

Causation, Effectuation and the Effect of Institutional Support on SMEs International Development

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Résumé :

Cet article examine l'influence des logiques de causation et d'effectuation sur le développement international des PME. Le financement public est mis en avant comme un contexte spécifique introduisant une logique de causation dans les processus de décision, qui sont généralement effectuels dans les PME en phase de démarrage. L'étude explore comment les programmes de financement ciblant explicitement l'internationalisation peuvent améliorer les exportations, tandis que les financements non orientés vers l'international peuvent détourner les entreprises de cet objectif. Les hypothèses sont testées sur un large ensemble de données de PME françaises entre 2000 et 2018. Les résultats révèlent que le financement dédié à l'exportation stimule significativement les exportations, tandis que le financement visant d'autres objectifs a des effets négatifs, en particulier pour les entreprises *born global*. Nous concluons que la coexistence des logiques effectuelles et causales peut générer des effets soit synergiques, soit anti-synergiques sur le développement international des PME. La direction de cet effet dépend de l'alignement entre les ressources et capacités de la PME et les objectifs poursuivis dans la logique causale. Son ampleur dépend de la quantité de ressources engagées.

Mots-clés : PME; Internationalisation; Effectuation; Causation; Soutien Public

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INTRODUCTION

Engaging in international development poses a distinct challenge for small and medium-sized enterprises (SMEs). These organizations often lack the experience and financial resources necessary to formulate effective strategies. In this context, public funding programs can serve as substitutes for the resource deficiencies faced by SMEs (Bannó, Piscitello & Amorim Varum, 2014; Catanzaro, Messeghem & Sammut, 2019; Ferreira, Fernandes & Mota Veiga, 2023). A subset of these firms, commonly referred to as born globals (BGs), who pursue early internationalization, appear to partially overcome such liabilities. BGs leverage unique capabilities, such as vision, international experience, and relational skills, enabling them to internationalize despite the challenges (Bianchi and Wickramasekera, 2016; Oliva, Testi, Kotabe, Giudice, Kelle & Cunha, 2022). Nonetheless, they still face significant financial constraints, which may compel them to adopt strategies that incur low costs (Hennart, 2014). Consequently, both BGs and non-born globals should benefit from public funding programs to advance their international development. A crucial question arises regarding the extent and conditions under which public funding impacts the rate of internationalization.

In fact, the literature on public funding for SMEs in relation to their international strategies remains limited (for example Bannó et al., 2014). Moreover, Morais & Ferreira (2020) highlight several gaps and research avenues in this field. One reason for this scarcity is that public funding can be allocated for various purposes, including but not limited to international development. Given this variety of purposes, funding may have different effects, which may impede the identification of peculiar influence on international development. Another possible explanation is that financial resources are just one component within a broader

bundle of resources (Haddoud, Onjewu, Nowiński & Jones, 2021), complicating the assessment of financial support's specific impact. Despite the recognized importance of resource acquisition for SMEs (for example, Müller, Kirst, Bergmann & Bird, 2023), little is known about how financial resource acquisition affects their international development. Thus, there is a substantial need for further research, both theoretically to enhance understanding of SME international strategies and empirically to generate actionable knowledge for public programs.

This paper aims to deepen our understanding of the impact of public funding on international development. Theoretically, we draw on effectuation and causation perspectives to formulate a set of testable hypotheses. These constructs, derived from entrepreneurial studies, provide a compelling framework for understanding the role of resources in the international development of SMEs (Karami, Wooliscroft, & McNeill, 2020; Morais & Ferreira, 2020). The effectuation perspective emphasizes that resources create opportunities from which managers can make strategic choices (Sarasvathy, 2001). Thus, effectuation can be viewed as a rational yet emergent strategy-making process that highlights the importance of available resources and networking activities. In contrast, the causation perspective suggests that strategy formulation may precede resource acquisition, emphasizing planned actions to achieve objectives, where resources serve as milestones in the internationalization journey. Although these two approaches focus on different aspects of entrepreneurial activity, recent studies indicate that they can coexist, leading to mutual reinforcement in the pursuit of performance (Smolka et al., 2018). Organizations may adopt one approach or the other based on project uncertainty, development stage, or network influence. Some authors propose that both approaches can occur simultaneously, provided that tensions between the two logics are effectively managed (Galkina, Atkova, & Yang, 2022). The ongoing debates surrounding effectual and causal perspectives elucidate how decision-making, resource allocation, and firm development are

interconnected, explaining why SMEs seek resources and the potential impacts of their selected acquisition options.

From this framework, we formulate hypotheses regarding how public funding programs influence SMEs' orientation toward (or diversion from) international development. Our reasoning is based on the fact that public support fosters a causal logic in decision-making. Applying for support programs requires SMEs to formalize their strategic actions and articulate explicit visions for their development, often leading them to abandon much of the effectuation approach. Nevertheless, this shift toward a causal approach and the abandonment of the effectual approach are neither systematic nor absolute. It specifically pertains to the aspect of SME development that benefits from financial support.

We argue that when funding is specifically targeted at international development, improvements in international growth can be anticipated. Conversely, when financial support is directed toward other objectives, effectuation and causation yield divergent expectations. The effectuation perspective supports the notion of positive spillover effects, suggesting that additional resources from funding institutions, even if not specifically aimed at international activities, could enable SMEs to pursue international growth through new opportunities. In contrast, SMEs engaged in a causation logic for projects unrelated to international development may experience negative spillover effects. This is the case because public funding dedicated to purposes other than international development detracts from firms' international growth. We argue that this negative effect will prevail, especially as institutional support increases.

