025; Csaszar et al., 2024). The use of machine learning algorithms, advanced decision-support systems, and predictive analytics enables firms to accelerate international expansion processes, increase the geographical scale of their operations, and optimize resource allocation in contexts characterized by high uncertainty and complexity (Duan et al., 2019; Ransbotham et al., 2021; Shrestha et al., 2021). Notwithstanding its benefits, the adoption of AI also introduces emerging risks. Prior research has highlighted concerns regarding algorithmic bias, the opacity of decision-making processes (Blackbox decision-making), dependence on proprietary analytical solutions, and increased vulnerabilities in cybersecurity and data governance (Aversa et al., 2021; Martín & Jones, 2023). These risks are particularly salient in

international contexts, where algorithmic decisions may have amplified effects across multiple markets and jurisdictions. In this context, this study proposes the concept of AI-Driven Internationalization (AI-IM) as an additional layer that extends classical internationalization models and reconfigures the traditional stages of the internationalization process. AI-IM operationalizes core internationalization activities, namely, the identification of international opportunities, market and segment discovery, target country selection, entry mode configuration, and the timing of international expansion, through the use of machine learning algorithms, optimization techniques, and data-driven decision-support systems. This framework fosters continuous learning and dynamic adjustment processes, transforming internationalization into an iterative cycle of real-time monitoring, prediction, and adaptation (Bresciani et al., 2021; Buckley, 2021). The integration of this algorithmic layer has several important implications for firms' internationalization trajectories. First, it is expected to increase both the speed and the scope of international expansion, as AI enables the simultaneous analysis of multiple markets and scenarios. Second, it is likely to encourage greater propensity towards hybrid entry modes, combining traditional forms such as exporting with digital platforms and small-scale foreign direct investment (micro-FDI). Third, the concentration of analytical capabilities within proprietary systems or dominant platforms may lead to increased centralization of strategic decision-making, thereby reducing the autonomy of local subsidiaries. Finally, additional risks are reinforced, including tacit collusion in algorithm-mediated environments, opacity in decision criteria, and heightened cybersecurity vulnerabilities (Huang & Rust, 2021; Watson et al., 2018). Based on this framework, the following research question is posed: RQ1. How does AI maturity, particularly data, analytical capabilities, and algorithmic governance, influence the speed, scope, and diversity of international entry modes? Anchored in the literature and the theoretical arguments developed above, the following proposition is formulated: **Proposition P1.** The higher the level of AI maturity and data-driven analytical capabilities, the faster the entry into new international markets and the more

frequently the adoption of hybrid combinations of entry modes (e.g., exporting, digital platforms, and micro-foreign direct investment).

Platform-Orchestrated Internationalization (POI) The growing centrality of digital platforms, including marketplaces, app stores, super-apps, and B2B hubs, has been structurally transforming internationalization processes, particularly for small and medium-sized enterprises (SMEs). By significantly reducing coordination and transaction costs, these platforms enable resource-constrained firms to rapidly access international markets and new customer segments, thereby alleviating traditional constraints related to capital, knowledge, and physical presence in foreign markets (Coviello et al., 2017; Brouthers et al., 2016). Through digital intermediation, SMEs can accelerate the identification of international opportunities, expand their geographic scope, and operate within global ecosystems characterized by substantially lower entry barriers than those observed in traditional internationalization models (Autio et al., 2021). However, platform-mediated internationalization is not without structural challenges. Platform governance establishes a set of formal and informal rules, including visibility algorithms, commission structures (take rates), data access policies, and performance monitoring mechanisms, that directly shape firms' speed of entry into foreign markets, international reach, and degree of strategic autonomy (Stallkamp & Schotter, 2021; Cusumano et al., 2019). While digital platforms provide immediate access to global networks and rapid scalability, they also tend to generate.

