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A Hierarchical Model of Capabilities for Financially Constrained Environments: An Internationalization of SMEs in Africa from A Resource-

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Abstract

While the African Continental Free Trade Area (AfCFTA) creates landmark opportunities for SMEs across Africa, access to adequate finance is still the main stumbling block preventing them from participating meaningfully in cross-border trade. We extend the Resource-Based View (RBV) streams with a hierarchical model of capability development for SME internationalization in resource-constrained settings and test its impact empirically. Based on survey data from 350 Ghanaian manufacturing SMEs operating in an AfCFTA environment, we show how financial resources serve as "meta-capabilities", facilitating the development and execution of higher-order organizational capabilities. Of these responses, 88.0% identify financial constraints as their main impediment to international trade, and both digitalization ($r = 0.447$, $p < 0.01$) and perceived challenges ($r = 0.474$, $p < 0.01$) are strongly correlated with financial constraints in a positive sense (Table1). According to regression analyses, financial constraints were one of the strongest predictors for SME difficulties ($\beta = 0.406$, $p < 0.001$) and digitalization paradoxically predicted higher financial constraints ($\beta = 0.447$, $p < 0.001$). These findings complement the implicit linearity in RBV by showing that if financial resources are necessary to gain access and develop/deploy other VRIN (valuable, rare, inimitable, non-substitutable) resources, there is a 'hierarchical' ordering whereby financial resources are accessed before other resources. Theoretically, we contribute to international business theory by contextualizing RBV for resource-constrained African markets and provide policy implications that are useful for policymakers, financial institutions and SME owners interested in leveraging AfCFTA benefits.
The study investigates the mediating role of capability hierarchy in relation to financial constraints and SME Expansion-oriented internationalization. It examines the impact of financial constraints, rather than general resource availability (the traditional definition cited within resource-based view), on internationalization given firm endogenous capabilities, particularly for developing economy SMEs: This paper aims to provide a synopsis of this thinking.

Keywords: Resource-Based View, SME Internationalization, Financial Constraints, AfCFTA, Capability Hierarchy, Digitalization.

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1.Introduction

On January 1, 2021, the African Continental Free Trade Area (AfCFTA) entered into force in what could be said to have established the largest free trade area in the world by number of countries participating in it with an estimated consumer size of about 1.3 billion people and a population GDP combined US$3.4 Trillion per UNCTAD (2024). This agreement both represents unprecedented opportunity and a serious challenge for Small to Medium Enterprises (SMEs), constituting nearly 85% of registered businesses while accounting for some 70% of Ghana's GDP (Ghana Statistical Service, 2022). The good news, of course, is that the 90% abolishment of tariffs on goods and services means far more market access – however this begs the question, do African SMEs have the capabilities to take advantage of these opportunities? There is relatively little empirical evidence on this question in the existing literature as most research focuses on macroeconomic projections than firm-level realities (Addo, 2021; Nyarko et al., 2022). This study fills this important void.

First introduced by Barney (1991), Resource-Based View of the firm (RBV) is an overarching block for firms to reason on how they can create competitive advantage by owning valuable, rare, inimitable and non-substitutable (VRIN) resources. Resource-based view (RBV): Firm-specific resources and capabilities as the foundation of internationalization. However, in spite of its important influence the RBV has been criticized for static definitions of competitive advantage and for not considering how resource-constrained firms from developing economies circumvent their environmental liabilities (Teece et al., 1997; Alayo et al., 2023; Doagbodzi, 2024). The criticisms are particularly hurtful in the African context, where SMEs confront structural problems to a degree that is qualitatively different from those faced by firms in developed economies. Such complex business contexts may be particularly problematic for both the implicit assumption of resource fungibility underpinning much RBV scholarship.

This paper fills an important gap in the literature via a critical retake of how financial constraints moderates the resource-capability relationships for SMEs preparing to internationalize under the AfCFTA. Instead, we argue against the traditional RBV assumption that resources are additive and independent and theoretically establish them as a hierarchy: financial resources which themselves are meta-capabilities enabling an organization to develop and deploy (higher order) organizational capabilities. Without adequate financial capital, we contend that many other VRIN resources—technological sophistication, managerial talent, network ties—are rather either out of reach or underutilized. This is not just a theoretical refinement but a practical imperative: if financial resources are indeed fundamental, then policy interventions focusing on capacity without addressing the binding nature of financial constraints cannot be expected to work.

