

RESEARCH ARTICLE

Business Model Innovation in SMEs through Horizontal Coopetition: A Resource Orchestration Perspective**Ayadi Sahar; Assil bouzoutina; Svitlana Ostapenko**

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ABSTRACT

Horizontal coopetition—the collaboration between direct competitors operating at the same market level—has increasingly emerged as a critical interorganizational strategy for enabling digital coopetition and business model innovation in small and medium-sized enterprises (SMEs). Although prior research has examined the relationships between horizontal coopetition, digital coopetition, governance, and business model innovation, limited attention has been devoted to explaining the resource orchestration mechanisms through which these relationships create value and enhance innovation performance. This article addresses this gap by mobilising Resource Orchestration Theory (ROT; Sirmon et al., 2011). It argues that horizontal coopetition provides access to complementary resources, but these resources generate value only when they are effectively orchestrated—structured, bundled, and leveraged—through digital coopetition within governance arrangements comprising legal, transactional, and relational mechanisms that coordinate interfirm collaboration. The empirical analysis relies on secondary data collected from 143 French industrial SME clusters, with particular attention to the Vallée de l'Arve, and employs partial least squares structural equation modelling (PLS-SEM) using XLSTAT. The findings demonstrate substantial explanatory power and confirm the complementary roles of horizontal coopetition, digital coopetition, and governance in enhancing business model innovation performance. By conceptualising digital coopetition as the mechanism through which complementary resources are orchestrated in competitive relationships, this study extends Resource Orchestration Theory beyond intra-organisational resource deployment to interorganizational competitive settings. It also opens promising avenues for future research by encouraging further investigation into the breadth and depth of digitalisation as orchestration mechanisms and the cognitive antecedents of coopetition, including managers' coopetition readiness and Cooperative mindset.

Keywords: horizontal coopetition; resource orchestration theory; digital coopetition; governance; business model innovation; SMEs; PLS-SEM

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1. Introduction

Horizontal coopetition, as described by Le Roy et al. (2022) and Bengtsson and Kock (2000), stands out as a particularly effective strategy for stimulating innovation and fostering the adoption of digital technologies. It involves collaboration between competing firms operating at the same market level, thereby enabling resource sharing while maintaining rivalry on other fronts. Yami and Nemeh (2014), for instance, showed in the telecommunications and technology sectors how firms cooperate to develop digital infrastructures or platforms while continuing to compete on their respective offerings. This dynamic not only reduces the costs associated with digital coopetition but also improves resource optimisation and accelerates innovation, thereby contributing to the evolution of business models (Bouncken & Fredrich, 2025).

Successful examples of horizontal coopetition (Gnyawali & Park, 2011) show that this strategy is already widely applied by large multinationals and could be adapted to SMEs. In the electronics industry, Samsung and Sony regularly collaborate on screen production while competing in the smartphone and television markets. In the automotive industry, Fiat and Renault have formed partnerships to develop vehicle platforms, pooling their R&D costs. In the airline sector, Airbus and Lufthansa cooperate with competitors to improve maintenance services and employee training (Chiambaretto et al., 2024); Lufthansa has also entered into a code-sharing partnership with Deutsche Bahn on certain unprofitable domestic routes, allowing it to maintain its presence in secondary markets while competing with its partner on those same routes. Finally, in the IT sector, IBM and Oracle collaborate on technology innovation projects while continuing to compete on software solutions.

These examples show that horizontal coopetition fosters beneficial synergies, even between direct competitors. While this strategy has proven itself in large corporations, it could also be successfully implemented in SMEs: by sharing the costs of raw-material purchasing, distribution lines and the risks of digital coopetition (Meena et al., 2024), SMEs would be able to innovate their business models through this strategy (Ritala et al., 2014).

A theoretical observation nonetheless runs through this literature: the relationship between coopetition, digital coopetition, governance and performance is most often established empirically and descriptively, without being grounded in an integrative theory explaining why and how these variables link together. This article seeks to fill this gap by mobilising Resource Orchestration Theory (ROT; Sirmon et al., 2011), according to which competitive advantage does not result from the mere possession of resources but from the managerial actions of structuring, bundling and deploying these resources over time. Applied to horizontal coopetition, this theory suggests that access to complementary resources (knowledge sharing, pooled purchasing, technological co-development) provided by coopetition does not mechanically generate performance: this access must be orchestrated — through digital coopetition — and structured by appropriate governance mechanisms in order to translate into effective business model innovation.

This article aims to explore, in light of this theoretical framework, the relationship between horizontal coopetition, digital coopetition, governance and business model innovation in SMEs. It addresses the following research questions:

- What are the effects of horizontal coopetition on firms' business model innovation performance?
- To what extent does digital coopetition, understood as a mechanism for orchestrating competitive resources, contribute to this performance?
- What role do governance mechanisms (legal, transactional, relational) play in structuring this relationship?

The article is organised into five sections. The second section develops the theoretical foundations of the research by mobilising Resource Orchestration Theory. The third section presents the conceptual model and hypotheses. The fourth section details the methodology and the field of study. The fifth section presents the results of the PLS-SEM analysis, discussed in light of the theoretical framework adopted. Finally, the conclusion revisits the study's limitations and proposes avenues for future research, including a finer disaggregation of the digital orchestration mechanism and the exploration of the cognitive antecedents of coopetition.

2. Theoretical Framework

2.1. Horizontal coopetition: definition and constitutive paradox

Coopetition refers to the simultaneous coexistence of cooperation and Competition between economic actors (Brandenburger & Nalebuff, 1996; Bengtsson & Kock, 2014). Its horizontal form refers specifically to collaborations between direct competitors positioned at the same level of the value chain (Bengtsson & Kock, 2000), as opposed to vertical coopetition, which links actors at different levels (suppliers, customers) and mobilises markedly different governance logics, more strongly marked by power asymmetry.

The literature establishes that horizontal coopetition is particularly fertile in the context of geographical clusters and technology-intensive industries (Czaron & Czernek, 2016; Gnyawali & Park, 2011), where proximity facilitates resource sharing while intensifying rivalry. This paradoxical dynamic constitutes, according to Konyalioglu, Ates and Paton (2026), a structural characteristic of interorganisational relationships: their systematic review of more than 2,100 publications shows that coopetition progressively evolves from dyadic, trust-centred configurations towards multi-actor, ecosystem-level configurations, shaped by digitalisation and adaptive governance mechanisms.

Operationally, horizontal cooperation can be multidimensional. Firms can cooperate in procurement, by sharing common resources such as purchasing groups; in production, by drawing on the skills of employees and production-plant staff of partner firms; or in logistics and distribution, by pooling transport equipment and storage facilities. This body of work (Fernandez et al., 2018; Ayadi et al., 2024) highlights several components of coopetition — competition criteria, dimensions of cooperation, partner type (direct or indirect competitor), the form of coopetition (dyadic, triadic, network-based), its governance, and its engagement and intensity indicators — which structure the conditions necessary for a successful coopetition strategy (Bouncken & Fredrich, 2025).

