

International network formation, home market institutional support and post-entry performance of international new ventures

Abstract

Effectuation and causation decision-making logics are noted to be major alternative approaches to international network formation. However, knowledge is lacking on how and the conditions under which the two approaches contribute to post-entry performance of international new ventures (INVs). We integrate the theory of effectuation and institutional development logic to explain how effectuation and causation approaches to international network formation individually and jointly contribute to post-entry performance under varying conditions of home market institutional support. We test our proposed framework on primary data from 228 INVs in a sub-Saharan African economy. Results suggest that greater uses of both effectuation and causation approaches to international network formation are associated with stronger post-entry performance. More interestingly, results show that the joint effect of the two international network formation approaches on post-entry performance is amplified under conditions of low home market institutional support. Our findings provide theoretical and managerial insights on the importance of complementing effectual and causal reasoning in international network formation in weak home market institutional environments.

Keywords: International network formation; effectuation approach; causation approach; home market institutional support; post-entry performance; international new ventures

1. Introduction

International entrepreneurship research has highlighted the importance of international network formation as a major determinant of the performance of international new ventures (INVs) (Knight & Cavusgil, 2005; Oviatt & McDougall, 1994). Studies have argued that, because INVs lack clout on the international market arena, suffer liabilities of foreignness and newness, and are disadvantaged by strategic resource constraints, international network formation becomes a valuable resource that such firms utilize to earn competitive advantage (Mudambi & Zahra, 2007; Khan & Lew, 2018; Torkkeli et al., 2019). International network formation is defined as the voluntary collaborative arrangements among partners headquartered in different countries to exchange and share resources to achieve strategic objectives (Gerschewski et al., 2015; López-Duarte et al., 2016). International networks contribute to post-entry performance of INVs by facilitating international market knowledge acquisition and by providing a portfolio of diverse resources required to compete effectively in overseas markets (Jin et al., 2018; Sleuwaegen & Onkelinx, 2014).

However, international network formation may be paradoxical in nature in that, despite the benefits it brings INVs, research shows that there are significant costs associated with its utilization (Czakoń & Czernek, 2016; Vangen & Winchester, 2014). Importantly, while international networks may enable a focal INV to achieve its strategic goals, such networks are also associated with high degrees of uncertainty due to partner contradictions (Galkina & Lundgren-Henriksson, 2017). Evidence shows that up to 70% of such inter-firm networks fail (Bamford et al., 2004), and about 50% of these have been terminated for a variety of reasons, including relationship conflicts (Lunnan & Haugland, 2008). As internationalization theory suggests, it is difficult for INVs to overcome outsidership liability in networks because *“it is a process that reflects the time required to combine and exchange resources with other actors in the host country network”* (Johanson & Johanson, 2021, p. 2). As a result, research suggests that post-entry performance benefits may decline or even cease if international networks are not competently managed (Lewis & Bozos, 2019). Recent studies have, therefore, begun to examine the conditions under which international network formation may be beneficial or harmful to networking partners (e.g., Galkina & Atkova, 2019; Kerr & Coviello, 2019). While these recent studies have helped generate scholarly interest in the benefits and costs of international network formation, it still remains unclear how effectuation and causation approaches to international network

formation contribute to post-entry performance. This study addresses this deficiency in the international entrepreneurship literature by examining how and the conditions under which effectuation and causation approaches to international networking contribute to post-entry performance of INVs.

The study draws on the effectuation theory to argue that effectuation and causation approaches to international network formation may contribute to post-entry performance differently in that unique mechanisms explain their contributions (Sarasvathy, 2001, 2008). The effectuation approach enables new ventures to identify and exploit network opportunities by assessing how existing resources help achieve market goals while at the same time continuously balancing goals with those resources. In contrast, the causation approach follows a predetermined goal and process to achieve goals given available resources (Sarasvathy, 2001). While some researchers have argued that the causation approach may not be ideal for new ventures due to the inherently uncertain and risky characteristics of such ventures (Sarasvathy, 2008), this study argues that the causation approach may complement the effectuation approach to enhance the post-entry performance of INVs.

Additionally, although new ventures may use both effectuation and causation approaches to international network formation to mobilize resources, it is also the case that such ventures are often highly deficient in terms of their capacity to penetrate heavily-guarded international networks due to their lack of stature and reputation in the international market arena (Mudambi & Zahra, 2018). Hence, a contention has been that support from formal and informal home market institutions (e.g., governmental export promotion agencies, chambers of commerce) can provide a lever to facilitate new ventures' efforts to access international market networks (Korosec & Berman, 2006; Zahra & Wright, 2011). This study, therefore, addresses the following research question: to what extent does variability in home market institutional support (high and/or low home market institutional support) serve as a lever to explain post-entry performance benefits of effectuation and causation approaches to international network formation?

In addressing this research question, the study contributes to international entrepreneurship research in three ways. First, the study responds to growing calls on researchers to develop new theoretical perspectives on

the international networking of new ventures (Coviello et al., 2017; Kerr & Coviello, 2019). Although scholarly interest is growing concerning how international networks are handled optimally to maximize benefits for INVs (Nordin et al., 2018), articulation of relevant theoretical arguments is limited regarding how INVs leverage incongruent international networking capabilities to boost post-entry performance. Accordingly, this study advances knowledge on international network formation by drawing insights from the theory of effectuation (Sarasvathy, 2001) to explain how effectuation and causation approaches to international network formation are synergistically used to enhance post-entry performance.

Second, the study extends the boundary of the effectuation theory by integrating it with the institutional development logic to explain the institutional environment conditions – such as high or low institutional support – under which effectuation and causation approaches to international network formation explain variability in post-entry performance (Kerr & Coviello, 2019; Prashantham et al., 2019). In particular, the study cross-fertilizes the effectuation theory with institutional development logic to demonstrate the extent to which changes in the levels of effectuation and causation network formation approaches explain variation in post-entry performance under differing conditions of home market institutional support.

Third, the study tests the proposed relationships on primary data from INVs located in a sub-Saharan African market, helping to broaden contextual understanding of international networking formation. Importantly, INVs competing in and out of sub-Saharan Africa are surrounded by extreme forms of market dysfunction and institutional weaknesses that can significantly undermine the ability of such ventures to compete effectively on the international stage (Adomako et al., 2018). In such a precarious and weak institutional environment, INVs may suffer greater liabilities of foreignness, resource constraint, and market illegitimacy (Khan & Lew, 2018; Zahra, 2005) – these adverse conditions may further explain the extent to which INVs benefit from international networks. Thus, in testing the proposed relationships in this context, the study brings a typical developing economy perspective to scholarly discussion on the application of effectuation and causation logics in precarious market environments.

2. Theoretical background and hypotheses

2.1. *Effectuation and causation approaches to international network formation*

International entrepreneurship research shows that international competitive strategy is forged between networks of businesses seeking to create and maximize market value (Bouncken & Fredrich, 2016; Leischnig et al., 2014). How INVs navigate these growing interdependencies as well as networks of large and small businesses captures the essence of international network formation (O'Dwyer & Gilmore, 2018). International networks are important determinants of the performance of INVs (including born-globals) seeking to compete in the international market (López-Duarte et al., 2016; Sharma & Blomstermo, 2003). By forming networks with international partners, INVs improve their competitiveness as they leverage resources in partner firms to compete with larger counterparts (Robson et al., 2019). In the case of INVs competing from developing economies, institutional development logic suggests that networking with more connected foreign market partners provides a pathway to overcome major liabilities including market illegitimacy, foreignness, resource limitations and lack of stature (Yiu et al., 2005). While network ties in home markets may be useful (Al-Laham & Souitaris, 2008), INVs are able to overcome these liabilities at post-entry stage by forming network ties with suppliers, customers, research institutions and even competitors in both home and international markets (Ozdemir et al., 2017; Albers et al., 2016).

Research suggests that successful international networking requires careful selection and formation of relationships with overseas partners (O'Dwyer & Gilmore, 2018; Sharma & Blomstermo, 2003), including leveraging of existing networks (Johanson & Vahlne, 2009, 2011). Scholars have drawn on the economic perspective and process view to explain how new ventures form international networks. The economic perspective highlights a logical (i.e. rational) decision-making approach that stems from the need to exhaust all available information before decisions are made on international network partners (Benito & Gripsrud, 1992). On the contrary, the process view argues that decisions can be made without access to full information; rather, firms can draw on the personal experiences, judgment, and heuristics of managers to inform decisions on international network partners (Benito & Gripsrud, 1992). In the case of INVs, network formation decisions are predicated largely on the use of informal and interpersonal relationships as well as

the personal judgment and experiences of entrepreneurs – lending such networking decisions more towards the process view (Acedo & Jones, 2007; Yang & Gabrielsson, 2017). Thus, while the process approach captures the essence of the effectuation theory that argues that the future is something that entrepreneurs can influence by their actions and available resources, the economic perspective lends itself more towards the causation arguments about international network formation (Sarasvathy et al., 2014; Sarasvathy & Dew, 2005).