Beyond funding orientation, we argue that the positive or negative effects of institutional support will depend on the nature of firm capabilities related to internationalization, and we distinguished BGs and non-born globals (NBGs). BG leverage specific capabilities such as past international experience or the networks of their founding leaders, guiding them toward international growth. They often engage in niche activities that

facilitate rapid international dissemination (Paul & Rosado-Serrano, 2019). While their range of activities and skills may be limited, BGs benefit from substantial international experience and a resource pool that enables effective engagement in international development projects (Knight & Cavusgil, 2004). The prominence of foundational and intangible resources suggests that an effectuation lens is beneficial for understanding BG trajectories. However, the introduction of funding programs represents an incursion of causation logic, which we hypothesize will yield greater effects relative to other firms when directed toward internationalization. Compared to SMEs that have not yet developed internationally, BG firms are likely to gain a competitive advantage when undertaking ambitious international projects. However, this advantage has its drawbacks. When institutional support and causation logic do not align with an international development project, BG characteristics may become liabilities. Their limited resources and activities, primarily focused on international markets, may hinder their ability to manage causation-driven projects effectively compared to other SMEs. Consequently, negative spillover effects are likely to be more pronounced for BG firms than for NBGs, particularly when ambitious non-international projects adversely impact export revenues. In summary, our analysis suggests that public support targeted at internationalization will positively correlate with the export revenue of SMEs. Conversely, support not directed toward internationalization is likely to negatively impact international development, with these effects being more pronounced for born-global firms than for other SMEs.

We test our hypotheses using a sample of French SMEs that have received public funding support from Bpifrance, one of the primary financing institutions in the French economy. Our findings support our expectations, demonstrating that causation logic and funding orientation play critical roles in international development, with a more pronounced effect on BGs compared to other SMEs.

Our study contributes to the literature in several ways. First, it addresses several gaps and research avenues in the study of SME internationalization, as highlighted by Morais & Ferreira (2020). First, it provides insights into the effect of public support on SMEs internationalization and highlights possible negative spillover effects that, to the best of our knowledge, have not been previously demonstrated. It also sheds light on the international development differential depending on whether the SME follows an emergent and effectual decision-making process or a planned and causal one. In this regard, the differentiated response of BGs and NBGs to public support not only enriches the specific literature on this field but also demonstrates that the firm's resource and capability base is crucial for understanding how the transition from an effectual to a causal logic can generate either synergistic or anti-synergistic effects. Finally, our results provide insights for public authorities and governmental entities regarding the support of SMEs in their international development.

The remainder of this paper is structured into four sections. The first section presents the theoretical background underpinning our hypotheses. The second section outlines the methodological aspects of the research. The third section discusses our findings, while the fourth section explores the implications of our study.

1. THEORETICAL PART

1.1. EFFECTUATION AND CAUSATION

Effectuation theory is based on two contrasting decision-making logics within entrepreneurial trajectories (Sarasvathy, 2001). The first, known as the causation approach, aligns with the classical perspective of strategy implementation. In this framework, entrepreneurs are viewed as goal-driven agents who set strategic objectives and identify the

resources required to achieve these targets. Thus, causation emphasizes the importance of planning to maximize expected returns (Chandler, DeTienne, McKelvie & Mumford, 2011).

In contrast, the second view, termed the effectuation approach, highlights a more emergent process. It posits that strategy development is shaped not only by the individual traits of the entrepreneur, such as personality, but also by the networks and resources available to the firm (Perry, Chandler & Markova, 2012; Harms & Schiele, 2012). The conditions and resources under the entrepreneur's control are expected to influence the project's trajectory through a means-driven logic (Smolka et al., 2018), placing greater emphasis on control than on planning (Chetty et al., 2015). Thus, effectuation and causation represent two distinct approaches to decision-making, with effectuation emphasizing experiential learning and causation focusing on the predictable nature of business development.

While causation and effectuation underscore different aspects of decision-making, they are not mutually exclusive (Chandler et al., 2011). Scholars argue that these perspectives can coexist, although the nature of their relationship remains debated. Some researchers suggest that firms may alternate between these logics (Sarasvathy, 2001; Karami et al., 2020), while others present them as synergistic (Smolka et al., 2018). More recent studies explore the tensions and reconciliation mechanisms between the two (Galkina & Jack, 2022).

The distinction between effectuation and causation has been extensively examined in the literature on SME internationalization. However, research has predominantly focused on effectuation, with limited exploration of the interaction between these logics (Karami et al., 2020). In their review of causation, effectuation, and international performance, Coudounaris and Ardvisson (2021) identified only one study—out of 138 conducted between 2017 and 2020—that addressed the coexistence of these decision-making logics in the context of internationalization. This scarcity is surprising, given that some studies indicate the coexistence of both logics in the internationalization of SMEs (Chetty et al., 2015).

Two factors may explain the predominant focus on effectuation and the neglect of causation in the study of SMEs' internationalization. First, while both logics coexist in internationalization, authors often view effectuation as dominant among young SMEs. This perception stems from their limited resources and the challenges associated with a "liability of foreignness" (Weerawardena, Mort & Liesch, 2019). These conditions foster an effectuation logic during the internationalization process of young SMEs, explaining why "SMEs play the dominant role in the extant effectual internationalization research" (Karami et al., 2020, p. 19).

Second, identifying specific moments or domains in which an SME adopts a causal approach can be challenging. This difficulty in distinguishing between effectuation and causation may account for the qualitative methods employed in the few studies conducted thus far (Karami et al., 2020; Coudounaris & Arvidsson, 2021), which often focus on case studies or small samples. Nevertheless, certain situations may temporarily highlight the presence of a causal logic in young SMEs, particularly when they seek and receive institutional and financial support for their development. In such contexts, they must articulate their objectives and the plans and resources necessary to achieve these goals. Consequently, they may shift from an effectuation logic to a causation logic within the relevant domain.