This dynamic, multidimensional character of coopetition has recently been made more explicit. Beraha and Gur (2026) identify seven underlying dynamics that shape firms' strategic orientation toward cooperation, competition or a balanced cooperative posture, and show that their combination explains why cooperative relationships evolve over time rather than settling into a fixed configuration — a finding that refines the ecosystem-level evolution described by Konyalioglu et al. (2026) above. The reach of the concept itself also continues to widen: Fong (2026) shows that the same logic of simultaneous cooperation and rivalry now structures alliance choices among states in the context of US-China strategic coopetition, illustrating that coopetition, first theorised at the firm level, has become a transposable analytical lens for interorganisational relationships more broadly.

This geographical dimension of coopetition can be given a more explicit theoretical grounding in the economics of proximity, which distinguishes geographical proximity — physical distance between actors — from organised proximity, understood as the capacity of a set of actors to interact and coordinate independently of distance, through shared norms, routines or membership in a common professional space (Torre & Rallet, 2005). Applied to logistics and supply-chain networks, Houé (2022) shows that the combination of these two forms of proximity conditions the pace and depth of the digital coopetition undertaken by network members: clusters combining geographical concentration with strong organised

proximity diffuse digital tools more readily than dispersed or loosely coordinated networks. This proximity-based reading complements the empirical justification given below (section 4.1) for selecting the Vallée de l'Arve as the study's field: beyond the density of subcontractors and the cost-reduction strategy documented by Cascino (2010), it is the specific articulation of geographical and organised proximity characterising this cluster that the economics-of-proximity literature identifies as a condition favourable to the very digital-coopetition mechanism mobilised in the model tested below.

2.2. Resource Orchestration Theory as an integrative lens

To move beyond a strictly descriptive reading of the relationship between coopetition and performance, this article mobilises Resource Orchestration Theory (ROT; Sirmon et al., 2011), recently applied to the study of coopetition within innovation ecosystems (Jung & Lee, 2026). ROT posits that competitive advantage depends not only on the possession of resources but on the managerial actions of structuring, bundling and deploying these resources over time.

Applied to our object of study, this theory suggests that the access to complementary resources provided by horizontal coopetition — knowledge sharing, pooled purchasing, technological co-development — does not mechanically produce business model innovation performance. This broadened access to resources must be orchestrated: structured by appropriate governance mechanisms, then deployed through digital coopetition, in order to translate into an effective reconfiguration of processes and business models. This reasoning provides the theoretical architecture of the model tested in this article: horizontal coopetition as access to resources, governance as the structuring of this access, and digital coopetition as the deployment mechanism — the three converging towards business model innovation performance.

Recent work on the resource-based view helps specify the micro-foundations of this orchestration process. Abbas (2026), studying Turkish manufacturing firms, shows that a firm's coopetition capability — its ability to decide when, where and how to collaborate with rivals — drives disruptive green innovation and sustainability performance, and that this effect is conditioned by the firm's knowledge absorptive capacity. Read through the lens of ROT, absorptive capacity can be understood as a micro-foundational capability underlying the bundling and deploying steps of the orchestration process: it is not enough for a firm to gain access to competitive resources or to possess a coopetition capability, it must also be able to recognise, assimilate and apply the knowledge that circulates within the competitive relationship for that access to be converted into performance.

2.3. Digital coopetition as an orchestration mechanism

Digital coopetition refers to the digitalisation of the collaborative relationship that competing firms establish within horizontal coopetition (Jung & Lee, 2026): the shared digital platforms, data exchanges and interoperable tools through which partner firms jointly integrate digital technologies (Liao et al., 2024), profoundly altering value creation, customer interactions and the management of operations they conduct together (Kane, 2015). It involves not only the adoption of technologies such as artificial intelligence, cloud computing or Big Data within the competitive relationship, but also a cultural transformation aimed at strengthening the partners' joint organisational agility (Bouncken & Fredrich, 2025). In line with ROT, we consider digital coopetition as the mechanism through which access to competitive resources is effectively deployed: it enables the creation of shared digital platforms, facilitating the integration of new technologies and the emergence of innovative business models, and fosters the creation of disruptive solutions by leveraging the diversity of expertise and perspectives among the different partners (Bouncken et al., 2021). This deployment role attributed to digital coopetition within the ROT architecture calls, however, for a theoretical grounding of its own, since resource orchestration explains the process by which resources are converted into performance but does not, on its own, specify why or when coopetition itself takes a digital form. This second grounding is provided by Reischauer and Hoffmann (2023), who develop digital coopetition as a construct in its own right — distinct from a merely digitalised version of traditional

coopetition — and specify the conditions under which digital coopetition becomes the dominant form of interfirm rivalry within an industry or ecosystem: the diffusion of algorithms, big data and platforms among competing firms reconfigures how value is jointly created and separately captured, to the point that the resulting cooperative relationship differs structurally, and not merely instrumentally, from its traditional, non-digital counterpart. Read together with ROT, this second pillar clarifies the status of the mediator tested in this article: digital coopetition is not simply horizontal coopetition observed through a digital channel, but a qualitatively distinct regime of interfirm relationship — algorithmic, data-intensive and platform-mediated — that ROT positions as the deployment mechanism through which access to cooperative resources is converted into business model innovation performance. This distinction between horizontal coopetition and digital coopetition as two related but non-equivalent constructs is reflected in the measurement strategy adopted in section 4.2 and Appendix A, where the two are operationalised through separate item sets rather than treated as variants of the same scale.

Very recent work calls for a finer disaggregation of this orchestration mechanism by distinguishing its breadth — the cross-functional diffusion of digital tools across the firm's functions — from its depth — the extent to which these tools are embedded in core business routines and decision-making processes (Fu & Zeng, 2025; Jung & Lee, 2026). A complementary disaggregation, developed specifically within the digital coopetition literature rather than borrowed from the broader digital-transformation literature, is offered by Nan et al. (2025): studying complementors on hospitality platforms, they distinguish three mechanisms through which digital coopetition unfolds dynamically — a spatial mechanism (phygital expanding, the blending of physical and digital modes of interaction with partners), a relational mechanism (loose-coupled bridging between partners of asymmetric power) and a temporal mechanism (instant shifting between cooperative and competitive postures). Because this typology is anchored in the digital coopetition construct itself rather than in firm-level digitalisation, it offers a theoretically closer candidate than the breadth/depth distinction for a future disaggregation of the mediator tested here. Neither distinction could be operationalised with the data mobilised in this article; both are taken up as research avenues in section 6.

This deployment function attributed to digital coopetition is consistent with earlier applications of resource orchestration to digital settings outside the coopetition literature. Studying the adoption of e-commerce by manufacturing firms, Cui and Pan (2015) show, through a process-based qualitative study, that the capabilities required to successfully deploy digital technologies change across the phases of adoption, and that resource orchestration — rather than mere resource possession — determines whether digital investment translates into an effective capability. Their study, conducted at the level of a single organisation, provides a direct methodological precedent for coupling ROT with digital coopetition; the present article extends this coupling from an intra-organisational to an interorganisational, cooperative setting, in which the resources being orchestrated are not solely the firm's own but are partly accessed through horizontal cooperation with competitors.