The theory of effectuation suggests that effectuation reasoning (i.e., non-predictive and affordable loss approach) and causation reasoning (i.e., deliberate, planned and goal-driven) approaches may inform how new ventures make decisions on international network formation (Sarasvathy et al., 2014). The effectuation approach concentrates on the formation of network relationships on the basis of the extent to which partners are easily accessible (Prashantham et al., 2019). The focus is primarily on “*who can, rather than who should*” be a network partner for INVs to achieve international market goals (Prashantham et al., 2019, p. 6). The idea of the effectuation approach is related to the emergent strategy perspective suggesting that INVs form international networks in the absence of intentions (Mintzberg & Waters, 1985). In this view, international network formation is assumed to be an ongoing rather than an inductive process that provides competitive advantage to INVs by rapidly spotting and retaining opportunities (Bodwell & Chermack, 2010; Neugebauer et al., 2015). In contrast, the causation approach is predicated on the deliberate cultivation and building of relations with international partners to achieve intended goals (van Werven et al., 2015). This approach emphasizes the efficient and effective search for international partners who possess the required resources to support an INV’s international market entry goals (Vissa & Bhagavatula, 2012). As such, the causation approach is in line with the deliberate strategy perspective (Kopmann et al., 2017). Specifically, the causation approach to international network formation is a deliberate strategy and a by-product of managerial decision-making (Galkina & Lundgren-Henriksson, 2017). In drawing a distinction between effectuation and causation approaches, Prashantham et al. (2019) argue that “*an effectuation approach embraces the prospect of serendipity, such as unintentionally connecting with dormant ties, thereby leveraging (rather than avoiding) surprises, as opposed to a causation approach that involves, for example, cold-calling actors that possess complementary resources*” (p. 7).

For a long time, international business research has focused on explaining the causation approach to international network formation, with limited scholarly works on the effectuation approach (Christoffersen, 2013; Teng, 2007). However, with the advent of theoretical articulations on the behavior of INVs (e.g., Oviatt & McDougall, 1994), and following Sarasvathy's seminal works (Sarasvathy, 2001, 2008), scholars have begun to examine the effectuation approach to international network formation (e.g., Engel et al., 2017; van Burg & Romme, 2014). A small but growing number of international entrepreneurship studies have also begun to distinguish between the causation and effectuation approaches with a contention that, while the two approaches may be theoretically distinct and generate unique outcomes, they may also play synergistic roles in explaining decision-making outcomes of entrepreneurial ventures (Galkina & Lundgren-Henriksson, 2017; Prashantham et al., 2019). In particular, some scholars (e.g., de Vasconcellos et al., 2019) view the causation and effectuation approaches as diametric opposites that differentially drive international business competence. Despite these advances, the focus of previous studies has largely been on entrepreneurial ventures' domestic relationships, with limited research on how the two network formation approaches operate in the international market arena. This study extends this literature stream by explaining how the effectuation and causation approaches to international network formation individually and jointly contribute to post-entry performance.

2.2. International network formation and post-entry performance

This study contributes to scholarly knowledge on the determinants of post-entry performance of INVs by examining how two micro-level international network formation approaches (i.e., effectuation and causation) individually and, more importantly, jointly influence post-entry performance at varying degrees of a perceived macro-level institutional phenomenon (i.e., home market institutional support) (see Figure 1). Specifically, the study draws insights from the theory of effectuation to argue in Figure 1 that both effectuation and causation approaches to international network formation may individually contribute to variation in post-entry performance (i.e., H1 and H2). Unlike previous research that views the two approaches as opposing forces that may have differential effects (Vasconcellos et al., 2019), this study further argues that, beyond the individual contributions, the two approaches to international network

formation may interact in a complementary function to explain additional variance in post-entry performance (i.e., H3). Additionally, the study argues that the extent to which INVs benefit from international network formation may be dependent upon the degree of perceived home market institutional support. To this end, the study draws insights from the institutional development logic to argue that the joint effect of effectual and causal approaches to international network formation on post-entry performance is strengthened under conditions of perceived low home market institutional support (i.e., H4).

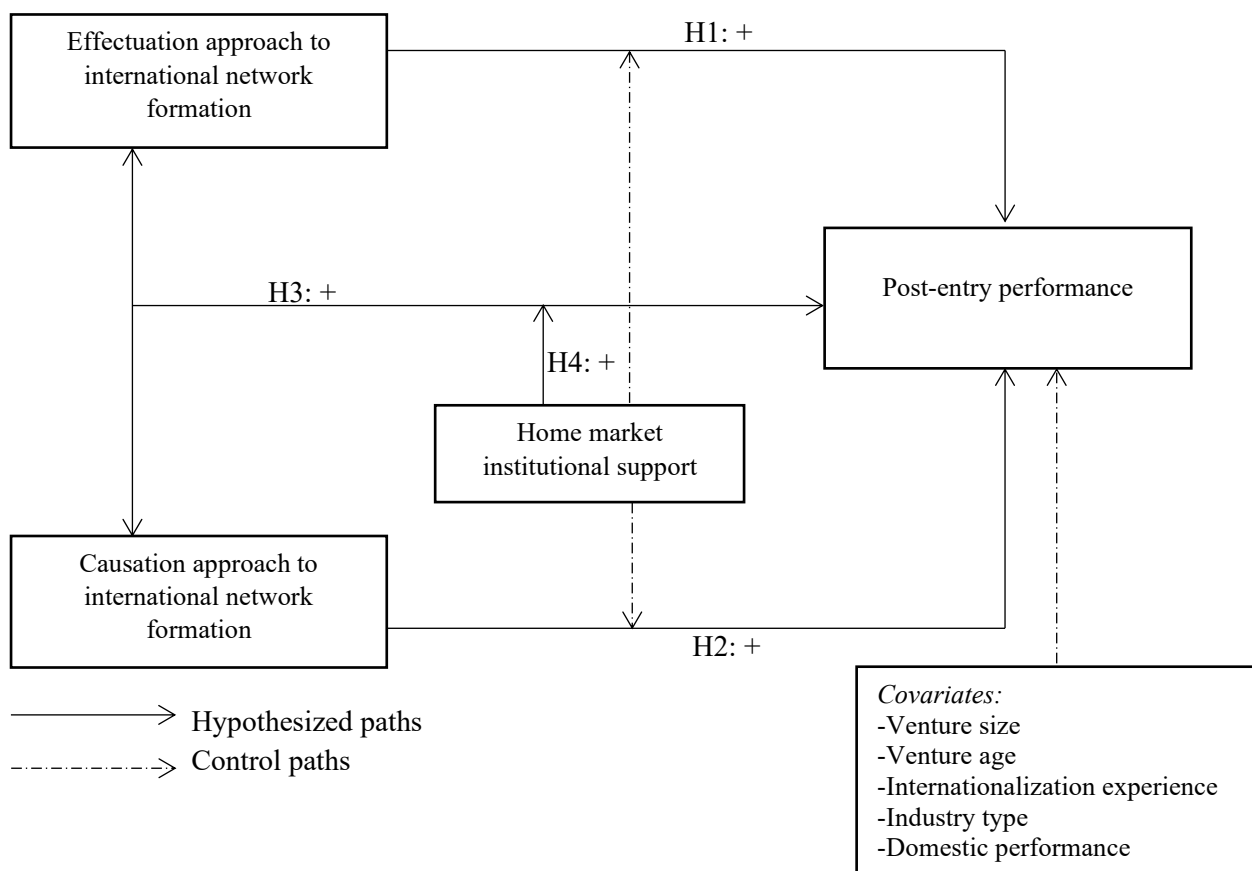


Figure 1: Conceptual framework of the study

2.2.1. Effectuation approach to international network formation and post-entry performance

The effectuation approach to international network formation is manifested in INVs' efforts to draw on available network partners to explore new and emerging international market opportunities (Sarasvathy & Dew, 2005). In following this effectual reasoning, INVs form international networks with known partners, which eliminates the need to search for new and ideal partners in foreign markets (Servantie & Rispal,

2018). International entrepreneurship research suggests that pre-existing international network ties facilitate the internationalization of new ventures (Kontinen & Ojala, 2011; Zhang et al., 2016), in that existing international partners can help INVs to reduce uncertainties associated with international markets and overcome liabilities of newness and foreignness (Park & Vertinsky, 2016). In leveraging ties with existing international networks, INVs are also able to overcome their international market illegitimacy challenge by leveraging the clout and connections of their more established international market partners (Mudambi & Zahra, 2018). Additionally, in line with the Uppsala internationalization model, using existing and more established networks help INVs to cut down search and coordination costs, freeing up the resources required to exploit international market opportunities (Johanson & Vahlne, 2009, 2011).