significant dependencies, potentially harming unit margins, control over end customers, and exposing firms to the risk of sudden exclusion (deplatforming). These tensions reveal a central trade-off between scale and dependence, necessitating that firms reconsider their internal governance arrangements and MACS. In contexts of platform-orchestrated internationalization, MACS play a critical role by enabling the systematic monitoring of platform specific metrics, such as take rates, customer acquisition costs, cohort analyses, market-level profitability, and the continuous assessment of risks associated

with excessive dependence on dominant platforms (Chen et al., 2019). The ability to integrate advanced analytics into MACS thus becomes a key capability for mitigating power asymmetries and supporting informed strategic decision-making. Based on this framework, the following research question is posed: RQ2. How does dependence on digital platforms affect the balance between operational control, margins, and access to data, in contrast to the gains in scale and speed associated with the internationalization process? Drawing on the reviewed literature and the theoretical arguments developed above, the following proposition is formulated: Proposition P2. Dependence on digital platforms tends to reduce firms' effective organizational control and net margins; however, these effects are partially mitigated when firms deploy MACS equipped with platform-specific analytical capabilities.

Industry 5.0 and Human-Centric Internationalization (I5-HCI)

The European Commission (2021) positions Industry 5.0 as an evolution and complement to Industry 4.0, explicitly introducing principles of human centricity, sustainability, and resilience into productive and organizational processes. Whereas Industry 4.0 primarily emphasised digitalisation, automation, and operational efficiency, Industry 5.0 broadens this logic by stressing the need for technologies oriented towards improving quality of life, preserving the dignity of work, and fostering long-term sustainable value creation (Nahavandi, 2019; Xu et al., 2018). In this context, recent initiatives, such as the Community of Practice for Industry 5.0, have sought to operationalize this paradigm through the development of roadmaps, metrics, and assessment tools that enable organizations to translate these principles into managerial practices and new performance measurement systems (European Commission, 2021; Breque et al., 2021). In this study, I5-HCI is conceptualized as an organizational moderator that interacts with the digital layers of internationalization, namely AI-IM and POI, by mitigating control risks and dysfunctions in highly technologically advanced contexts. The I5-HCI logic is grounded in a hybrid model that combines automation and artificial intelligence with

principles of human centricity, organizational resilience, and sustainability. In contrast to a purely techno-centric approach, I5-HCI promotes a balanced integration of digital efficiency with social, ethical, and organizational responsibility. The adoption of this paradigm has important implications for internationalization processes. First, it entails a reconfiguration of organizational design and competencies, simultaneously valuing advanced digital capabilities and critical human skills such as judgement, creativity, and ethical sensitivity. Second, it leads to the development of performance metrics and incentive systems aligned with ESG criteria and employee well-being, extending beyond traditional financial indicators. Third, it mitigates digital risks by implementing ethical and responsible AI governance mechanisms, thereby reducing phenomena such as automation bias and opaque algorithmic decision-making. Finally, it fosters more resilient global value chains, capable of adapting to external shocks and environments characterised by heightened international uncertainty (Liu & Xu, 2021; Demir et al., 2019).

Algorithmic Governance and the Transformation of Management Accounting and Control Systems

Recent literature has increasingly documented a structural transformation of MACS, driven by the growing incorporation of artificial intelligence and advanced analytics into organizational processes. This transformation reflects a progressive shift from predominantly reactive systems, focused on historical reporting, towards dynamic, predictive, and real-time integrated architectures (Appelbaum et al., 2017; Moll & Yigitbasioglu, 2019; Korhonen et al., 2021). Within this context, the literature identifies four main trends. First, the emergence of predictive key performance indicators (KPIs) and real-time dashboards enables managers not only to monitor current performance but also to anticipate future outcomes and simulate alternative scenarios. This evolution substantially enhances managerial agility and responsiveness, particularly in international contexts characterized by high volatility and uncertainty (Appelbaum et al., 2017; Cokins, 2021). Second, the diffusion of advanced analytics and optimization algorithms tends to reinforce the

centralization of strategic decision-making, as these capabilities become critical resources, often concentrated at headquarters or controlled through proprietary solutions. This dynamic reshapes traditional balances between central control and local autonomy, with direct implications for multinational governance and internal control systems (Quattrone, 2016; Arnaboldi et al., 2017). At this point, it is important to distinguish algorithmic governance from the broader governance logic associated with Industry 5.0. While Industry 5.0 governance (hereafter I5-HCI governance) reflects a human-centric, ethical, and sustainability-oriented normative framework, algorithmic governance refers to the concrete organizational mechanisms designed to supervise, constrain, and audit algorithmic decision-making systems. Hereafter, the term I5.0 governance refers to a human-centric, ethical, and sustainability-oriented governance logic, whereas algorithmic governance denotes only formal mechanisms for supervising and auditing algorithmic decision-making. Third, the increasing reliance on algorithms and machine learning models creates a strong need for explicit mechanisms of algorithmic governance. These mechanisms include the precise definition of roles and responsibilities, the implementation of operational guardrails, systematic model audits, and the adoption of explainability practices, aimed at mitigating risks related to algorithmic bias,