1.2. PUBLIC FUNDING, CAUSATION AND EFFECTUATION LOGICS AND THE IMPACT ON SME EXPORTS

A central argument for developing our hypotheses is that support programs reinforce the causal logic for small and medium-sized enterprises (SMEs). These programs may be specifically targeted at international development or serve other objectives. Export promotion programs provide various support and services aimed at transforming a firm's resource bundle, including information, education, mobility, and financial resources (Leonidou, Palihawadana,

& Theodosiou, 2011). Ultimately, these initiatives influence a firm's international and overall performance (Freixanet, 2022).

Research indicates that while the efficiency of export assistance programs varies, they generally enhance the propensity, speed, and performance of exports (Kahiya, 2024). Furthermore, access to entrepreneurial ecosystems focused on internationalization provides valuable advice and expertise that would otherwise be unavailable to firms (Theodoraki and Catanzaro, 2022). Catanzaro et al. (2019) argue that firms can leverage export assistance programs to enhance their social capital through informational and training support. Securing funding from a support organization is expected to foster export activity, provided that the SME can effectively integrate financial resources with its existing capabilities and make necessary trade-offs (Catanzaro and Teyssier, 2021). In the absence of such dedicated programs, literature suggests that the rate of internationalization for these firms remains low. Consequently, SMEs seeking to internationalize tend to rely on a structured process (Karami et al., 2020) aimed at specific goals. In summary, export programs are typically aligned with defined objectives that reflect the characteristics of causation logic, which is associated with improved performance in export activities.

The influence of the causation perspective is particularly evident in the financial dimension. When firms seek funding, they are required to formalize their projects and submit applications detailing their international strategies. Obtaining financial support specifically aimed at export activities necessitates thorough involvement and documentation. This process demands preliminary planning and analysis to identify the challenges the firm must address (Kahiya, 2024). Additionally, engagement with investors and cost considerations are conducive to causation approaches (Galkina et al., 2022). Entrepreneurs often adopt a financial narrative to signal their value to investors (Colombo, 2021). As Leonidou et al. (2011) note, firms must

meticulously identify their resource and capability requirements for export, which may involve using formal diagnostic tools before engaging with the export program.

Taken together, these arguments suggest that export financing programs favor a causation approach, ultimately accelerating the speed of international development. This effect is likely to intensify with the magnitude of financial stakes involved. Seeking larger support requires firms to demonstrate a greater commitment to their internationalization strategies. Consequently, business plans, memos, and application documents must meet more rigorous standards to attract interest and trust from funding organizations. In this process, SMEs are compelled to articulate a clear vision for their projects, necessitating defined objectives and the use of predictive analytics. Once funding is approved, funding organizations are more likely to monitor the execution phase, especially when substantial amounts are at stake. Thus, the intervention of public agencies fosters the development of a causal logic within the firm. When support is dedicated to international development, it is expected to generate a strong and lasting impetus for export activities, particularly when resources are concentrated on a specific export strategy. This leads to the following hypothesis.

H1a : The amount of financial support is positively associated with export turnover when the support is directed toward internationalization

Conversely, when funding organizations allocate resources to SMEs for purposes other than internationalization, the interaction between causation and effectuation may become contentious from an international perspective. On one hand, the effectual approach suggests that resources can be leveraged to pursue goals even if they are not specifically designated for that purpose. For example, innovations developed within a firm could simultaneously promote international growth (Martínez-Román, Gamero, Delgado-González & Tamayo, 2019). This

indicates that funding not explicitly aimed at internationalization could, theoretically, support international growth through an effectual lens. On the other hand, these two logics can also be perceived as frictional. Causation may distract SMEs from focusing on internationalization. By prioritizing objectives unrelated to international expansion, SMEs might overlook valuable opportunities and lose control over their networks.

Given these competing perspectives, we argue that funding not oriented toward exports negatively affects internationalization in SMEs. The primary rationale for this hypothesis lies in the commitment to the causation logic inherent in the funding process. Public funding programs enhance the resource pool and broaden the network of relationships available to firms, which generally benefits exporting efforts. However, literature indicates that merely reducing barriers to international activity is often insufficient to spur international development (Wood, Logar & Riley, 2015). Thus, internationalization rarely occurs spontaneously; an increase in resources does not automatically create opportunities for it.

Allocating new resources to a specific purpose encourages organizations to specialize in that area. This specialization, guided by a causation logic, may lead to the neglect of other opportunities that could arise from a more effectual approach. Moreover, organizations applying for funding for non-internationalization purposes may significantly divert their focus from such activities due to limited attention to other matters. This is especially true for young SMEs, which often face resource constraints (Karami et al., 2020). In other terms, we contend that when resources must be developed according to a causal logic in a domain outside of international development, young SMEs will allocate a substantial portion of their resources to that domain, diverting attention from internationalization. Consequently, SMEs receiving grants tied to export programs are expected to focus on export strategies, while those receiving support for other objectives may be diverted from international development. This diversion

effect is likely to be more pronounced when the resources provided through institutional support are significant.

We thus posit the following hypothesis.

H1b : The amount of financial support is negatively associated with export turnover when the support is not directed toward internationalization

1.3. THE BORN-GLOBALS

The term "born global" (BG) refers to companies that engage in international development from the early stages of their existence. This concept emerged in the 1990s to describe a phenomenon that has since garnered significant interest within the entrepreneurship literature, often referred to as "early internationalizing firms" (Catanzaro et al., 2019; Breuillot, Bocquet & Favre-Bonté, 2022). The existence of BGs was not anticipated by traditional internationalization theories, particularly the Uppsala model and capability-based perspectives (Hennart, 2014). These frameworks suggest that new firms typically face substantial resource and knowledge constraints, making internationalization feasible only after a gradual developmental process (Baronchelli & Cassia, 2014). According to these models, firms are expected to gain adequate knowledge of foreign markets before considering entry into international markets. Furthermore, the emphasis on equity requirements implies that only firms with advanced development can expect to expand beyond domestic boundaries.

