Organizational Capabilities and SME Exports:
The Moderating Role of External Funding Intentions and Managerial Capacity

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Abstract

Entry to export markets can stimulate business growth, yet remarkably few small-and-medium-sized enterprises (SMEs) pursue export strategies. Using data gathered from the UK Small Business Surveys and a theoretical framework that combines principles from the resource-based view of the firm with notions of 'investment readiness' and 'managerial capacity' , we examine the empirical relationships between new product development (NPD) and new market entry (NME) capabilities on UK SMEs export decisions. Amongst other things, we find that there are contexts in which SMEs should develop these capabilities concurrently and others in which they should develop them independently to minimise added managerial complexity. Our results also indicate that in the absence of strong managerial capacity, SMEs should prioritise NME over NPD capabilities. Our findings produce several interesting theoretical and practical implications for SME exports.

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1. Introduction

Economic activity in the Organization for Economic Cooperation and Development (OECD) is dominated by small- and medium-sized enterprises (SMEs), which accounts for approximately 99% of all firms and 70% of employment (OECD, 2017). However, while they generate 50-60% of the value-added of all enterprises, SMEs are responsible for less than a third of the value of exports (OECD, 2016). In the UK, only 9% of the value of exports is attributable to SMEs, although this climbs to 15% if we include SMEs' contributions to the supply chains (DBIS, 2016). SMEs are consequently under-represented in export markets in relation to their economic importance (Tan, Brewer, and Liesch, 2018).

Unsurprisingly, practitioners and business scholars have been exploring the development of policies that encourage SMEs to export (Acs, Morck, Shaver, and Yeung, 1997; Acs and Terjesen, 2013). Many use insights from the resource-based view of the firm (RBV) which highlights the vital role organizational capabilities — i.e. the operational routines that allow a firm to deploy its resources — play in the development and implementation of export strategies (Filatotchev, Liu, Buck, and Wright, 2009; Grimes, Doole, and Kitchen, 2007). In particular, previous studies note the importance of new product development (NPD) and new market entry (NME) capabilities for SMEs' internationalization activities (Golovko and Valentini, 2011; Tan et al., 2018). NPD capability reflects the operational routines that 'enable the development and introduction of new products', while NME capability reflects the operational routines that 'facilitate the entry to new markets' (Acs and Audretsch, 1988; Bratti and Felice, 2012; Raymond and St-Pierre, 2013). However, few studies examine how these capabilities interact with each other — and other factors — in the development and sustainability of SMEs' export strategies. Our first research objective addresses this gap by investigating the joint effects of NPD and NME capabilities on UK SMEs' export decisions. More concretely, we posit that the combined effect of these strategic resources on SMEs

internationalization will be larger than the sum of their individual effects (Barney, Ketchen, and Wright, 2011; Vomberg, Homburg, and Bornemann, 2015).

The second way in which our study contributes to the literature on SMEs exports is by exploring if, and possibly how, financial constraints and managerial capacity impact on the joint effect organizational capabilities exert on SMEs export decisions. This line of enquiry is also informed by the RBV which emphasises the importance of aligning the firm's strategic resources to relevant internal and external factors (Sirmon and Hitt, 2009; Vomberg et al., 2015). In this light, we recognise that SMEs with limited access to capital are typically willing to relinquish some degree of control over their strategy in exchange for external funds (OECD, 2017). While existing studies discuss the influence external finance providers exert on SMEs' strategies once funding is secured (Greenaway, Guariglia, and Kneller, 2007; Manova, Wei, and Zhang, 2015; Bellone, Musso, Nesta, and Schiavo, 2010; Wu, Si, and Wu, 2016), relatively few investigate how the pursuit of external funds frames the development of SMEs' strategies (Silver, Berggren, and Veghohn, 2010). In a similar vein, we explore how the firm's own managerial capacity (MC) facilitates the deployment and alignment of SMEs' organizational capabilities towards export markets (Sirmon and Hitt, 2009). Despite recognizing the critical role MC exert in SME internationalization (Graves and Thomas, 2006; Hsu, Chen, and Cheng, 2013) few studies speculate on its underlying mechanisms. We do so here by investigating linkages between MC, EFI, and the joint effect NPD and NME capabilities exerts on SMEs' export decisions.