Methodology

Building on the internationalization literature and on the proposal to extend classical internationalization models developed by Roque, Alves, and Raposo (2019), this study develops an integrative conceptual framework that articulates three emerging paradigms of contemporary internationalization: AI-IM, POI, and I5-HCI. The conceptual model incorporates three core antecedent conditions: (i) AI maturity, (ii) the degree of dependence on digital platforms, and (iii) the quality of human-centric governance associated with Industry 5.0, and

relates them to key international decision-making mechanisms, namely market selection, entry mode choice, and hybridisation, and the speed and scope of international expansion. In addition, the model integrates MACS adaptability and configuration in digital environments, as well as internationalization outcomes, including international performance, digital risks, and organizational sustainability. To operationalise this framework, the study adopts a mixed-method research design structured into two interrelated phases, combining in-depth qualitative analysis with large-scale quantitative validation. The aim is to capture the mechanisms that structure internationalization mediated by artificial intelligence, digital platforms, and human-centric principles associated with Industry 5.0, as well as the role played by MACS in this process. The choice of a mixed-methods approach enables the integration of mechanistic explanations with causal testing, leveraging the complementary strengths of qualitative and quantitative methods. The study was therefore developed in two phases. Phase 1 consisted of four multiple case studies, selection rationale, relevant, technologies & interviewee profiles.

To strengthen externa validity and contextual understanding additional information was collected for each organization, including year of foundation, approximate number of employees, international presence (number of countries of operation), and degree of internal digitalisation. The latter was assessed using metrics such as the percentage of automated processes, the existence of data lakes or *machine learning* pipelines, and the level of integration between operational and analytical systems. The inclusion of these elements enabled the capture of firms' structural heterogeneity and clarified how different configurations of digital maturity shape the observed socio-technical mechanisms.

Table1. Characterization of multiple case studies

Case	Sector / Paradigm	Reason for Selection	Technologies Relevant	Interviewees	Year of Foundation	Number of Employees	Number of Countries Operated	Digitisation level (indicative)
X Tech	Saa SB2B (AI-IM)	Born-digital with intensiveuse of AI	ML; market scoring; dynamic pricing	CEO; Head of Data; Controller	2018	45	12	80% (datalake, full MLOps)
Y Market	E-Commerce (POI)	Strong reliance on marketplaces	Take rate; cohort analytics	Founder; Ops Manager; Controller	2015	28	7	65% (automation, logistics, dashboards)
W_Mfg	Industry (I5-HCI)	Transition I4.0 $\rightarrow$ I5-HCI. ESG practices	MES/IoT; well-being metrics	COO; HR. Con troller	1998	230	4	55% (partialIoT, without datalake)
Z_B2B	B2B Services (AI-IM+POI)	Strategy hybrid AI + platform	Appstore; predictive templates	CFO; International Lead; Data Lead	2010	60	10	75% (ML pipelines and automation commercial)