We make three primary contributions. We contribute to RBV in two ways: first, we show that resources are hierarchically organized not additive organized under financially constrained contexts with financial capital acting as a gateway capability. This tests the assumption — often implicit in VRIN studies — that all VRIN resources produce competitive advantage regardless of context. Second, we offer empirical evidence from an under explored context African SMEs caught in the midst of regional trade liberalization — that runs contrary to rampant conjectures concerning resources and capabilities. Third, we address a paradox of digitalization: although internationalization barriers are expected to decrease as firms digitalize their business processes, resource-constrained SMEs adopting such technologies face a limit on human resources that can trap them with not enough financial slack. This result contradicts uncritical narratives of leapfrogging in the context of digital technologies which already influenced policy discourse significantly.

2 Theoretical Framework

2.1 The Resource-Based View and Its Limitations on African SME Contexts

The Resource-Based View (RBV) articulated by Barney (1991) and Wernerfelt (1984) has rapidly emerged as one of the most widely adopted and cited theoretical lenses for firm-level performance differentials. Thesis of RBV: Message of the Paper — The way firms achieve sustainable competitive advantage is by possessing resources that are VRIN (Valuable, Rare, Costly to Imitate, Non-substitutable) Among SMEs that are pursuing internationalization, academics have proposed a diverse set of VRIN resources such as access to financial

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capital (Ahmad & Zafar, 2022), managerial talent and experience (Oduro & Mensah-Williams, 2023), technological capabilities (Ooi et al., in press), brand equity and social network (Chetty & Agndal, 2007).

Yet, our findings show that it 30 potential RBV applications to SME internationalization in Africa are limited and may present theoretical challenges which need to be addressed. RBV presumes a rather stationary resource context but African SMEs operate in institutional contexts that have been shown to be some of the most volatile (Anim, Arthur, & Amoako, 2023) and where infrastructure gaps are acute and resources scarce. Second, the theory treats resources as additive and largely independent, by implicitly assuming that holdings of any VRIN resource additive contribute to competitive advantage. This assumption does not consider the case that some resources might also be essential building blocks for the development of others. Third, most of RBV literature has been developed and tested in the context of industrial firms from developed country contexts (Alayo et al., 2023; Doagbodzi, 2024), where resource constraints might be marginal at best. As its transferability to African contexts cannot be assumed, it should be shown empirically.

These limitations are not only theoretically. Therefore, in the light of Ghanaian manufacturing SMEs being positioned within the context of AfCFTA which offers unprecedented opportunities for regional market access, it becomes practically significant to understand whether firms can and how such capabilities required for internationalization are developed. Since the standard RBV treats resources as discrete and independent, it provides little guidance about the sequencing of capability development or foundational resources that facilitate acquisitions. This is a major omission that our study aims to fill.

2.2 Dynamic capabilities: an incomplete solution with lasting holes

The dynamic capabilities framework of Teece, Pisano and Shuen (1997) counters the static nature of RBV by highlighting how firms need to integrate, develop and reconfigure internal and external competences in order to meet the needs of changing environments. In the setting of altered trade regimes, like that of the AfCFTA, normal dynamic capabilities such as sensing opportunities, seizing them and transforming operations are relevant constructs in accommodating SME reactions to changing market conditions (Adomako et al., 2023; Kusi et al., 2025).

However, the dynamic capabilities literature has been criticized for conceptual vagueness and an failure to consider the resource implications necessary for capability development itself (Eisenhardt & Martin 2000). This framework implicitly assumes that firms have enough slack resources to conduct all the sensing, seizing and transforming. This assumption is however problematic for financially constrained SMEs in Africa: in order to sense opportunities, you need market intelligence capacity; in order to seize opportunities, working capital is needed to support inventory and logistics needs; in order to transform operations funding is required not only to invest in technology but also training. Dynamic capabilities rely on foundational resources to move from aspiration to practice (Sirmon et al., 2007). In this respect, the framework of dynamic capabilities which is very informative but may be less relevant than one might think for the SMEs that are in needs to develop their capability.

2.3 The Missing Link: Financial Resources Are Foundational Meta-Capabilities

In financially constrained environments, we argue that financial resources serve as a special class of master capability enabling both the development and deployment of every higher order organizational capability. There are three related transgressions in thinking that underpin this proposition that stand in contrast to the assumptions of RBV, and ultimately, competitive advantage.

First of all, internationalization involves large sunk costs that need to be incurred before any export revenues are generated. Such costs consist of conducting market research, adapting products for regional preferences and qualifying them for quality standards; costs associated with legal compliance and regulations; and building relationships with prospective foreign customers (Melitz, 2003; Love, Roper, & Vahter, 2023). This leads to insurmountable upfront costs, which SMEs cannot absorb without sufficient financial resources, and thereby preventing their internationalization regardless of other capabilities. Those managerial talents or technological competences considered as resources in the so-called RBV of firms (Barney 1991) are not enough to serve owners and managers if a firm cannot even afford the low hanging basic costs of entering a market.