In other words, and as foretold by RBV, we posit that SMEs' intentions to seek external financing (EFI) and its managerial capacity (MC) act as important contingent factors in the development of SMEs export strategies. In the first instance, we assess the joint effect of NPD and NME capabilities on SMEs' decision to export (see Figure 1). We then evaluate how the inclusion of EFI and MC impact on this result. We use data from the 2010, 2012, and 2014 UK

Small Business Surveys and probit multivariate regression analysis to test our framework. We argue that our findings contribute to the RBV literature on SMEs internationalization by further developing our understanding of how and under what circumstances organizational capabilities affect SMEs' pursuit of exports while generating useful insights for SME managers and policymakers who wish to support them.

_____Insert Figure 1_____

2. Theoretical Background

2.1 Organizational capabilities and SMEs' exports

For SMEs, selling in export markets will typically be the first substantive step towards internationalization (Bianchi and Wickramasekera, 2016; Tan et al., 2018). Given the low number of exporting SMEs relative to the economic importance of the sector (OECD, 2016), identifying the internal factors that incite SMEs to engage in export activities has become a popular area of inquiry. The RBV framework frames much of this discussion as it focuses on identifying the resources (the firm's observable, but not necessarily tangible assets) and organizational capabilities (the firm's accumulated knowledge and skills) that support the development of export strategies (Murray, Gao, and Kotabe, 2011).

Larger firms typically have 'deeper pockets' and greater access to slack resources, all of which facilitate the process of internationalization. Hence, by virtue of their size, SMEs are subject to resource limitations that hamper their progress in international markets (Acs et al., 1997; Acs and Terjesen, 2013). Nonetheless, proponents of RBV argue that SMEs can enter, survive, and thrive in international markets, provided they develop the organizational capabilities that can help them compensate for their limited resources (Bianchi and Wickramasekera, 2016; Raymond and St-Pierre, 2013).

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Within this strand of the RBV literature, studies demonstrate that organizational capabilities can act as valid predictors of SMEs' engagement and performance in international markets. For example, Bianchi and Wickramasekera (2016) show how the perceptions of SMEs managers regarding resources and organizational capabilities can influence their commitment to export activities. Raymond and St-Pierre (2013) identify the configurations of organizational capabilities that help French and Canadian SMEs in the manufacturing industry succeed abroad. Lefebvre, Lefebvre, and Bourgault (1998) use data on Canadian firms to show that R&D-related capabilities significantly impact upon SMEs' export intensity in global markets. These and other studies highlight the significance of organizational capabilities for exporting SMEs while demonstrating how they help offset their lack of resources, size, and general clout.

We note that the RBV literature on the internationalization of the firm offers alternative perspectives to the 'organizational' capabilities lens used in this study. In particular, several authors focus on SMEs' 'dynamic' capabilities which capture a firm's ability to integrate, develop, and reconfigure its competences in the internationalization processes (Villar, Alegre, and Pla-Barber, 2014). To reconcile these different strands, RBV theorists suggest interpreting organizational and dynamic capabilities as first-order and second-order competencies respectively. First-order competencies help firms configure resources to accomplish existing tasks while 'second-order' competencies facilitate the development of new organizational capabilities that are required in a rapidly changing environment (Danneels, 2012). Other authors also refer to 'absorptive capacity', or the ability of firms to recognize the value of new information and act upon it in the internationalization of commercial activities (Valdaliso, Elola, Aranguren, and Lopez, 2011). However, by focusing on its knowledge creation and utilization, absorptive capacity can be interpreted as a dynamic capability (Zahra and George, 2002). Given its focus on NPD and NME capabilities, our study is embedded within the 'organizational' capabilities or first-order competencies perspective of the RBV framework.

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2.2 NPD and NME capabilities

According to the RBV, organizational capabilities help firms organize their resources in ways that makes them more competitive in international markets (Filatotchev et al., 2009; Grimes et al., 2007). Hence firms with strong organizational capabilities are more likely to pursue internationalization (Bianchi and Wickramasekera, 2016). We build on these insights by suggesting that SMEs with strong NPD and NME capabilities are more likely to engage in exports.

