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The Context Sensitivity of International Entrepreneurial Orientation and the Role of Process and Product Innovation Capabilities

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Drawing on a contingency perspective of the resource-based view of the firm, we test the thesis that a relationship between international entrepreneurial orientation (IEO) and the international performance of export-manufacturing firms is context-sensitive and contingent on innovation capabilities. Using time-lagged survey data from 369 Bangladeshi export-manufacturing firms in a least developed country (LDC) as an extreme empirical context, we predict that process and product innovation capabilities are essential to the relationship between IEO and international performance among export-manufacturing firms. We find that the effect of IEO on international performance is not positive; however, the relationship becomes positive when moderated by process and product innovation capabilities. International entrepreneurial firms in an LDC succeed when they can better align IEO-driven efforts with these capabilities. Our study advances knowledge on the context sensitivity of IEO and embellishes a resource-based theory of IEO.

Introduction

International entrepreneurial orientation (IEO) is a vital subset of entrepreneurial orientation (EO) (Clark and Covin, 2021; Covin and Miller, 2014) and emphasizes the entrepreneurial attributes of international ventures. IEO is a composite construct characterizing an entrepreneurial firm's forward-looking and opportunity-seeking behaviour distinguished by internationally oriented proactiveness, innovativeness and risk-taking. IEO requires capabilities to function successfully (Gupta, Pandey and Sebastian, 2021). The need to nurture critical capabilities is especially essential when a firm originates from an economy with few resources (Jin and Cho, 2018). Compared to developed economies, international entrepreneurial firms from least-developed countries (LDCs)[1] suffer from stagnant capacity, knowledge and resources (Mostafiz, Sambasivan and Goh, 2019) and weak institutional support to remedy these weaknesses (Ahmed and Brennan, 2019b). Given the significant risks of wild swings in firm performance made possible by an IEO, variations in IEO can (theoretically) lead firms into failure traps, where high-risk, innovative and proactive efforts are not matched by a firm's capability to convert those IEO-driven initiatives into successful international performance. In turn, LDC-originating international entrepreneurial firms (LIFs) grapple

[1]Least-developed countries are categorized based on the parameter of low gross national income per capita, weak human development index and high level of economic vulnerability (UNCTAD, 2015). Forty-nine countries are listed as LDC.

with environmental turbulences: they must internationalize to escape environmental turbulences (Wu and Deng, 2020), but scholars are yet to shed sufficient light on the boundary conditions necessary for their IEO-driven efforts to germinate success in an LDC. A dearth of knowledge explains the effects of IEO on LIFs, the context dependence of IEO and the capabilities needed for success (Chen, Lin and Tsai, 2020). Understanding these phenomena is essential for more targeted theory development for IEO (Covin and Miller, 2014; Gupta, Pandey and Sebastian, 2021) and closing the theory chasm between (I)EO as strategic orientation and the achievement of (international) performance (e.g. Hughes *et al.*, 2022). We address this critical research gap.

Covin and Miller (2014) observe that the performance benefits of IEO are not uniform. The IEO–international performance relationship is theoretically long-linked, and we predict that this link is destabilized for LIFs unless essential contingencies are put in place. Because scholars increasingly converge on the idea that a positive relationship between IEO and international performance is contingent on firm-specific capabilities (Gupta, Pandey and Sebastian, 2021), we argue that IEO can generate a range of initiatives, some of which yield large gains and others significant losses (Covin and Miller, 2014). This variation is nihilistic for LIFs, indicating that a theory for IEO among LIFs must uncover the capabilities needed to match IEO to the requirements of the business environment. For instance, firms originating from developed economies are fortunate with more robust institutional support, an innovation ecosystem, advanced technologies and infrastructures and access to richer functioning markets. Therefore, (I)EO may assume greater prominence. In contrast, however, LIFs must rely more on developing in-house capabilities (Mostafiz *et al.*, 2021b) because entrepreneurial tendencies are not equally effective due to differences in the contexts in which firms operate (Li *et al.*, 2018). Since LIFs' opportunity costs are more significant, it is essential to identify which capabilities are most urgent to develop. Therefore, we set conditional boundaries for the IEO–international performance relationship and pose the question: *what firm-specific capabilities impact the relationship between IEO and international performance among LIFs?*

To productively convert IEO into international performance among LIFs and reduce or terminate a preponderance of destructive projects, we theorize that process and product innovation capabilities (Nuruzzaman, Gaur and Sambharya, 2018; Shan, Song and Ju, 2016) are essential and represent missing contingencies in a resource-based theory of IEO in an LDC context. Scholars (e.g. Jin and Cho, 2018; Karami and Tang, 2019) argue that process and product innovation capabilities play unequivocal roles in optimizing manufacturing processes and lead firms to develop new and improved products, respectively. Therefore, we propose that the willingness for international entrepreneurship exhibited through an IEO will generate internal performance but only when productive process and product innovation capabilities are available to match that willingness with ability. We expect this among intensive apparel export-manufacturing firms to stay competitive in the international market (Mostafiz *et al.*, 2021a). Drawing on a contingency perspective of the resource-based view (RBV) (Engelen *et al.*, 2015), given weak process and product innovation capabilities, IEO-driven efforts will lead firms to use resources unproductively, escalating a failure trap that causes vulnerable LIFs to fail internationally. Hence, using the RBV (Barney, 1991) along with its contingency perspective (Engelen *et al.*, 2015), we test whether process and product innovation capabilities moderate the conversion of IEO-driven efforts into successful international performance among LIFs, especially for those firms in an institutionally and environmentally challenged economy in which environmental turbulence is commonplace (Bouguerra *et al.*, 2022; Kearney, Soleimanof and Wales, 2018). Taken together, we propose that an IEO–performance relationship is sensitive to firm-specific capabilities essential for LIFs to succeed in international markets.

Our contributions to the literature are twofold. First, anticipating that IEO is context-sensitive, our research offers rich theoretical development by explaining IEO's taxonomy in an LDC. Without acknowledging the capabilities needed to bolster the production efficiency (i.e. process innovation) and market penetration functions (i.e. product innovation) of export-manufacturing firms, IEO will manifest aggressive but unproductive opportunity-seeking behaviour, causing underwhelming or even negative returns to international performance. We propose a novel solution to this dissension. Second, we theorize a contingent RBV model and identify firm-specific

capabilities intercepting the relationship between IEO and international performance. We argue that international entrepreneurial export-manufacturing firms in an LDC can only succeed by developing and using process and product innovation capabilities to convert their international forward-looking, opportunity-seeking and risk-taking initiatives into economic success. Both our contributions help resolve why studies on the relationship between IEO and firm performance are mixed and inconclusive (Gupta, Pandey and Sebastian, 2021), the unintended consequences of manifesting IEO in an LDC and why (despite popular belief) IEO *by itself* is unlikely to be a recipe for long-term organizational success.

