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Theoretical underpinnings of the relationship between accounting information systems and organisational performance in SMEs: a multi-paradigmatic approach applied to the Senegalese context

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ABSTRACT

The influence of the accounting information system (AIS) on the performance of small and medium-sized enterprises (SMEs) remains a theoretically fragmented subject. The literature draws upon – most often in isolation – resource-based theory, contingency theory, the socio-technical approach, neo-institutionalism or agency theory, without always clarifying the relationship between these frameworks, to the detriment of the cumulative body of knowledge on the subject. We propose to construct, based on a narrative and thematic review of the literature, an integrative theoretical framework for the AIS-performance relationship, applied to the specific context of Senegalese SMEs, a significant proportion of which remain rooted in the informal sector. Having clarified the concepts of SMEs, accounting information systems and organisational performance, and having reviewed the state of the art of available empirical research on this relationship in Africa, we propose a multi-paradigmatic interpretation of the relevant theoretical frameworks. We demonstrate that resource-based theory and the socio-technical approach form a complementary explanatory core, insofar as they account for both the strategic value of the accounting information system and the social conditions under which it is adopted by managers, whilst contingency theory, neo-institutionalism and agency theory provide peripheral insights into the conditions and motivations for its adoption. This analysis leads to an integrative conceptual model articulating three general propositions linking the AIS to the commercial, financial and operational performance of SMEs, broken down into sub-propositions distinguishing between the production and the actual use of accounting information. Finally, we discuss the scope of this framework for future empirical research as well as its limitations, notably its exclusively conceptual nature, and propose avenues for empirical validation in the Senegalese context.

Keywords: accounting information system; organisational performance; Senegalese SMEs; resource-based theory; socio-technical approach.

1. Introduction

The volatility of the contemporary economic environment, driven by the globalisation of markets, has placed the management of information at the heart of business decision-making (Després-Lonnet, 2009). This demand for information primarily affects small and medium-sized enterprises (SMEs), which constitute the overwhelming majority of the productive fabric of developing economies. In Senegal, they account for 97 per cent of the 407,000 enterprises recorded by the National Agency for Statistics and Demography (General Enterprise Census, 2016), yet a significant proportion of them remain entrenched in the informal sector and lack structured accounting systems.

In this context, the accounting information system (AIS) plays a pivotal role: it refers to the organisational framework for the collection, processing and dissemination of accounting-based data (Chapellier, 1997; Dieng, 2018). It is no longer merely a technical tool for the ac nd maintenance of accounts, but a potential driver of organisational performance, provided it is produced, adopted and effectively utilised by managers in their management decisions (Granlund, 2011).

However, the literature on this relationship has two major limitations. On the one hand, empirical studies remain few in number and their findings are mixed, particularly in African contexts where informality and institutional constraints significantly alter the conditions under which the system is used (El Bakirdi and Radi, 2017; Ghorbel, 2016; Chapellier and Mohammed, 2010). On the other hand – and this is the point we intend to address here – these studies draw on disparate theoretical frameworks (resource-based theory, contingency theory, the socio-technical approach, neo-institutionalism, agency theory) without always making explicit the links between these frameworks, which hinders the accumulation of knowledge on the subject.

Our objective is therefore to construct an integrative theoretical framework for the relationship between SIC and the organisational performance of SMEs, by clarifying the complementarity between the main applicable paradigms and applying this to the specific context of Senegalese SMEs. We propose a conceptual contribution, derived from a structured literature review, intended to provide a foundation for future empirical research on this relationship within an African context.

This issue extends beyond the purely academic sphere. The informal sector, in which a significant proportion of Senegalese SMEs operate, deprives the state of a portion of its tax revenue, limits enterprises' ability to access bank credit due to a lack of reliable financial statements, and undermines their sustainability in the absence of suitable management tools. The gradual development of an accounting information system represents both a potential driver of economic formalisation and an internal management tool. Its influence on performance therefore warrants examination in the light of several complementary theoretical frameworks, rather than just one.

After setting out the literature review methodology adopted (Section 2), we clarify the concepts of SMEs, accounting information systems (AIS) and organisational performance (Section 3), before providing an overview of the current state of empirical research on the AIS–performance relationship (Section 4). We then propose, in section 5, a multi-paradigmatic interpretation of the theories that can be drawn upon to explain this relationship, before integrating them, in section 6, into a comprehensive conceptual model accompanied by research proposals. Finally, we discuss the contributions of this framework (section 7) before concluding with its limitations and possible extensions (section 8).

2. A narrative and thematic literature review

We draw on a narrative and thematic, rather than systematic, literature review: this choice is consistent with the objective of theoretical construction pursued, which differs from that of an exhaustive review. Within the corpus examined, we combine three categories of sources: the seminal works underpinning the selected theories in strategic management and organisational theory (Wernerfelt, 1984; Barney, 1991; Lawrence and Lorsch, 1967; Trist and Bamforth, 1951; DiMaggio and Powell, 1983; Jensen and Meckling, 1976/2019); French-language research in accounting and management control focusing on the accounting information systems used by SME managers, notably the work of Chapellier (1994, 1997) and its follow-up studies (Ngongang, 2007, 2013; Lavigne, 2002; Lavigne and St-Pierre, 2002); and, finally, recent empirical studies on the performance of SMEs in sub-Saharan Africa and Senegal (Dieng, 2018; Diop, 2016; Bampoky and Meyssonnier, 2012).