NPD capability[1] refers to SMEs' ability to develop and introduce new products. It is associated with technological competencies and 'inside-out' operational routines, including product innovation, process innovation, and product design (Bratti and Felice, 2012; Deeds et al., 2000). SMEs with a strong NPD capability find it easier to develop new products that are perceived to be more valuable than the current offerings, resulting in a competitive advantage in foreign markets (Cassiman and Golovko, 2011; Esteve-Pérez and Rodríguez, 2013). In this sense, NPD capability incentivizes SMEs to engage in export markets. This conclusion is also supported by studies demonstrating how product innovation impacts positively on SMEs' decision to export (Acs and Audretsch, 1988; Añón Higón and Driffield, 2011; Yang, Chen, and Chuang, 2004).

On the other hand, NME capability captures the 'outside-in' operational routines that connect a firm's organizational processes to the external environment and facilitate its entry into new markets. It does so by helping the firm anticipate market requirements while building and maintaining its relationships with external stakeholder groups (Saboo et al., 2017; Zou et

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[1] NPD capability sometimes overlaps with other types of organizational capabilities, such as R&D capabilities (Guan and Ma, 2003), marketing capabilities (Zou, Fang, and Zhao, 2003), and exploration capabilities (Yalcinkaya, Calantone, and Griffith, 2007). In light of these ambiguities, we follow Deeds, DeCarolis, and Coombs (2000) by treating NPD capability as a standalone category that encapsulates a firm's R&D potential relating to new export opportunities.

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al., 2003). Firms with strong NME capabilities typically find it easier to establish new distribution channels abroad, develop/adapt their brand image for an international audience, and keep the organization informed and attuned to developments in export markets (Morgan, Katsikeas, and Vorhies, 2012; Murray et al., 2011). In other words, SMEs with a strong NME capability find it easier to develop a competitive advantage in foreign markets and are hence more likely to develop an export-related growth strategy.

The RBV recognizes that a firm's ultimate source of competitive advantage lies in the complementarity of its organizational capabilities as much as in the bundle of resources it has developed over time (Barney et al., 2011; Vomberg et al., 2015). Accordingly, we expect that there will be synergies between NME and NPD capabilities in incentivizing SMEs to engage in exports. NME capability promotes the establishment of long-term relationships between firms and their customers. This allows SMEs to integrate information about foreign customers regarding their needs and pricing preferences into their product development and launch processes, thereby enhancing their NPD capability (Krasnikov and Jayachandran, 2008;) (Krasnikov and Jayachandran, 2008; Saboo et al., 2017. There is also evidence that SMEs are prone to committing planning errors and oversights during product-launch activities (an NPD process) due to their limited resources, but that a strong NME can support the coordination of these logistical processes, ultimately reducing the risks associated with NPD activities (Bowersox, Stank, and Daugherty, 1999). Thus, NPD capability facilitates the introduction of innovative products that appeal to foreign customers and enhances the SME's NME capability (Añón Higón and Driffield, 2011). Hence, we postulate that NME and NPD capabilities complement each other in the development of SMEs' competitive advantage in export markets:

H_1: NME and NPD capabilities have a positive joint effect on SMEs' exports.

2.3 Moderating roles of EFI and MC

Prior work on RBV emphasises how the 'context' in which the firm operates influences how, and to what extent, strategic resources can contribute to its competitive advantage (Sirmon and Hitt, 2009; Vomberg et al., 2015). In particular, while organizational capabilities are important strategic resources in export markets, firms may fail to realise their full potential if they are unable to deal with the added managerial complexity their coordination entails (Barney et al., 2011; Raymond and St-Pierre, 213; Lubatkin, Simsek, Ling, and Veiga, 2006; Penrose, 2009). This implies that to capitalise on the potential synergies embedded in NPD and NME capabilities, firms must be able to deal with complex business operations effectively. We use these insights to argue that EFI and MC are factors that affect the combined influence of NPD and NME on SMEs export decisions.