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Secondly, financial restriction (squeezed budgets) very much inhibit organizational learning and experimentation. An untested product, process or market comes with a cost that firms with limited financial resources cannot absorb; such costs cannot be dispersed when the outcome of efforts is uncertain, nor can scarce funds invested in capability-building activities which are essential for generating organizational learning (Sirmon, Hitt & Ireland, 2007). It produces a self-feeding loop: financial constraints hinder capability growth, which hinders performance, which in turn provides an ongoing reason for financial restraint. This dynamic is cumulative in nature, which leads to the possibility that initial resource endowments shape firm trajectories over time—a connection that RBV has rarely theorized.

Third, the causal and directional relationship between financial resources and other VRIN resources. Money enables purchases of technology, the ability to attract talent managers and develop a brand equity or just give access to network relationships. These additional capabilities often remain out of reach or underutilized without financial inputs. This implies a hierarchical and not additive relationship among resources so that the financial resources create operational capabilities, in turn strategic capabilities, which in turn determine internationalization performance. The hierarchical nature of this relationship not only contradicts the assumption of resource independence—H1 and H2 provide evidence for nested levels of interdependence—but it suggests that the order in which a firm acquires its resources actually influences performance.

2.4 A Model of Hierarchy of Capabilities based on Financial Constraint

Collaborating across the foundations of capability hierarchies (Calof & Beamish, 1995; Knight & Cavusgil, 2004), we suggest a hierarchical model of four levels of capability development for SME internationalization in financially constrained environments.

2.4.1 Level 1: Foundational Financial Capabilities

The bottom of the hierarchy comprises basic financial competencies such as access to credit, sufficient working capital and cash flow management stability (no negative cash cycle) and capacity to few transaction costs. These capabilities are not simply one type of resource among many; they are the even higher-order capabilities, on which any high-and-drive bundling must be rooted. Investment in capabilities further up the hierarchy will not be sustainable without these foundational capabilities. We argue that so much policy attention to SME development has a focus on higher-order capabilities, but overlooking this foundational tier a serious misordering; one which – we pose – may begin to explain the relative persistence of policy failures.

2.4.2 Level 2: Operational Capabilities

The second tier consists of operational capabilities have digitalization, quality management systems, logistics coordination and regulatory compliance. These functions transform financial resources into operational efficiency and effectiveness. But they are resource-intensive, requiring a major investment in technology, training and systems. Moreover, for SMEs constrained by financial resources, investing in operational capabilities is another way to develop at the expense of building foundational financial capabilities first they risk becoming cost burdens that cannot be sustained. We are not saying that operational capabilities do not matter, but rather their development has to be sequenced right.

2.4.3 Level 3: Strategic Capabilities

The third layer consists of strategic capabilities such as market intelligence, network relationships, brand development, and product localization. Such capabilities position firms within regional markets and set them apart from their competition. Strategic capabilities cannot only be funded; they must also be enabled by the operational capabilities that assure reliable delivery and quality. This hierarchical logic means that strategic capabilities are not substitutes for weaknesses at other levels; a firm possessing strong but unbalanced strategic capabilities will be unlikely to sustain its international growth if it lacks the relevant operational or financial capabilities (Teece, 2018).

2.4.4 Level 4: Internationalization Performance

Finally, the top most constituent of the hierarchy is dependent on internationalization performance, including export intensity, market diversification and profitability. The performance of internationalization stems from the successful construction and leak proof deployment of capabilities down all tiers. But performance also creates funds for further reinvestment in capability so firms that have figured out the hierarchy trigger a

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positive feedback loop. Instead, firms that cannot develop foundational capabilities never have performance in the first place even if they invest extensively in higher-order capabilities.
It is both a description and prescriptive. Descriptively it reflects the observed empirical patterns: financial constraints are more strongly correlated with challenges (r = 0.474) than digitalization is (r = 0.334), indicating that financial capabilities are more fundamental than digital capabilities. From a perspective of prescription, the model suggests that capability development at higher levels depends on issues related to capability development at lower levels. Without building fundamental financial capabilities (Morgan et al., 2003), investment in either line of business, digitalization or market intelligence cannot be sustained. This understanding holds enormous implications for policy design, implying that it is often not so much the content of reforms as their sequence that can make or break success.

2.5 Theoretical Propositions

According to the hierarchy of capabilities model, we propose the following theoretical propositions:
Proposition 1: Financial resources serve additional advantages in the shape of meta-capability, that allows a firm to develop operational, strategic and internationalization capabilities. Financial resources are necessary if not sufficient, but in resource-constrained contexts they tend to be complementary capability paradoxically.
Proposition 2: The relationship between resources is hierarchical rather than additive. Instead, how success in internationalization is achieved depends on the order of capability development: For operational and strategic capabilities to be deployed effectively, they need a strong foundation of financial capabilities.
Proposition 3: Digitalization even leads to reduced demand and therefore also to increased financial constraints in the short-term for resource-constrained firms on SME internationalization. Digital Technologies are not substitutes for financial resources but complementary assets that require a monetary investment.
Proposition 4: Financial constraints are a more effective single predictor of the problems experienced by SMEs in internationalization than technology gaps, infrastructure deficits, or informational asymmetries.