Two criteria guide the selection of the theories considered: their frequent use in the literature on accounting information systems, on the one hand, and their ability to account for the contextual specificities of Senegalese SMEs (small size, predominance of the informal sector, significant institutional constraints, and the close link between ownership and decision-making), on the other. This approach is integrative in nature: we do not seek to pit the theories against one another, but rather to examine the extent to which they can be combined to construct a more comprehensive explanation of the phenomenon under study.

In practical terms, we have identified the sources used by drawing on the main databases and portals for disseminating Francophone research in management sciences (Cairn, HAL-SHS, Érudit, IMIST), as well as specialist journals in accounting and management control that regularly publish work on African SMEs, such as the *Revue Africaine de Gestion*, the *Revue Africaine de Management*, the *Revue Internationale P.M.E.* and *Comptabilité – Contrôle – Audit*. We supplemented this approach by examining the references cited in the most relevant studies identified (the so-called 'snowball' method), so as not to limit the review solely to the results returned directly by bibliographic search engines.

3. Conceptual framework: SMEs, accounting information systems and organisational performance

3.1. Senegalese SMEs: specific characteristics and information-related challenges

The definition of an SME remains a subject of controversy in the literature, as the criteria used vary considerably depending on the country and the statistical objectives pursued (Marchesnay, 1993; Julien and Carrière, 1994; Torrès, 1997). Two types of criteria are generally combined: qualitative criteria (the dominant role of the manager, ownership structure, organisation) and quantitative criteria (number of employees, turnover, balance sheet total). The European Commission (2003), for example, uses a threshold of 250 employees and a turnover of less than 50 million euros, combined with a criterion of capital independence.

In Senegal, an SME is defined as any legally independent enterprise employing between 10 and 100 employees (Chapellier, 1997). Beyond this definition, what is essential for our purposes lies in the typical organisational structure of the Senegalese SME: governance centred on the owner-manager, limited human and financial resources, a high prevalence of informal practices, and increased exposure to management risks in the absence of structured information systems (Baidari, 2005; Gendre-Aegerter, 2008). This prevalence of the informal sector is not merely a residual aspect of the Senegalese entrepreneurial landscape: Simen (2018) demonstrates that it constitutes a structuring component, with its own logic and specific characteristics, which suggests that informal SMEs should not be treated as merely incomplete formal SMEs. This context forms the basis for examining the question of how the accounting information system (AIS) influences performance: are SMEs that lack a structured accounting information system more exposed to risks and less efficient than those that have one?

The economic weight of these enterprises makes this question all the more pressing. In addition to constituting the majority of the national business sector, Senegalese SMEs contribute significantly to job creation and to the value added generated outside the major corporate groups and locally based multinationals (General Business Census, 2016). This contribution remains, however, fragile: the early failure of African SMEs is frequently associated, in the literature, with inadequate management tools and a lack of foresight regarding cash flow difficulties – two issues directly linked to the presence or absence of a functioning accounting information system. This structural fragility gives the theoretical question addressed here a significance that extends beyond mere academic interest.

3.2. The accounting information system: nature and components

The accounting information system differs from mere accounting data in the importance it attaches to the use of information in decision-making. Chapellier (1994) proposes distinguishing between accounting data (derived from general ledger accounting, cost accounting, the budgetary system and the monitoring system) and accounting information proper, which corresponds to the actual use made of this data. Accounting data thus only becomes information when it is interpreted and utilised in decision-making (Lebraty, 2001).

The Management Information System (MIS) encompasses a set of production mechanisms — such as transaction and invoicing tools, planning and budgetary control tools, and financial statements — and a set of utilisation mechanisms, corresponding to the use of accounting information derived from management control, cost accounting or cash management. This dual dimension — production and utilisation — underpins the entire modelling that follows: an ICS may indeed be formally established without the information produced being actually utilised by the manager; hence the need to carefully distinguish between the existence of the system and its actual use (Dieng, 2018).

The quality of the information thus produced determines, at an early stage, its ability to support managerial decision-making. Three attributes are generally identified in the literature on control systems (Chenhall and Morris, 1986):

– The scope of the information: the diversity of sources and dimensions covered, both financial and non-financial, internal and external;

– Timeliness: the frequency with which data is produced and the speed with which it is made available;

– The degree of aggregation: the system's ability to provide detailed or summarised information according to the decision-maker's needs.

In the context of Senegalese SMEs, these three attributes are rarely present simultaneously: managers most often have access to limited information, produced with a delay and at a low level of aggregation, which consequently limits its value for decision-making.

Finally, the management information system (MIS) of SMEs is best understood as lying on a continuum ranging from informal to formal, rather than being viewed as a binary system—either present or absent. Many SMEs in the Senegalese ' ' maintain rudimentary accounts, focused solely on tax compliance, without this information being utilised for internal management purposes. Others, by contrast, are gradually developing tools for forward planning and budget monitoring as their size and exposure to financial partners increase. This heterogeneity, documented in particular by Bampoky and Meyssonnier (2012) in the Senegalese context, is one of the reasons why the relationship between ICS and performance cannot be understood without a theoretical framework that takes contingency factors into account, as developed in section 5.