While previous studies on the internationalization process focus on explaining the importance and processes of forming international networks, this study argues that formation of international networks with trusted partners, rather than risky exploration of potential new partners, is helpful in driving post-entry performance (Musteen et al., 2010). The logic supporting our argument is that trusted existing networks pose less risks to INVs relative to ties with strangers because trusted existing partners have greater knowledge about each other's strengths and weaknesses, which may enable new ventures to sustain sales and cash flow in new foreign markets (Sarasvathy et al., 2014). Since a focal INV may not need to invest in additional relationship coordination efforts in assessing the reliability of existing trusted partners, there is an enhanced cost benefit of aligning its goals with existing international partners' goals. Furthermore, because formation of international networks from an effectual logic is predicated on the willingness and commitment of existing partners to support INVs' international operations, it can be expected that the rate of growth in sales and profit from international activities would increase. Taken together, this study hypothesizes that:

H1: The use of an effectuation approach to international network formation is positively related to post-entry performance of INVs.

2.2.2. Causation approach to international network formation and post-entry performance

The causation approach to international network formation encapsulates INVs' ability to deliberately and actively search for, and form relationship with, specific international network partners that possess required

valuable resources (Vissa & Bhagavatula, 2012). In following the causal approach, INVs use rational decision-making processes to evaluate relevant information about desired network partners and the advantages that may accrue from such partners (Galkina & Lundgren-Henriksson, 2017). To this end, Khan et al. (2018) suggest that international opportunities are discovered from a rational search for global partners in which alternatives are identified and analyzed. Although the causal approach may take longer to initiate and establish international networks, it can increase the post-entry performance of new ventures due to the eventual rational selection of strategically compatible partners (Reymen et al., 2015). The rational selection of an international partner may contribute to post-entry performance of INVs for different reasons.

First, this approach enables INVs to follow specific objectives in the search for international partners, and therefore ensures attainment of a strategic fit with selected international partners, which then helps strengthen post-entry successes (Prashantham et al., 2019). Second, greater investment of time and efforts in the search for suitable international network partners signals a new venture's commitment to the network partnership, and may help enhance its network relationship learning processes (Gil-Barragan Juan et al., 2020). Research shows that stronger learning processes enable a firm to strengthen its relationship management capability to the extent that it allows the firm to exploit greater relational assets from its portfolio of relationships to reinforce its international market position (Schilke & Goerzen, 2010). Such a firm may also strengthen its ability to reap a variety of network-related benefits including cost and risk sharing, access to a variety of partners' skills, knowledge, resources, and capabilities (Dagnino et al., 2016), and access to partners' customers, which may ultimately help enhance this INV's international sales and profitability levels. Accordingly, the study hypothesizes that:

H2: *The use of a causation approach to international network formation is positively related to post-entry performance of INVs.*

2.2.3. *Ambidextrous capability in international network formation and post-entry performance*

Although there are post-entry performance benefits in using either approach to international network formation, there are strong reasons to expect that complementary use of the two approaches may generate greater post-entry performance benefits. Importantly, use of the effectuation-based network approach alone

may undermine a venture's ability to coordinate its network of international relationships due to the lack of predetermined and consistent goals among partners (Evers & Andersson, 2019). This may eventually result in lower network relationship effectiveness and, as the effectiveness of a venture's international relationships depletes, post-entry performance may decline. Similarly, exclusive use of the causation approach to international network formation may weaken the speed of relationship formation due to the longer period of time and greater personnel efforts required to search for and evaluate international partners. Because INVs, especially those from developing economies, may lack reputation and stature in international markets, and given that such firms may lack human resource capacity to effectively identify relational assets in international networks, exclusive reliance on a causation approach may result in the selection of incompatible and potentially uncommitted international partners. International network formation with incompatible and uncommitted international partners may derail post-entry performance due to the higher coordination cost and relationship inefficiencies that result.

This study draws insights from the organizational ambidexterity literature to explain how INVs can develop ambidextrous capabilities to overcome the deficiencies associated with the two approaches to further boost post-entry performance. March (1991) argues that exploration and exploitation are diametrically opposed capabilities that may explain variation in performance of firms. In contrast, ambidextrous capability researchers view exploitation and exploration as complementary capabilities that firms need to master to achieve long-term success (cf. Gibson & Birkinshaw, 2004; Moorman & Slotegraaf, 1999; Luo & Rui, 2009). Typical ambidextrous capabilities include a venture's ability to pursue exploration and exploitation (March, 1991), efficiency and effectiveness (Eisenhardt et al., 2010), global integration and local responsiveness (Doz & Prahalad, 1991), and cooperation and competition (Galkina & Lundgren-Henriksson, 2017) strategies concurrently. Prior research contends that an ambidextrous strategy may contribute to performance enhancement in that the complementarity that emerges from the two incongruent strategies may enable a venture to offset the cost of pursuing one strategy (Buccieri et al., 2020; Hsu et al., 2013). For example, Fu et al. (2020) find that a new venture's ability to simultaneously manage exploration and exploitation of opportunities may result in stronger growth. Some other scholars argue that a balance

between effectuation and causation logics in internationalization decisions is conducive to INVs' performance (Evers & Andersson, 2019).

In drawing insights from Evers and Andersson (2019) and other prior scholarly works, therefore, this study proposes that simultaneous use of effectuation and causation approaches in a complementary function may constitute an ambidextrous capability, which may vary across a host of INVs, and may, therefore, explain additional variability in post-entry performance (Smolka et al., 2018). We argue that a capability to concurrently use both the effectuation and causation approaches may provide INVs with balanced information to evade dangerous extremes. Our contention is that the two approaches enable INVs to generate unique information and require different types of investment decision choices that may help offset the cost of either approach (Sarasvathy, 2001). For example, the effectuation approach concentrates on less risky network choices despite the associated limited resource and knowledge potential, whereas the causation approach emphasizes the purposeful selection of partners that possess the required resources to support predetermined goals (Kerr & Coviello, 2019). Additionally, while the effectuation approach enables INVs to leverage surprises by unintentionally connecting with dormant and known partners, the causation approach affords INVs the capability to rationally select optimal partners (Engel et al., 2017). Thus, by developing the capability to simultaneously execute effectuation and causation approaches to international network formation, INVs may strengthen their ability to complement the deficiencies of one approach with the strength of the other in the selection of international network partners to boost post-entry performance (Yu et al., 2018; Rasiah et al., 2016). Accordingly, the study hypothesizes that:

H3: *The use of both effectuation and causation approaches to international network formation is positively related to post-entry performance of INVs.*

2.2.4. *Moderating role of home market institutional support*

While international network formation provides a viable path for INVs to access opportunities in international markets, it is also the case that developing economy INVs often lack experience and reputation on the international market stage (Mudambi & Zahra, 2018). The idea that an INV is from a developing economy might mean that access is blocked to some international markets (Khan and Lew, 2018; Thomas et

al., 2007). For early internationalizing firms, entry into international markets may be a difficult task due to the complete absence of (or weak) home market institutional structures and networks (Yiu et al., 2007). For example, research shows that formal institutional structures in many sub-Saharan African markets are in precarious conditions and are largely ineffective in aiding international business activities (Parente et al., 2019). From such a disadvantage position, where support from formal home market institutions is virtually absent, the value of international network formation in aiding post-entry performance may become increasingly amplified (Cuervo-Cazurra & Genc, 2008).

Home market institutional support refers to “*the extent to which administrative institutions (such as government departments) provide support for firms in order to reduce the adverse effects of the inadequate institutional infrastructure*” (Li & Atuahene-Gima, 2001, p. 1125). This support may take the form of sociopolitical conditions, social norms, legal responsibility, and cognitive legitimization (Rhoades & Eisenberger, 2002). International new ventures take into account the level of reliability of their home country’s institutional environment when making investment and expansion decisions (Knack & Keefer, 1997). This includes the level of trust and confidence in the country’s legal, political, and social systems to govern the behavior of market actors (Zucker, 1986). In developing country markets, the institutions are often less developed and increasingly precarious (Parente et al., 2019; Fiedler et al., 2016), resulting in less reliable and trustworthy systems (Welter & Alex, 2012). Under such weak home market institutional conditions, INVs often face severe resource constraints due to underdeveloped financial markets and industrial sectors (Agnihotri & Bhattacharya, 2015), making it exceedingly difficult for new ventures to expand to international markets (LiPuma et al., 2013; Nuruzzaman et al., 2019). In contrast, when home market formal institutions are well developed and functional, INVs receive valuable resource support including legal protection for intellectual properties, tax rebates (including tax exemption on profits generated from exports), export subsidies, direct payments, low-interest credit facilities, and government-financed international advertising, which may help them to secure entry into international markets (Rasiah et al., 2016).