2.4. Coopetition governance as a condition for structuring

The literature on the governance of cooperative relationships identifies three broad categories of mechanisms: legal governance (contracts, intellectual-property clauses), transactional governance (exchange rules, cost- and benefit-sharing arrangements) and relational governance (trust, norms of reciprocity, long-term commitment). These three mechanisms are not substitutable but complementary: hybrid governance, combining formal safeguards with relational mechanisms, appears necessary to manage the fundamental paradox of coopetition — collaborating while protecting oneself against the risk of opportunism and the leakage of strategic knowledge (Bouncken et al., 2016; Tidström et al., 2018).

Read through the lens of resource orchestration, governance is not merely one explanatory variable among others: it represents the resource-structuring function — the first step of the orchestration process according to Sirmon et al. (2011) — which enables and secures access to resources shared between competitors. This

is why the model tested in this article incorporates the three dimensions of governance as direct antecedents of performance, alongside coopetition and digital coopetition: their respective contribution to explaining performance allows the structuring role attributed to them by the theory to be empirically assessed.

This structuring function is all the more critical because coopetition also carries a risk of knowledge misappropriation that governance is meant to contain. Using panel data on Chinese pharmaceutical firms, Zhang, Sun and Zhou (2026) find an inverted-U-shaped relationship between the intensity of competition with a partner and the focal firm's R&D investment: beyond a certain threshold, the fear of knowledge leakage outweighs the benefits of knowledge acquisition and depresses investment. They further show that regional intellectual-property-rights protection flattens this curve, while firms' organisational inertia steepens it — an empirical illustration, external to our own field, that legal governance can neutralise part of the opportunism risk inherent in horizontal coopetition, reinforcing the structuring role attributed to governance in the model tested below.

2.5. Business model innovation as the outcome of orchestration

Business model innovation consists of rethinking and redefining the ways in which a firm creates, delivers and captures value (Nyuur et al., 2023). It can be understood through several key dimensions reflecting its capacity to create, deliver and capture value, while having a strategic and societal impact. Value creation assesses whether the innovation differentiates the offering, integrates disruptive technologies and strengthens strategic partnerships. Value delivery rests on customer experience, digitalisation and operational efficiency. Value capture examines revenue diversification, margin improvement and financial sustainability. Strategic impact analyses increased competitiveness and business model flexibility. Finally, social and environmental impact considers sustainable practices and benefits for communities.

Within the theoretical framework adopted, this innovation performance constitutes the outcome of the orchestration process: it results from the combination of access to cooperative resources (horizontal coopetition), their structuring (governance) and their deployment (digital coopetition). Table 1 summarises the articulation between these three bodies of theory and their contribution to the tested model.

Table 1: Articulation of the tested model with Resource Orchestration Theory

Theoretical body mobilised	Function in the orchestration process (Sirmon et al., 2011)	Contribution to the tested model
Horizontal coopetition (Bengtsson & Kock, 2000; Le Roy et al., 2022)	Access to resources	Exogenous variable: direct effect on performance (H1)
Governance — legal, transactional, relational (Bouncken et al., 2016; Tidström et al., 2018)	Structuring of resources	Exogenous variables: direct effect on performance (H3a–c)
Digital coopetition (Kane, 2015; Bouncken & Fredrich, 2025)	Deployment of resources	Exogenous variable: direct effect on performance (H2)
Business model innovation (Nyuur et al., 2023)	Outcome of orchestration	Endogenous variable (dependent variable)

3. Conceptual Model and Hypotheses

In line with the theoretical framework adopted, the conceptual model (Figure 1) articulates three exogenous variables — horizontal coopetition, digital coopetition and governance (legal, transactional, relational) —

and one endogenous variable, business model innovation performance. Digital coopetition and governance are linked to horizontal coopetition (upward/downward arrows in the diagram), reflecting the fact that access to coopetitive resources feeds both their structuring by governance and their deployment through digitalisation, before converging towards performance.

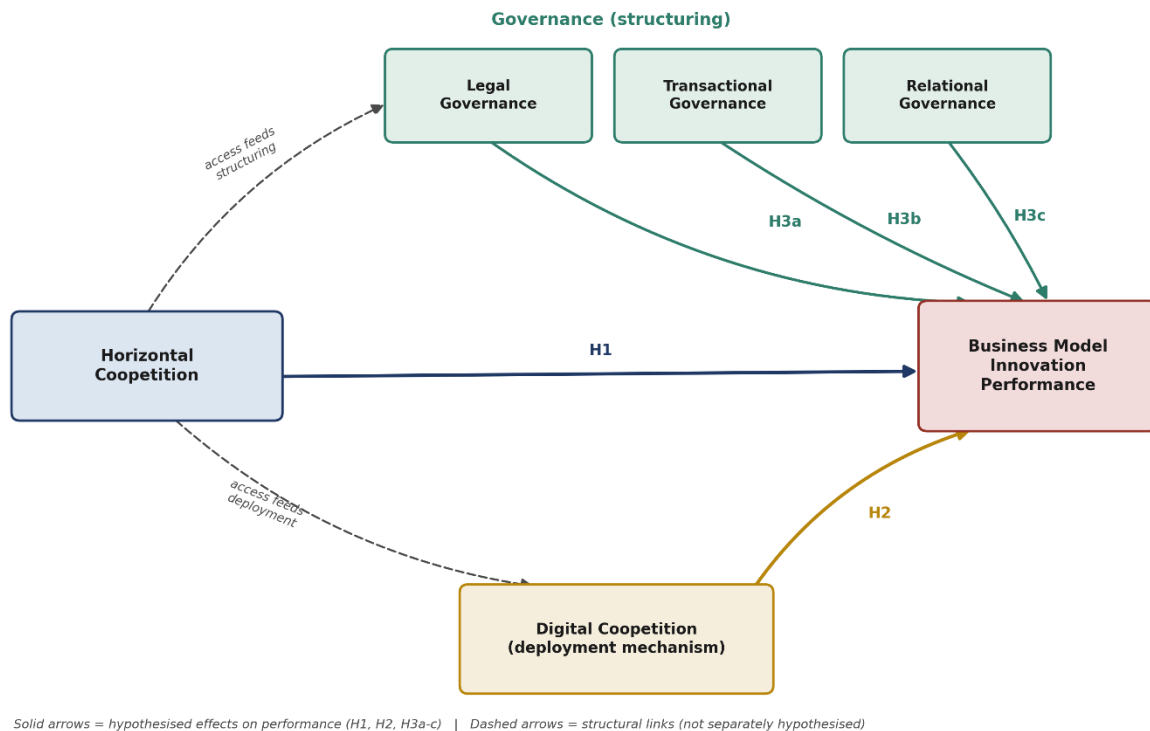


Figure 1: Conceptual model of the effect of coopetition on business model innovation, read through the lens of resource orchestration. Solid arrows show the hypothesised paths (H1, H2, H3a-c) to business model innovation performance; dashed arrows show the structural links through which horizontal coopetition feeds governance and digital coopetition, without being separately hypothesised.

3.1. Direct effect of horizontal coopetition

The type and intensity of horizontal coopetition determine the extent of resources shared between competitors (Katsaliaki et al., 2024). From an orchestration perspective, this access to resources constitutes the raw material of the innovation process:

H1: The type of horizontal coopetition has a positive effect on firms' business model innovation performance.