2.6 Context: Ghanaian SMEs and AfCFTA

Ghana: Between Aug 2020 and now you have special position on AfCFTA as the secretariat is hat at Accra Ghana's manufacturing sector comprises 11.8% of GDP and represents 13.7% of formal jobs (World Bank, 2022), with approximately 85% being SMEs. The key sub-sectors include, food and beverage processing (28%), textiles and garments (16%), wood and furniture (15%) and metal fabrication (13%) respectively (FAO, 2023). Ghanaian manufacturing SMEs have significant structural challenges, nonetheless. However, access to credit continues to be highly constrained since only 23% of SMEs ever gained access to formal loans through banks (Asiedu & Freeman, 2022). As many SMEs come up against acute infrastructure deficits, with 56.6% claiming poor logistics discourage business (Doagbodzi, 2024). Only 31% of them adopt e-commerce; therefore, Technology adoption is lagging. Asiedu & Freeman (2022). The AfCFTA focuses on harmonizing tariff barriers, while non-tariff barriers, financial constraints, infrastructure gaps and information asymmetries yet to be addressed (UNECA, 2021). The nature of these structural constraints indicates that the AfCFTA's net benefits for SMEs will not automatically accrue but necessitate policy interventions to complement them by addressing foundational constrain.

3 Methodology

3.1 Research Design and Sample

The research adopted a quantitative cross-sectional survey approach to capturing data from AfCFTA-certified or export-ready Ghanaian manufacturing SMEs (Creswell & Creswell, 2018). Instruments were administered to 350 respondents in Greater Accra Region using stratified and purposive sampling (Saunders, Lewis, & Thornhill; 2019). The respondents included CEOs or founders (24.9%), quality control managers (19.1%), operations managers (14.6%); and export manager (13.7%). The sample consisted of 66.3% male, 68.6% postgraduate-qualified and 43.1% aged between 31 and 40 years old.
Sample size was determined by using Yamane's (1967) formula $n = N / (1 + Ne^2)$, where N = 3500 (estimated number of registered manufacturing SMEs with high possibility to export) and e = 0.05 which tells us that our

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target is only 359 respondents. After cleaning our data 350 were found to be valid responses, and in total the response rate was 87.5%.

3.2 **Measures**

A structured instrument using the five-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree) assessed four constructs:

Perceived opportunities (10 items, α = 0.87) —Market access; Tariff reduction; Product diversification; Innovations; and Collaboration

Perceived Barriers (10 items, α = 0.84): Regulation, competition, finance and resource constraints, infrastructure deficit و information deficit

Digital Transformation and E-commerce (10 items, α = 0.89): Digital competitive, e-commerce, social media, the importance of cybersecurity

Financial Constraints: 10 items, α = 0.91 Credit access, transaction costs, working capital, compliance costs, cash flow

A thorough literature review and expert analysis by three academics in the field of international business and SMEs established content validity. With all items loading above the standard 0.50 threshold on their respective factors, exploratory factor analysis verified construct validity (Hair et al., 2006). Cronbach's alpha coefficients were calculated as a measure of internal consistency with all exceeding the accepted 0.70 threshold (Nunnally & Bernstein, 1994).

3.3 **Analytical Approach**

Data were analyzed with SPSS version 26. We summarized respondent characteristics and perceptions using descriptive statistics. Pearson correlation tested the associations between key variables. Predictors of SME challenges and digitalization outcomes were tested by multiple regression. Before regression analysis, diagnostic tests confirmed that OLS assumptions normality, homoscedasticity and no multicollinearity (VIF < 10) were met (Field, 2018).

3.4 **Ethical Considerations**

Ethics approval was obtained from the Institutional Review Board of Desh Bhagat University. Data collection was preceded by obtaining informed consent from all participants, assuring confidentiality, anonymity and right to withdraw without consequence. All data were stored in password protected computers with encrypted back-up files for the purposes of confidentiality and security (British Educational Research Association, 2018).

4 Results

4.1 **Financial Constraints Prioritization**

Descriptive statistics of financial constraints to Ghanaian SMEs under AfCFTA (Table 1) The most serious issue was easy availability of reasonably priced credit: 66.9% strongly agreed and 20.3% agreed that SMEs face difficulties in getting credit. Cash flow problems were reported strongly and agreed at a ratio of 56.3% and 30.9% respectively, while 50.9% strongly agreed that high transaction costs are an impediment to international trade.