Theoretical foundation and hypothesis development

International entrepreneurial orientation

IEO is a behavioural scaffolding for firms to become more internationally entrepreneurial. While often depicted as being made up of the same core elements as the broader (and traditional) firm-level EO construct, IEO is a subcategory of EO that includes an additional distinguishing element – an 'international' emphasis (Covin and Miller, 2014). IEO is defined as 'the behaviour elements of a global orientation and captures top management's propensity for risk-taking, innovativeness and proactiveness' (Freeman and Cavusgil, 2007, p. 3). Covin and Miller (2014) observe that many studies claiming to investigate IEO actually measure 'EO in an international context' (e.g. Kuivalainen, Sundqvist and Servais, 2007), which is not the same as an 'international entrepreneurial orientation'. As Covin and Miller (2014) emphasize, IEO is not merely EO in an international context because IEO is responsible for making new market entries *across borders* (Wales *et al.*, 2019) and contains distinguishing features due to an international emphasis (Gupta, Pandey and Sebastian, 2021) specifying the manifestation and conduct of internationally focused risk-taking, innovativeness and proactiveness. The risk-taking element of IEO is responsible for an inclination to take risks internationally to respond to foreign market uncertainty (Covin and Miller, 2014) using experimentation and efforts to act outside of conventional routines in operating globally (Boso, Oghazi and Hultman, 2017). Innovativeness refers to the tendency to develop new products/services for the international market(s) (Story, Boso and Cadogan, 2015) and inventively introduce those innovative products/services internationally (Boso, Story and Cadogan, 2013). The proactiveness element of IEO captures firms' tendency to recognize and exploit international market opportunities before rivals (Boso, Oghazi and Hultman, 2017). Hence, IEO is a potentially pivotal characteristic of international entrepreneurial firms to compete internationally and outperform their rivals.

We reviewed prior studies on IEO[2] and identified mixed results (see Table 1). For instance, Bianchi, Glavas and Mathews (2017) report non-significant direct effects from IEO on international performance among Chilian firms; similarly, Jin and Cho (2018) also report non-significant direct effects from IEO on the export performance of South Korean firms. Both studies highlight the need for contingency effects to transform the non-significant effects of IEO into significant performance outcomes. However, prior studies also report negative effects from IEO and its dimensions on the strategic actions of an organization (e.g. Boso, Oghazi and Hultman, 2017; Kurtulmus *et al.*, 2020), suggesting that the value of IEO is context-specific. They emphasize the need for capabilities as contingencies to overcome the negative consequences of IEO-driven efforts. By contrast, in a developed economy such as Spain, IEO positively influences the performance of the organization (Hernández-Perlines and Mancebo-Lozano, 2016; Hernández-Perlines, Moreno-García and Yañez-Araque, 2016). These mixed results motivate us to consider the context sensitivity of IEO and resource-based contingencies to realize the consequences of successfully manifesting IEO within an organization.

The IEO–international performance relationship hinges on various capabilities (Covin and Wales, 2019; Wales *et al.*, 2013) and the context in which the firm operates (Yin, Hughes and Hu, 2021). Recent studies (e.g. Table 1) point to the context sensitivity of IEO among entrepreneurial firms in institutionally and environmentally challenged economies, and its potential reliance on innovation activities to convert the *willingness* to

[2]We reviewed articles on IEO published from 2013 to 2021. We excluded those articles that operationalized EO in an international context or measured IEO using EO elements alone, devoid of an international component.

Table 1. Heterogeneities in IEO studies

Authors	Research context	Findings
Zhang, Sarker and Sarker (2013)	81 Chinese and 66 US-born global (BG) firms	IT capability mediates the relationship between IEO and international performance among Chinese and US BG firms.
Glavas and Mathews (2014)	Eight Australian travel and tourism firms	The innovativeness and proactiveness of IEO influence the Internet capabilities of the firm. In contrast, the risk-taking propensity of IEO plays the most negligible role in reshaping the international business process of Australian travel and tourism firms.
Barbat, Hlady Rispal and Randerson (2014)	Eight firms (multi-industry) in France	Firms with a higher level of IEO have a better level of export; however, with an incremental and slow internationalization process. Firms with lower levels of IEO do not initiate export activities but leverage their different networks to achieve their export activities. As a result, those firms export faster, but with a lower level of IEO, the levels of export activity are modest and some of them stop exporting.
Gerschewski, Rose and Lindsay (2015)	147 BG and 163 non-BG firms in New Zealand and Australia	For BG firms, global vision, perseverance, innovativeness and proactiveness influence financial and operational performance; however, they do not significantly impact perceived success. For non-BG firms, global vision and perseverance positively impact operational performance and perceived success; however, they do not impact financial performance. Moreover, the innovativeness and proactiveness of non-BG firms do not have any impact on any of the three dimensions of international performance.
Emőke-Szidónia (2015)	122 Romanian firms (multi-sector)	International risk-taking positively impacts international sales in all environments and on international profitability in dynamic foreign markets. However, the linear effects of IEO on foreign sales and international profitability were non-significant. International innovativeness also has a non-significant impact on international performance.
Calabrò *et al.* (2017)	113 German family firms	IEO mediates the relationship between external influence and the pace of internationalization.
Swoboda and Olejnik (2016)	604 German SMEs	IEO mediates the relationship between market scanning/international planning and international performance.
Hernández-Perlines, Moreno-García and Yañez-Araque (2016)	174 Spanish family firms	Competitive strategy mediates the relationship between IEO and international performance. Among the three dimensions of IEO, innovativeness is the most critical attribute of IEO, explaining 25% of international performance.
Hernández-Perlines and Mancebo-Lozano (2016)	174 Spanish family firms	Competitive strategy mediates the relationship between IEO and international performance. In addition, the business environment has contingency effects on the mediation role of competitive strategy between IEO and international performance.
Glavas, Mathews and Bianchi (2017)	208 Australian firms (multi-sector)	International vision mediates the relationship between IEO and international opportunity recognition.
Bianchi, Glavas and Mathews (2017)	233 Chilian entrepreneurial firms	IEO has non-significant direct effects on international performance. However, technology-related international networks and opportunity recognition capability mediate the relationship between IEO and firm performance.

Table 1. (Continued)

Authors	Research context	Findings
Boso, Oghazi and Hultman (2017)	214 Ghanaian exporting SMEs	Product innovativeness intensity and autonomous behaviour have negative effects on regional expansion. However, the effects of proactiveness on regional expansion have been eliminated when channel management capability levels of the firm are higher but strengthen the effects of risk-taking and competitive aggressiveness on regional expansion.
Acosta, Crespo and Agudo (2018)	161 Mexican exporting SMEs	IEO affects international performance through networking capability. IEO also affects international market orientation; however, international market orientation's effects on international performance are non-significant.
Jin and Cho (2018)	470 South Korean exporting SMEs	IEO has non-significant effects on export performance. Technological and marketing capabilities mediate the relationship between IEO and export performance.
Hernández-Perlines and Xu (2018)	218 Spanish family firms	IEO has non-significant effects on international performance. Absorptive capacity mediates the relationship between IEO and international performance.
Yoon, Kim and Dedahanov (2018)	334 South Korean technology-based SMEs	Networking capability moderates the relationship between IEO and international performance.
Li *et al.* (2018)	237 Canadian hi-tech SMEs	Stronger IEO leads to performance below aspirations, whereas the performance of the firms increases when IEO diminishes. In addition, when small firms experience performance below aspirations, host-country market potential moderates the negative relationship between performance below aspiration levels and IEO.
Zizah *et al.* (2018)	50 Malaysian construction firms	Proactiveness has been identified among all dimensions of IEO as the most influential dimension to going global.
Birru *et al.* (2019)	159 Ethiopian exporting firms	Export market-orientated capability moderates the relationship between IEO and financial performance. IEO also influences the strategic export performance of the firms.
Kurtulmuş, Katrinli and Warner (2020)	180 Turkish SMEs	IEO negatively affects the financial performance of the firms. Furthermore, the informal institutional framework mediates the relationship between IEO and perceived financial performance.
Freixanet *et al.* (2020)	128 Spanish firms (multi-sector)	IEO has non-significant effects on innovation performance. However, open innovation positively mediates the relationship between IEO and innovation performance.
Raats and Krakauer (2020)	Four Brazilian air sport firms	IEO is beneficial for monitoring the environment and forecasting competitors' actions in the international market.
Lin, Cao and Cottam (2020)	208 Chinese firms in the electronics and textile sector	IEO mediates the relationship between TMT's global mindset, international networking and knowledge acquisition activities.
Maksimov and Luo (2021)	208 Chinese MNEs	Innovativeness fully mediates goal diversity's effects on responsiveness and market scope but partially mediates the effects of goal diversity on cooperativeness. Proactiveness partially mediates goal diversity's impact on responsiveness and cooperativeness but fully mediates goal diversity's influence on the market scope. Finally, risk-taking partially mediates the effect of goal diversity on responsiveness but fully mediates the effect of goal diversity on market scope and cooperativeness.