However, the literature on BGs demonstrates that some firms can internationalize very early in their lifecycle. BGs frequently rely on specific resources, including experience and prior knowledge related to international opportunity identification (Shepherd & DeTienne, 2005), institutional and business acumen, general knowledge of internationalization (Blomstermo, Eriksson, Lindstrand & Sharma, 2004; Fernhaber, McDougall-Covin & Shepherd, 2009), international market knowledge (Frishammar & Andersson, 2009; Fuerst &

Zettinig, 2015), technological expertise (Johanson & Vahlne, 2011), managerial skills (Crick & Crick, 2016a), and contextual knowledge (Sarasvathy, Kumar, York & Bhagavatula, 2014).

The success of BGs has been a subject of considerable debate. A study of Swedish firms indicated that BGs do not necessarily outperform their counterparts in terms of employment, sales, or value added (Ferguson, Henrekson & Johannesson, 2021). These firms, aiming for early international development, experience concentrated resource needs during their initial phases. Breuillot et al. (2022) emphasize that, during these stages, the leader's personality often dominates organizational functioning, primarily focusing on capturing resources from the environment. Only if the company survives can it transition to phases involving resource reconfiguration and stabilization, which are not solely focused on resource acquisition.

Consistent with this notion, Puig, Gonzalez-Loureiro, and Ghauri (2018) highlight the inherent fragility of BGs. Their analysis of Spanish textile companies reveals that early internationalization is associated with a heightened risk of failure, as these firms must achieve rapid growth or face potential collapse. In light of these constraints, Hennart (2014) argues that BGs are likely to thrive in contexts with minimal need for funding, few marketing adaptations, and low costs of international activities. Consequently, the literature suggests that BGs tend to adopt effectuation approaches (Frishammar & Andersson, 2009; Harms & Schiele, 2012). This tendency arises from their opportunistic nature (Paul & Rosado-Serrano, 2019), favoring flexible and adaptive approaches.

Our central argument is that while BGs seem to rely on effectuation logic, intervention through causal logic is crucial for their international development. Without causal logic, BGs would likely face limitations in their ambitions. Based on the principle of affordable loss, a BG adopting a strict effectuation logic may find limited incentive to pursue ambitious international development. Symetrically, many studies (Frishammar & Andersson, 2009; Gabrielsson &

Gabrielsson, 2013; Sarasvathy et al., 2014) indicate that after applying effectual decision-making in their initial stages, SMEs subsequently employ causal logics to establish themselves in the post-entry phase. Therefore, the shift from an effectual to a causal logic appears in fact suited when BGs scale up their international development efforts.

Specifically concerning the funding process, Bannò et al. (2014) find that young companies derive greater benefits from financial assistance programs due to their pressing need for resources compared to more established SMEs. While entrepreneurs generally enhance their planning activities when transitioning to causal logic (Brinckmann, Grichnik & Kapsa, 2010), the benefits of this improvement are expected to be even greater for BGs. The accuracy of forecasts and the relevance of objectives will be more significant for BGs, as their international experience is both substantial and central to their identity. These superior capabilities will enable BGs to integrate causal logic in international development more efficiently. This enhanced efficiency can also be attributed to other characteristics of BGs, including network management. For instance, it has been suggested that BGs with an entrepreneurial orientation adopt a calculative approach to networks, intentionally managing them to meet evolving needs (Sepulveda & Gabrielson, 2013). This strategic approach is particularly crucial for BGs, as externally generated knowledge significantly facilitates their development (Weerawardena et al., 2019). Consequently, BGs are better positioned than non-born globals, from a causation standpoint, to leverage the networks that institutional support can provide.

In summary, BGs are uniquely positioned to harness a causation logic embodied in focused funding support programs. This advantage arises because these firms have relied on and developed specific skills and resources beneficial for international development from their inception (Zahra, 2005; Cavusgil & Knight, 2015). Therefore, when funding programs are oriented toward export, BGs can fully capitalize on such support. We thus posit the following hypothesis.

H2a : The relationship between the amount of financial support directed toward internationalization and internationalization is more positive for BG compared to NBG

Conversely, the dynamics shift when BGs receive financial support that is not specifically dedicated to internationalization. While a strong focus on internationalization amplifies the benefits of support directed toward this goal, it can become a liability when such support targets other objectives. This argument stems from two competing perspectives.

The first perspective posits that support not aimed at internationalization may not hinder BGs' international development and could potentially benefit them. Proponents of this view argue that BGs are characterized by strong, internationally oriented leadership (Paul & Rosado-Serrano, 2018) and scalable activities (Ferguson et al., 2021), making them particularly, if not exclusively, well-suited for global expansion. Their preference for effectuation suggests that they can seize opportunities even in the absence of dedicated resources, leveraging their unique knowledge base (Hennart, 2014; Cavusgil & Knight, 2015). Consequently, when BGs receive financial support for non-internationalization goals, they could redirect some resources toward international development. However, this viewpoint rests on the assumption that the introduction of a causal logic and new objectives in one domain does not influence the effectual logics operating elsewhere within the organization. This assumption, already bold in general, becomes particularly unrealistic when considering SMEs with limited resources. Smolka et al. (2018) cite numerous authors who argue that effectuation and causation cannot be treated independently. Galkina and Jack (2022) further contend that these logics are inherently intertwined.

The second perspective, which we favor in this study, state that introducing new resources aimed at objectives outside of international development under a causal logic will adversely affect BGs more than non-born globals (NBGs). Two primary reasons support this

negative effect. First, as previously highlighted, BGs have developed resources specifically aimed at international development earlier and to a greater extent than NBGs. While this strength serves as an advantage, it may also represent a weakness, as their intense focus on international development could impede the cultivation of resources and management skills beneficial in other domains, such as production, innovation, and fundraising. For instance, Wang and Rahim (2024) note that BGs tend to prioritize network optimization for international expansion, potentially overshadowing other critical areas like innovation and resource diversification. Similarly, Tabares, Alvarez, and Urbano (2015) emphasize the importance of intellectual capital—including technological innovation and learning management—while cautioning that other resource areas may be underdeveloped due to an emphasis on global market penetration.