3.2. Effect of digital coopetition as a deployment mechanism

Digital platform innovation and, more broadly, the digital coopetition of SMEs — understood, following Reischauer and Hoffmann (2023), as a distinct, algorithmic and platform-mediated regime of interfirm rivalry rather than a mere digital variant of horizontal coopetition — constitute the mechanism through which resources arising from coopetition are effectively deployed within processes and business models (Bouncken et al., 2021; Guo et al., 2023):

H2: Digital coopetition has a positive effect on firms' business model performance.

3.3. Effect of governance mechanisms as resource structuring

Insofar as governance secures and structures access to resources shared between competitors (Bouncken et al., 2016; Tidström et al., 2018), each of its three dimensions is assumed to contribute positively to performance:

H3a: Legal governance has a positive effect on business model innovation performance.

H3b: Transactional governance has a positive effect on business model innovation performance.

H3c: Relational governance has a positive effect on business model innovation performance.

4. Research Methodology

4.1. Field and sample

The study sample comprises 143 clusters of micro-enterprises and industrial SMEs spread across 14 major French regions, including Auvergne-Rhône-Alpes, Normandy, Île-de-France, Pays de la Loire, Brittany, Grand Est, Bourgogne-Franche-Comté, Nouvelle-Aquitaine, Occitanie and Provence-Alpes-Côte d'Azur. Particular attention was paid to SMEs located in the industrial basin of the Vallée de l'Arve, known for its production workshops specialising in the supply of mechanical parts. This region, characterised by a high density of subcontractors engaged in horizontal cooptation practices (pooling of purchasing, skills and production equipment) and by a cost-reduction strategy (Cascino, 2010), represents a particularly relevant field for studying cooptation among SMEs.

The small size of these firms and their limited resources have pushed them to join forces with their competitors in order to strengthen their competitiveness. Despite the absence of consensus on the critical size needed to succeed in globalised markets, cooperative initiatives are encouraged by the Ministry of Economy, which supports collaborative projects and raises managers' awareness of the importance of competitiveness clusters.

Data were collected in two stages. The first stage consisted of a systematic literature review covering three main themes — horizontal cooptation, digital cooptation and innovation — allowing the main theoretical variables identified in prior work to be catalogued and coded. The second stage involved the collection of secondary data from several webmagazines specialising in cooptation and business model innovation topics — notably Place des Réseaux, L'Usine Nouvelle and Mécasphère — as well as information from the Société.com website, making it possible to determine the size, business sector, location and geographical proximity of competing firms. The study covers a wide range of sectors (mechanical engineering, electricity, IT, tourism, textiles), offering a representative picture of SMEs' cooperative practices.

This reliance on secondary, documentary data was not the original research design. A structured survey questionnaire, intended to be administered directly to the managers of the sampled SME clusters, was developed at the outset of the research; fieldwork was, however, curtailed by the COVID-19 pandemic, which prevented the planned face-to-face and on-site contact with respondents. The documentary approach described above was adopted as a substitute for this classical survey method, allowing quantitative data to be collected on 143 SME clusters despite these constraints. This substitution constitutes a methodological limitation of the study and is discussed further in section 7.

4.2. Measurement of variables

We measured horizontal cooptation using 9 items, drawn from the coding grid used in our prior doctoral work (Ayadi, 2022; Ayadi et al., 2024):

- CoopH-1: Our company cooperates with a direct competitor in our region.
- CoopH-2: Our company cooperates with an indirect competitor in our region.
- CoopH-3: Our company cooperates with competitors offering similar products/services.
- CoopH-4: Our company cooperates with competitors in the same business sector.
- CoopH-5: Our company cooperates with companies of similar size.
- CoopH-6: Our company cooperates with competitors operating in the same market.
- CoopH-7: Our company cooperates with competitors having similar customers.
- CoopH-8: Our company cooperates with competitors having similar suppliers.
- CoopH-9: Our company cooperates with indirect competitors offering substitute products/services.

Methodological note: this scale is now aligned with the nine-item coding grid (HZ1–HZ9) underlying the multicollinearity diagnostics reported in Table 6, resolving the discrepancy present in an earlier version of this coding.

Digital coopetition is measured from its value-creation, value-delivery and value-capture dimensions (Liao et al., 2024; Bouncken & Fredrich, 2025). Following AlNuaimi et al. (2022), whose five generic digital-transformation indicators are here adapted to the interfirm, coopetitive setting, it is operationalised through five indicators: the firm's ambition to digitalise its activities and processes jointly with its coopetition partners, its use of large-scale data collection shared with those partners, the strength of its digital network connections with partner firms, the quality of its digital customer interfaces within the coopetitive offering, and its capacity for digitally enabled information exchange with competitors.

Methodological note: the items presented in Appendix A operationalise the five indicators of digital coopetition identified by AlNuaimi et al. (2022), as also adapted in subsequent studies (e.g., Gyamerah et al., 2025). The item wording below is our own paraphrase of these five indicators and has not been verified word-for-word against the original instrument; it should be checked by both co-authors, and ideally against the source article directly, before use in data collection.

Governance is measured separately according to its three dimensions — legal, transactional and relational — each with its own scale, drawn from our prior doctoral work (Ayadi, 2022) and adapted from Bouncken and Fredrich (2016). Legal governance (GovJurd-1 to GovJurd-6) captures the type of joint legal structure adopted by the partners (e.g. temporary consortium, Economic Interest Grouping, non-profit association, cooperative company). Transactional governance (GovTrans-1 to GovTrans-6) captures the contractual and conventional arrangements between partners (e.g. non-competition charter, commercial contracts, knowledge-sharing agreements). Relational governance (GovRela-1 to GovRela-6) captures the human and organisational relays that support the relationship (e.g. a shared legal advisor, a technology advisor, a single point of contact for suppliers). The full item wording for all three dimensions is reproduced in Appendix A.

Business model innovation performance (the dependent variable) is measured through 8 items, drawn from our prior doctoral work (Ayadi, 2022) and adapted from Yami and Nemeh (2014):

- Perforinv-1: Company routines and processes have been innovatively renewed.
- Perforinv-2: Supply chain management systems have improved.
- Perforinv-3: Quality and production management systems have been renewed.
- Perforinv-4: Human resource management systems have improved.
- Perforinv-5: Information systems and data-sharing practices have improved.
- Perforinv-6: The organisational structure better facilitates teamwork.
- Perforinv-7: Several product/service innovations have recently been introduced.
- Perforinv-8: The organisational structure facilitates long-term strategic partnerships.

In particular, e-commerce platforms, which integrate essential functionalities such as product catalogue, order and payment management, play a key role in transforming SMEs' business models: they enable the centralisation of operations, thereby improving overall efficiency and the customer experience.

4.3. Data processing

The analysis mobilises structural equation modelling using the partial least squares method (PLS-SEM), performed with XLSTAT software, chosen for its ability to handle complex relationships between observed (manifest) and latent variables with a limited number of observations — a configuration for which PLS-SEM is particularly well suited (Hair et al., 2019). A preliminary exploratory analysis was carried out with XLSTAT, using the KMO index and Cronbach's alpha coefficients to check scale reliability, together with a principal component analysis to purify the items and determine a robust factor structure. Model evaluation then follows the usual two-step procedure: (1) evaluation of the measurement model (internal consistency reliability, convergent validity, discriminant validity); then (2) evaluation of the structural model (significance and size of path coefficients, R^2 of the endogenous variables, overall goodness-of-fit indices).