innovate in uncertain, risky and proactive ways into an *ability* to do so *productively* (Arzubiaga *et al.*, 2018; Hughes *et al.*, 2021a, 2021b). For instance, firms from developed economies and LDCs may not achieve similar benefits by manifesting IEO as the performance outcomes of IEO can vary in dramatic ways, ranging from enormous gains to catastrophic losses (Covin and Miller, 2014) because of the exploration component built into EO and its subsets (IEO). Hence, a contingency perspective offers a theoretical scaffolding for the IEO–international performance relationship among LIFs by concentrating on aligning capabilities and addressing environmental turbulences. Based on this logic, we assert that possessing and leveraging firm-specific innovation capabilities is essential (Jin *et al.*, 2022) for entrepreneurial firms from LDCs to convert IEO-driven efforts into *productive* returns to international performance (for a discussion about the potential unproductiveness of EO and its subsets, see Covin and Wales, 2019; Hughes *et al.*, 2022). Without valuable innovation capabilities, we predict a greater risk of unproductive entrepreneurial projects occurring and far more damaging consequences to the inherently resource-constrained LIFs. Their inability to access mature strategic factor markets further highlights why the ownership of good internally built innovation capabilities should distinguish higher and lower-performing LIFs.

Resource-based view and capabilities

The RBV refers to bundles of abilities and skills embedded in organizational routines necessary to secure competitive advantages by their potential to transform initiatives into valuable outcomes (Jin and Cho, 2018). We assert that the relationship between IEO and firm performance is capability-dependent, creating ever-increasing internal resource demands to sustain its tendencies. In a contingency perspective of RBV (Engelen *et al.*, 2015), we argue that effective innovation capabilities will vastly improve the resource usage of IEO, generating more productive outcomes from IEO and mitigating its high cost. Among the two regimes of innovation capabilities relevant to export-manufacturing firms' context, process innovation capability is defined as the ability of a firm to introduce new manufacturing mechanisms to achieve cost-effectiveness, optimize existing production mechanisms and render services efficiently and effectively (Damanpour, 2010). Product innovation capability is the firm's ability to develop 'new products and services that are introduced to meet external user's need' (Damanpour, 2010, p. 997). The RBV asserts that a firm achieves competitive advantages by leveraging capabilities. Innovation capabilities can impact LIFs by improving resource configuring to better convert strategic behaviour into more productive outcomes and fewer unproductive outcomes (Damanpour, Walker and Avellaneda, 2009). Without innovation capabilities, LIFs in the export-manufacturing apparel industry of Bangladesh can face inefficiencies and potentially devastating failure traps (a cycle in which exploratory efforts continue to fail due to an ineffective ability to commercialize successfully) that ultimately will result in poor international performance. This is especially important from an IEO perspective since entrepreneurially oriented behaviours can lead to tenuous projects pursued in the name of risk-tolerance, innovativeness and proactiveness but not for any strategic utility (Covin and Wales, 2019; Hughes *et al.*, 2022).

LIFs can benefit from low labour cost. However, poor institutional support and an immature strategic factor market hinder entrepreneurial success. Innovation capabilities must then be nurtured internally to remedy these contextual constraints. For instance, Teece, Pisano and Shuen (1997) highlight that innovation capabilities improve technical functionality, volume activity, facilitate firms to develop new products/services, optimize operations and improve product quality (Ferreras-Méndez *et al.*, 2021). Process innovation capability supports efforts to modernize the manufacturing process to handle scarce raw materials optimally, and product innovation capability delivers solutions to respond to changes in market needs and competition (Martinez-Ros, 1999). Hence, an RBV-derived contingency logic provides a theoretical grounding for the organization's process and product innovation capabilities to improve the impact of IEO initiatives on international performance.

The relationship between IEO and international performance

International performance is multifaceted, including a combination of financial performance (e.g. return on assets (ROA), return on equity (ROE)

and return on investment) and market-based performance (e.g. market share, global reputation, perceived achievement of market goals, etc.) (Hult *et al.*, 2008). We hypothesize that implementing IEO will not necessarily benefit LIFs. Three arguments contribute to this hypothesis. First, international firms with high innovativeness might enhance international performance by excelling at initiatives to develop new products and services routinely and not sporadically (Zahra and Garvis, 2000). Nevertheless, LIFs have few slack resources, operate in weakly developed factor markets and struggle to access financial capital. These are more readily accessible or acquirable among their peers in developed countries. The innovativeness component of an IEO is resource-intensive, suggesting that LIFs will struggle to effectively transform a commitment to novelty and innovativeness across their international operations into strong international performance. Second, LIFs could achieve first-mover advantages by proactively recognizing attractive opportunities and acting ahead of competitors. However, for LIFs, such highly proactive behaviour and risk-taking threaten stretching a firm's limited resources in a way that is neither sustainable nor viable for its existing international operations. A firm's capacity to generate revenue originates from making its existing activities efficient and effective. This implies that a more exploitative orientation is needed to grow and stabilize the resources required to fuel more entrepreneurial endeavours (Hughes and Morgan, 2007; Hughes *et al.*, 2021a, 2021b). For LIFs, its resources are stretched, its domestic and regional factor markets are underdeveloped and it is vulnerable to better-endowed competitors and fierce price competition (Shamsuddoha, Ali and Ndubisi, 2009). Therefore, expectations among studies of exporting firms in more developed markets about strategizing around the ability to negotiate and charge a premium price and exerting bargaining power (Thanos, Dimitratos and Sapouna, 2017) when proactively entering new (and often embryonic) markets are more complex for the LIFs. Third, LIFs proactively explore new markets and regularly monitor emerging trends to be in a privileged position to respond quickly to a dynamic international market (Mostafiz *et al.*, 2021b). However, the LIFs attempting such features of IEO contest with stagnant capacity and little institutional support (Ahmed and Brennan, 2019b).

Therefore, in isolation, we expect LIFs to exhibit a general tendency to struggle to convert high levels of IEO into returns to international performance. At high levels of IEO, we expect the quantity and nature of innovativeness, proactiveness and risk-taking to overtake the ability of the LIFs to realize the value and create wealth. At low to medium levels, we expect IEO to be more feasible to implement across its exporting activities. Therefore, based on these arguments, we hypothesize:

H1: IEO is negatively related to the international performance (*H1a*: financial performance and *H1b*: market-based performance) of LIFs.

The contingency role of innovation capabilities

H1 represents what we expect under a general tendency from increasingly high levels of IEO on the LIFs' international performance. However, we expect that some LIFs can better capitalize on firm-specific capability-based contingencies to change their system of constraints and better leverage IEO to accumulate its potential benefits. Prior theory predicting a positive relationship between IEO and international performance occurred before recent insights into the context sensitivity of an EO (Yin *et al.*, 2021) and concerns that (I)EO should be manifested with caution (Wales, Covin and Monsen, 2020). The contingency perspective can promise that the IEO–international performance relationship is subject to the firm's innovation capabilities to *realize* value from IEO initiatives. For instance, studies of EO (based on the contingency perspective; Engelen *et al.*, 2015) suggest that firms rely on information and learning capabilities (Kearney, Soleimanof and Wales, 2018), especially those firms in emerging economics (Hughes *et al.*, 2018b). Innovation capabilities can resolve the paradox between the *willingness* and motivation to be (internationally) entrepreneurial (an IEO) and the *ability* to do so in a way that creates wealth (Arzubiaga *et al.*, 2018; Hughes *et al.*, 2021b).