Table 1: Financial Constraints Faced by SMEs under AfCFTA

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)
SMEs struggle with accessing affordable credit	66.9	20.3	10.3	2.6
High transaction costs are a barrier	50.9	32.9	14.6	1.7
Limited working capital reduces competitiveness	44.9	47.4	7.7	0.0
Cash flow challenges hinder competitiveness	56.3	30.9	12.6	0.3
Compliance costs burden SMEs financially	42.6	41.1	14.0	2.3

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Government subsidies are insufficient	24.6	57.7	15.1	2.5

Source: NOTE: N = 350; The percentages may not add to 100 because of rounding.

These findings corroborate other evidence that financial constraints on Ghanaian manufacturing SMEs are not unique occurrences (Joint SDG Fund, n.d). The enduring nature of these constraints in Ghana is thought to stem from deeply embedded structural impediments within the country's financial architecture, despite decades of policy interventions. The Development Bank Ghana rightly observes that the classic banking structure, dependent on short term deposits from savers, is "fundamentally ill-suited to drive long-term industrial transformation" (Nsor-Ambala 2025). This example shows that if there is no structural reform in the financial sector, individual-level policy measures would not be as effective.

4.2 **The Hierarchy of Challenges**

Table 2 presents the correlation matrix for concepts in a hierarchical capability model.

Table 2: Matrix of Correlations: Problems, digitalization and capital constraints

Variable	Challenges	Digitalization & E-commerce	Financial Constraints
Challenges	1.000		
Digitalization & E-commerce	0.334**	1.000	
Financial Constraints	0.474**	0.447**	1.000

$p < 0.01$ (2-tailed); N = 350

Financial constraints are moderately positively correlated with challenges ($r = 0.474$, $p < 0.01$), indicating that financially constrained SMEs are systematically forced to face more institutional and operational barriers. This indicates that the association between financial constraints and SME-level internationalization is stronger than between digitalization and challenges ($r = 0.334$, $p < 0.01$), where it can be concluded that financial constraints are a more important determinant of decimal intrastate than the technology gap. Taken together, this finding provides empirical support for our hierarchical model suggesting that financial capabilities are more foundational than digital capabilities.

4.3 **Financial Constraints as Predictors of SME Challenges**

Table 3 shows the results of multiple regression analyses used to predict SMEs challenges under AfCFTA.

Table 3: Multiple Regression Predicting Challenges (Objective 2)

Predictor	B	Std. Error	Beta	t	Sig.
Constant	13.462	2.513	--	5.357	.000
Digitalization & E-commerce	0.158	0.054	0.153	2.925	.004
Financial Constraints	0.449	0.058	0.406	7.774	.000

Model Summary: $F(2, 347) = 55.776$, $p < .001$, $R^2 = 0.243$

Financial barriers are the more important driver of problems for SMEs ($\beta = 0.406$, $p < 0.001$) than even digitalization ($\beta = 0.153$, $p = 0.004$), by a factor of nearly three times more strong in predictionery power This offers rich empirical support for our assertion of the hierarchical nature of capability: financial constraints underlie all other challenges, making each worse. This large effect is especially important, as it contradicts much of the current policy discourse emphasizing technology adoption.

4.4 **The Digitalization Paradox**

Results for financial constraints predicted by digitalization and e-commerce, which were in opposite direction of expectations are shown in Table 4.

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Table 4 Regression of Financial Constraints on Digitalization & E-commerce

Predictor	B	Std. Error	Beta	t	Sig.
Constant	24.777	1.915	--	12.939	.000
Digitalization & E-commerce	0.418	0.045	0.447	9.312	.000

Model Summary: $F(1, 348) = 86.709$, $p < .001$, $R^2 = 0.199$

Although digitalization was already expected to ease financial constraints, in that it could reduce transaction costs and increase efficiency, we observe a positive effect ($\beta = 0.447$, $p < 0.001$). This highlights a "paradox of digitalization" as many cash-strapped SMEs had to make prior investments such as purchasing hardware and software, training costs, technological platform fees and high-cost cyber protection that raises rather than reduces the budgetary burdens (Chen et al., 2024). This result refutes the current policy assumption that digitalization provides a cheap short cut to SME growth; and implies that digitalization increases, rather than reduces, inequality between SMEs.

4.5 **Perceived Opportunities and Readiness**

Even with the limitations that we have highlighted, awareness of AfCFTA opportunities are relatively high among Ghanaian SMEs (Table 5).