3.3. Organisational performance: a multidimensional construct

Business performance is a concept with multiple meanings that is difficult to define; for a long time, it was reduced to its financial dimension alone, before a multidimensional approach incorporating non-financial indicators became established (Kaplan and Norton, 1998). In line with this development, the organisational performance of SMEs is understood here as a construct comprising three complementary and interdependent dimensions:

– Commercial performance: the organisation's ability to generate sales, build customer loyalty and increase its market share;

– Financial performance: indicators such as net profit, turnover or profitability;

– Operational performance: the efficiency of internal processes, resource management and the smooth flow of information.

These three dimensions do not operate in isolation: the company's success depends on their balance and synergy (Fornell and Hult, 2016). Bocco (2010) provides empirical support for this multifaceted conception: he observes that managers of small businesses in Africa spontaneously draw on multiple and often non-financial criteria for success, rather than a single accounting indicator. This finding reinforces the relevance of a multidimensional approach in the context studied here and justifies, in Section 6, the formulation of distinct theoretical propositions linking the SIC to each of these dimensions rather than to a single, aggregated performance indicator.

This multidimensional approach finds a methodological counterpart in the performance management tools developed since the late 1990s, foremost among which is Kaplan and Norton's (1998) Balanced Scorecard, which specifically articulates financial and non-financial indicator- , covering the customer, internal processes and organisational learning perspectives. Whilst these tools were initially designed for large organisations, their underlying rationale is to measure performance in a balanced manner rather than through a single accounting indicator. This rationale is widely reflected in the analytical frameworks used in research on accounting information systems in SMEs, including in contexts where these formalised tools are not themselves deployed.

3.4. The West African regulatory accounting framework and its implications for the accounting information system

The production and reliability of accounting information from Senegalese SMEs cannot be separated from the regulatory framework within which they operate. Since its entry into force, the accounting framework of the Organisation for the Harmonisation of Business Law in Africa (OHADA), implemented in Senegal as in the other member states of the West African Economic and Monetary Union, has required companies to adopt a standardised accounting system, the OHADA Accounting System (SYSCOHADA), whose requirements vary according to the size of the enterprise, ranging from a standard system, a simplified system and a minimal cash-based system intended for the smallest organisations.

This gradation in regulatory requirements has a direct impact on the nature of the internal control system (ICS) observed in Senegalese SMEs: many of them fall, de jure or de facto, under the minimal cash-based system, which requires only a highly simplified cash-flow accounting system, far removed from the wealth of information expected from a comprehensive accounting system. The transition from a simplified system to a standard system, as the enterprise grows, thus constitutes a potentially decisive tipping point for the relationship between the SIC and performance, insofar as it generally corresponds to a substantial increase in the information available for management decision-making. This normative dimension overlaps with both contingency theory (the size and legal status of the firm determine the applicable accounting regime) and neo-institutionalism (compliance with the OHADA framework is the result of coercive pressure); it will be revisited in the theoretical framework proposed in Section 6.

4. State of the art in empirical research on the relationship between management information systems and performance

The earliest studies on the accounting information systems of SME managers, conducted by Chapellier (1994, 1997) in France, highlighted a high degree of heterogeneity in practices: far from a homogeneous model, SMEs develop information systems of varying complexity, closely dependent on the manager's profile. This research was subsequently extended ly to developing contexts, notably in Tunisia by Chapellier and Ben Hamadi (2012), Ghorbel (2016), Lassoued and Abdelmoula (2006) and Mnif (2008), in Syria by Chapellier and Mohammed (2010) and Chapellier and Teller (2013), and in Morocco by El Bakirdi and Radi (2017) and Bakirdi (2023), who confirm the low level of structuring of the CIS in the majority of the SMEs studied.

In the West African context, several studies have examined the determinants and effects of the CIS in greater detail. Ngongang (2007, 2013) demonstrates, using samples of Cameroonian and Chadian firms, that accounting practices and the level of sophistication of the information system are associated with structural and behavioural contingency factors, in line with the work of Chenhall and Morris (1986) on the perceived usefulness of management control systems. This finding is corroborated by Letsina and Omenguele (2021), who explicitly link the complexity of the accounting data system to the financial performance of Cameroonian SMEs, and by Bishenjwa and Unshengwo (2023), who identify similar determinants for SMEs in the Democratic Republic of the Congo, whilst Kede Ndouna and Tsafack Nanfosso (2023) show that financial inclusion promotes the gradual formalisation of these same enterprises, a mechanism directly relevant to the formalisation trajectory of Senegalese SMEs described in section 3.1. Traoré and Kaka (2023) confirm, in Mali, a positive effect of information systems on the commercial performance of SMEs, whilst Boubakary (2022) links, in Cameroon, the entrepreneurial resilience of African SMEs to their overall performance. In Senegal, Bampoky and Meyssonnier (2012) note that the use of management control tools in enterprises remains limited, whilst Dieng (2018) shows that managers of Senegalese SMEs, when confronted with accounting information, make uneven use of it depending on their educational background and length of service. These findings have been further elaborated upon in more recent studies: Wade and Dieng (2019) demonstrate, with regard to Senegalese industrial firms, that cost accounting practices remain underdeveloped; Mohamed El Bachir and Dieng (2019) identify a marked scale effect on the use of management control tools in the Senegalese SME context; and Dieng and Diop (2023) confirm that the manager's profile, their training and previous experience directly influence the choice and use of these tools, whilst Barry (2021) links the manager's actions more directly to the organisational performance of Senegalese SMEs.