Innovation capabilities are the amalgamated competencies of the firms capturing their ability to innovate valuable new products and processes (Mostafiz, Ahmed and Hughes, 2022). Progressive organizational culture, senior leadership and cross-functional integrations play critical roles as antecedents to product innovation capability (Slater, Mohr and Sengupta, 2014), whereas

tacit knowledge search breadth and depth have achieved wider attention as a determinant of process innovation (Aliasghar, Sadeghi and Rose, 2020; Terjesen and Patel, 2017). To enter international markets entrepreneurially and competitively, firms must leverage product innovation capability to improve the existing design, extend product range and develop new and novel products at affordable prices that satisfy market needs and achieve competitive advantages in international markets (Kim and Jeong, 2014). Furthermore, Ahsan *et al.* (2022) and Ferreras-Méndez, Llopis and Alegre (2022) signify that high-level product innovation capability intensifies product development speed and increases new product performance. Currently, other firms' internal capabilities, such as marketing, can also benefit from a superior product innovation capability because of the added effects this capability has on achieving differentiation and diversification to feed international performance (Cascio, 2011; cf. Hughes *et al.*, 2019). Among apparel LIFs, for example, the continuous innovation of product offerings supports the ability of firms to grow their negotiating power (Islam and Polonsky, 2020).

Second, a deficiency common to any manifestation of EO can equally prompt unproductive, tenuous entrepreneurial initiatives, especially at high levels, just as it might prompt high-potential initiatives (Covin and Wales, 2019; Hughes *et al.*, 2022). This tendency originates from its exploratory nature. For example, the more the LDC LIFs seek new, embryonic market opportunities (under its proactiveness) and risk organizational resources in pursuit of novel initiatives (its innovativeness), the more likely it is that those bets do not pay off (its risk tolerance) while at the same time stretching its limited resources thinly and sparsely (Hughes *et al.*, 2021b). Superior product innovation capabilities increase the likelihood that the firm can generate a meaningful innovation to match against those international opportunities.

Third, unlike a general EO (Covin and Wales, 2019), IEO has a built-in strategic intent insofar as the focal point of its efforts is international market expansion. Firms with a high frequency of IEO must match their internal capabilities to this entrepreneurial strategy before consuming large quantities of resources to exploit international opportunities (which, at high levels of IEO, will gear towards new and embryonic markets where novel solutions are sought and where a high risk-to-return ratio is tolerated). As the outcome of product innovation capability is to introduce new products/services or redesign existing offerings (Roberts, Palmer and Hughes, 2022), we argue that a high level of IEO will only create a successful outcome when firms possess a high level of product innovation capability. An IEO is intended to seize new business opportunities, expand international market operations and explore and export products to the new international market (Covin and Miller, 2014). However, none of these intentions can be profitably realized without high-quality and diversified products at affordable prices. These outcomes are realizable through a high-standard product innovation capability. For example, competition among apparel firms in Bangladesh is exceptionally high and not limited to the domestic market, spreading widely into the international market with firms from Vietnam and India (Mostafiz *et al.*, 2021b). Moreover, a feature of LDCs is the imminent threat to LIFs' survival when extremely scarce resources are consumed with little to no assured return. Stated differently, LIFs simply cannot afford a high resource consumption rate (inevitable from a high IEO) *without* the capacity to *productively realize* value from its initiatives. This capacity originates from an effective product innovation capability.

Therefore, nurturing product innovation capability in apparel export-manufacturing firms is not a luxury for wealth creation but a necessity for survival (Mostafiz *et al.*, 2021b). In more developed countries, internationally entrepreneurial firms can sustain resource attrition from failed exploratory endeavours by accessing mature financial and factor markets to 'go again'. LIFs' ability to access market at low cost is far diminished, meaning these LIFs must do the most with less and do so efficiently. This is achieved through superior product innovation capabilities (Krammer and Kafouros, 2022), and we project that it is far more challenging for apparel export-manufacturing LIFs to accrue wealth from IEO in the absence of this capability. Based on these arguments, we hypothesize:

H2: Product innovation capability positively moderates the relationship between IEO and the international performance (*H2a*: financial performance and *H2b*: market-based performance) of LIFs.

A process innovation capability enables firms to reduce manufacturing costs and achieve economies of scale (Damanpour, 2010). Intensive apparel export-manufacturing LIFs will struggle to get much traction in international markets without economies of scale (Mostafa and Klepper, 2018). Process innovation capability augments the conversion of inputs (i.e. raw materials) into outputs (finished goods) by reconfiguring the manufacturing mechanisms of the organization (Langley, Pals and Ort, 2005). Significant reconfiguration of resources is made possible when firms absorb (Bouguerra *et al.*, 2021) and embed superior knowledge and routines to re-engineer production processes, better integrate technologies, introduce modern machinery, deploy resources efficiently and possess complete managerial control of overall manufacturing facilities (Hughes *et al.*, 2018a). A benefit of high levels of IEO is its contribution to organizational learning and increasing a firm's knowledge stocks. To use these knowledge resources, the LIFs should reconfigure manufacturing mechanisms that convert that knowledge into superior production, expanding the firm's efficiency at using its resources in pursuit of cost advantages in the international market. However, entrepreneurially ambitious export-manufacturing firms face unintended consequences when possessing low process innovation capabilities, including failing to capitalize on international opportunities in timely and cost-efficient ways due to limitations in their manufacturing activities. For example, strong process innovation capabilities are needed to capitalize on new knowledge about technological advancements, new sources of raw materials, manufacturing plants and equipment and production technologies. A better-quality management system commensurate with a high process innovation capability enhances the manufacturing firm's performance by introducing advanced manufacturing facilities resulting from process innovation (Schniederjans, 2018). In resource-based terms, a process innovation capability increases the firm's viability by making more efficient and effective use of its resources against its business strategy (Najafi-Tavani *et al.*, 2018).

Therefore, LIFs with low process innovation capabilities are likelier to fail or underperform against their international market rivals because of weaker cost competitiveness and deficient manufacturing times. Stated differently, the LIFs in the apparel export-manufacturing industry will be in no position to capitalize on international market opportunities detected through a high IEO, or to do so in a way that will profit the firm. On the other hand, rivals with high IEO and high process innovation capability will be faster, more efficient, effective and able to deliver against market needs and experience the greatest returns to international performance. Based on these arguments, we hypothesize:

H3: Process innovation capability positively moderates the relationship between IEO and the international performance (*H3a*: financial performance and *H3b*: market-based performance) of LIFs.