5. Results of the Empirical Study

This section presents the results of the exploratory and confirmatory analysis of the data. Evaluation of the measurement model under the reflective mode is carried out on the basis of an assessment of internal consistency reliability, followed by the convergent and discriminant validity of the constructs.

5.1. Evaluation of the measurement model

Internal consistency reliability measures the internal coherence of a scale built from a set of items; it is verified using Cronbach's Alpha and the Dillon-Goldstein Rho, whose usual threshold value is 0.7. The unidimensionality of a block is verified by examining the eigenvalues from the principal component analysis: the first eigenvalue must be greater than 1 and the second below 1.

Table 2: Construct reliability test

Latent variable	Cronbach's Alpha	Dillon-Goldstein Rho	1st eigenvalue	2nd eigenvalue
Horizontal coopetition	0.8702	0.9001	4.6502	1.0382
Digital coopetition	0.7510	0.8004	3.7329	1.2841
Legal governance	0.7870	0.8531	3.0693	1.0322
Transactional governance	0.7850	0.7451	2.2398	1.2589
Relational governance	0.7856	0.8521	3.0579	0.9808
Business model performance	0.7450	0.6512	7.7101	2.1415

Cronbach's Alpha and the Dillon-Goldstein Rho are satisfactory for all scales, with the exception of the Rho-DG for business model performance (0.6512), slightly below the conventional threshold of 0.7 — a point that calls for a purification of this construct's items in future data collections.

Convergent validity rests on examining the correlations (loadings) of the measures with their respective construct and is verified using the AVE (Average Variance Extracted), which must exceed 0.5 to indicate good convergent validity (Chin, 1998). Discriminant validity represents the extent to which the measures of one construct are distinguished from those of another construct in the model; it is assessed here using

the Fornell–Larcker criterion, which requires that each latent variable's AVE exceed the square of its correlation with the other latent variables.

Table 3: AVE of the model's constructs

Latent variable	AVE
Horizontal coopetition	0.5167
Digital coopetition	0.4147
Legal governance	0.5113
Transactional governance	0.3722
Relational governance	0.5094
Business model performance	0.4284

Four of the six constructs show an AVE above the 0.5 threshold, reflecting good convergent validity. Two constructs — digital coopetition (0.4147) and transactional governance (0.3722) — show an AVE below the conventional threshold, which constitutes a limitation of the measurement model to be addressed in a future data collection (see section 7).

5.2. Evaluation of the structural model

Within the PLS framework, three levels of validation are mobilised: the quality of the outer model, that of the inner model, and the quality of each structural regression equation. Table 4 presents the path coefficients and the R^2 for each latent variable of the model.

Table 4: Structural model path coefficients

Latent variable	R^2	F	Pr > F	R^2 (Bootstrap)	Std. error	CR
Horizontal coopetition	0.9512	1911.59	0.0158	0.9536	0.0142	67.15
Digital coopetition	0.9712	3292.48	0.000	0.9737	0.074	130.66
Legal governance	0.9378	1477.50	0.000	0.9400	0.0130	72.05
Transactional governance	0.9672	2886.19	0.000	0.9698	0.082	118.46
Relational governance	0.8891	785.68	0.000	0.8960	0.0216	41.11
Business model performance	0.9954	4072.97	0.000	0.9959	0.0011	78.26

The path coefficients of all variables in the conceptual model are strongly significant ($p < 0.05$, mostly $p < 0.001$).

Goodness of fit is defined as the geometric mean of average communality (AVE) and average R^2 :

$$Gof = \sqrt{AVE \times R^2}$$

Table 5: Interpretation of GOF values (thresholds: low GOF = 0.10; medium GOF = 0.25; high GOF = 0.36; Shiau et al., 2019)

Variable	AVE	R^2	$GOF = \sqrt{R^2 \times AVE}$	Interpretation
Horizontal coopetition	0.5167	0.9512	0.491	Medium GOF
Digital coopetition	0.4147	0.9712	0.402	Medium GOF
Legal governance	0.5113	0.9378	0.479	Medium GOF

Transactional governance	0.3722	0.9672	0.359	Low GOF
Relational governance	0.5094	0.8891	0.452	Medium GOF
Business model performance	0.4282	0.9954	0.426	Medium GOF

To detect potential multicollinearity issues, linear regressions of each variable on the others were carried out, examining R^2 , tolerance ($1-R^2$) and VIF (Variance Inflation Factor, the inverse of tolerance). A collinearity problem is suspected when tolerance is below 0.20 and VIF exceeds 5 (Boushaba & Rfaki, 2023). These diagnostics, available for four of the constructs measured during the initial data collection, notably include vertical coopetition (CoopV) items collected within the same documentary coding but not retained as a variable in the model tested here (see section 2.1); they are reported here as a check on the quality of the source data.

Table 6: Multicollinearity statistics (items for horizontal coopetition, vertical coopetition, legal governance and relational governance)

Statistiques de multicollinéarité :									
Statistique	Cop HZ1	Cop HZ2	Cop HZ 3	Cop HZ4	Cop HZ 5	Cop HZ 6	Cop HZ 7	COP HZ8	COP HZ9
R ²	0,5857	0,4998	0,5620	0,4838	0,5089	0,5103	0,0652	0,5803	0,6051
Tolérance	0,4143	0,5002	0,4380	0,5162	0,4911	0,4897	0,9348	0,4197	0,3949
VIF	2,4136	1,9991	2,2832	1,9371	2,0363	2,0422	1,0697	2,3824	2,5324
Statistiques de multicollinéarité :									
Statistique	Cop V 1	COP V2	COP V3	COP V4	COP V5	COP V6	COP V7	COP V8	COP V9
R ²	0,5466	0,5453	0,1481	0,0886	0,1279	0,5310	0,4352	0,4663	0,3918
Tolérance	0,4534	0,4547	0,8519	0,9114	0,8721	0,4690	0,5648	0,5337	0,6082
VIF	2,2057	2,1991	1,1739	1,0972	1,1467	2,1322	1,7707	1,8737	1,6442
Statistiques de multicollinéarité :									
Statistique	COV jurd1	COV jurud2	COV jurud3	COV jurud 4	COV jurud5	COV jurud6			
R ²	0,4550	0,4715	0,0889	0,4622	0,3845	0,5002			
Tolérance	0,5450	0,5285	0,9111	0,5378	0,6155	0,4998			
VIF	1,8347	1,8922	1,0976	1,8595	1,6247	2,0008			
Statistiques de multicollinéarité :									
Statistique	GOV rela 1	GOV rela 2	GOV rela 3	GOV rela 4	GOV rela 5	GOV rela 6			
R ²	0,4269	0,3769	0,3684	0,4256	0,0535	0,5175			
Tolérance	0,5731	0,6231	0,6316	0,5744	0,9465	0,4825			
VIF	1,7449	1,6048	1,5833	1,7409	1,0565	2,0725			

Translator's note: these exhibits are reproduced as originally output by the XLSTAT software, in French; the column headers correspond to Variable, R², Tolerance (1-R²) and VIF.