Table 5: Perceived AfCFTA Opportunities

Statement	Strongly Agree (%)	Agree (%)	Total Positive (%)
Access to larger markets	67.1	21.7	88.8
E-commerce enables international expansion	69.1	22.0	91.1
Digitalization improves competitiveness	65.4	22.9	88.3
Regional agreements enhance expansion	57.7	28.6	86.3
Collaboration across Africa	43.1	37.7	80.8

Still, there remains a gap between awareness and participation: only 26.3 percent agreed or strongly agree that their SMEs are currently aware of AfCFTA opportunities while, 19.1 percent disagreed or strongly disagreed. The divergence between opportunity recognition and actual participation indicates that awareness, although necessary, is not sufficient for engagement.

5 **Discussion**

5.1 **Financial Resources as Meta-Capabilities**

We provide evidence for a capability development hierarchy in the context of SME internationalization where access to adequate financial resources is limited. Developing from foundational research on capability hierarchies (Calof & Beamish, 1995; Knight & Cavusgil, 2004), in our model the availability of financial resources (e.g., credit and working capital), transaction cost manageability, and cash flow stability are all at the bottom of a hierarchy among factors. The meta-capabilities, in this instance, are financial resources that form the base platform from which all higher-order capabilities can flow (Adomako, 2021; Amin et al., 2016).

The second layer is made up of operational capabilities like digitalization; quality management, logistics coordination and regulatory compliance which demand a huge financial investment (Knight & Cavusgil, 2004). Strategic capabilities like market intelligence, relationships in networks, brand development and product localization are third-tier capabilities that will dictate where a firm stands competitively from region to region. The top is internationalization performance: export intensity, market diversification and profitability.

The necessity of capability development at a higher level is both descriptive and prescriptive: without capability development at lower levels, capability is not developed at higher levels. Before any form of digitalization or market intelligence can be developed, there needs to be investment into basic financial capabilities (Morgan et al., 2003). The relationship between financial stability and financial performance explains empirical patterns in our data, such as why we found that financial constraints ($r = 0.474$) matter more than digitalization ($r = 0.334$), and why firms leading without sufficient foundational financial stability exhibit

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higher levels of future financial challenges rather than the expected relief associated with digitalization. Such a finding would have significant policy implications: interventions that improve higher-order capabilities without directly addressing underlying financial limitations are unlikely to work.

5.2 **Theoretical Implications**

First, the hierarchy of resources. We show that resource accumulation is not a simple additive process but rather one that occurs hierarchically, with the convergence of financial assets serving as hydraulic gate-keepers for second-order capabilities. Not only does this contradict the implicit assumption of resource fungibility on which RBV is built but also it identifies a critical insight: In settings where resources are scarce, sequencing in building those resources is as important as eventual possession. Most of the RBV literature has ignored this insight, as resources are often treated as additive in their contribution to competitive advantage.

Second, contextualizing RBV for Africa. Our results provide further support for recommendations on the need to contextualize and expand international business theory in African settings (Barnard, Amaeshi, & Vaaler, 2023). In Ghana, financial constraints are especially pernicious: According to World Bank data only 14% of SMEs have access to formal loans from banks (the Sub-Saharan African average being around 23%). Where RBV is applied in those contexts it must regard financial endowment as a background foundational (rather than a differentiated) resource. RBV has been limited to African contexts due to the ignorance of these contextual specificities.

Third, the digitalization paradox. Digital technologies are not free substitutes for hard-to-come-by financial resources; rather, they are means to an end and as such complementary assets requiring payment prior to return (Heeks, 2022). In the context of SMEs with limited financial resources, early digitalization can subject firms to a trap in capability development: firm investment into technology devours hard-to-come-by capital without equal dividing returns. It aligns with the digitalization paradox found in SME literature (Chen et al.,2024) and pushes back against optimistic narratives surrounding dry-digital "leapfrogging" which have received broad swathes of policy traction since the US-China trade war.

Fourth, sequencing dynamic capabilities. Sensing, Seizing and Transforming: Dynamic Capabilities. Teece, Pisano & Shuen (1997) But these dynamic capabilities are not independent, as we measure them with the prior resource endowments. Market Intelligence for sensing opportunities, Working capital to capture them(inventory, logistics)Funding to transform (technology, human resource). Dynamic capabilities might be a luxury in financial constrained environments, but not a more universal strategic choice. This important insight goes against a pervasive but implicit assumption made by the dynamic capabilities literature, which suggests that every firm could potentially build its own unique dynamic capabilities if it really wanted to.

5.3 **Comparison with Existing Literature**

Our results are consistent with the evidence that financial constraints govern the fate of African SMEs. To put it to context, according to the study conducted by Abor and Biekpe (2009) only less than a quarter of total debt financing obtained by Ghanaian SMEs are actually from bank loans. Beck and Cull (2014) found that non-sub-Saharan African small enterprises are nearly twice as likely to have a bank loan as their African counterparts. We add to this literature by explaining through financial capability as the first pillar that triggers a positive feedback loop between difficulties in operations and overall development of capability.