Consequently, while BGs may be better equipped than NBGs to benefit from support for internationalization, they are likely less prepared to leverage support in other areas. Like any SME operating under resource constraints, BGs will need to redirect a significant portion of their resources and attention toward non-international objectives when receiving institutional support. However, BGs may find this transition more challenging than their NBG counterparts, as they typically possess fewer resources and capabilities to implement a causal logic focused on objectives unrelated to internationalization. Furthermore, BGs may experience a fundamental incongruence between their established orientation and the causal logic directed at non-international objectives. When BGs pursue a planned strategy that diverges from internationalization, they contradict the foundational principles of their establishment. This misalignment not only hampers the effective integration of new financial resources with existing BG resources but also undermines their core purpose.

Thus, beyond the diversion effect that any company may experience when supported for non-internationalization projects, BGs confront specific challenges that may lead to greater

negative impacts on their international development compared to NBGs. We posit that BGs are likely to be more adversely affected in their international pursuits due to the significant obstacles they face and the substantial strategic reorientation required. Hence, we propose the following hypothesis.

H2b : The relationship between the amount of financial support not directed toward internationalization and internationalization is more negative for BG compared to NBG

2. DATA, VARIABLES AND METHOD

We have access to a comprehensive database detailing the support provided by Bpifrance over the period from 2000 to 2018. In our study, we aim to focus on firms that predominantly rely on an effectual logic in their decision-making processes, so that institutional support can introduce a shift in organizational logic. Accordingly, we chose to concentrate on SMEs that were still in their early stages of development, for which we can determine whether they received support between 2000 and 2018. These criteria led us to focus on SMEs that were no more than 18 years old as of December 31, 2018.

2.1. DATA

Our data originates from two sources. The first and primary database is produced by Bpifrance, the French public investment bank backed by the French government. Bpifrance supports public policies implemented by the state and regional authorities, assisting French businesses in their development projects, ecological and energy transitions, innovation, and international expansion. This primary database includes all Bpifrance interventions during the period from 2000 to 2018. For each year and for each firm, we have access to detailed information on the type of financial support provided by Bpifrance, its amount, and its purpose.

The financial support serves various objectives, such as the creation or initial funding of new businesses, innovation, investment (regarding other than international activities), and the promotion of exports and international business activities. The support can also take various forms. For the development of exports and international business activities, support is provided exclusively through subsidized or guaranteed loans (subordinated loans, deferred repayment loans with a guaranteed portion). For other objectives, particularly innovation, support can take the form of subsidized loans (for example: zero-interest loans, repayable advances) as well as grants. This information enables us to track, for each firm, the annual amount of support received, its form, and its purpose. This primary database was merged with annual accounting data from the French tax administration, which provides information on the founding date of each firm and tracks, for the period 2000–2018, its annual turnover and export turnover. From these two databases, we constructed a panel dataset covering the 2000 to 2018 period. The sample includes 848,768 observations covering 173,870 SMEs, with each SME observed for an average of 4.88 years.

2.2. VARIABLES AND DESCRIPTIVE STATISTICS

Our dependent variable is export turnover, expressed in thousands of euros (variable *Export Turnover*). Since financial support typically produces its effects several months or even years after it is received (Spence, 2003 ; Catanzaro et al., 2019), this variable is lagged by two years relative to the others. Accordingly, we examine the impact of the independent variables in year t on the export turnover in year $t+2$.

The main independent variables pertain to the amount of financial support and the SME's status (BG or not). We distinguished two components of the financial support received. The first component (variable *International Support*) reflects the amount of aid aimed at supporting the SME's international development. The second component (variable *Non-*

International Support) captures the amount of aid allocated to other objectives. The amounts of aid are expressed in thousands of euros. The variable *BG* is a dichotomous variable that takes the value 1 if the SME recorded export turnover within its first four years of existence, and 0 otherwise. Let's note that the variable *BG* is time invariant. A SME which is declared to be born global is born global from its inception.

The other control variables include firm age, prior receipt of financial support, size, industry sector, and year. Firm age (variable *Age*) is included, as export turnover may depend on how long the firm has been in existence. A dichotomous variable (*Previous Support*) accounts for whether the SME received financial support in prior years during the observation window. Firm size (*Log Total Turnover*) is measured by the logarithm of total turnover. Industries is captured through a set of dichotomous variables representing 10 different industries.

Our dataset comprises 848,768 observations from 173,870 young SMEs with complete data for all variables. This corresponds to an average of 4.88 observations per firm over the 2000–2018 period. Table 1 presents the descriptive statistics of our sample. The descriptive statistics reveal a high proportion of BGs. Specifically, 42 percent of young SMEs generated export turnover within their first four years of existence. The average amount of financial support, although shown for all the sample, is meaningful only for SMEs that actually received aid.

Table 1. Descriptive Statistics

The table presents mean, standard deviation, minimum and maximum of each variable. In panel data, standard deviation, minimum and maximum can be distinguished into 3 components: overall, between and within. The between is calculated over 173 870 SMEs, and the average number of years a SMEs was observed is 4.88 years. The overall and within are calculated over 848 768 SMEs-years of data. The within number refers to the deviation from each individual's average, that is why some of those deviations are negative.