Research methodology

Research context

Despite making strides in its industrialization, Bangladesh represents a labour-intensive but resource-constrained economy.[3] The apparel industry comprises approximately 5000 firms and currently exports to around 151 countries. Even though the country suffers from weak institutions, infrastructure deficiencies and economic volatility, the apparel industry has been thriving and has achieved striking success (Ahmed and Brennan, 2019a). The benefits of process innovation capabilities among these LIFs in the apparel industry are well-argued (Islam and Polonsky, 2020), as are those of a product innovation capability (Mostafiz *et al.*, 2021b). Due to high competition in international markets, these apparel LIFs pour significant resources into developing in-house research and development (R&D) (Textile Today, 2016a). Decades ago, these firms were contract manufacturers for Western brands (e.g. H&M, Zara, Spirit, etc.). However, Mostafiz *et al.* (2021b) have shown that they now espouse entrepreneurship, actively recognize opportunities and no longer operate as contract manufacturers. Given the distinguishing features of LDCs, the context-sensitive nature of IEO and the capabilities these firms should nurture, Bangladeshi apparel LIFs represent an

[3]A resource-constrained economy is a hallmark of an LDC, and consists of weak institutions, deficiencies in its infrastructures, weak market progression and extreme economic volatility, of which Bangladesh is a referent example (Hoskisson *et al.*, 2013).

excellent research site to test our theoretical framework.

Sample and research design

We selected sample firms from the database of BGMEA. Approximately 5000 firms are registered with BGMEA. These registered firms are 100% export-oriented and are not allowed to generate domestic revenue (BGMEA, 2022). We administered 800 paper-based questionnaires (in English) to these firms using the random sampling method. The entrepreneurs/founders are solely responsible for taking all strategic and significant decisions for these firms. The founders/entrepreneurs (key informants) were responsible for answering the questions on the firms' IEO, product and process innovation capabilities. We follow Mostafiz, Sambasivan and Goh (2019) to determine the status of international entrepreneurial firms. We asked the entrepreneurs: *whether the firm introduced any new products in the international market in the last three years*; *whether the firm exported new/existing products in the new international market in the last three years*; *whether the firm identified and recognized any new/novel opportunities in the last three years*. The mean values of these questions (on a seven-point Likert scale) are 6.19, 6.68 and 6.03, respectively, representing a high level of international entrepreneurship.

During the first wave of data collection, we encountered difficulties collecting data directly from the entrepreneurs/founders due to their busy schedules (not more than 10%). We approached the next person in charge (deputy managing director) to provide data on IEO and innovation capabilities in those circumstances. This data collection approach helped this study control social desirability bias by allowing a second person to respond to the questionnaires (Chandler and Hanks, 1994). Furthermore, for data accuracy, we reviewed the responses from an anonymous person (e.g. general manager/deputy general manager) in the firm. After multiple follow-ups, we received 377 complete responses. The response rate was 47%. During the second wave (four months from the first wave), we collected international performance data from the finance and operational managers of these firms. We convinced and managed to obtain objective data on ROA and ROE from the finance managers. We assured the firms that the financial data would only be used for research purposes and not be disclosed elsewhere. The operational manager provided information on the market-based performance of the firm on a Likert scale.

We collected and checked each firm's first-time internationalization and export percentage. We identified that our sample of firms generated 100% revenue from international markets from inception. We also collected data on the in-house R&D activities of the firms on a five-point scale (from very low to very high); the mean value is 4.39, which implies that the sample has considerable R&D practices in place. The results of R&D practices among these firms show consistency with the findings of Nichols (2020). Additionally, we assessed informant competence in both waves on a five-point Likert scale. The mean values of informant competence were 4.03 and 4.39, respectively, indicating that respondents were well-informed and competent to provide the necessary information (Heide and Weiss, 1995).

Measurement

International entrepreneurial orientation

IEO could be operationalized as both individual-level and firm-level constructs. Covin and Miller (2014) assert that the conceptualization of IEO as an individual-level construct is ambiguous because IEO has been empirically assessed mostly at the firm level. IEO is a composite construct distinguished by *proactiveness*, *innovativeness* and *risk-taking* with an international emphasis. We operationalized IEO as a second-order construct consisting of these three sub-dimensions with items sourced from Hernández-Perlines, Moreno-García and Yañez-Araque (2016). We measured IEO on a seven-point Likert scale, where 1 indicated strongly disagree and 7 indicated strongly agree.

Process and product innovation capabilities

The items for process and product innovation capabilities were adopted from Camisón and Villar-López (2014). Eleven items were used to measure process innovation capability, and five items were used to measure product innovation capability of the firm on a seven-point Likert scale, where 1 indicated strongly disagree and 7 indicated strongly agree.

International performance

We measured the firm's international performance based on subjective (market-based) and objective (financial) items. Scales were adopted from Gerschewski, Rose and Lindsay (2015) and Karami and Tang (2019) to capture market-based performance and its perceived success. Eight items were used to measure market-based performance on a seven-point Likert scale, where 1 indicated strongly disagree and 7 indicated strongly agree. We followed Jantunen *et al.* (2008) and Cerrato and Piva (2015) to measure financial performance. Objective items measured financial performance, including ROA and ROE. We collected objective financial data for the last 3 years and averaged it for inferential statistical analyses.

Control variables

This study adopted four variables to control for other factors that may influence (or alternatively explain) the results. We followed Cruz-González *et al.* (2014) to operationalize the firm's age and size control variables. First, the natural logarithm of the *number of employees (executives and workers)* and *firm's age* were used as control variables for the firm's size and age, respectively. Jantunen *et al.* (2005) note that both firm size and age are assumed to have a positive impact on the international performance of the firm as a 'larger firm has a larger pool of resources to exploit and the possibility to achieve advantages of scale in its international operations' (p. 232). The entrepreneurs were asked to provide information on environmental dynamism. We sourced two items of environmental dynamism from Jantunen *et al.* (2005) as 'impact of changes in the market' and 'changes in the legal rules on performance', where 1 represents very high impact and 7 illustrates low impact. Previous studies highlight that higher dynamism in the market is beneficial and opens new opportunities for new entrants, whereas it can also increase the challenges of operating the business due to high volatility in the market (Jantunen *et al.*, 2005). Finally, we sourced export assistance from Sousa and Bradley (2009) by asking the entrepreneurs about *export assistance from government* and *other trade associations*. Firms in Bangladesh might achieve better performance with export assistance than firms with less assistance. Due to weak institutional infrastructure and bureaucracy in Bangladesh, these subsidies provide financial support to apparel firms (Shamsuddoha, Ali and Ndubisi, 2009).

Results and findings

Descriptive statistics. We conducted the Mahalanobis D-square test ($p < 0.001$) to identify the outliers in the data (Hair *et al.*, 2010). We also computed Mardia's multivariate kurtosis for multidimensional normality (Mardia, 1970). We deleted eight outliers (i.e. cases > 0.001) and carried forward 369 valid observations for statistical analyses. The sample firms in this study ranged from 5 to 16 years old (mean 11.4, SD 2.83) and the number of executives ranged from 25 to 200 employees (mean 91, SD 13.68); the number of workers ranged from 270 to 2040 (mean 1203.48, SD 142.73). Table 2 highlights the correlation results of the variables. The skewness and kurtosis values represent the normal distribution of the dataset, and the VIF values show that the effects of multicollinearity are minimal (<5.0) (Graham, 2003). A non-response bias test was conducted using an independent t-test (Armstrong and Overton, 1977). We identified non-significant variances among key variables, eliminating the impact of non-response bias in this study.