Qualitative data collection integrated four complementary sources: (i) semi-structured interviews, conducted using a standardized protocol aligned with the theoretical propositions and validated through member checking; (ii) analysis of internal documentation (AI policies, playbooks, KPIs); (iii) digital trace data (platform analytics, conversion funnels, cohort analyses, and latency-to entry); and (iv) direct observation of management dashboards. All materials were anonymized and processed using CAQDAS software, enabling systematic procedures of open, axial, and selective coding, as well as the maintenance of a rigorous audit trail. Data analysis followed a structured process that combined pattern matching (comparing theoretical propositions with empirical evidence), process tracing (identifying the mechanisms underlying key decision episodes), and constructing cross-case matrices linking conditions, mechanisms, and outcomes. Rival explanations, namely industry sector, organizational size, and prior international experience, were also considered and subsequently rejected or partially discounted, thereby reinforcing the explanatory relevance of digital factors in shaping the observed patterns. Following an exploratory sequential mixed-methods design, Phase 2 complemented the qualitative analysis (Phase 1) by administering a quantitative survey to internationalized firms in Portugal and other European Union countries, in which the propositions derived from the qualitative phase were operationalized as testable hypotheses. The sampling frame was constructed using business databases and professional networks, and organizations with active international operations were contacted. Sampling combined convenience and snowball techniques, resulting in 218 valid responses, a number exceeding the minimum requirements recommended for PLS-SEM estimation (Hair et al., 2022; Sarstedt et al., 2021; Kline, 2016). The questionnaire, distributed via institutional email addresses, employed seven-point Likert scales (1–7) to measure constructs derived from both the literature and the findings of Phase 1, including AI maturity, platform dependence, I5-HCI, digital MACS, speed and scope of internationalization, adoption of hybrid entry modes, and international performance. Wherever possible, previously validated scales were adapted to the study context and supplemented by author-developed items

as necessary. The operationalisation of constructs is presented in Table 2, including sample items and their respective sources.

Table2. Operationalization of the constructs

Construct	Examples of tems (Likert Scale 1–7)	Source/ Adaptation
MaturityinAI	"We have formal ML O psprocesses.""We conduct audits of AI models."	Hasan (2024); MIT/BCG (2024)
Platform Dependency	"+50% of revenue comes from platforms."The risk of deplete forming is significant."	DaRocha (2024)
Governance I 5.0	"The decisions involve human-centric and well-being criteria."	EC (2021); CoP (2024)
Digital MACS	"We use predictive KPIs." "We have real-time dashboards available."" Budgets are adaptive."	Sundström (2024)
Speed	Months between decision and go-live	
Hybrid Mode	Composite index of entry modes	Developed forth is study
International Performance	Growth, margin, ESG indicators	Developed for this study

Analytical Procedures and Quality Criteria

The statistical model was estimated using PLS-SEM, following the recommendations of Hair et al. (2022), as this technique is particularly suitable for exploratory models, reflective constructs, and medium-sized samples. The analysis was conducted in two stages. In the first stage, the measurement model was assessed by examining internal consistency reliability (Cronbach's alpha), composite reliability (CR), convergent validity (average variance extracted—AVE), and discriminant validity (Fornell–Larcker criterion). In the second stage, the structural model was estimated to test direct, indirect, and moderating relationships among the constructions. Coefficient stability was assessed through bootstrapping with 5,000 re-samples.

Results and Discussion

This section integrates evidence from Phase 1 (multiple case studies) and Phase 2 (PLS-SEM survey) to assess the empirical support for Propositions P1–P4. The first salient pattern emerged in X_Tech, a born-digital firm with high AI maturity. Its decision-making processes relied heavily on predictive market-scoring models that combine potential demand, entry costs, and competitive intensity, thereby significantly reducing uncertainty and accelerating decision cycles. These dynamics were accompanied by advanced control practices, including predictive KPIs, real-time dashboards, and adaptive budgeting, leading to hybrid entry modes that combine digital exporting, platform presence, and micro-foreign direct investment (micro-FDI). This preliminary qualitative evidence aligns with the pattern anticipated in Proposition P1, which posits that higher AI maturity is associated with greater speed and diversity in foreign market entry strategies.

Pattern of matching

Proposition	Theoretical Standard	Evidence from the Cases	Conclusion
P1	AI accelerates decisions and generates hybrid modes.	Cycles < 6 months; export + platforms + micro- FDI	Full match
P2	Platforms generate scale but reduce control.	Volatile margins; risk of deplatforming	Full match
P3	Human-centricity reduce algorithmicizes.	Audits, well-being, resilience	Strong correspondence
P4	Algorithmic governance increases reliability.	Guardrails and playbooks implemented.	Full match

Evidence-based empirical findings about AI, digital governance, and implications for MACS architecture and control

Case	Key Empirical Evidence	Implications for MACS architecture and control	Supported Propositions
X_Tech	Use of predictive AI, quick decisions, and hybrid modes.	KPIs; adaptive budgeting; algorithmic governance	P1,P4
Y _ Market	marketplace dependency; margin compression.	Post-mediation metrics ; cohort analytics	P2
W_Mfg	Human-centric practices; AI committee; ESGmetrics	KPIs forwell-being and resilience; reduction of dysfunctions.	P3
Z_B2B	AI platforms; micro-FDI;algorithmic guardrails	Hybrid control mechanisms; algorithmic integration	P1,P2, P4