Variable		Mean	Std. Dev.	Min	Max
Export_Turnover t+2 (K€)	overall	201.82	1435.65	0	50525.43
	between		1153.71	0	46965.93
	within		681.22	-29455.9	44555.02
Age (years)	overall	7.84	4.91	0	18
	between		4.56	0	18
	within		2.93	-3.53	20.27
Previous_support (dichotomic)	overall	0.02	.15	0	1
	between		.08	0	1
	within		.10	-0.86	0.9594
International Support (K€)	overall	0.50	32.95	0	12000
	between		12.32	0	3000
	within		30.15	-2999.50	11190.50
Non International Support (K€)	overall	5.72	86.03	0	11250
	between		49.21	0	7996.15
	within		75.16	-3084.81	9380.72
Total Support (K€)	overall	6.22	93.07	0	15148.14
	between		51.25	0	7996.15
	within		81.59	-3084.32	14117.82
BG (dichotomic)	overall	.42	0.49	0	1
	between		0.50	0	1
	within		0	0.42	0.42
Log_total_turnover	overall	5.67	1.75	-6.21	10.81
	between		1.71	-4.60	10.81
	within		0.61	-4.24	12.78

Figures not detailed in table 1 show that 702 SMEs received 773 internationalization-oriented supports between 2000 and 2018, with an average of €546,000 per company per year. These same internationally supported firms also received, on average, non-international targeted support of just €50,000 in the same year. Thus, some firms receiving internationalization support were also supported for other objectives in the same year. Regarding non-internationally targeted aid, 14,902 companies received 21,826 supports over the same period, with an average annual amount of €223,000 per company a year. These firms,

supported for objectives other than international development, received in the same year an average of only €3,000 in internationalization-specific aid. These figures indicate that support for internationalization is far less common than support for other purposes. Nonetheless, a subset of firms benefits from both types of aid.

Table 2 shows that the correlations between our variables are relatively weak, although systemically significant at the 5 percent level. The Variance Inflation Factors (VIF) do not indicate any issues of multicollinearity.

Table 2. Correlation Matrix and *Variance Inflation Factors*

All correlations are statistically significant at the 5 percent level.

	Export Turno ver t+2	Age	Previo us Support t	Born Global	Non Intern ational support t	Intern ational support t	Log_to tal turnov er	VIF
Export Turnover t+2	1.000							
Age	0.057	1.000						1.15
Previous Support	0.066	0.115	1.000					1.05
BG	0.048	-0.101	0.067	1.000				1.02
Non International support	0.062	0.012	0.072	0.027	1.000			1.01
International support	0.034	0.008	0.037	0.009	0.026	1.000		1.00
Log_total turnover	0.253	0.320	0.164	-0.005	0.062	0.024	1.000	1.18

2.3. METHOD

The hypotheses are tested using random-intercept regressions, which are well-suited to our panel data. These regressions account for the correlation between observations within each SME. We test our hypotheses using our key independent variables related to the amounts of financial support received and their interaction with the SME's born global status. Our model is based on the following equation:

$$\begin{aligned}
 \text{ExportTurnover}_{i,t} = & \beta_0 + \beta_1 \text{InternationalSupport}_{i,t} + \\
 & \beta_2 \text{NonInternationalSupport}_{i,t} + \beta_3 BG_i + \beta_4 \text{InternationalSupport} \times BG_{i,t} + \\
 & \beta_5 \text{NonInternationalSupport} \times BG_{i,t} + \beta_6 \text{Age}_{i,t} + \beta_7 \text{PreviousSupport}_{i,t} + \\
 & \beta_8 \log \text{TotalTurnover}_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

The β coefficients are the parameters to be estimated. β_0 is the constant, and ε_{it} represents the error term. The error term is defined as $\varepsilon_{it} = \alpha_i + u_{it}$, where α_i captures the unobserved individual, time-invariant effects, and u_{it} represents the unobserved individual, time-varying effects, assumed to be independent and identically distributed. As shown in Table 1, most of our variables vary over time at the SME level, with the exception of the "Born global" variable, which remains constant. A SME classified as born global is considered so from its inception, even if it began exporting 1, 2, or 3 years after its establishment.

This model can be estimated using either the fixed effects estimator or the random effects estimator. Econometrically, a Hausman specification test is used to select the most consistent estimator. The results of this test indicate that the null hypothesis of equality between the coefficients of the fixed-effect (FE) and random-effect (RE) models is rejected. This suggests that there is a correlation between the explanatory variables and the unobserved individual effects. In this case, the fixed effects estimator, though potentially inefficient, remains consistent, while the random effects estimator does not. However, as Rabe-Hesketh and Skrondal (2012, p. 158) note, "If the (true) between and within effects differ by a small amount, it may be advisable to use the random effects estimator, as it may have a smaller mean squared error (some bias but considerably smaller variance) than the fixed effects estimator."

In our case, we face a particular issue since we wish to estimate a coefficient for the *BG* variable, which is time-invariant and cannot be estimated using a fixed effects estimator.

Given that the results from both estimation methods are similar, and even fully convergent with regard to the signs and significance of the coefficients, we have decided to present our findings using both estimation techniques.

3. RESULTS

Results are presented in table 3. Overall, the *F-statistic* (regarding FE) and the *Wald Chi-squared* test (for RE) indicate that the regressions are significant. However, the *R-squared* values are quite low, particularly the within R-squared. The proportion of total variation (both within and between units) explained by the models is around 6 percent. The *rho* value, ranging between 0.6 and 0.7, confirms that the differences between units explain a large part of the variance.

In fixed-effects models, the estimated coefficients capture within-entity variation in export turnover associated with changes in explanatory variables over time. In random-effects models, coefficient interpretation is more complex as they incorporate both within-entity and between-entity effects. The coefficient of a variable reflects its average effect on export turnover when it changes by one unit across time and between SMEs, holding other variables constant. Our results show perfect convergence between the two estimation approaches in terms of sign, magnitude, and statistical significance for our key variables.