Common method variance

We computed Harman's single-factor test to check common method variance (CMV) effects. The result of the first component percentage of variance was less than 50% (18.69%). Next, we conducted a single latent factor analysis to eliminate the issues of CMV. All items were loaded to a single factor using AMOS. The results of the single latent factor analysis ($\chi^2 = 6106.903$, df = 779, $p < 0.000$, $\chi^2/df = 7.841$) are significantly different compared to the five-factor confirmatory factor analysis (CFA) results ($\chi^2 = 1586.638$, df = 753, $p < 0.000$, $\chi^2/df = 2.107$). We built psychological separation into the questionnaire (including questions not used in this study) to ensure that the respondents were unaware of the research goal (Chang, Van Witteloostuijn and Eden, 2010). Furthermore, the time-lagged survey data collection procedure was followed. This data collection approach also helped us control the simultaneity threat of endogeneity (Guide and Ketokivi, 2015). Hence, based on these initiatives and the statistical

Table 2. Correlation matrix and descriptive statistics (N = 369)

Constructs	1	2	3	4	5
(1) International entrepreneurial orientation	0.714				
(2) Process innovation capability	0.207[a]	0.717			
(3) Product innovation capability	0.227[a]	0.286[a]	0.836		
(4) Financial performance	0.240[a]	0.204[a]	0.304[a]	0.795	
(5) Market-based performance	0.230[a]	0.248[a]	0.258[a]	0.629[b]	0.806
Control variables					
Firm size	0.236[a]	0.061	0.089	0.173[a]	0.212[a]
Firm age	0.128[a]	0.101	0.286[a]	0.217[a]	0.198[a]
Environmental dynamism	0.161[a]	0.027	0.046	0.279[a]	0.263[a]
Export assistance	0.108	0.104	0.083	0.228[a]	0.201[a]
Mean score	77.57	61.53	27.82	10.68	49.60
Standard deviation	7.45	6.82	3.69	1.51	6.63
Skewness: Statistics	−0.200	−0.140	−0.140	−0.248	−0.410
Kurtosis: Statistics	0.427	0.159	−0.163	0.194	−0.163
VIF	1.80	1.31	1.46	1.60	1.32

Note: Diagonal (bold) entries are the square root of the AVE.
[a]Correlations significant at the 0.05 level.
[b]Correlations significant at the 0.01 level.

Table 3. Summary of the reliability and validity analysis

Constructs	α	CR	AVE	MSV
IEO	0.797	0.746	0.510	0.226
Process innovation	0.726	0.721	0.515	0.291
Product innovation	0.742	0.719	0.669	0.287
Financial performance	0.799	0.774	0.633	0.296
Market-based performance	0.749	0.743	0.651	0.285

results, we conclude that CMV effects in this study are negligible (Podsakoff *et al.*, 2003).

Reliability, validity and model specification

Table 3 highlights the results of the reliability and validity of the measurement items. The Cronbach alpha and composite reliability (CR) values of each construct are higher than 0.70. Therefore, the constructs have achieved internal consistency and reliability (Hair *et al.*, 2010). The average variance extracted (AVE) of the constructs is higher than 0.500. The square root of the AVE value of each construct is (diagonal values in Table 1) also higher than the corresponding correlations. These results confirm the convergent validity of the constructs. The standard loading values are higher than 0.600, indicating adequacy (Anderson and Gerbing, 1988) (see Appendix 1 for constructs, items and their standard loadings), and the AVE values are higher than the MSV values of the constructs (see Table 3). These results confirm the discriminant validity of the constructs (Fornell and Larcker, 1981).

Hypotheses testing

We used AMOS v. 24 to conduct CFA and SEM. The measurement model suggests adequate fit indices ($\chi^2 = 1586.638$, df = 753, $p < 0.000$, $\chi^2/df = 2.107$, CFI = 0.935, IFI = 0.936, TLI = 0.928, SRMR = 0.0406, RMSEA = 0.049, PRATIO = 0.905). Table 4 highlights the results of the hypothesized relationships. The first structural model represents expectable fit indices ($\chi^2 = 1785.535$, df = 898, $p < 0.000$, $\chi^2/df = 1.976$, CFI = 0.928, IFI = 0.928, TLI = 0.921, SRMR = 0.0427, RMSEA = 0.048, PRATIO = 0.911) for the IEO–international performance relationship. The results highlight that IEO has a negative effect on financial performance ($\beta = -0.013$**, p = 0.031) and a non-significant negative effect on market-based performance ($\beta = -0.010$, p = 0.082).

Table 4. Results of hypothesized relationships

Path coefficient	Std. estimates	Critical ratio	p-Value
IEO to market-based performance	−0.010	−1.037	0.082
IEO to financial performance	−0.013**	−1.976	0.031
Process IC * IEO to market-based performance	0.091**	2.229	0.026
Process IC * IEO to financial performance	0.024***	3.373	0.001
Product IC * IEO to market-based performance	0.009	0.848	0.397
Product IC * IEO to financial performance	0.038**	2.044	0.041

Notes: IC = innovation capabilities.
Critical ratio greater than 1.96 is significant at **p < 0.05, ***p < 0.01.

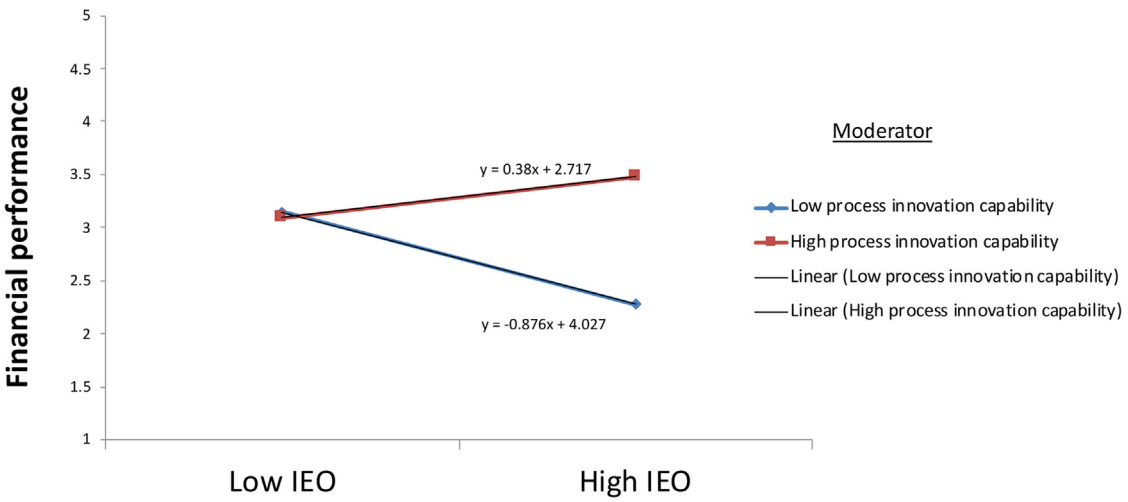

Figure 1. Line graph of the moderating role of process innovation capability between IEO and financial performance 95% confidence interval (0.1483–0.3798). [Colour figure can be viewed at wileyonlinelibrary.com]

Therefore, the finding supports H1a but does not support H1b.

We test the moderating effects of process innovation capability between IEO and international performance in the second structural model. We used interactions to test the moderation effect (Hair *et al.*, 2010). For structural model 2, the fit indices are $\chi^2 = 1637.535$, df = 857, $p < 0.000$, $\chi^2/df = 1.904$, CFI = 0.903, IFI = 0.900, TLI = 0.901, RMSEA = 0.049. The path analysis shows that product innovation capability influences and positively moderates the relationship between IEO and financial performance ($\beta = 0.038$**, $p < 0.05$). The moderating effect of product innovation capability on the relationship between IEO and market-based performance is positive but non-significant ($\beta = 0.009$, $p = 0.379$). Hence, H2a is supported but not H2b. The model fit indices for structural model 3 are $\chi^2 = 1543.535$, df = 841, $p < 0.000$, $\chi^2/df = 1.834$, CFI = 0.908, IFI = 0.902, TLI = 0.900, RMSEA = 0.049. Process innovation capability influences and positively moderates the relationship between IEO and financial performance ($\beta = 0.024$***, $p = 0.001$) and between IEO and market-based performance ($\beta = 0.091$**, $p < 0.05$), supporting H3a and H3b. Figures 1, 2 and 3 highlight the line graphs of the moderating effects.