External finance providers typically consider investments in SMEs as high-risk ventures (Bellone et al., 2010). To alleviate these perceived risks, SMEs intent on securing external funding will try to present themselves as 'investment ready' and capable of coping with complex business environments (Mason and Harrison, 2004; Mason and Kwok, 2010). An effective way of doing so is by hiring and/or developing strong managers that have the knowledge and skills to run business operations effectively (Silver et al., 2010). On this basis, we argue that SMEs with EFI are more likely to showcase a strong management team to demonstrate their ability to deal with complex managerial decisions to potential external funders.

The Theory of the Firm also recognises that managerial capacity (MC) is a unique scarce resource that limits the size of the firm (Oi, 1983). On this basis, we argue that a graduate or technically qualified SME owner-manager can be relatively more effective since he/she can operate more or less unhindered by the bureaucratic hierarchies typically found in larger corporations (Gray, 2006). In other words, the nimbleness and agility of SMEs facilitate the execution of 'good' managerial decisions particularly with regards to the allocation and

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deployment of strategic resources (Jennings and Beaver, 1997; Kevill, Trehan, and Easterby-Smith, 2017; Graves and Thomas, 2006). We extend this conventional wisdom by stipulating that SMEs with strong managerial capacity –embodied in the qualifications of the owner-manager - will find it easier to identify the potential benefits of combining strategic resources and capitalise on the potential synergies derived from the joint implementation of NME and NPD capabilities.

Our second and third hypotheses are ultimately based on the premise that SMEs' ability to deal with complex managerial decisions allow them to realize the full potential of deploying different strategic resources (i.e., NME and NPD capabilities) and partake and succeed in export markets. Such ability can be internal to the firm as captured by (MC) or it can be acquired in an attempt to showcase investment readiness to external funders (EFI). For these reasons, we postulate that SMEs with strong EFI and/or MC are more likely to realize the full potential of combining NME and NPD capabilities, thereby facilitating their participation in international markets. This logic is captured by the following hypotheses:

H_2: The joint effect of NPD capabilities and NME capabilities on exports is positively moderated by SMEs' EFI.

H_3: The joint effect of NPD capabilities and NME capabilities on exports is positively moderated by SMEs' MC.

3. Research Methods

3.1 Data

The data for this study were extracted from the 2010, 2012 and 2014 UK Small Business Surveys (SBS) commissioned by the Department for Business Innovation and Skills (DBIS). These surveys document SMEs' intentions, needs, concerns, and the obstacles they

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face while monitoring key dynamic indicators.[2] More concretely, business managers and/or owners are interrogated about a range of issues, including sale figures, employee numbers/turnover, firm capabilities (e.g., ability to innovate, export, train staff), access to finance, product types, product destinations, and the use of business support. SBS datasets feature in academic research on SMEs' finance, growth dynamics and internationalization (Añón Higón and Driffield, 2011; Cowling, Liu, Ledger and Zhang, 2015).

The surveys use computer-assisted telephone interviews and a stratified random sample selection method that reflects the 13 regions of the UK and SME size (as defined by the number of employees). To ensure that the data are representative of the UK's SME population, respondents were weighed by sector within employment size and regional categories according to the BIS's business population estimates targets. Hence, to create robust sub-samples, larger SMEs are over-sampled compared to their natural occurrence in the SME population, while businesses that report zero employees are under-sampled. This generated a sample of 15,418 completed questionnaires (response rate > 50%) across the merged surveys.[3] Among these, 50% are micro-enterprises or non-employer businesses (0-9 employees), 33% are small enterprises (10-49 employees), and 17% are medium-sized enterprises (50-249 employees). After eliminating missing values, the dataset comprises 11,689 observations across three years.