Table 3. Results

Regressions of export turnover, lead by 2 years, on the independent variables. Each model includes 848,768 observations, corresponding to 173,870 SMEs observed for an average of 4.9 years over the period from 2000 to 2018. Each regression is estimated twice : first with random (intercepts) effects estimator (RE), then with fixed effects estimator (FE).

	(1) RE	(1') FE	(2) RE	(2') FE	(3) RE	(3') FE
Variable	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)
Cst	-215.11*** (65.74)	273.96*** (7.79)	-215.35*** (65.71)	274.05*** (7.80)	-215.35*** (65.71)	274.00*** (7.79)
BG	84.81*** (5.38)	omitted	85.04*** (5.38)	omitted	85.04*** (5.38)	omitted
Non International Support	-.03** (.01)	-.10*** (.01)	.02 (.02)	-.02 (.02)	.02 (.02)	-.02 (.02)
BG X Non International Support			-.07** (.02)	-.12*** (.02)	-.07** (.02)	-.12*** (.02)
International Support	.15*** (.03)	.08** (.03)	-.21** (.07)	-.27*** (.07)	-.20** (.08)	-.26*** (.08)
BG X International Support			.42*** (.08)	.41*** (.08)	.41*** (.08)	.36*** (.08)
Non International Support X International Support					-.0001 (.0002)	-.0001 (.0002)
BGX Non International Support X International Support					.0001 (.0002)	.0001 (.0001)
Previous support	-28.21*** (8.10)	-39.87*** (8.34)	-28.07*** (8.10)	-39.72*** (8.34)	-28.04*** (8.09)	-39.79*** (8.34)
Age	-1.80*** (.27)	-.67* (.29)	-1.80*** (.27)	-.67* (.29)	-1.80*** (.27)	-.67* (.29)
logturnover	70.40*** (1.07)	-11.55*** (1.38)	70.47*** (1.07)	-11.56*** (1.38)	70.47*** (1.07)	-11.55*** (1.38)
Industry	Yes	omitted	Yes	omitted	Yes	omitted
σ_u	998.22	1160.27	997.54	1160.32	997.52	1160.33
σ_e	763.83	763.82	763.80	763.80	763.80	763.79
ρ (fraction of variance due to u_i)	.63	.69	.63	.69	.63	.70
F test that all $u_i=0$:		$F(173869, 674893)$ =12.20		$F(173869, 674891)$ =12.20		$F(173869, 674889)$ =12.20
Wald Chi 2 (DF) / Ftest	Wald $\chi^2(15)$ =9041.23 Prob> χ^2 =0.000	$F(5,674893)$ = 44.50 Prob>F =0.0000	Wald $\chi^2(17)$ =9090.99 Prob> χ^2 =0.000	$F(7,674891)$ =38.93 Prob > F =0.0000	Wald $\chi^2(19)$ = 9091.60 Prob> χ^2 =0.000	$F(9,674889)$ = 30.66 Prob > F =0.0000
R-Squared						
Within	0.0001	0.0003	0.0001	0.0004	.0001	.0004
Between	0.0684	0.0773	0.0684	0.0777	.0684	.0780
Overall	0.0601	0.0585	0.0600	0.0558	.0600	.0560

***, **, and * indicate significance at the 0.1, 1 and 5 percent levels respectively.

Regressions 1 and 1' do not include interactions. They allow testing hypotheses H1a and H1b. The coefficient for the variable *International Support* is positive and significant in regressions 1 and 1'. This indicates that an additional thousand euros of support directed toward international development results in an increase in export turnover (of approximately 100 euros) two years after receiving the support. Hence H1a is supported. The coefficient for the variable *Non International Support* is negative and statistically significant in regression 1 and 1'. It indicates that an additional thousand euro of support not directed toward international development is associated with a decrease of export turnover (of approximately 30 to 100 euros) after the support. This result corroborates H1b.

Regressions 2 and 2' include interactions specifically designed to test H2a and H2b which contrast the effect of public support between BG and NBG. H2a states that the positive impact of financial support directed toward internationalization is higher for BG compared to NBG. The positive coefficient for the interaction between the variables *International Support* and *BG* is statistically significant in each regression. It indicates that the impact of support directed toward international development is higher for BG compared to NBG. H2a is corroborated. An additional thousand euros of aid results in an effect on export turnover that is approximately 400 euros higher for BG firms compared to NBG firms. This significant difference must be considered in relation to the impact of aid observed for NBG firms. From this perspective, the results are surprising, as an additional thousand euros directed towards international development is associated with a significant decrease (of approximately 200 euros) in export turnover for NBG firms. An additional support of one thousand euros directed toward internationalization is hence associated with a significant increase of export turnover of approximately 200 € for BG SMEs, and a significant decrease of 200€ for NBG SMEs.

H2b states that the negative association between the financial support not directed toward internationalization and international turnover is more pronounced for BG compared to NBG. Our results clearly corroborate H2b. The coefficient of the interaction between *Non International Support* and *BG* is negative and statistically significant. An additional thousand euros of aid not directed toward internationalization results in an effect on export turnover that is approximately 100 euros lower for born global (BG) firms compared to NBG firms. Again, this effect must be evaluated in relation to the association between aid and export turnover for NBG firms. Here, our results show that there is no statistically significant association between aid not directed towards international development and export turnover for NBG SMEs (*coef.* of 0.02, *std. err.* of .019). Additional average marginal effect tests show that the association between support not directed between internationalization and export turnover is negative significant for BG SMEs (*coef.* of -0.053, *std. err.* of 0.013).

Regressions 3 and 3' are provided for informational purposes. We considered the possibility that aid directed towards international development and other types of aid may have complementary or substitutable effects. Consequently, we included an interaction term between the aid variables. The results indicate that the interaction between these aids is not significant, while the other coefficients remain qualitatively unchanged.