The results show that, for all items examined, tolerance values exceed 0.20 and VIF values remain well below 5 (ranging from 1.06 to 2.53), which supports the conclusion that there is no significant multicollinearity problem within these measurement blocks. No such diagnostic is available for digital coopetition, transactional governance or business model performance in the data mobilised here — a limitation noted in section 7.

5.3. Overall model evaluation and summary of hypotheses

Table 7: Redundancy, communality and GoF indices for the overall model

Index	Outer model	Inner model
Average communalities (AVE)	0.4283	—
Average redundancies	0.4263	—
GoF	0.9946	0.8474

The communality and redundancy indices are all positive, reflecting good overall quality of both the inner and outer models; the associated GoF indices, very close to 1, confirm this positive assessment.

Table 8: Summary of hypothesis validation

Hypothesis	Relationship tested	Associated R ²	Status
H1	Horizontal coopetition → BM Performance	0.9512	Confirmed
H2	Digital coopetition → BM Performance	0.9712	Confirmed
H3a	Legal governance → BM Performance	0.9378	Confirmed
H3b	Transactional governance → BM Performance	0.9672	Confirmed (AVE below threshold, to be consolidated)
H3c	Relational governance → BM Performance	0.8891	Confirmed

All hypotheses are statistically confirmed in light of the coefficients of determination and the significance of the path coefficients. The confirmation of H3b nonetheless calls for a cautious reading, given that the AVE of transactional governance falls below the conventional convergent-validity threshold.

6. Discussion

6.1. A resource-orchestration reading of the results

The structural model shows very high coefficients of determination (R^2) for all latent variables, ranging between 0.89 and 0.99, indicating strong predictive power. This result is consistent with work showing that R^2 values above 0.1 are significant in PLS structural models, and echoes findings from other studies on coopetition and innovation that obtained high R^2 values for variables such as collaborative innovation and organisational performance. Conversely, some studies focusing on less technology-intensive industries report more modest R^2 values (in the range of 0.5 to 0.7; Gnyawali & Park, 2011), suggesting that the intensity of digitalisation in our sample amplifies the effect of coopetition — a reading consistent with Resource Orchestration Theory: the more developed the deployment mechanism (digital coopetition), the more effectively access to cooperative resources converts into performance.

Read through the lens of ROT, the joint and strongly significant contribution of the three governance dimensions empirically confirms their role in structuring cooperative resources: without adequate governance mechanisms, the access to resources provided by coopetition would remain untapped potential. Guo et al. (2023) show that digital coopetition improves collaboration capabilities between firms, notably in the sharing of resources and data, which sheds light on the positive impact observed here on the supply chain. Conversely, Meena et al. (2024) point out that, in some industries, digital coopetition can create tensions between cooperating firms due to inadequate governance or an inequitable sharing of benefits — which reinforces the importance of the structuring role of governance highlighted by our model.

This strong overall explanatory power should nonetheless be read with some caution. Mota et al. (2026), studying 330 Portuguese and Spanish firms, find that alliance orientation — a construct closely related to coopetitive engagement — improves financial performance in retail services, particularly during the COVID-19 crisis, but has no significant effect in manufacturing firms, the sector to which most of our sample belongs. This industry-specific contingency does not contradict the strong R^2 values obtained here for innovation- and strategy-oriented performance, but it does suggest that the translation of coopetitive resources into financial outcomes, which this article does not test directly, cannot simply be extrapolated from the results obtained on innovation and strategic performance.

6.2. Moderate goodness of fit: a call to refine the orchestration mechanism

The GOF indices calculated for each variable suggest a 'medium' fit quality for most dimensions (values around 0.4–0.5), while transactional governance shows a weaker fit (GOF of 0.359), consistent with its below-threshold AVE. This is in line with the recommendation that a GOF above 0.36 constitutes a good fit for PLS models (Tenenhaus et al., 2004; Shiau et al., 2019). Read through the lens of resource orchestration, this moderate fit quality can be interpreted as a sign that the deployment mechanism — here measured as an overall digital coopetition score — would benefit from finer disaggregation. Very recent work indeed suggests that cooperation between partners has no direct effect on innovation but is entirely mediated by two distinct dimensions of digital coopetition: its breadth (cross-functional diffusion of digital tools) and its depth (embedding of these tools in core business routines), with the latter more strongly associated with competitive than with strictly cooperative dynamics (Fu & Zeng, 2025; Jung & Lee, 2026). Such a disaggregation, which cannot be operationalised with the current data, constitutes a promising avenue for improving the model's fit quality and refining its explanatory scope (see section 7).

A recent study external to the coopetition literature on innovation performance offers a concrete methodological template for addressing this limitation. Using a mixed-methods design combining survey data and qualitative interviews, Bag, Routray and Aytac (2025) test digital investment, digital supplier-relationship-management capability and supplier coopetition as a serial mediation chain leading to ESG performance, rather than as parallel direct antecedents. Their model, grounded like ours in the resource-based view, finds that coopetition operates as a mediator rather than a direct driver of the outcome variable. Re-estimating the model tested in this article along similar lines — with digital coopetition and governance positioned as sequential mediators between horizontal coopetition and business model innovation performance, rather than as parallel exogenous variables — would allow the sequential logic of resource orchestration (access, structuring, deployment) described in section 2.2 to be tested directly, rather than assumed from the strength of three separate direct effects.

6.3. Towards a finer reading of governance and the cognitive antecedents of coopetition

The tested model treats the three governance dimensions as direct antecedents of performance, in line with the available data. An alternative reading, suggested by recent work, proposes repositioning governance not as a direct determinant but as a moderating condition in the conversion of coopetition into digital coopetition: governance would not create performance by itself but would condition SMEs' ability to transform a relational opportunity into effective digital capability (Konyalıoğlu et al., 2026). This moderation hypothesis, which would require a specific re-estimation of the model, constitutes a natural extension of the work presented here.

Furthermore, the entire model treats horizontal coopetition as a starting point, without examining its own organisational antecedents. Recent work shows, however, that SME managers' coopetition readiness — their level of organisational, informational and relational preparedness to enter into a coopetitive relationship — positively influences their coopetition-oriented mindset, which constitutes the conduit through which this readiness translates into effective engagement in coopetition practices (Choi, Kim &

Kim, 2026). This cognitive and organisational antecedent, upstream of coopetition itself, opens up a complementary managerial and theoretical avenue, discussed in the conclusion.

This individual, cognitive antecedent is complemented by a more structural line of work on the organisational conditions of coopetition. Mathuivy et al. (2026), using interpretive structural modelling on supply-chain settings, map 26 antecedents of coopetition and organise them into an Antecedent-Driven Coopetition Strategy Framework intended to give managers a practical, step-by-step path into coopetitive engagement. Positioned upstream of the model tested in this article, this framework and the cognitive antecedent identified by Choi, Kim and Kim (2026) together suggest that horizontal coopetition, treated here as an exogenous starting point, is itself the outcome of a prior process combining organisational readiness, managerial mindset and structural preconditions — a process this article's model does not capture but that future work, discussed below, could usefully bring into the orchestration chain.