The results of the control variables show that firm size has a significant effect on financial performance ($\beta = 0.036$, $p < 0.05$) and market-based performance ($\beta = 0.045$, $p < 0.05$); firm age has a non-significant impact on financial performance ($\beta = 0.011$, $p > 0.05$) and market-based performance ($\beta = 0.016$, $p > 0.05$). The impact of environmental dynamism is significant on market-based performance ($\beta = 0.183$, $p < 0.05$); however, it is non-significant on financial performance ($\beta = 0.012$, $p > 0.05$). Export assistances had no significant

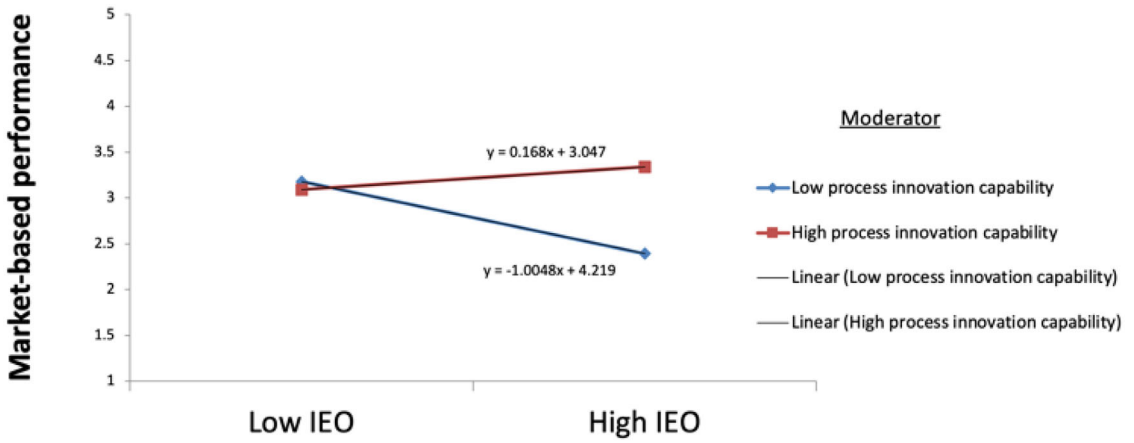

Figure 2. Line graph of the moderating role of process innovation capability between IEO and market-based performance 95% confidence interval (0.1328–0.4261). [Colour figure can be viewed at wileyonlinelibrary.com]

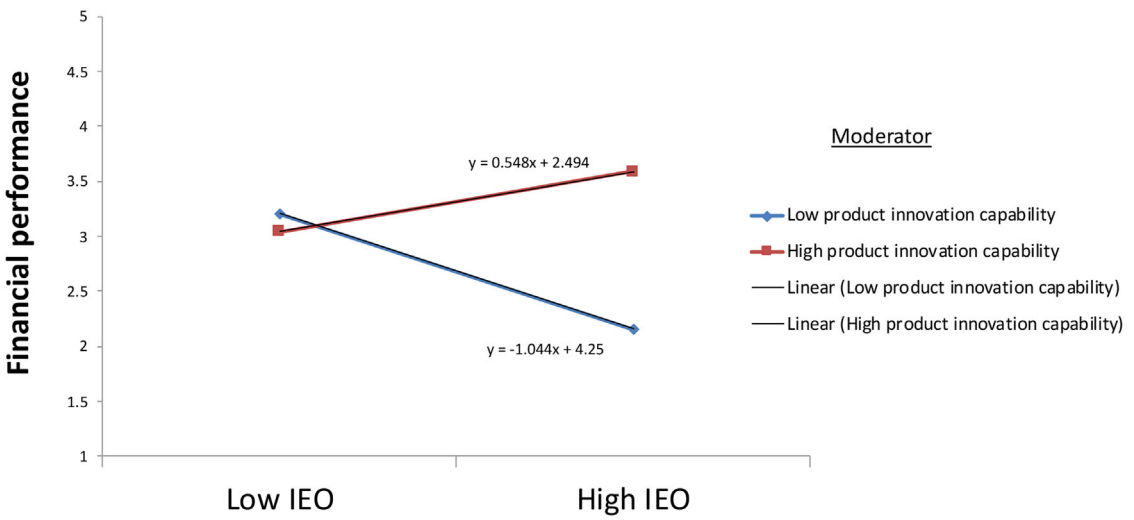

Figure 3. Line graph of the moderating role of product innovation capability between IEO and financial performance 95% confidence interval (0.3127–0.4863). [Colour figure can be viewed at wileyonlinelibrary.com]

impact on market-based performance ($\beta = 0.033$, $p > 0.05$) but do have a positive significant impact on financial performance ($\beta = 0.139$, $p < 0.05$). In addition, we performed rigorous analyses to rule out the presence of endogeneity in this research (i.e. Appendix 2).

Discussion and contributions

LIFs face diverse challenges, stretched by a plethora of competition from countries better equipped in infrastructure and resources and compelled towards entrepreneurship as an essential means to survive; how can these firms capitalize on an IEO to achieve international performance? Scholars advocate strongly for IEO, but the results of the performance consequences of IEO are mixed (Covin and Miller, 2014; Gupta, Pandey and Sebastian, 2021). Especially for those firms from LDCs then, indulging in IEO as a luxury because of a *potential* return to performance is simply not a viable strategy, and scholars have been relatively silent on the consequences of IEO for LIFs and the contingencies needed to accrue international performance from IEO-driven endeavours.

Applying a contingency perspective to the RBV of the firm (Engelen *et al.*, 2015), we find that process and product innovation capabilities enhance

the IEO–firm performance relationship. In addition, we find that IEO harms the firm's international financial performance, although it neither negatively nor positively affects market-based performance. As we feared then, for LIFs, higher levels of IEO can become unproductive, harming the LIF. This outcome can be course-corrected by developing and leveraging product and process innovation capabilities and can also be used to unlock returns to market-based performance. Consistent with rising fears in the broader EO literature (Covin and Wales, 2019; Hughes *et al.*, 2022), left to its own schemes and at increasing levels, IEO is deleterious for LIFs because it strains and stretches the highly scarce resources of these types of firms. Moreover, LIFs do not operate in institutional contexts or strategic factor markets that readily enable their resources to replenish (Lin, Cao and Cottam, 2020). Thus, LIFs in the export-manufacturing industry of Bangladesh benefit greatly by developing and leveraging innovation capabilities to increase the productiveness of IEO and unlock its potential for positive performance returns. We reveal how a failure to do so sees the LIF suffer the costs of IEO but not its benefits. Our results provide a reason and a mechanism to explain the mixed results among studies of IEO to date (Gupta, Pandey and Sebastian, 2021). The nature and strength of the IEO–international firm performance link change as a function of contingency representing firm-level capabilities. Advances in IEO research most likely result from the rigorous consideration of the contingency perspective; thus, this study illuminates the boundary conditions of when the managerial emphasis on IEO is beneficial for the international firm and when it may not be. We expound the theoretical contributions of the study below.

Theoretical contributions

The study's contribution to the IEO literature is the theoretical argument and empirical validation that a firm's IEO–international performance relationship is contingent upon and moderated by process and product innovation capabilities. Thus, consistent with our theoretical arguments of the contingency perspective of RBV (Engelen *et al.*, 2015), we unveil the importance of process and product innovation capabilities among the apparel export-manufacturing firms in Bangladesh in conditioning positive returns to international performance from an IEO. Without these capabilities, the forward-looking, opportunity-seeking and risk-taking initiatives by entrepreneurs in LIFs generate unintended consequences for international performance, harming it instead of benefiting it. To the IEO and broader EO literatures, then, we provide a resource-based thesis that accurately predicts and explains why IEO can be destructive to a firm's international financial performance. Moreover, by revealing the absence of any effect on market-based performance, our studies unveil to scholars how the consequences of IEO are sensitive in ways that include context and the measure of performance itself. These advancements call on scholars to carefully consider the context and foci of their performance measures in informing predictions about IEO and its effects.