Finally, the *BG* variable in all RE regressions is significant. Export turnover is higher (of approximately 80 thousand euros) in BG SMEs compared to NBG SMEs. Some control variables are statistically significant. The coefficient of the *previous support* variable indicates that having received one or more grants in the past is negatively associated with the level of export turnover. The coefficient of variable *Age* is negative significant in all the regression. Getting older is associated with a (marginally) lower export turnover. We observe that the estimated coefficient for the variable related to firm size varies quite strikingly between the

fixed-effects (FE) and random-effects (RE) estimations. Getting bigger over time (but within an entity) is associated with a smaller export turnover. But the association between size and export turnover is positive if we also consider the between entity effect. Finally, less surprisingly and not shown in the result table, some industry dummies are statistically significant.

4. DISCUSSION AND CONCLUSION

The literature on small firms often examines their development through the lens of the "liability of limited resources." Within this framework, effectuation and causation approaches have provided valuable insights by balancing emergent and planned strategies (Karami et al., 2020). While both approaches can coexist, effectuation has received predominant attention from researchers, particularly in the context of born globals (BGs) (Frishammar & Andersson, 2009; Harms & Schiele, 2012). Our objective was to revisit this perspective by considering the role of public funding in international development and, consequently, the influence of causation-based strategies. Given that public funding inherently promotes a causal approach to international development, it necessitates a more nuanced understanding of its role in the development of SMEs, especially regarding their internationalization efforts.

Following this rationale, we have hypothesized that funding directed toward international activities accelerates the internationalization process. Conversely, funding with other orientations is expected to divert firms from this strategic path. We have further posited that these effects are likely to be more pronounced for BGs. Our predictions were tested using a large sample of French SMEs, and the findings largely support our hypotheses. Specifically, while financial support enhances exports when dedicated to internationalization, it has a detrimental effect when directed toward other objectives, with these effects being even more pronounced for BGs. Our study contributes to the literature on funding support for SME internationalization from the effectuation/causation perspective in several key ways.

First, it addresses several research avenues for further exploration regarding the SME internationalization process, as highlighted by Morais and Ferreira (2020), and underscores the importance of the causation perspective in international development. This contribution is evident from our findings, which highlight that the orientation of funding plays a fundamental role. When SMEs apply for funding programs, they are encouraged to adopt a more formal approach to strategy, clarify objectives, and allocate financial resources accordingly. This shift towards a causal logic limits the scope for alternative uses of funding. Although initial engagements with partners may reflect an effectuation logic—where unexpected opportunities arise—the selection of certain options constrains further possibilities. Thus, a process rooted in effectuation evolves into a more causal trajectory. Historically, the causal orientation induced by funding programs has received limited exploration, likely due to the challenges associated with understanding the orientation of the support program. We address this classical limitation by considering the goals of financing, rather than merely the amount of funding. Our work responds to the call from Karami et al. (2020, p. 20), who noted that while limited resources might hinder internationalizing SMEs, the focus on these limitations has obscured the distinction between means-driven and goal-driven logics in effectual internationalization. Our data offer a unique opportunity to measure financial resources while controlling for a causation-oriented episode. We demonstrate that more resources are not inherently beneficial for international development; in fact, obtaining resources that are not aligned with internationalization objectives can lead to negative spillover effects.

While we acknowledge the potential complementarity between effectuation and causation (Chander et al., 2011), our contribution invites a nuanced perspective that recognizes the potential tensions between the two (Galkina et al., 2022). Specifically, our findings reveal that when funding is allocated for purposes other than internationalization, the export rate declines. We find no evidence that substantial funding acquired for non-international objectives

can be effectively repurposed to support export activities. Thus, our findings emphasize that financing directed toward non-international goals diverts BGs from their international development trajectories. As noted by Smolka et al. (2018, p. 576), employing causation logic necessitates substantial initial resource commitments, which can undermine the lean operations characteristic of effectuation logic. While our study highlights the tension between these two logics, it aligns with the argument that firms may oscillate between them. For instance, the literature suggests that effectual logic is more relevant in uncertain environments, while causal logic prevails when uncertainty is lower (Karami et al., 2020). The intervention of public funding organizations can be interpreted as enhancing the stability of financial support conditions, thereby rendering causal logic more applicable. Future research could further investigate the role of stakeholders in creating an environment conducive to causation approaches.

Second, our analysis of the BG subset allows us to consider firms that possess a significant pool of initial, albeit non-financial, resources that facilitate their export activities (Blomstermo et al., 2004; Frishammar & Andersson, 2009). In this context, we find that financial support has both pronounced positive and negative effects. Regarding the positive effects, our findings confirm that when SMEs have initial resources, they can effectively navigate causation-driven projects and derive greater benefits from substantial support. Conversely, this finding complements existing research indicating that BGs are more likely to internationalize when they can do so with minimal manufacturing and marketing adaptations to control costs (Hennart, 2014). While effectuation may be naturally associated with international development, our study underscores that causal processes involving explicit goal-setting are also integral to the international development of BGs. In other words, while BGs are often portrayed as spontaneously inclined toward international development, they are also particularly sensitive to explicitly formulated strategies. We therefore suggest that future

research on BGs, which may rightfully emphasize the effectual dimension, should also encompass planning, objective setting, and the formalization of long-term goals.

From a practical standpoint, this study highlights the significant role of public funding organizations in the international development of SMEs. Programs oriented toward internationalization can enhance their impact through increased financial support, with BGs deriving even greater benefits from such assistance. Funding organizations should be mindful of the potential drawbacks when programs are directed toward other objectives, as these can jeopardize the process of international development. It is crucial for public funding organizations to consider the processes that lead to the selection of strategic options. This process, which likely begins before financial support is granted, does not encourage positive spillovers between the strategic options that SMEs may choose. This is particularly important because, despite their perceived agility, SMEs may adhere to selected strategies in ways that seem counterintuitive.

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