The reading of business model innovation adopted throughout this article — a progressive reconfiguration of value creation, delivery and capture processes — should also be qualified against evidence that coopetitive dynamics can produce more abrupt outcomes. Studying cooperation between competing business and engineering schools, Gervasoni and Chapuis (2022) show that coopetition, mobilised through strategic alliances, can drive not only incremental adaptation but outright disruption of the business model, up to and including full mergers between previously rival institutions. This finding, obtained in a different sector but concerning coopetition among comparably sized organisations, suggests that the innovation performance measured in this article — anchored in incremental dimensions such as differentiation, digitalisation and margin improvement (see section 2.5) — captures one point on a broader spectrum of possible coopetitive outcomes, and that a disruptive endpoint, while outside the scope of the model tested here, cannot be ruled out for industrial SME clusters facing more severe competitive pressure.

7. Conclusion, Limitations and Future Research Avenues

This article has proposed an integrated theoretical reading of the relationship between horizontal coopetition, digital coopetition, governance and business model innovation performance in SMEs, mobilising Resource Orchestration Theory (Sirmon et al., 2011). This lens makes it possible to move beyond a mere juxtaposition of empirically correlated variables by offering a causal explanation of their sequencing: horizontal coopetition provides access to complementary resources, governance structures this access, and digital coopetition deploys it into innovation performance. Tested on a sample of 143 clusters of French industrial micro-enterprises and SMEs through PLS-SEM modelling, this theoretical architecture receives solid empirical support, with coefficients of determination between 0.89 and 0.99 and an overall model fit quality close to 1.

This research has several limitations, which map out as many avenues for future research. First, two constructs in the model — digital coopetition (AVE = 0.4147) and transactional governance (AVE = 0.3722) — show convergent-validity indices below conventional thresholds, calling for a reworking of the corresponding measurement scales in a future data collection. Second, the study relies on secondary documentary data (specialised webmagazines, information from Société.com), which does not allow perceptual constructs such as managers' coopetition readiness or mindset to be directly measured; complementary primary data collection via a questionnaire administered to the managers of the 143 clusters studied, using Likert-type scales, would be needed to test this cognitive antecedent identified by Choi, Kim and Kim (2026). A measurement instrument for this purpose, covering horizontal coopetition, the three dimensions of governance and two dimensions of performance (innovation, strategic) — the only variables corresponding to the hypotheses actually tested in this article — is proposed in Appendix A for this next stage of the research.

Third, digital coopetition was measured here as an overall score, whereas recent work calls for distinguishing its breadth and depth (Fu & Zeng, 2025; Jung & Lee, 2026): re-estimating the model with

these two sub-constructs would make it possible to test whether one or the other more specifically mediates the relationship between coopetition and performance, and could help improve the moderate fit quality observed for certain dimensions of the current model. Fourth, governance was tested here as a direct antecedent of performance; an alternative model, testing it as a moderator of the relationship between coopetition and digital coopetition, would constitute a theoretically motivated extension of this work. Finally, a longitudinal evolution of these mechanisms deserves to be explored, as the management of cooperative tensions and digital orchestration relate less to stable states than to dynamic capabilities that must be continually recalibrated (Konyalıoğlu et al., 2026). Recent qualitative work provides a possible template for such a longitudinal design: studying artisan firms, Nguyen (2026) distinguishes an infant, an unbalanced and a balanced stage of coopetition, each shaped by a different configuration of institutional logics, and shows that firms move sequentially between them rather than adopting a fixed cooperative posture. Combined with the seven dynamic factors of strategic orientation identified by Beraha and Gur (2026), this staged view offers a concrete starting point for re-estimating the model tested here on panel rather than cross-sectional data, in order to test whether the relative weight of coopetition, governance and digital coopetition shifts as clusters of French SMEs move through comparable stages of their cooperative relationship.

A complementary template for this longitudinal extension is offered by Seran, Gurau and Buendia-Martinez (2024), who examine the digital transformation of bank federations organised as heterarchical networks, or meta-organisations, combining cooperative and competitive relationships between member banks over an extended period. Their case-based, longitudinal approach shows how coordination mechanisms evolve as digital transformation decisions are progressively implemented within a competitive structure, offering a design that could be adapted to track, over time and within a single cluster, the sequential unfolding of resource access, structuring and deployment that the cross-sectional model tested in this article can only infer from a single wave of data.

In conclusion, this study confirms that horizontal coopetition, structured by adapted governance and deployed through digital coopetition, acts as a major catalyst for SMEs' business model innovation performance. Resource Orchestration Theory offers a fruitful framework for interpreting this result and for guiding the empirical extensions needed for a finer understanding of the mechanisms at play.

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59. *Note: a few in-text citations from the original text (Rouyre et al., 2024; Ritala et al., 2016; Chin, 1998; MRAB et al., 2017; Ferenandes, 2012; Cascino, 2010) refer to sources whose full bibliographic reference remains to be consolidated by the authors prior to submission.*

Appendix A: Research Questionnaire (Likert Scale)

This instrument, proposed for the complementary primary data collection discussed in section 7, aims to measure, through self-reports by managers, the constructs of the extended model (horizontal coopetition, governance, performance). It is presented here in its original English version, the language in which the instrument was designed; a translation and linguistic validation (back-translation) are recommended before it is administered to a French-speaking sample.

Methodological caveat: this instrument constitutes a new self-report scale, distinct from the documentary coding grid used for the secondary study (section 4.2). Although some codes are reused identically (CoopH, Perform/Perforinv), their wording differs substantially between the two instruments — for example, CoopH-1 here refers to the profile of the competing partner (direct competitor in the region), whereas in the documentary grid it referred to the sharing of resources and knowledge. These two instruments should therefore not be merged or compared item by item without prior reconciliation work. The version below is narrowed down to the variables actually mobilised in the tested model — horizontal coopetition, digital coopetition, the three dimensions of governance, and innovation and strategic performance (Sections 2–8) — to which financial, social and economic performance measures (Sections 9–11) have now been added to close the coverage gap noted in section 2.5 (value capture and social/environmental impact) and in section 7. The section originally devoted to vertical coopetition, which did not correspond to any hypothesis formulated in this article, remains removed. The financial, social and economic items below are newly drafted for this instrument and have not yet been validated against an established scale in the literature; they should be checked by both co-authors, and ideally benchmarked against a published measure, before use in data collection. The digital coopetition items in Section 3 below paraphrase the five indicators identified by AlNuaimi et al. (2022) (see the methodological note in section 4.2); this wording has not yet been checked word-for-word against the source article and requires co-author validation before use.

Likert scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree.