With regard to the relationship between accounting information systems (AIS) and financial performance, Lavigne (2002) and Lavigne and St-Pierre (2002) demonstrate, using samples of Quebec SMEs, that a more sophisticated accounting information system is associated with better financial performance, notably through easier access to external finance. This relationship is confirmed in the Tunisian context by Louizi and Boujelbene (2016), who establish a link between the characteristics of the accounting information system, perceived environmental uncertainty and the financial performance of SMEs. Diouf and Boiral (2017), adopting a similar perspective centred on non-financial accountability, highlight the role of information quality in managing the firm's legitimacy vis-à-vis its stakeholders.

Other studies shed light on the contribution of the accounting information system to commercial and operational performance. Taylor-Isiwele (2018) shows that the use of the accounting information system improves the quality and speed of managerial decision-making, with knock-on effects on operational efficiency. Marnewick and Labuschagne (2011), discussing the governance of IT projects, emphasise the role of organisational adoption of tools, a finding consistent with the socio-technical hypothesis developed below. Finally, at a macroeconomic level, Kouamé and Tapsoba (2019) show that structural reforms promoting the formalisation of businesses in developing countries are associated with productivity gains, indirectly reinforcing the value of improved information structures within African SMEs.

These findings are consistent with those obtained in other developing contexts. Beyond the Francophone world, Akinadewo and Adebiyi (2023) demonstrate, using Nigerian firms as a case study, that accounting information systems significantly improve performance, confirming that the poor accounting structure of SMEs acts as a barrier to their access to finance and commercial development, even when the available technological tools differ little from those used in more formalised economies. This finding suggests that the observed performance gap stems less from the availability of tools than from the organisational and institutional conditions governing their adoption, which ties in directly with the link between the socio-technical approach and neo-institutionalism discussed in Section 5.

A second body of research has focused more directly on the performance measurement and management tools themselves. Germain (2004) shows that the sophistication of performance measurement systems in SMEs varies significantly according to the size of the firm, its sector of activity and the degree of formalisation of its management, echoing the findings of Ngongang and Kadouamaï (2008) on the accounting transformation of Cameroonian firms following the transition from the OCAM framework to the OHADA framework. This research suggests that the adoption of a more sophisticated ICS often accompanies broader institutional transformations, which implies that the analysis of the ICS-performance relationship should not be isolated from the regulatory and norm al developments surrounding it — a point to which we shall return by drawing on neo-institutionalism (section 5.4).

This body of empirical research is nevertheless characterised by two limitations which we intend to address specifically at a conceptual level. On the one hand, most of these studies are conducted independently of one another, each drawing on a different theoretical framework: contingency in Ngongang (2007, 2013) and Germain (2004), resources in Louizi and Boujelbene (2016), implicit institutional legitimacy in Diouf and Boiral (2017), with none proposing an explicit articulation between these approaches. On the other hand, whilst studies conducted in Senegal have proliferated recently (Dieng, 2018; Dieng and Diop, 2023; Mohamed El Bachir and Dieng, 2019; Wade and Dieng, 2019; Barry, 2021), they remain, given the economic significance of SMEs in the region, still fewer in number than those carried out in Cameroon, Tunisia or Morocco, and, above all, scattered across several uncoordinated theoretical frameworks. This twofold observation reinforces the need for a theoretical framework capable of integrating the available explanations rather than simply juxtaposing them, whilst taking into account Senegal's specific characteristics. This is the focus of the following sections.

5. Theoretical grounding of the relationship between the accounting information system and performance: a multi-paradigmatic approach

The analysis of the accounting information system cannot be reduced to an exclusively technical dimension: understanding it requires a theoretical grounding that sheds light on its nature, its operational logic and its influence on organisational performance (Granlund, 2011). To this end, the literature has drawn on a variety of theoretical approaches, which we examine in turn before proposing a way of integrating them.

5.1. Resource-Based View: the accounting information system as a strategic resource

First proposed by Wernerfelt (1984) and further developed by Barney (1991), the Resource-Based View posits that differences in corporate performance stem from the possession and exploitation of resources that are rare, valuable, inimitable and difficult to substitute, in accordance with the so-called 'VRIN' model. Applied to the accounting information system (AIS), this perspective leads us to view the AIS not merely as a technical infrastructure, but as an organisational resource capable of generating a sustainable competitive advantage provided it is properly designed and integrated into decision-making processes.

The heuristic value of the VBR for our subject is twofold. On the one hand, it helps explain why SMEs with seemingly comparable resources derive unequal benefits from their AIS: the resource only generates value if the firm develops the organisational capacity to transform it into a decision-making advantage. On the other hand, it provides a theoretical basis for the hypothesis that the CIS has a positive effect on various dimensions of performance, as a resource that facilitates the collection, processing and analysis of management information.