Thus, under conditions of low home market institutional support, post-entry performance benefits of the simultaneous use of effectuation and causation approaches to international network formation are strengthened. We reason that the ability to use effectuation and causation approaches simultaneously allows an INV to overcome challenges posed by resource constraints in that, while the effectuation network approach allows access to the complementary resources of committed international partners, the causation network approach provides access to novel resources of carefully selected new international partners (Smolka et al., 2018), thereby allowing an INV to achieve post-entry performance without overstressing precious and scarce resources. In addition, the greater availability of trusted international partners resulting from use of the effectuation networking approach may mitigate the cost of low home market institutional support, while greater strategically compatible partnerships developed through the causation networking approach may help offset weak home market governmental support (e.g., absence of government-sponsored international advertisements) – ultimately resulting in stronger post-entry performance. Taken together, this study argues that, under conditions of low home market institutional support, the joint effect of effectuation and causation approaches to international network formation on post-entry performance is further strengthened. Accordingly, the study hypothesizes that:

H4: *The weaker the perceived home market institutional support, the stronger the relationship between use of both effectuation and causation approaches to international network formation and post-entry performance of INVs.*

3. Methodology

3.1. Empirical setting

To test the hypothesized relationships, we used primary data from a sample of INVs located in a major a sub-Saharan African country – Ghana. Several reasons informed our choice of Ghana as the empirical context for the study. First, Ghana, like many sub-Saharan African societies, is a high relational society where interdependence, networking, and relational ties are highly valued (Greenfield et al., 2003). Hence, INVs from this context should be able to leverage their experience of operating from a high relational home market environment to strengthen their capability to network with business partners in foreign markets.

Second, compared to other countries within sub-Saharan Africa, Ghana has over the years achieved significant economic growth and socio-political transformation through its continuous trade liberalization policies and democratic principles (Acquaah, 2007). These features have led to significant private business growth within the country. Third, Ghana's economic landscape is characterized by activities of both domestic and internationalizing new ventures that have accounted for a greater proportion of employment and GDP growth (Amankwa-Amoah, Boso & Antwi-Agyei, 2018; Donbesuur et al., 2020). Third, like most developing countries, Ghana's domestic markets can be described as increasingly precarious, and with formal institutions that are weak and still developing. While such features may shape domestic performance, they have propelled many new ventures to seek alternative growth paths through expansion to international markets within and outside the West African sub-region (Boso, Oghazi & Hultman, 2017). For example, data from the Ghana Export Promotion Authority (GEPA) indicates that most SMEs in Ghana have internationalized within the European Union (e.g., Netherlands, United Kingdom, Germany, Spain), Asia (e.g., India, Vietnam, China), and North America (e.g., USA, Canada) – in addition to their huge presence in the African region. In the case of the sample of INVs used in this study, the majority have internationalized in African, Asian, and European markets (see table 1). Thus, these characteristics and its economic outlook make Ghana, a suitable setting in which to empirically test the proposed conceptual framework.

3.2. Sampling and data collection procedure

We sampled INVs from two company registration databases: Association of Ghana Industries and Ghana Business Directory. Following prior research (e.g., Gerschewski et al., 2018; Knight & Cavusgil, 2004; Wiklund & Shepherd, 2011), we selected participating firms based on three criteria: (1) firms that had internationalized within the first three years of establishment; (2) firms that reported at least 25% of their international sales within the first three years following establishment; and (3) firms that were independently owned and not subsidiaries of any group of companies. In using these criteria, a random sample of 786 firms was selected from the two databases. We contacted these firms through emails and telephone calls to solicit their participation in the study. In all, a total number of 623 firms agreed to participate in the study. Subsequently, a survey instrument was administered to CEOs, owner-managers, international business managers, and finance managers of the selected firms. In the end, 255 responses were received after three

rounds of visits to the firms and reminder emails. Due to incomplete responses (missing data), 27 responses were discarded, giving us 228 usable responses, which represents a 36.5% response rate. The descriptive characteristics of the INVs sampled for the study are provided in Table 1.

Variables	Frequency	Percentage (%)
<i>Key respondents</i>		
Category 1 (owners and CEOs)	172	75.4
Category 2 (international business managers and finance managers)	56	24.6
Total	228	100
<i>Firm size</i>		
Small-sized firms	158	69
Medium-sized firms	70	31
Total	228	100
<i>Firm age</i>		
1-7 years	100	43.9
8-14 years	128	56.1
Total	228	100
<i>Industry</i>		
Manufacturing	65	28.4
Services	163	71.6
Total	228	100
<i>International experience</i>		
1-7 years	153	67.1
8-14 years	75	32.9
Total	228	100
<i>Network type</i>		
Equity	31	13.6
Non-equity	197	86.4
Total	228	100
<i>Network partner origin</i>		
Africa	99	43.4
Asia	76	33.3
Europe	38	16.7
Rest of the world	15	6.6
Total	228	100

Table 1. Sample characteristics

3.3. Measures

All multi-item constructs (i.e., effectuation international network formation, causation international network formation, post-entry performance, and home market institutional support) were measured using seven-point rating scales (see Appendix A).

Effectuation international network formation: Effectuation international network formation was operationalized as the ability of an entrepreneur to build network ties with readily accessible and willing international partners (Prashantham et al., 2019). Consistent with the effectuation literature (Chandler et al., 2011; Sarasvathy, 2001), we modeled effectuation international network formation as a formative second-order construct including first-order dimensions of experimentation, affordable loss, pre-commitment, and flexibility (see Appendix A). Measures were developed on the basis of those used by Cai et al. (2017) and Smolka et al. (2018) as well as insights from the conceptual work of Prashantham et al. (2019). More specifically, the scales by Cai et al. and Smolka et al. were transferred from the context of effectual decision-making logic to the context of effectual-based international networking and complemented with conceptualization of effectuation networking decisions proposed by Prashantham et al. (2019). The effectuation construct provided the following Cronbach's alpha (α) values: (1) experimentation with three items ($\alpha = 0.88$); (2) affordable loss with three items ($\alpha = 0.89$); (3) pre-commitment with two items ($\alpha = 0.79$); and (4) flexibility with four items ($\alpha = 0.86$).

Causation international network formation: We operationalized causation international network formation as the ability of an entrepreneur to deliberately cultivate network ties with international partners to achieve a predetermined market entry goal (Hite & Hesterly, 2001). To measure this construct, we drew insights from the conceptual work of Prashantham et al. (2019) and the empirical studies by Chandler et al. (2011) and Smolka et al. (2018) to develop indicators that captured a unidimensional causal international network formation construct. Specifically, we measure causation international network formation with four items ($\alpha = 0.89$).

Home market institutional support: Based on the works of Li and Atuahene (2001) and Guo et al. (2014), home market institutional support was operationalized as the extent of central and other levels of home market government support available to new ventures including information on foreign market opportunities, resources, and permission for business actions. This construct was measured with five items ($\alpha = 0.93$).

Post-entry performance: We operationalized post-entry performance as the extent to which a new venture attains its performance objectives within the first three years of international market entry (Knight & Cavusgil, 2004). In line with previous research (e.g., Gerschewski et al., 2018), we treated the post-entry performance construct as a second-order construct with financial and non-financial performance components, thus complementing the shortcomings of any one type of performance measure (Ibeh et al., 2018). The measures for both performance components were adopted from Gerschewski et al. (2018). The respondents were asked to evaluate the extent to which they were satisfied with their firms' post-entry performance during the first three years of entry into international markets. The post-entry performance construct provided satisfactory Cronbach's alpha (α) values: (1) financial performance measured with four items ($\alpha = 0.90$) and (2) non-financial performance measured with five items ($\alpha = 0.86$).