Reliability and validity of the scales

Construct	Alpha	CR	AVE
Maturity in AI	0.89	0.91	0.67
Platform Dependency	0.82	0.86	0.60
I5.0 Governance	0.88	0.90	0.64
Digital MACS	0.91	0.93	0.72
International Performance	0.80	0.84	0.54

The quantitative results clearly converge with the patterns identified in Phase 1. X_Tech and Z_B2B, both characterised by high levels of AI maturity, illustrate how predictive digitalisation accelerates decision cycles and favours hybrid combinations of entry modes. Y_Market empirically exemplifies the risks associated with platform dependence, aligning with the adverse effects observed on margins and net performance in the statistical model. W_Mfg demonstrates how human-centric mechanisms reduce control dysfunctions and strengthen system credibility, as confirmed by the significant quantitative moderation effect. Finally, algorithmic governance, observed at a more advanced level in Z_B2B and X_Tech, emerged as a critical variable for the reliability of MACS and for performance in foreign markets.

Summary of Propositions (Triangulation Phase 1 + Phase 2)

Proposition	Qualitative Evidence	Quantitative Evidence	Conclusion
P1– AI increases speed and hybrid modes	X_TechandZ_ B2B	β IA ⟶ Speed= 0.41; β IA ⟶ Hybrid Mode= 0.33	Confirmed
P2– Platforms accelerate but compress margins	Y_Market	β Platform ⟶ Amplitude= 0.38; β Platform ⟶ Performance=– 0.27	Confirmed
P3– I5.0 Governance moderates the impact of AI.	W_Mfg	β I5×IA ⟶ MACS= 0.29	Confirmed
P4– Algorithmic governance reduces risks	X_TechandZ_ B2B	β Algorithmic governance⟶MACS= 0.36	Confirmed

These findings contribute to the ongoing debate on algorithmic governance, highlighting that MACS are not merely control instruments but socio-technical architectures that actively shape international strategies.

Conclusions

This study builds on a critical review of classical internationalization models to propose an updated conceptual framework that integrates three emerging paradigms of contemporary internationalization: AI-IM, POI, and I5-HCI. Using a mixed-methods research design that combined multiple case studies with a quantitative survey of 218 internationalised firms, the study examined how these digital and human-centric layers reconfigure foreign market entry decisions, the architecture of MACS, and organizational outcomes in terms of performance, risk, and sustainability. The results empirically confirm all four propositions and point to three central conclusions. First, AI maturity significantly accelerates internationalization and broadens the range of entry modes, fostering hybrid strategies that combine digital exporting, platform participation, and micro-foreign direct investment. These findings demonstrate that AI not only reduces uncertainty

in market selection but also structurally alters the traditional sequential logic of internationalization. Second, dependence on digital platforms emerges as an ambivalent mechanism. While it facilitates rapid gains in scale and geographical reach, it entails a clear trade-off between growth, organizational control, and net margins. The empirical evidence indicates that this trade-off is only partially mitigated when firms deploy specialised MACS that monitor take rates, customer acquisition costs, cohort analytics, and deplatforming risks. Third, the findings reveal that human-centric governance and algorithmic governance constitute critical conditions for the reliability and legitimacy of MACS in technology-intensive internationalization contexts. The Industry 5.0 logic, by emphasising well-being, ethics, sustainability, and resilience, acts as an organizational moderator that reduces dysfunctions associated with excessive automation, such as automation bias and dashboard-induced myopia, while strengthening alignment with ESG criteria and stakeholder expectations. From a theoretical perspective, this study offers three main contributions. First, it reconciles classical internationalization models with the digital and human-centric dynamics of the contemporary economy, proposing a unifying framework that explains hybrid trajectories and algorithmically and platform-orchestrated internationalization processes. Second, it deepens the dialogue between the internationalization and management accounting literatures by demonstrating that MACS are not merely reactive control tools, but socio-technical architectures that actively shape strategic decisions regarding entry modes, speed, and international configuration.

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