The extension of the Value-Based Theory (VBT) towards the dynamic capabilities approach further suggests that we should not limit ourselves to the mere possession of the MIS, but should focus on the SME's ability to adapt it in the face of changes in its environment: new tax obligations, the digitisation of transactions, and increased demands from financial partners. In the Senegalese context, where the digitisation of invoicing and till systems is progressing rapidly, this dynamic interpretation of the information resource appears particularly relevant: the value of the MIS lies not merely in its existence, but in the manager's ability to adapt it in step with changes in the market. From a similar perspective, Djamel and Chafia (n.d.) demonstrate, in the Algerian context, that mastery of economic information is a determining factor in a firm's competitiveness, which reinforces the view of the CIS as a strategic resource within the meaning of the RBV.

5.2. Contingency theory: the situational effectiveness of the CIS

Contingency theory, founded by Lawrence and Lorsch (1967) and further developed by the work of Burns and Stalker (1961) on mechanistic and organic structures, is based on the observation that there is no universally effective organisational model: performance depends on the fit between a firm's internal characteristics and the demands of its environment. Mintzberg (1982) subsequently systematised several contingency factors likely to influence management systems: size, age, technology, organisational culture and power relations.

The same applies to the SIC. This theory posits that its effectiveness varies according to structural contingency factors (size, legal form, sector of activity, age of the organisation) and behavioural factors (training, length of service and profile of the manager) (Chapellier, 1997; Ngongang and Kadouamaï, 2008; Affes and Chabchoub, 2007). Germain (2004) confirms, based on a sample of SMEs, that the sophistication of performance measurement systems is strongly contingent on the organisational characteristics of the firm. Avelé (2010) reaches a similar conclusion regarding Cameroonian municipal public services: the use of management control tools there remains heavily influenced by contingent factors specific to each organisation. This approach helps to explain why a system that performs well in a large, formalised organisation may prove unsuitable for a Senegalese SME facing limited resources or operating in an environment characterised by informality.

This contingency framework leads to the identification of two categories of factors likely to influence the relationship between management control systems and performance. Structural factors relate to the organisational characteristics of the enterprise: an SME incorporated as a company, subject to stricter accountability requirements, will thus be more inclined to formalise its management control system than a sole trader operating in the informal sector. Behavioural factors, on the other hand, relate to the manager's profile: their initial education, particularly in management or accountancy, their length of service at the helm of the firm, and their openness to digital tools directly influence their propensity to produce and use accounting information. These two categories of factors will be used, in Section 6, as moderating variables in the integrative conceptual model.

5.3. The socio-technical approach: adoption as a prerequisite for effectiveness

The socio-technical approach, initially developed by Trist and Bamforth (1951) and subsequently by Bostrom and Heinen (1977), constitutes a paradigm closely related to contingency theory. It emphasises the interdependence between the technical dimension (infrastructure, software) and the social dimension (skills, organisational culture, working practices) of an information system: the system can only perform effectively if the technological tools are consistent with the social organisation that implements them.

This framework aligns well with the SIC: its value lies not only in its intrinsic technical characteristics, but in its ability to be adopted and accepted by users, foremost among whom is the SME manager. Marnewick and Labuschagne (2011), in their work on the governance of IT projects, reach a similar conclusion: the failure of many systems stems less from their technical limitations than from a lack of organisational adoption.

In Senegalese SMEs, this social dimension of adoption is of particular importance: the introduction of invoicing software or a spreadsheet for budget monitoring only has an impact on performance if the manager – and, where applicable, the accounting staff – develop the skills and work routines necessary for its regular use. Conversely, a sophisticated tool that is poorly adopted – because it has been imposed by a financial partner or a consultancy firm without sufficient support – risks remaining under-utilised. Its contribution to performance would consequently be automatically limited, regardless of its intrinsic technical quality.

5.4. Complementary theories: neo-institutionalism and agency theory

Two additional theoretical frameworks help to shed light on peripheral but significant aspects of the relationship under study. Neo-institutionalism, developed by DiMaggio and Powell (1983), highlights the influence of coercive pressures (tax regulations, accounting standards), normative pressures (the accounting profession, financial partners) and mimetic pressures (imitation of dominant sector practices) on organisational choices. It thus sheds light on the transition from the informal to the formal sector in Senegalese SMEs, demonstrating that the adoption of an internal control system (ICS) stems not only from a quest for efficiency, but also from a quest for institutional legitimacy vis-à-vis the tax authorities or donors.

Agency theory, formalised by Jensen and Meckling (1976, republished in 2019), analyses conflicts of interest and information asymmetries between stakeholders: managers, employees and financial partners. In SMEs, where the close link between ownership and decision-making does not preclude opportunistic behaviour towards third parties, a reliable and transparent internal control system helps to reduce these asymmetries, strengthen internal control mechanisms and build the trust necessary for relations with external partners. This mechanism is empirically supported by Mendy's (2014) work on corporate governance in Senegal, which highlights the weakness of formal accountability mechanisms as a persistent source of information asymmetries between managers and external stakeholders.

These two theories, taken on their own, do not provide a sufficient explanation of the relationship between ICS and performance: they account more for the conditions under which the system is adopted than for its actual influence on the company's results. Nevertheless, they remain useful complements to the central interpretation we advocate here, which is based on resource theory and the socio-technical approach.