Control variables. Several control variables were used in the analysis to minimize biases from omitted variables. First, we controlled for industry-level effects, because INVs in certain industries may systematically perform better than those in other industries, owing to differences in industry structure (Schilke & Goerzen, 2010). To control for industry effects, we used dummy variables: 1 = manufacturing and 0 = services. Second, we controlled for firm size since it has been argued that some new ventures benefit more from international networks than others (Gerschewski et al., 2018). Firm size was operationalized as the natural logarithm of total number of full-time employees. Third, previous research suggests that firm age may influence performance (e.g., Zhou et al., 2010), hence we controlled for firm age, which was operationalized as a natural logarithm of the number of years an INV has been in operation since its establishment. Fourth, given that international experience influences post-entry performance (Gerschewski et al., 2018; Musteen et al., 2010), we controlled for this effect by taking natural logarithm of the number of years an INV has been operating in international markets. Finally, variability in performance at home may cause some new ventures to accelerate their internationalization efforts (Lu et al., 2014). Thus, we controlled for the effect of domestic performance on post-entry performance. The domestic performance construct was measured with four items ($\alpha = 0.85$) that were developed and validated by Smolka et al. (2018).

3.4. Measure reliability and validity assessments

Before testing the hypothesized relationships, we conducted confirmatory factor analysis (CFA) using AMOS 26.0 to assess the reliability and validity of the multi-item constructs. Following on from recommended practices (e.g., Bagozzi & Yi, 2012; Kline, 2015), we relied on estimates from both approximate fit heuristics and relative fit indices such as Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Goodness of Fit (GFI), The Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Squared Residual (SRMR) to evaluate fit between the measurement model and the empirical data. Results of the CFA model showed an acceptable fit to the data: Chi-square/df = 1.62; RMSEA = 0.052; CFI = 0.93; SRMR = 0.050; NFI = 0.92; TLI = 0.91; and GFI = 0.90. We further assess reliability and validity of the measures by evaluating the standardized loadings, Cronbach's alpha score and composite reliability (CR) values of all the constructs. As provided in Appendix A the standardized factor loadings for the measurement items are significant at 1%, while the Cronbach's alpha and the composite reliability (CR) values for each set of measures exceed the required benchmarks of 0.70 and 0.60 respectively (Hair et al., 2017; Hair et al., 2018). These favorable statistics demonstrate convergent validity of the observed indicators used to measure the study's latent constructs.

Furthermore, we followed the Fornell and Larcker (1981) approach to test for the discriminant validity of the multi-item latent constructs. Specifically, as shown in Appendix A, results indicate that the square root of average variance extracted (AVE) for each construct exceeds any of the inter-construct correlations, providing support for the discriminant validity of the observed indicators used to measure the first-order constructs. In view of the multi-dimensional nature of the effectuation construct, we assessed effectuation as a second-order reflective factor and the weights linking effectuation to experimentation = 0.60, affordable loss = 0.60, pre-commitment = 0.62, and flexibility = 0.55 were all significant at 1%. Similarly, post-entry performance is conceptualized as a multi-dimensional construct (Katsikeas et al., 2006). Hence, we assessed post-entry performance as a second-order reflective factor and the weights connecting the first-order post-entry financial performance = 0.80 and the non-financial performance = 0.82 constructs to the second-order post-entry performance factor were all significant at 1%. Results show good fit to the data for both second-order constructs (see Appendix B).

3.5. Bias Assessments

3.5.1. Respondent bias assessment

We tested non-response bias by comparing two groups – early-response and late-response (Armstrong, 1977). The results of the t-test suggest no significant ($p > 0.10$) difference between the two groups in terms of mean values of causation, effectuation, and post-entry performance. We also tested for the response-bias related to the two categories of respondents – Category 1 (owners and CEOs) and Category 2 (international business managers and finance managers) (see Table 1). Again, the results do not suggest significant differences between the two categories of respondents in terms of causation ($t = 0.50$, $p = 0.62$), effectuation ($t = -0.87$, $p = 0.38$), or post-entry performance ($t = -1.56$, $p = 0.12$). Thus, response bias does not significantly characterize the data.

3.5.2. Common method bias assessment

We employed both ex-ante research design procedures and ex-post statistical analyses to minimize and assess any potential common method biases (CMB) that may characterize the data. Ex-ante research design procedures included use of multiple respondents (i.e., CEOs, owner-managers, international managers, and finance managers) as well as randomization of the ordering and structuring of the measurement items in the questionnaire. This method was also helpful in reducing the potential for social desirability bias. Additionally, prior to the execution of the field study, a pre-test was conducted with owner-managers of 12 INVs, in order to confirm that all questions were easy to understand.

Ex-post procedures involved the use of two statistical tests to assess the CMB. First, we used exploratory factor analysis to perform Harman's single-factor test (Podsakoff et al., 2003). Results reveal nine factors with Eigenvalue greater than 1, with the first factor accounting for 19.33% of the total variance. This confirms that CMB does not sufficiently describe the data. Second, we followed previous practices (Boso et al., 2013; Chang et al., 2010) to estimate three competing CFA models. The following results were obtained from the competing CFAs: (1) *method-only model*, where all the measurement items are loaded on a single

latent variable ($\chi^2/\text{d.f.} = 10.46$; RMSEA = 0.20; CFI = 0.21; SRMR = 0.17; NFI = 0.21; TLI = 0.20; GFI = 0.22); (2) *trait-only model*, where the measurement items are loaded on their respective latent variables ($\chi^2/\text{d.f.} = 1.62$; CFI = 0.93; RMSEA = 0.052; SRMR = 0.050; NFI = 0.92; TLI = 0.91; GFI = 0.90); and (3) *method and trait model*, which estimates both models 1 and 2 ($\chi^2/\text{d.f.} = 1.47$; RMSEA = 0.07; CFI = 0.94; SRMR = 0.04; NFI = 0.93; TLI = 0.92; GFI = 0.90). A comparison of these CFAs indicates that model 1 provides very poor fit statistics. However, models 2 and 3 have acceptable model fit statistics, with model 3 being slightly superior. With these findings, it is safe to assume that common method bias does not characterize the data.

<i>No.</i>	<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>
1	Causation	4.85	0.95	0.78												
2	Experimentation	5.01	1.07	0.28**	0.84											
3	Flexibility	4.73	0.97	0.14*	0.30**	0.78										
4	Affordable loss	4.62	1.17	0.12*	0.44**	0.24**	0.86									
5	Pre-commitment	4.46	1.06	0.17*	0.09	0.12*	0.19**	0.81								
6	Financial performance	4.71	1.13	0.33**	0.16*	0.16*	0.09	0.29**	0.84							
7	Non-financial performance	4.59	0.96	0.07	0.01	0.12*	0.11*	0.09	0.70**	0.74						
8	Domestic performance	4.71	0.90	0.20	0.23**	0.52**	0.20**	0.07	0.31**	0.05	0.85					
9	Home market institutional support	3.91	1.31	-0.03	-0.05	-0.07	-0.08	0.05	-0.05	-0.24**	0.08	0.77				
10	Firm size [#]	3.63	0.28	-0.02	-0.03	-0.08	0.00	0.13*	0.06	-0.06	-0.08	0.10*				
11	Firm age [#]	2.06	0.38	0.04	-0.04	-0.06	0.04	0.09	0.06	0.06	0.00	0.10*	0.49**			
12	International experience [#]	1.84	0.39	0.04	0.00	-0.02	0.00	0.03	-0.02	-0.03	0.03	0.16**	0.39**	0.77**		
13	Industry type [†]	---	---	-0.03	0.16*	0.11*	0.05	0.14*	0.14*	0.02	0.09	0.05	-0.16*	-0.07	-0.09	1.00

Table 2: Means, standard deviations, and correlations

Notes: * $p < 0.05$; ** $p < 0.01$; #: Natural logarithm transformation of the original values; M = Mean; SD = Standard Deviation; † = Dummy variable; square root of AVEs in diagonal and in bold

4. Results of structural model estimation

We employed the structural equation modeling (SEM) technique implemented in AMOS 26.0 to test the hypothesized relationships in the conceptual model. Specifically, for the purposes of model parsimony, we used a path analysis approach to SEM to hierarchically test the hypotheses. This approach allowed us to report individual model fit indices, while observing model improvements as successive paths are added to the structural model. Accordingly, we tested H1, H2, and H3 with the full sample ($N = 228$), as shown in Table 3. Hypothesis 4 is tested using a split sample approach. Specifically, we divided the full sample into two: (i) below the mean value of home market institutional support ($N = 101$); and (ii) above the mean value of home market institutional support ($N = 127$), as shown in Table 4 (Patel & Conklin, 2012).

Model 1 is the baseline model that tests the effects of the control variables on post-entry performance. Model 2 tests the direct effects of the effectuation approach and the causation approach to international network formation on post-entry performance (H1 and H2). Model 3 tests the interaction effect of effectuation and causation approaches to international network formation on post-entry performance (H3). From Table 3, model 2 shows that H1 and H2 are supported: (1) effectuation approach to international network formation ($\beta = 0.29, p < .01$), and (2) causation approach to international network formation ($\beta = 0.47, p < 0.01$) are both positively related to post-entry performance. Contrary to our expectation, we find no support for H3 without consideration of home market institutional support. That is, without consideration of levels of home market institutional support, increases in both effectuation and causation approaches to international network formation are not associated with stronger post-entry performance ($\beta = 0.03, t = 1.47, p > 0.05$).