We contribute a theoretical rationale for how IEO interacts with process and product innovation capabilities as the significant competencies required to increase international firm performance when pursuing an IEO. In doing so, we link IEO to the RBV and address scholarly calls to embrace theories from related disciplines to clarify which capabilities foster a robust entrepreneurial process and lead to positive performance consequences. Further, our theoretical treatment and empirical results contribute new boundary conditions to the understanding of (a) when IEO can add to or detract from competitive organizational success (e.g. Gupta, Pandey and Sebastian, 2021; Hernández-Perlines and Xu, 2018) and (b) how the willingness to identify and act on the international novel, proactive, risky international opportunities and initiatives are matched by an ability to do so productively (e.g. Freixanet *et al.*, 2020; Lin, Cao and Cottam, 2020; Raats and Krakauer, 2020).

We identify that IEO alone among international entrepreneurial export-manufacturing firms in an LDC negatively affects firms' financial performance. The result is consistent with Boso, Oghazi and Hultman (2017) and Kurtulmus *et al.* (2020), whereby these authors reported negative consequences of manifesting IEO. We reason that the context-sensitive nature of IEO explains its adverse effects on international performance. Due to weak institutional settings and limited access to resources in an LDC (Ahmed and Brennan, 2019b) there is danger in manifesting IEO alone, especially at higher levels. Alongside this, the effects of IEO on market-based performance are non-significant. This is also consistent with prior studies in which

the authors reported similar non-significant direct effects of IEO on firm performance (e.g. Bianchi, Glavas and Mathews, 2017; Jin and Cho, 2018). Nonetheless, prior to our study, the reasons for these discrepancies have remained largely a mystery. Therefore, grounded in a contingency perspective of the RBV (Engelen *et al.*, 2015), we unveil that the nexus between IEO and international performance is context-sensitive, the solution to which lies in developing and leveraging critical internal innovation capabilities fundamental to converting IEO initiatives into *productive*, rent-generating outcomes – or else accruing only harmful, *unproductive* costs. Moreover, our findings go a step further and suggest that the performance effects of IEO vary across forms of international performance (and may further explain prior inconsistent findings). Nevertheless, what is consistent is that drawing value from IEO relies on innovation capabilities, extending the contingency perspective of RBV surrounding IEO.

Taken together, manifesting IEO in LIFs requires firm-specific innovation capabilities to channel IEO-driven actions into outcomes enhancing international performance. This is because proactiveness drives entrepreneurial firms to take long-term, exploratory gambles on latent market needs (Hughes *et al.*, 2021b), which may or may not bring international success. Concerning innovativeness, the opportunity for product development can exceed the firm's capability to capture it profitably, leading to extreme losses (Singh and Fleming, 2010). Last, a high risk-taking attitude echoes 'uncertain and ambiguous knowledge recombination' (Patel *et al.*, 2015, p. 1740) and, therefore, increases the total amount of negative variance in firm performance (Hughes and Morgan, 2007). Fundamentally, then, we see this as a difference between the *willingness* to act internationally entrepreneurially (IEO) versus the capabilities that define the *ability* to do so productively. For instance, scholars observe that innovation capabilities must be embedded and fine-grained in apparel export-manufacturing firms (Islam and Polonsky, 2020) and without it, these apparel LIFs cannot compete effectively in the international market (Nichols, 2020). Crucially, we show how IEO in isolation is not the solution. International opportunities can be identified by manifesting a high level of IEO (Karami and Tang, 2019), but firms realize those opportunities by leveraging rich process and product innovation capabilities. Our results evidence that these innovation capabilities mitigate the otherwise detrimental effect of IEO on LIFs' international performance in an LDC.

Managerial implications

Our results are crucial for internationally entrepreneurially oriented firms that operate in environmentally challenging, resource-constrained contexts characterized by weak institutional infrastructure, market progression and extreme economic volatility. Bangladeshi apparel firms face intense competition to capitalize on the international market. Therefore, conventional strategies (i.e. contract manufacturing) are insufficient to address these new and emerging challenges (Textile Today, 2016a). These firms require product innovation capability to replace and expand the range of products and predict and develop the new design in advance to capture a new market. For instance, a renowned firm producing t-shirts and polos can gradually start producing functional apparel products (e.g. smart clothes) to attract new consumers. Due to COVID-19, for example, these apparel manufacturing firms are pivoted to produce personal protective equipment on a large scale and export to many countries, such as the United States, United Kingdom and Europe (Primack, 2020; Textile Today, 2020). Those firms that profited from such entrepreneurial endeavours realized these new opportunities by fostering innovation equipped with modern machinery and technological advancement (Financial Times, 2019) – this establishes that innovation capabilities are powerful means to transform IEO-driven efforts productively to achieve superior international performance among LIFs in an LDC, and require investment.

Oshri (2018) observes how advanced technologies through process innovation capabilities can shape the future of the apparel industry, such as the use of robots and artificial intelligence in the manufacturing process, the use of cryptocurrency to replace real money and the adaptability of blockchain to integrate the lead and focal firm's communications to achieve efficiency. The Bangladeshi government can provide sophisticated and secure connectivity to facilitate firms introducing such apparatus to achieve effective and timely communication. Doing so will significantly reduce lead times concerning new orders,

sourcing of raw materials and production execution and effective inventory management and transaction systems (Raghunath and Balaraman, 2017). Second, developing process and product innovation capabilities is possible through an R&D strategic alliance. For instance, these apparel firms will achieve freedom and efficiency from 3D printing and selective laser sintering in designing new apparel products (Textile Today, 2019a) through collaboration with hi-tech research firms to facilitate know-how (Textile Today, 2019b). Sharing knowledge with lead firms could be beneficial to sourcing advanced machinery and technological advancements in the manufacturing system (Mikalef *et al.*, 2019), which can significantly reduce raw material wastages and lead times, increase efficiencies and promote environmentally friendly manufacturing processes (Textile Today, 2016b) and support an entrepreneurial ecosystem (Scott, Hughes and Ribeiro-Soriano, 2022),

Limitations and future research

Scholars may look to mitigate some of the limitations of our research. First, the research is conducted on samples from a single-country and single-industry; therefore, replication of the research framework requires caution. Because the practices and the quality of process and product innovation vary among industries and countries. Second, our study lacks an explicit investigation of innovation types and their long-term impact on financial performance. Future research can contribute to specific innovation types and how to satisfy international market needs. Finally, more nuanced research studies are required (e.g. configurational and quadratic analyses of IEO with other dynamic capabilities) to propose practical implications that firms could follow in responding to global challenges, sustaining and ameliorating international performance.

Conclusion

This study contributes to expanding the 'limited field of vision stemming from contingency theory, which may have obscured critical nuances in managing entrepreneurial firms' (Kearney, Soleimanof and Wales, 2018, p. 526). It addresses how and why the relationship between IEO and international performance is neither self-evident nor inherently positive (Covin and Miller, 2014). We bring a contingency perspective on RBV to support this assertion (Engelen *et al.*, 2015). We postulate that nourishing process and product innovation capabilities will expedite firms to reap benefits from IEO-driven efforts and mitigate the anomalous impact (if any) of IEO on international performance.

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