It should be noted that neo-institutionalism and agency theory are not mutually exclusive in the context under study: a single Senegalese SME may be simultaneously subject to institutional pressures (compliance with the requirements of the tax authorities) and agency issues (the need to reassure a microfinance institution regarding its solvency). These two lines of reasoning then combine to reinforce, in a convergent manner, the manager's incentive to structure their accounting information system, irrespective of any immediate efficiency gains.

5.5. Comparative summary of the theoretical frameworks used

Table 1 summarises the assumptions, contributions and limitations of each of the theoretical frameworks examined.

Table 1. Comparative summary of the theoretical frameworks used

Theoretical framework	**Pioneering authors**	**Central premise**	**Contribution to the SIC-performance relationship**	**Main limitation**
Resource-Based View (RBV)	Wernerfelt (1984); Barney (1991)	Differentiated firm performance stems from resources that are rare, valuable, inimitable and non-substitutable (VRIN).	The SIC is regarded as a strategic organisational resource, a source of competitive advantage when integrated into decision-making processes.	An internal and relatively static approach, which offers little explanation of how the external context influences the value of the resource.
Contingency theory	Lawrence and Lorsch (1967); Burns and Stalker (1961); Donaldson (2001)	There is no universally effective organisational structure; performance depends on the fit between the organisation and its environment.	The effectiveness of the ICS is determined by structural factors (size, legal form, sector) and behavioural factors (managerial profile).	This is sometimes a deterministic approach, which leaves little scope for the agency of actors in taking ownership of the system.
Socio-technical approach	Trist and Bamforth (1951); Bostrom and Heinen (1977)	A system's performance results from the coherence between its technical and social dimensions.	It complements the RBV by emphasising that the value of the CIS lies not only in its technical characteristics, but in its adoption by users.	Difficulty in operationalising and empirically measuring the degree of social adoption of the system.

Neo-institutionalism	DiMaggio and Powell (1983)	Organisations adopt practices under the influence of coercive, normative and mimetic pressures, regardless of their efficiency alone.	It sheds light on the adoption of the SIC by Senegalese SMEs as a response to regulatory requirements and a quest for legitimacy.	It explains the adoption of the system more than its actual influence on performance.
Agency theory	Jensen and Meckling (1976/2019)	Information asymmetries between stakeholders generate agency costs and opportunistic behaviour.	The SIC reduces information asymmetries, strengthens internal control and builds trust with financial partners.	Assumes a separation of ownership and decision-making that is not typical of the family governance found in many SMEs.

Source: Ourselves.

5.6. A theoretical analysis tested against the Senegalese context

The relative relevance of these five theoretical frameworks is not independent of the context to which they are applied. In Western economies, where the majority of the SMEs studied already have a basic accounting information system in place due to long-standing legal obligations and well- d regulations, the dominant research question centres on the sophistication of the system and its marginal effect on performance: resource-based theory and the socio-technical approach naturally find their place here. In the Senegalese context, however, a significant proportion of SMEs still lie upstream of this continuum, in a zone where the very existence of a minimal accounting information system remains in question. This lends greater weight to neo-institutionalism as an explanation for the transition from the absence to the presence of a system, even before the question of its influence on performance arises.

This observation calls for a nuanced interpretation – without invalidating it – of the proposed hierarchy between the explanatory core and peripheral frameworks: it remains valid for Senegalese SMEs already engaged in a process of formalisation, but should be reversed for SMEs still rooted in informality, for whom the question of adoption takes precedence over that of optimisation. This heterogeneity within the fabric of Senegalese SMEs constitutes, by implication, a further argument in favour of a pluralist theoretical framework: a single framework, whatever it may be, would not suffice to account for the diversity of situations encountered on the ground.

6. Towards an integrative theoretical model

6.1. A complementary rather than competing articulation of paradigms

We do not interpret the juxtaposition of the theoretical frameworks presented in Section 5 as a competition between rival paradigms, but rather as a functional complementarity. We propose distinguishing between an explanatory core and peripheral frameworks. The explanatory core combines resource-based theory with the socio-technical approach: within this framework, the SIC is viewed simultaneously as a strategic resource and as a system whose effectiveness depends on its social appropriation by the actors. This integration transcends the limitations inherent in each theory taken in isolation: the static and internal nature of the RBV, on the one hand, and the difficulty of the socio-technical approach in explaining performance on its own, on the other.

Around this core, contingency theory acts as a moderator: it explains why the effect of the ICS on performance is not uniform, but depends on the structural and behavioural characteristics specific to each SME. Finally, neo-institutionalism and agency theory shed further light on the reasons for adopting the system and on its role in internal governance, without constituting the core explanation for the SIC–performance relationship.

6.2. Theoretical research propositions

By linking these theoretical frameworks to the multidimensional conception of organisational performance set out in section 3.3, we formulate three general theoretical propositions, which are to be operationalised and tested empirically:

- P1: The accounting information system has a positive influence on the commercial performance of SMEs, in that it improves the reliability of information relating to sales, invoicing and customer management.
- P2: A well-structured accounting information system supports the financial performance of SMEs: it provides the data necessary for cash flow management and facilitates access to external finance.
- P3: The operational performance of SMEs also benefits from the accounting information system, which facilitates the coordination of activities, the

traceability of transactions and the monitoring of internal flows.