The study subsequently accounted for the moderating effects of home market institutional support in H4 to further explain the effect of an interaction between effectuation and causation approaches to international network formation on post-entry performance at low and high levels of perceived home market institutional support. Accordingly, we followed previous studies (e.g., Klingebiel & Rammer, 2014; Sui et al., 2019; Zheng et al., 2016) to test H4 by splitting the full sample into low and high institutional support conditions. Group 1 comprised INVs that perceived high institutional support

conditions ($N = 127$) – samples above the mean value of institutional support. Group 2 comprised INVs that perceived low institutional support conditions ($N = 101$) – samples below the mean value of institutional support. Thus, we test the joint effect of effectuation and causation approaches to international network formation on post-entry performance under low and high levels of perceived conditions of home market institutional support. Results of the split-group analysis show support for H4 (see Table 4). Specifically, results show that the effect of the effectuation and causation interaction terms are positively associated with post-entry performance for INVs with a low perception of home market institutional support ($\beta = 0.37, p < 0.01$). To further interpret the interaction effect between effectuation approach and causation approach to international network formation on INVs' post-entry performance, we follow recommended procedures (Cohen et al., 2013) to plot the interaction effect at ± 1 standard deviation. Figure 2 shows a significant effect of the interaction between effectuation approach and causation approach to international network formation on post-entry performance under conditions of low institutional support.

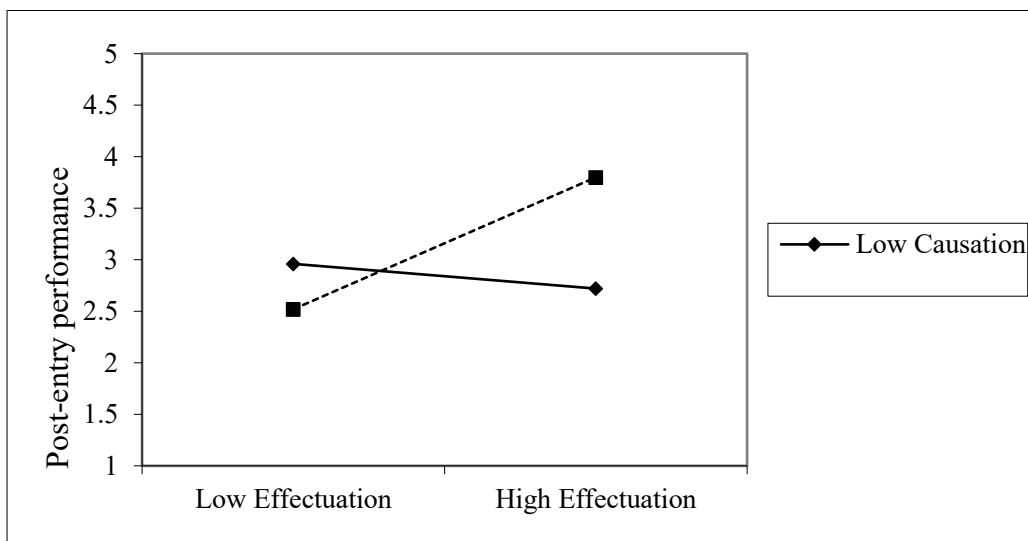


Figure 2: Surface plot diagram of the interaction effect of effectuation and causation on post-entry performance under low home market institutional support.

Post-entry Performance			
Independent variables	Model 1	Model 2	Model 3
<i>Control variables</i>			
Firm size [#]	0.11 (0.48)	0.20 (0.11)	0.20 (0.11)
Firm age [#]	0.44 (0.05) *	0.19 (0.25)	0.19 (0.26)
Internationalization experience [#]	-0.24 (0.11)	-0.24 (0.13)	-0.24 (0.13)
Industry type [†]	0.25 (0.07)	0.19 (0.08)	0.19 (0.08)
Domestic performance	0.63 (0.00) **	0.31 (0.01) *	0.31 (0.01) *
Home market institutional support	-0.36 (0.01) *	-0.20 (0.06)	-0.20 (0.06)
<i>Main effect</i>			
H1: Causation		0.47 (0.00) **	0.47 (0.00) **
H2: Effectuation		0.29 (0.01) *	0.29 (0.02) *
<i>Interaction effect</i>			
H3: Causation x Effectuation			0.03 (0.78)
<i>Fit statistics</i>			
χ^2/DF	1.39	1.19	1.14
p-value	0.02	0.06	0.11
CFI	0.98	0.98	0.99
NFI	0.94	0.94	0.93
NNFI	0.97	0.98	0.99
GFI	0.95	0.93	0.93
RMSEA	0.04	0.03	0.03
SRMR	0.05	0.05	0.05

Table 3: Summary of SEM results (full sample analysis; N = 228).

Notes: Standardized coefficients are reported with level of significance in parentheses; # = Natural logarithm transformation of the original values; † = Dummy variable; * p < 0.05 and ** p < 0.01.

Outcome Variable: Post-entry performance						
Moderator Independent variables	High institutional support (N = 127)			Low institutional support (N = 101)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variables						
Firm size [#]	-0.10 (0.41)	-0.15 (0.15)	-0.15 (0.14)	-0.00 (0.99)	-0.00 (0.99)	0.14 (0.31)
Firm age [#]	0.13 (0.46)	0.21 (0.17)	0.24 (0.11)	0.20 (0.43)	0.01 (0.96)	-0.22 (0.31)
Internationalization experience [#]	-0.10 (0.54)	-0.11 (0.41)	-0.13 (0.34)	-0.18 (0.45)	-0.09 (0.66)	-0.00 (0.99)
Industry type [†]	0.46 (0.00) **	0.37 (0.00) **	0.35 (0.00) **	0.28 (0.08)	0.20 (0.16)	0.20 (0.11)
Domestic performance	0.49 (0.00) **	0.31 (0.00) **	0.28 (0.01) *	0.65 (0.00) **	0.15 (0.41)	0.06 (0.71)
Main effect						
Causation		0.14 (0.14)	0.13 (0.15)		0.29 (0.05) *	0.34 (0.01) *
Effectuation		0.25 (0.02) *	0.25 (0.02) *		0.71 (0.00) **	0.58 (0.00) **
Interaction effect						
H4: Causation x Effectuation			-0.17 (0.07)			0.37 (0.01) *
Fit statistics						
χ^2/DF	1.33	1.26	1.24	1.45	1.25	1.21
p-value	0.04	0.07	0.07	0.01	0.06	0.07
CFI	0.96	0.98	0.97	0.96	0.97	0.98
NFI	0.90	0.91	0.90	0.90	0.92	0.91
NNFI	0.96	0.97	0.96	0.96	0.96	0.96
GFI	0.90	0.92	0.90	0.90	0.91	0.91
RMSEA	0.06	0.04	0.04	0.06	0.05	0.04
SRMR	0.06	0.05	0.05	0.06	0.05	0.05

Table 4: Summary of SEM results (split sample analysis).

Notes: Standardized coefficients are reported with level of significance in parentheses; # = Natural logarithm transformation of the original values; † = Dummy variable; * p < 0.05 and ** p < 0.01.

5. Post-hoc analysis

We performed several post-hoc analyses to check the robustness of our results. First, the same analytical techniques used to test H1 to H4 were used to test an alternative decomposed model that involved the individual dimensions of the effectuation approach to international network formation. As shown in Table 5 (full sample analysis), we find a significant relationship between pre-commitment and post-entry performance ($\beta = 0.35, p < 0.01$). We further find that the interaction between causation and flexibility is negatively related to post-entry performance ($\beta = -0.18, p < 0.05$), and the interaction between causation and pre-commitment is negatively related to post-entry performance ($\beta = -0.14, p < 0.05$). Relative to the split-group analysis (low and high levels of institutional support), the post-hoc analysis shows a significant relationship between pre-commitment and post-entry performance at high levels of home market institutional support ($\beta = 0.75, p < 0.01$). Additionally, we tested for the moderating effect of home market institutional support on the interaction between effectuation approach and causation approach to international network formation – post-entry performance relationship. The result suggests a negative moderation effect of institutional support on the joint effect of effectuation and causation approaches to international network formation on post-entry performance ($\beta = -0.18, p = 0.01$), which further confirms findings from the main study that the association between use of both effectuation and causation approaches to international network formation and post-entry performance is strengthened when home market institutional support is low.