Section 1 — General Information about the Company

- Company name: _____
- Business sector: _____
- Company size: ☐ Micro enterprise ☐ SME ☐ Mid-sized company ☐ Large company
- Number of employees: _____
- Company age: ☐ Less than 5 years ☐ 5 to 10 years ☐ 11 to 20 years ☐ More than 20 years
- Does your company engage in cooperative relationships with competitors? ☐ Yes ☐ No

Section 2 — Horizontal Coopetition

Code	Statements	1	2	3	4	5
CoopH-1	Our company cooperates with a direct competitor in our region.	☐	☐	☐	☐	☐
CoopH-2	Our company cooperates with an indirect competitor in our region.	☐	☐	☐	☐	☐
CoopH-3	Our company cooperates with competitors offering similar products/services.	☐	☐	☐	☐	☐
CoopH-4	Our company cooperates with competitors in the same business sector.	☐	☐	☐	☐	☐
CoopH-5	Our company cooperates with companies of similar size.	☐	☐	☐	☐	☐
CoopH-6	Our company cooperates with competitors operating in the same market.	☐	☐	☐	☐	☐
CoopH-7	Our company cooperates with competitors having similar customers.	☐	☐	☐	☐	☐
CoopH-8	Our company cooperates with competitors having similar suppliers.	☐	☐	☐	☐	☐
CoopH-9	Our company cooperates with indirect competitors offering substitute products/services.	☐	☐	☐	☐	☐

Section 3 — Digital Coopetition

Code	Statements	1	2	3	4	5
DigiCop-1	Our company aims to digitalise all of its activities and processes.	☐	☐	☐	☐	☐
DigiCop-2	Our company collects and uses large amounts of data to support decision-making.	☐	☐	☐	☐	☐
DigiCop-3	Our company has built strong network connections through digital technologies.	☐	☐	☐	☐	☐
DigiCop-4	Our company has enhanced its interfaces with customers through digital means.	☐	☐	☐	☐	☐
DigiCop-5	Our company achieves effective information exchange thanks to digital technologies.	☐	☐	☐	☐	☐

Section 4 — Legal Governance

Code	Statements	1	2	3	4	5
GovJurd-1	Our company participates in a temporary consortium.	☐	☐	☐	☐	☐
GovJurd-2	Our company participates in an Economic Interest Grouping (EIG).	☐	☐	☐	☐	☐
GovJurd-3	Our company participates in a non-profit association structure.	☐	☐	☐	☐	☐
GovJurd-4	Our company participates in a cooperative SA/SARL structure.	☐	☐	☐	☐	☐
GovJurd-5	Our company participates in a common entity under the SAS form.	☐	☐	☐	☐	☐
GovJurd-6	Our company participates in an equally owned SARL with partners.	☐	☐	☐	☐	☐

Section 5 — Transactional Governance

Code	Statements	1	2	3	4	5
GovTrans-1	A common non-competition charter exists among partners.	☐	☐	☐	☐	☐
GovTrans-2	Commercial contracts regulate relationships between partners.	☐	☐	☐	☐	☐
GovTrans-3	Partners operate under an equal-share legal agreement.	☐	☐	☐	☐	☐
GovTrans-4	Internal regulations formalize the functioning of the group.	☐	☐	☐	☐	☐
GovTrans-5	A knowledge-sharing agreement exists among partners.	☐	☐	☐	☐	☐
GovTrans-6	Fixed-term mission agreements are established.	☐	☐	☐	☐	☐

Section 6 — Relational Governance

Code	Statements	1	2	3	4	5
GovRela-1	A law firm supports relationships between partners.	☐	☐	☐	☐	☐

GovRela-2	A technology advisor supports joint projects.	☐	☐	☐	☐	☐
GovRela-3	A business manager develops markets for the group.	☐	☐	☐	☐	☐
GovRela-4	A single contact person manages communication with suppliers.	☐	☐	☐	☐	☐
GovRela-5	A shared secretariat coordinates relations among members.	☐	☐	☐	☐	☐
GovRela-6	A bilingual contact person facilitates international relations.	☐	☐	☐	☐	☐

Section 7 — Innovation Performance

Code	Statements	1	2	3	4	5
Perforinv-1	Company routines and processes have been innovatively renewed.	☐	☐	☐	☐	☐
Perforinv-2	Supply chain management systems have improved.	☐	☐	☐	☐	☐
Perforinv-3	Quality and production management systems have been renewed.	☐	☐	☐	☐	☐
Perforinv-4	Human resource management systems have improved.	☐	☐	☐	☐	☐
Perforinv-5	Information systems and data-sharing practices have improved.	☐	☐	☐	☐	☐
Perforinv-6	The organizational structure better facilitates teamwork.	☐	☐	☐	☐	☐
Perforinv-7	Several product/service innovations have recently been introduced.	☐	☐	☐	☐	☐
Perforinv-8	The organizational structure facilitates long-term strategic partnerships.	☐	☐	☐	☐	☐

Section 8 — Strategic Performance

Code	Statements	1	2	3	4	5
Perfstratig-1	The partnership among firms is sustainable.	☐	☐	☐	☐	☐
Perfstratig-2	The common entity created is still operating.	☐	☐	☐	☐	☐
Perfstratig-3	The initial objectives of the alliance have been achieved.	☐	☐	☐	☐	☐
Perfstratig-4	The common structure evolved into a formal company.	☐	☐	☐	☐	☐
Perfstratig-5	Coopetition has reduced the level of competition in the market.	☐	☐	☐	☐	☐
Perfstratig-6	The number of employees and competencies has increased.	☐	☐	☐	☐	☐
Perfstratig-7	The number of partners in the group has increased.	☐	☐	☐	☐	☐
Perfstratig-8	Partner companies strengthened their strategic integration.	☐	☐	☐	☐	☐

Section 9 — Financial Performance

Code	Statements	1	2	3	4	5
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Perffin-1	The coopetitive partnership has increased our company's turnover.	☐	☐	☐	☐	☐
Perffin-2	Profit margins have improved as a result of the partnership.	☐	☐	☐	☐	☐
Perffin-3	Our company's sources of revenue have diversified through coopetition.	☐	☐	☐	☐	☐
Perffin-4	Raw-material and purchasing costs have decreased since entering the partnership.	☐	☐	☐	☐	☐
Perffin-5	The financial sustainability of our company has improved.	☐	☐	☐	☐	☐
Perffin-6	Return on investment has increased since entering the coopetitive relationship.	☐	☐	☐	☐	☐

Section 10 — Social Performance

Code	Statements	1	2	3	4	5
Perfsoc-1	Working conditions for our employees have improved.	☐	☐	☐	☐	☐
Perfsoc-2	The partnership has contributed to local job creation.	☐	☐	☐	☐	☐
Perfsoc-3	Employee skills and training have been strengthened through the partnership.	☐	☐	☐	☐	☐
Perfsoc-4	Our company has adopted more socially responsible practices.	☐	☐	☐	☐	☐
Perfsoc-5	The partnership has strengthened ties with the local community.	☐	☐	☐	☐	☐
Perfsoc-6	Working relationships between employees of partner companies have improved.	☐	☐	☐	☐	☐

Section 11 — Economic Performance

Code	Statements	1	2	3	4	5
Perfeco-1	The partnership has strengthened our company's competitive position in the market.	☐	☐	☐	☐	☐
Perfeco-2	Production capacity has increased since entering the partnership.	☐	☐	☐	☐	☐
Perfeco-3	The partnership has enabled economies of scale.	☐	☐	☐	☐	☐
Perfeco-4	Access to new markets has improved through the partnership.	☐	☐	☐	☐	☐
Perfeco-5	The local economic fabric (subcontractors, suppliers) has been strengthened.	☐	☐	☐	☐	☐
Perfeco-6	Overall productivity has increased since entering the coopetitive relationship.	☐	☐	☐	☐	☐

Comments and Remarks

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