Each of these general propositions can be broken down into two distinct components, in line with the distinction between the production and use of accounting information set out in section 3.2. The production component encompasses the implementation of transaction and invoicing tools, planning and budgetary control tools, as well as the preparation of regular financial statements. The utilisation component refers to the effective use of these tools by the manager, as well as the application of accounting information derived from management control, cost accounting or cash management in day-to-day decision-making. This framework, which follows the approach already validated by the work of Chapellier (1997) and Ngongang (2007, 2013), has the advantage of not treating the SIC as a homogeneous whole: it allows us to formulate, for each general proposition, sub-propositions that distinguish the effect of the mere production of accounting tools from the potentially more decisive effect of their actual use in the day-to-day management of the SME.

In line with contingency theory, the strength of these relationships – whether in relation to the general propositions or their sub-components – is also likely to vary according to structural factors (size, legal form, sector of activity) and behavioural factors (training, length of service and profile of the manager), which act as moderators across the entire model. Table 2 summarises the main theoretical framework drawn upon for each of the three propositions.

Table 2. Theoretical underpinnings of the research propositions

Proposal	Target performance dimension	Main theoretical basis
P1	Commercial performance	RBV (informational resources); socio-technical approach (adoption by sales staff)
P2	Financial performance	VRB (reliability of financial data); agency theory (reduction of information asymmetries with funders)
P3	Operational performance	RBV (process efficiency); socio-technical approach (integration into work routines)

Source: Ourselves.

6.3. Proposed conceptual model

The conceptual model resulting from this theoretical framework distinguishes between two components of the ICS: the production of accounting tools (transactions and invoicing, budgetary planning and control, financial statements) and the use of the resulting accounting information, linked to the three dimensions of organisational performance (commercial, financial, operational) via relationships P1 to P3, under the moderating influence of structural and behavioural contingency factors, and within an institutional environment that determines the terms of the system's adoption (Figure 1).

An analysis of this model calls for an important clarification regarding the respective status of the various theoretical frameworks employed. The central relationships P1 to P3, represented by direct arrows between the components of the ICS and the dimensions of performance, form part of the explanatory core combining resource-based theory and the socio-technical approach: they postulate a positive effect of the ICS, contingent upon its effective adoption by the organisation's stakeholders. The moderating effect of structural and behavioural contingency factors, represented by a cross-sectional arrow influencing the strength of these relationships, falls within the scope of contingency theory. Finally, the institutional environment, which frames the entire model without being linked by a direct causal arrow to performance, accounts for the role of neo-institutionalism and agency theory in the very genesis of the accounting information system, prior to the relationships tested by propositions P1 to P3.

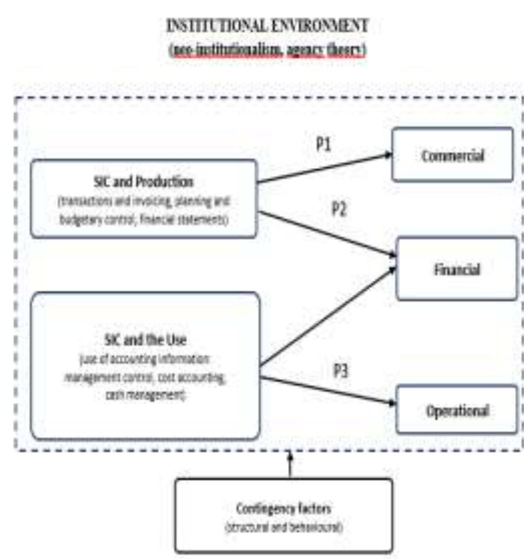

Figure 1. Integrative conceptual model of the relationship between the accounting information system and the organisational performance of SMEs

The two components of the SIC (production and utilisation) are linked via relationships P1, P2 and P3 to the three dimensions of organisational performance; the moderating effect of structural and behavioural contingency factors is represented as a cross-lagged effect; the institutional environment frames the entire model.

6.4. Implications for empirical operationalisation

This conceptual framework calls for several methodological choices for its future empirical validation. In terms of measurement, the production and utilisation components of the SIC can be operationalised using self-report scales measuring the frequency of production of various accounting tools and the intensity of their use in decision-making, similar to the instruments already employed by Chapellier (1997) and Ngongang (2007, 2013). The three dimensions of organisational performance, for their part, can be assessed at the level both through objective indicators, where the accounting data of the SMEs under study permit this, and through perceptual measures gathered from managers – a combination that is often necessary in contexts where access to audited financial data remains limited.

In terms of analysis, the model's structure—comprising two explanatory components, three dimensions of performance, and structural and behavioural moderating factors—lends itself naturally to structural equation modelling, which would allow for the simultaneous testing of the direct relationships postulated by propositions P1 to P3 and the moderating effects associated with contingency theory. Such a quantitative approach, applied to a sample of Senegalese SMEs spanning several sectors of activity, would constitute the natural empirical extension of this conceptual contribution.

7. Discussion

Three main contributions emerge from this analysis. Firstly, it offers an integrated interpretation of a theoretical field that has hitherto been fragmented, distinguishing an explanatory core (resource theory and the socio-technical approach) from peripheral frameworks (contingency, neo-institutionalism, agency), whereas the existing literature frequently juxtaposes these theories without prioritising them or justifying their interrelation.