Post-entry Performance						
Independent variables	Full sample		Low institutional support		High institutional support	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variables						
Firm size [#]	0.16 (0.20)	0.09 (0.22)	0.18 (0.05)	0.65 (0.05)	-0.08 (0.74)	-0.05 (0.82)
Firm age [#]	0.19 (0.28)	0.08 (0.45)	-0.02 (0.90)	-0.42 (0.17)	0.51 (0.08)	0.56 (0.05)
Internationalization experience [#]	-0.21 (0.20)	-0.12 (0.26)	-0.12 (0.34)	0.17 (0.49)	-0.23 (0.37)	-0.30 (0.24)
Industry type [†]	0.20 (0.08)	0.11 (0.09)	0.13 (0.13)	0.48 (0.08)	0.10 (0.66)	0.10 (0.65)
Domestic performance	0.45 (0.00) **	0.27 (0.00) **	0.31 (0.00) **	0.04 (0.81)	0.51 (0.02) *	0.42 (0.04) *
Home market institutional support	-0.25 (0.02) *	-0.13 (0.07)	-0.06 (0.57)	0.30 (0.18)	0.25 (0.28)	0.28 (0.23)
Main effect						
Causation	0.43 (0.00) **	0.24 (0.00) **	0.28 (0.00) **	0.16 (0.39)	0.42 (0.03) *	0.41 (0.03) *
Flexibility	0.01 (0.96)	-0.02 (0.81)	-0.10 (0.35)	0.16 (0.50)	0.15 (0.48)	0.19 (0.34)
Experimentation	0.06 (0.62)	0.10 (0.23)	-0.06 (0.55)	0.28 (0.26)	0.36 (0.07)	0.30 (0.16)
Pre-commitment	0.35 (0.00) **	0.24 (0.00) **	0.06 (0.49)	0.03 (0.87)	0.75 (0.00) **	0.66 (0.00) **
Affordable loss	-0.07 (0.57)	-0.07 (0.33)	0.00 (0.98)	-0.07 (0.73)	0.16 (0.39)	0.14 (0.49)
Interaction effect						
Causation x Flexibility		-0.18 (0.02) *		-0.50 (0.08)		-0.34 (0.06)
Causation x Experimentation		-0.01 (0.87)		0.21 (0.37)		-0.13 (0.53)
Causation x Pre-commitment		-0.14 (0.04)		-0.42 (0.08)		0.10 (0.56)
Causation x Affordable loss		0.05 (0.53)		-0.47 (0.06)		-0.08 (0.72)
Fit statistics						
χ^2/DF	1.49	1.53	1.38	1.39	1.38	1.39
CFI	0.97	0.96	0.93	0.92	0.93	0.92
NFI	0.90	0.89	0.79	0.77	0.79	0.77
NNFI	0.95	0.95	0.91	0.88	0.89	0.86
GFI	0.91	0.90	0.84	0.85	0.86	0.83
RMSEA	0.05	0.05	0.04	0.04	0.04	0.04
SRMR	0.05	0.06	0.06	0.06	0.06	0.06

Table 5: Post-hoc analysis

Notes: Standardized coefficients are reported with level of significance in parentheses; # = Natural logarithm transformation of the original values; † = Dummy variable; * p < 0.05 and ** p < 0.01.

6. Discussions and conclusion

6.1. *Contribution to theory*

The dynamics of international network formation and its effects on the post-entry internationalization processes and performance outcomes continue to receive growing scholarly attention in the international entrepreneurship literature (Galkina & Atkova, 2019; Kerr & Coviello, 2019). We contribute to this body of research by drawing insights from the effectuation theory to examine how effectuation and causation approaches to international network formation individually and jointly contribute to post-entry performance of INVs. Additionally, we cross-fertilize the effectuation theory with the institutional development logic by examining the home market institutional support boundary conditions of the effects of effectuation and causation approaches to international network formation on post-entry performance. This cross-fertilization is premised on the assumption that institutional frameworks and arrangements play a crucial role in the internationalization decisions of new ventures, especially for those competing in and out of weak institutional environments. Findings from the empirical study of INVs in a sub-Saharan African market – Ghana – advance the international network formation literature in three ways.

First, in drawing on the effectuation theoretical perspective, we find that both effectuation and causation approaches to international network formation individually contribute to variability in post-entry performance of INVs in Ghana. Thus, unlike previous research (e.g., de Vasconcellos et al., 2019) that suggests effectuation and causation to be opposing decision-making approaches, evidence from this study suggests that effectuation and causation approaches to international network formation can improve post-entry performance in a non-contradictory manner. We argue that although both network formation approaches help improve post-entry performance, the mechanisms underlying their effects are unique: whereas the effectuation approach drives post-entry performance on the basis of chance and rapid network formation processes, the causation approach contributes to performance through entrepreneurs' capability to purposefully select partners to meet pre-determined post-entry goals (Prashantham et al., 2019). An implication, therefore, is that INVs can draw on multiple approaches to international network formation and decision-making in international markets (Nemkova et al, 2015). Our findings advance the literature on how networks can help cushion resource constraints of new ventures and subsequently shape internationalization

processes and speed (e.g., Ellis, 2011; Gabrielsson & Gabrielsson, 2013). Additionally, the findings help address growing calls on international entrepreneurship researchers to provide a fine-grained examination of the role of networks in the internationalization process of entrepreneurial firms (see, Schwan et al., 2018). Relatedly, the findings mirror recent conceptual studies that seek to suggest that an effectuation network-building capability may have a significant implication for internationalization speed (Prashantham et al., 2019).

Second, findings from the study suggest that the interaction term of the effectuation and causation approaches is significantly related to post-entry performance in the full sample (see Table 6), suggesting that concurrent use of both approaches may obfuscate than facilitate the individual contribution of either approach. Importantly, this non-significant effect relationship provides support for the contention that developing a capability to concurrently deploy effectuation and causation approaches may be too costly for new ventures to accommodate, given the resource constraint challenges such firms face; hence, their post-entry performance benefits may be cancelled out by the cost of deploying both approaches concurrently (Yu et al., 2018). An implication, therefore, is that either effectuation or causation approach to international network formation may help improve post-entry performance when they are appropriately deployed.

Notwithstanding the non-significant effect relationship in the full sample, findings further indicate that, under conditions of low institutional support, post-entry performance is strengthened when INVs develop capability to pursue the effectuation and causation approaches concurrently. This finding highlights the value of developing an ambidextrous capability to form international networks when competing in and out of weak institutional environments where home market institutional support is low. What this means for INVs operating in weak institutional environments is that when faced with limited to zero home market institutional support, post-entry performance may be enhanced by developing an ambidextrous capability to complement effectuation and causation approaches to international network formation. This finding highlights and extends arguments in the strategy literature regarding the orthogonality of exploration and exploitation capabilities: while March (1991) and other researchers think of exploration and exploitation as opposing forces, proponents of ambidextrous capability views exploitation and exploration as

complementary to each other as opposed to diametric opposites with a contention that firms need to master alignment of these two diametrically opposed capabilities to enhance performance (cf. Gibson & Birkinshaw, 2004; Moorman & Slotegraaf, 1999). Just like exploration and exploitation, entrepreneurship researchers continue to debate how effectuation and causation approaches can co-exist within an organization (e.g., Harms & Schiele, 2012; Reymen et al., 2015; de Vasconcellos et al., 2019). In line with the ambidextrous capability view, this study shows that, under conditions of low home market institutional support, both effectuation and causation approaches can complement each other to improve post-entry performance.

Third, the contextual setting of the study provides a unique perspective on the effectuation theory. Importantly, entrepreneurship research suggests that entrepreneurial behaviors and decisions do not manifest in a vacuum; rather, they are largely enabled or constrained by contextual forces that are often beyond the control of entrepreneurs. Thus, in considering the weak institutional environment setting within which this study is empirically situated, we extend the international entrepreneurship literature by showing how new ventures use effectual and causal logics to build and deploy international networks to improve post-entry performance (Read et al., 2016; Reuber et al., 2016). In this way, we address recent calls on researchers to provide new perspectives on how effectual and causal logics operate under different institutional conditions (Ibeh et al., 2018; Prashantham et al., 2019).

6.2. Contribution to managerial practice and policymaking

Findings from the study provide useful lessons for entrepreneurs and policymakers seeking to improve performance of new ventures in international markets. First, the findings suggest that managerial-level decisions on the choice of international network approach can have significant implications for performance during the post-entry phase of the internationalization process. An important takeaway from this study is that while the use of either approach to international networking can help improve post-entry performance, concurrent use of both approaches may be too costly for new ventures to accommodate; hence it is important that INVs focus on deploying either one of the two approaches well.