Our proposed digitalization paradox is in line with the observations of UNCTAD that digital transformation provides extensive opportunities for SMEs (united nations conference on trade and development, 2019), but success also involves new costs such as platform fees, payment handling charges and investments into cyber security which strongly burden smaller firms compared to bigger ones (united nations conference on trade and development, 2021). We contend that our results challenge optimistic tales of digital technologies as "leapfrogging" tools, enabling resource-constrained firms to circumvent established boundaries (Manyika et al., 2013). Although favoring the digitalization process could be efficient in the long-run, we argue that immediate financial costs are too large for SMEs already working under heavy constraints (Alzouma, 2005; Heeks, 2022). A particularly important element of this critical lens maintains that policy optimism surrounding digitalization as a core response mechanism for achieving development goals is misplaced.

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6 Policy Implications

6.1 For Policymakers

The core specification that comes from our hierarchical model is that financial inclusion needs to be a precondition for investing into digital infrastructure and developing capacity. Yet the Ghanaian authorities are right to place so much emphasis in its National AfCFTA Policy Framework and Action Plan (Government of Ghana, 2022) on export readiness, quality systems; but our findings suggest these may only have limited impact unless trade finance facilities, credit guarantee schemes and working capital support also expand. If interventions are sequenced as they are currently, with a clear focus on capacity building to the detriment of financial inclusion – this might not work.

We recommend:
Establishment of specific AfCFTA-compatible credit lines for SMEs with repayment initialized when the product is exported
Standard cross-border transaction coverage for trade credit
Easier application processes, considering the limited administrative capacity of SMEs
Along with those models, non-collateral based lending that relies on transaction data, supply chain relationships and growth potential for credit assessment
Using mobile money data and electronic payment history to perform algorithmic fees on quality (Bazarbash, 2019; Mhlanga, 2020).
Such alternative strategies should be implemented in light of our key finding that financial constraints constitute the biggest obstacle to SME internationalization, which needs to be addressed on a top priority basis.

6.2 For SME Managers

We found that firms need to have key financial capabilities in place with enough working capital, stable cash flows, and manageable debt service levels before engaging in digitalization or pursuing opportunities aggressively (Quartey et al., 2017). This may involve:
Get Quicker Funding: Venture Capital, Impact Investing, Crowdfunding or Supply Chain finance
Collaborative models: initiatives like joint ventures, cooperatives or contract manufacturing help reduce the cash required by companies for internationalization.
Building financial literacy and cash flow management skills
Adopting a step-by-step capability development process instead of trying to execute two simultaneous upgrades
The hierarchical nature of our model dictates a sequential process: attempting to develop second-order capabilities before building first order financial capabilities would almost certainly be disastrous!

6.3 For Development Partners

This raises the possibility that fragmented, single-factor interventions have little prospect for success. Interventions combining financial inclusion with technical assistance, market access and other value added components through formal SME networks/associated companies or groups are considerably more likely to attain success. The best programs are those that pair digital skills training with access to credit, or market access facilitation with working capital support where the program might lead to sustaining impact. For example, the hierarchical logic of our model implies that integrated interventions operating at different levels of the capability hierarchy simultaneously have a better chance of success than single-factor interventions.

7 Limitations and Future Research

Several limitations warrant acknowledgement. We note that, our cross-sectional design gauges perceptions of SMEs at a relatively early stage in the implementation of AfCFTA. Longitudinal studies examining the same firms over a five- to ten-year span will tell us how capability hierarchies develop with export experience and changing trade liberalization. Such studies would yield more convincing evidence of any causal relationships we have suggested.

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Secondly, our sample only includes manufacturing SMEs in Ghana and so cannot be generalized to service-sector SMEs, SMEs from other African countries or non-certified firms. MULTI-COUNTRY Studies Comparative research across various countries with diverse institutional characteristics would offer a rigorous empirical test of the external validity of our model. It remains to be seen how far our results are specific to local conditions in Ghana, and how far they are representative of wider patterns across Africa.
Third, although our use of self-reported perceptual measures may pose a risk to common method bias, Harman's single-factor test showed that it is not a serious threat. But future studies should validate these perceptual measures against objective data such as financial statements, export records, and digital adoption indicators. Regarding perceptual and objective data, one would strengthen the other in providing causal inference.
Fourth, our regression models account for 19.9% to 24.3% of the variance in key outcomes, indicating further pathways not fully examined here. Future research should investigate moderating variables (industry, firm age, owners' education) and mediating mechanisms(like network relationships & institutional support). The contributions of new variables would strengthen our hierarchical model.