Secondly, it situates this theoretical articulation within a context as yet under-researched by accounting scholarship: that of West African SMEs characterised by a high prevalence of informality (El Bakirdi and Radi, 2017). This context lends particular significance to neo-institutionalism, whose role in explaining the transition from the informal to the formal sector is often underestimated in studies conducted in Western contexts, where the adoption of an accounting information system is generally taken for granted.

Thirdly, by explicitly distinguishing between the production and use of accounting information, in line with Chapellier (1997), and by linking them separately to three dimensions of performance, the proposed framework offers a more nuanced basis for empirical operationalisation than models that treat the AIS or performance as one-dimensional constructs. More broadly, this distinction echoes a recurring observation in the information systems literature: the mere technical availability of a tool in no way prejudges its actual use—a discrepancy that studies focusing on the presence or absence of an MIS, without examining the extent to which it has been adopted, tend structurally to underestimate.

Finally, this theoretical framework has implications that extend beyond the academic sphere alone. For SME managers, it highlights that simply purchasing accounting software is not enough to improve performance: it is the effective adoption of the tool, over time, that determines its impact, hence the need for training support for managers and their accounting staff, for example through SME support organisations. For support organisations and public authorities, the neo-institutional perspective serves as a reminder that regulatory incentives (accounting standards, conditions for access to credit, tax requirements) play an active role in the dissemination of accounting information systems, independently of the arguments of economic efficiency put forward by resource-based theory.

We must, however, discuss two limitations. On the one hand, the proposed hierarchy between the explanatory core and peripheral frameworks remains an analytical choice, which is open to debate depending on the empirical context: in particularly restrictive institutional environments, neo-institutionalism could, on the contrary, constitute the primary explanation for the adoption of the SIC. On the other hand, the articulation of theories, however conceptually coherent it may be, does not guarantee the statistical significance of the postulated relationships, which remains to be established empirically.

Far from setting in stone a single interpretation of the SIC–performance relationship, this integration leaves room for other possible frameworks, for example by giving a more central role to agency theory in family-owned SMEs where governance issues are particularly significant, or by drawing on complementary approaches from the sociology of translation to provide a more nuanced account of the processes by which the SIC is adopted by those within the organisation.

We thus propose a well-reasoned starting point rather than a final conclusion, open to discussion and further development through future research.

8. Conclusion, limitations and future directions

We set out to construct an integrative theoretical framework for the relationship between the accounting information system and the organisational performance of SMEs, in response to the fragmentation observed in the existing literature. By articulating resource-based theory and the socio-technical approach around a common explanatory core, and by supplementing them with contingency theory, neo-institutionalism and agency theory, we have proposed a conceptual model that links the two components of the accounting information system – the production and use of accounting information – to the three dimensions of organisational performance, under the moderating effect of contingency factors and within an institutional environment that shapes the conditions for the system's adoption.

At a theoretical level, we argue for moving beyond the juxtaposition of isolated frameworks that characterises part of the literature on accounting information systems, in favour of an explicitly multi-paradigmatic approach. From a contextual perspective, we draw attention to the specific characteristics of African SMEs (informality, institutional constraints, leader-centred governance), which influence the relative relevance of the various theories that can be applied.

More broadly, the approach adopted here forms part of a wider trend in accounting research in sub-Saharan Africa, which stands to benefit from integrating analytical frameworks derived from strategic management and organisational theory with the normative realities specific to the OHADA region. The proposed framework does not seek to replace existing approaches, but rather to provide a point of reference that can guide the design of future research protocols examining the relationship between accounting information systems and performance in SMEs in the West African sub-region.

This work also has limitations inherent to its conceptual nature. Firstly, the theoretical propositions put forward have not been subjected to empirical testing in this text: their validation requires a quantitative approach, for example using a structural equation model tested on a sample of Senegalese SMEs. Secondly, the literature review we have drawn upon, being narrative in nature, does not claim to be as comprehensive as a systematic review and could be supplemented by a bibliometric analysis of the field. Finally, the proposed framework would benefit from being tested in other West African national contexts, in order to assess its scope beyond the Senegalese case alone. These limitations open up a number of avenues for future research, which we aim to support with this conceptual framework.

At the conclusion of this analysis, we demonstrate that the question posed in the introduction (are Senegalese SMEs lacking a structured accounting information system more exposed to risks and less efficient than those that have one?) cannot be answered unequivocally without carefully distinguishing the nature of the information resource utilised, the conditions under which it is adopted by the firm's stakeholders, the contingency factors that influence its effectiveness, and the institutional environment in which it operates. It is precisely this complexity that we have endeavoured to capture in lso through the integrative theoretical framework advocated here, with a view to providing a foundation for future empirical research.

Three areas for further research appear particularly promising. The first would involve empirically testing the proposed model on a representative sample of Senegalese SMEs, using a quantitative methodology that allows for the simultaneous estimation of the direct relationships and the postulated moderating effects. The second would involve comparing the results obtained according to the applicable accounting regime (minimal cash-based system, simplified system or standard system under the SYSCOHADA framework) in order to assess whether the relationship between the SIC and performance varies according to the degree of accounting formalisation imposed on the firm. Finally, the third approach would benefit from adopting a complementary qualitative approach, based on in-depth case studies, in order to document in detail, the processes by which SME managers adopt the SIC – processes which the socio-technical approach specifically invites us to examine more closely.

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