Second, INV owner-managers whose home markets are characterized by low institutional support can take a cue from our findings on how to optimally develop and select their international networks. Evidence from the study suggests that new ventures that are burdened by institutional environment uncertainties and weakness in their home markets can use both effectuation and causation approaches in a complementary manner to maximize post-entry performance. In effect, the flexibility of using the effectual logic to form networks can be combined with the causal logic of carefully weighing the cost and benefit associated with selecting network partners to improve post-entry performance.

Third, from a public policymaking standpoint, evidence from the study suggests that entrepreneurs consider and evaluate conditions in home markets when making internationalization decisions. The level of home market institutional support available to INVs seems to be an important contingency factor; hence, it is important that policymakers step in to introduce international support services to INVs seeking to expand to international markets.

7. Limitations and future research directions

Our study is characterized by some limitations which provide avenues for future research. First, as demonstrated by our post-hoc analysis, one may argue that the dimensions of the effectuation approach to international network formation may drive post-entry performance differently as they are potentially distinct manifestations of the effectual logic (Yu et al., 2018). Thus, the mechanisms linking the dimensions of the effectuation-based networking formation may be different; hence, need a well-thought through theoretical articulation to help unearth how and the conditions under which each dimension influences post-entry performance outcomes.

Second, our study was limited to post-entry performance outcomes of effectuation and causation approaches to international network formation. Future research may benefit from studying the determinants of effectuation and causation. In this regard, future research may adopt a micro-foundations approach to study entrepreneurial attributes and preferences, leadership traits and capabilities as potential determinants of effectuation and causation (Vahlne & Johanson, 2020). By so doing, future research will help to broaden

scholarly knowledge on how effectuation and causation approaches to international network formation can be developed.

Third, although the contextualization of effectuation theory in internationalization is diverse, the current study is limited to the examination of home market institutional support within a single geographical location of a developing country as a boundary condition. Future research can extend our findings by incorporating wider contextual factors such as philosophies, cultural values, and formal and informal institutional settings across different developing economies (Vahlne & Johanson, 2017). In addition, a comparative study involving the use of primary or panel data (where available) from developed and developing economies could provide broader perspectives on how different infrastructural, sociocultural, and institutional conditions moderate the effect of effectuation and causation approaches to international network formation on post-entry performance.

Fourth, while discussions and empirical examination of the effectuation and causation approaches to international network formation continue to receive scholarly attention, it is important that scholars begin to explore other innovative approaches to observing and theorizing about this phenomenon. This study uses a survey-based data collection method to examine the phenomenon; however, future research might use a field experiment to directly examine how manipulation of the effectuation and causation approaches may influence specific performance outcomes. Additionally, future research might examine the phenomenon from a longitudinal perspective using panel data. Thus, in situations where panel data is available, future research may model how entrepreneurs' previous experience of institutional conditions influences their propensity to develop and use effectuation and causation approaches, while also moderating the effect of the two approaches on objectively measured post-entry performance.

Finally, post-entry performance was measured based on managers' subjective evaluation of international market performance of the INVs. Despite the difficulty of obtaining objective performance data on INVs as such firms are normally not legally required to report their financial records (Schoenberg, 2006; Oura et al., 2016), we recommend that, where possible, future studies should use objective data such as export sales,

export revenues, and profit margin from export operations reported in firms' annual reports and/or directly obtained from internal account records to measure post-entry performance.

8. Conclusion

This study drew insights from the effectuation theory to argue that both effectuation and causation approaches to international network formation are individually and jointly associated with post-entry performance. Additionally, the study drew arguments from the institutional development logic to suggest that the extent to which INVs benefit from effectuation and causation approaches to international network formation is dependent upon the degree of home market institutional support. These arguments were subsequently tested on a sample of 226 INVs competing in the international market from a sub-Saharan African market, Ghana. Findings from the study suggest that the relationship between use of both effectuation and causation approaches to international network formation and post-entry performance is strengthened when INVs perceive low home market institutional support.

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Appendix A: Results of Measure Validity Tests

Constructs, Details of Measures, and Results of Validity Tests	Standardized loadings
Causation $\alpha = 0.89$; $CR = 0.91$; $AVE = 0.62$ <i>Please indicate the extent to which you agree with the following statements in forming networks with international partners:</i>	0.77
We analyze long-run partnering opportunities and select partners on what we think will provide the best returns.	0.82
We have a clear and consistent vision for what we want from our partners.	0.77
We develop a strategy to best take advantage of our partners' resources and capabilities.	0.80
We organize and implement processes to make sure networks meet objectives.	0.78
Effectuation second-order construct	
Experimentation $\alpha = 0.88$; $CR = 0.88$; $AVE = 0.71$ <i>Please indicate the extent to which you agree with the following statements in forming networks with international partners:</i>	
We experiment with different network partners (e.g., customers, suppliers, competitors, and research institutions).	0.82
The partners that we now collaborate with are substantially different from what we first imagined.	0.86
We try different partners until we find the partners that are suitable.	0.84
Affordable loss $\alpha = 0.89$; $CR = 0.90$; $AVE = 0.74$ <i>Please indicate the extent to which you agree with the following statements in forming networks with international partners:</i>	
We are conscious of not committing to many partners than we could afford to lose.	0.85
We are careful of not risking so much money in initial network management investment than we could afford to lose	0.91
We are careful of not risking more money than the company would need in a difficult financial situation if the network did not work out.	0.82
Pre-commitment $\alpha = 0.79$; $CR = 0.80$; $AVE = 0.66$ <i>Please indicate the extent to which you agree with the following statements in forming networks with international partners:</i>	
We rely on a number of network partners including customers, suppliers, and other organizations to reduce the amount of uncertainty.	0.83
We often use pre-commitments from network partners including customers, suppliers, and other organizations.	0.80
Flexibility $\alpha = 0.86$; $CR = 0.86$; $AVE = 0.61$ <i>Please indicate the extent to which you agree with the following statements in forming networks with international partners:</i>	
We transform our networks as soon as partnering opportunities emerge.	0.69
We adapt to the needs of our partners.	0.73
We are flexible to take advantage of partnering opportunities as they arise.	0.87
We avoid the network action that can restrict our flexibility and adaptability.	0.83
Post-entry performance second-order	
Post-entry financial performance $\alpha = 0.90$; $CR = 0.91$; $AVE = 0.71$ <i>Please indicate the extent to which you are satisfied with the achievement of the following financial objectives:</i>	
Volume of international sales.	0.89
Growth rate of international sales.	0.86
Profitability from international activities.	0.87
Return on investment from international activities.	0.74
Post-entry non-financial performance $\alpha = 0.86$; $CR = 0.86$; $AVE = 0.55$	

Please indicate the extent to which you are satisfied with the achievement of the following non-financial objectives:

Strong reputation of the firm in international markets.	0.68
Introduction of new product and services in international markets.	0.72
Operations in various countries worldwide.	0.84
Timely launch of new product and services in international markets.	0.76
Establishing a strong position in international markets.	0.70

Domestic performance $\alpha = 0.85$; CR = 0.86 AVE; = 0.60

Please indicate the extent to which you are satisfied with the achievement of the following performance objectives:

Volume of domestic sales.	0.61
Growth rate of domestic sales.	0.85
Profitability from domestic activities.	0.89
Return on investment from domestic activities.	0.72

Home market institutional support $\alpha = 0.93$; CR = 0.94; AVE = 0.73

Please indicate the extent to which you agree with the following statements:

The government policies and programs are beneficial to our operations.	0.73
The government provides us with much useful business information.	0.86
We can find adequate and reliable information on customers in our home market	0.88
Unnecessary bureaucracy and weak legal systems characterize our business environment (r).	0.90
It is easy to obtain licenses such as import license and technological license.	0.88

Model fitness: Chi-square/df = 1.62; RMSEA = 0.052; CFI = 0.93; SRMR = 0.050; NFI = 0.92; NNFI = 0.91; GFI = 0.90

Notes: α = Cronbach's alpha; CR= composite reliability; AVE = average variance extracted; fit indices for

Appendix B: First and second-order CFA for post-entry performance and effectuation

Models	Chi-square/df	RMSEA	SRMR	CFI	NFI	TLI	GFI
Model 1a	1.66	0.05	0.04	0.98	0.95	0.97	0.95
Model 1b	1.74	0.05	0.05	0.97	0.95	0.97	0.95
Model 2a	1.35	0.04	0.03	0.99	0.98	0.99	0.97
Model 2b	2.12	0.06	0.05	0.96	0.97	0.96	0.97

Note: Model 1a: Effectuation first-order CFA; **Model 1b:** Effectuation second-order CFA; **Model 2a:** Post entry performance first-order CFA; and **Model 2b:** Post-entry performance second-order CFA.