8 Conclusion

Drawing on evidence from 350 Ghanaian manufacturing SMEs operating within the AfCFTA, this study proposed and tested a multi-level model of capability development for SME internationalization in financially constrained environments. Our evidence is consistent with previous research showing that access to finance remains a major determinant of SME export performance in Africa (Kottaridi &Lioukas, 2017). We build on this literature by demonstrating how financial resources are a type of enabling meta-capability that facilitates the acquisition and deployment of higher order operational and strategic capabilities.
The prevalence of significant financial constraints representing more than 60% ($\beta = 0.406$ as a challenge, $p < 0.001$) and the digitalization paradox reflecting positive relationships between increased resource limitations following the adoption of management technology ($\beta = 0.447+$; localization: age-interaction term with financial behaviour modeled to predict augmented constraints level, $p < 0.001$) directly contradicts pre-existing platform assumptions rooted in RBV which postulates an unlimited exchangeability of resources counterbalanced by techno-optimism (Barney, 2001). Our evidence indicates that digitalization paradoxically aggravates financial burdens in resource constrained contexts; a finding consistent with the digitalization paradox found within SME literature (Chen et al., 2024). This result questions the uncritical enthusiasm that policies demonstrate toward digitalization as a cure-all for development.
Market access thus is not enough for AfCFTA to deliver on its promise of inclusive growth and industrialization. Without complementary financing capabilities, such as access to credit and working capital at low transactions costs, Africa's SMEs will struggle to turn trade liberalization into sustainable internationalization (UNCTAD, 2023). The hierarchy of capabilities represents a theoretical lens through which to investigate the embedding of RBV in conditions wherein resource constraints are extreme as well as practical advice on how to prioritize interventions that would yield greater SME participation in Africa's new continental market. Without this sequencing, the AfCFTA risks essentially becoming large corporation-led with most attention focused on big business and SMEs — which make up 90% of businesses and create two-thirds of jobs in Africa [1] — left behind as a result.

9 Declarations

9.1 Ethical Approval

The institutional review board of Desh Bhagat University-approved this study [Approval reference: DBU/IRB/2025/5186]. The study was carried out in accordance with the principles listed in the Declaration of Helsinki and British Educational Research Association (BERA) Ethical Guidelines for Educational Research (2018). The protocol on all the procedures involving human participants was reviewed and approved by the institutional ethics committee before data collection.

9.2 Informed Consent

All individual participants provided informed consent for the inclusion in the study. Before taking part, respondents were given an information sheet outlining the aims of the research, what their involvement would

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entail and their rights as participants. Prior to participating in the study, all participant(s) provided consent in writing with explicit indication that taking part is entirely voluntary and they may withdraw (be excluded from entering or continuing this research) at any time without providing a reason while incurring no penalty. Participants were also told that their answers would be kept completely confidential and anonymous; no identifying information to any publication resulting from this research.

9.3 **Conflict of Interest**

Competing interests The authors declare that they have no competing financial, professional or personal interests that might have influenced the research, analysis or interpretation of findings described in this manuscript. Funding This study did not receive any funding from a specific agency or sector that could have influenced the design, conduct, or reported findings. Authors' contributions The authors declare no competing interests with the organization or entity with which they are associated that would pose a conflict of interest, as well as any financial interests or non-financial interests in the subject matter or materials discussed in this manuscript.

9.4 **Funding**

No specific funding were received for this work from any funding agency in the public, commercial or not-for-profit sectors. The investigation was carried out as part of the First Author's doctoral research work at Desh Bhagat University. The authors declare that external funding was not available for this work and that they enjoyed total independence in the design, data collection, analysis, and interpretation of findings.

9.5 **Data Availability**

The data sets generated and analyzed during the current study are not publicly available due to privacy and confidentiality restrictions. Participants were informed that their answers would remain anonymous and that no identifying information would be released. All datasets can be available on reasonable request from the corresponding author if submitted to institutional ethics committee approval (de-identified data). Data accessibility Requests for access to data should be addressed to the corresponding author: yakubu.abukari@gmail.com.

9.6 **Author Contributions**

Yakubu Abukari: Conceptualization, Methodology, Investigation, Data Collection, Formal analysis, Writing-original draft Preparation & Writing-review and editing. Dr Manoj Kumar: Investigation, writing and the review of manuscript. All authors read and approved the final manuscript.

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9.8 **Disclaimer**

Disclaimer: The views expressed in this manuscript are those of the authors, and do not necessarily reflect the official policy or position of any affiliated institution/organization/government agency mentioned in this study. The authors bear sole responsibility for any errors or omissions.

9.9 **Research Involving Human Participants**

Human participants These studies were conducted using survey data from human participants. The study was conducted in accordance with the ethical standards of the institutional research committee and with the 1964

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Helsinki Declaration and its later amendments. This research did not include interventions, such as trials, or populations that are under care. All study participants were adults (≥18 years) and voluntarily provided informed consent.

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