Since the data are collected from three pooled cross-sectional surveys, all firms are 'alive', eliminating the risk of survival bias. To ensure that missing observations do not affect our results, we also performed a Heckman-type probit model with sample selection (Van de Ven and Van Praag, 1981). This involved removing variables with missing values – i.e., 'sales' and 'age of owner'. To identify whether or not a firm belongs to the body of observations with no missing values, we applied a two-stage model to this 'reduced form' using regional dummies

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[2] SMEs are defined as businesses with fewer than 250 employees (BIS, 2012).
[3] Removing SME non-employers does not alter our main results significantly but reduces the sample size by approximately 20% (results available upon request).

as the selection criteria, or exclusion restrictions (first stage, selection equation). We then ran this data on our principal model (second stage, main equation). The hypothesis that the correlation between the selection and main equations equals zero cannot be rejected – i.e., we found no evidence of sample selection based on missing values.

3.2 Measurements

3.2.1 Dependent variable

The dependent variable measures SMEs' export activities. It is a dummy variable that takes the value of one if the firm is selling goods or services outside the UK at the time of the survey, and zero otherwise. The percentage of export in total sales was also used as an alternative measure of internationalization (Table 2A, online appendix).

3.2.2 Explanatory variables

The surveys contained questions about SMEs' organizational capabilities, including measures of the firm's capability to 'enter new markets' (NME) and its capability to 'develop new products and/or services' (NPD).[4] While these self-reported perception measures are used for practical reasons – i.e., they feature in the DBIS surveys, there is also evidence that perceptions of organizational capabilities drive managerial decisions and actions related to internationalization (Grimes et al., 2007; Raymond and St-Pierre, 2013). This is a common approach in studies investigating organizational capabilities (Morgan et al., 2012; Murray et al., 2011).

We capture SMEs' external financing intentions (EFIs) with a dummy variable that equals one if the SME is planning to approach external finance providers to fund future growth, and zero otherwise. In the absence of an explicit measure of managerial capacity (MC), we use 'owner-manager qualifications' as a proxy, i.e. a dummy variable that equals one if the owner-

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[4] We measure these using a five-point scale (1 (very poor) to 5 (very strong)).

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manager holds relevant technical qualifications and zero otherwise, capitalizing on established links between MC and owner-manager competencies (Jennings and Beaver 1997; Kevill et al., 2017; Gray, 2006 and references therein).

3.2.3 Control variables

Throughout our analyses, we control for business and owner/entrepreneur characteristics that previous studies suggest will influence export-related behaviors. These include firm size, age, sector, region, ownership structure, and owner characteristics (gender, ethnic minority, qualifications, age). Firm size is captured by the number of SME employees while age is measured using three ranges (less than 3 years, 4-10 years, more than 10 years). We categorize SMEs into six different sectors: agriculture, production, construction, transport (including retail and distribution), business services, and other services. Eleven dummies capture the 12 geographic regions of the UK – i.e., the West Midlands, Yorkshire and the Humber, Wales, Scotland, Northern Ireland, the South East, the South West, the North East, the North West, London, the East of England, and the East Midlands (the base category).

We control for firm-level accounting information such as turnover and profitability, and proxies that capture the availability of financial resources (*credit rationing*). We also monitor whether the firm has a formal business plan since its existence could help it secure loans. We account for ownership structure by employing a simple 'family-owned' indicator and include the owner's age (a continuous variable). The dummies take the value of one if the owner is a woman and if he/she is from an ethnic minority.

Since we use self-reported variables collected from cross-sectional surveys, we test for the possibility of Common Method Bias (CMB). We apply the marker variable technique, which uses the correlation between the study variables and a theoretically unrelated variable to estimate the extent of CMB. Following the guidelines of Malhotra, Kim, and Patil (2006), we

use responses associated with the survey question, "How long after startup was the business registered for VAT?" as our marker variable. We also use their formula to calculate the adjusted correlation coefficients and find insignificant differences between the unadjusted and adjusted correlations. Moreover, none of the correlations changed from significant to insignificant after accounting for CMB. We conclude that the extent of CMB in the data is too small to impact significantly on our results.

3.3 Analyses and Results

Table 1 presents the definitions and descriptive statistics of the variables used in our model, while correlations appear in Table 1A of the online appendix. The SMEs in our sample are typically over 10 years old and operated by two employees (this average climbs to nine when zero-employee SMEs are excluded from the sample). The representative firm is family-owned with a 50 year-old male at its head.

_____Insert Table 1_____

Preliminary analyses using univariate comparison of variables (Table 1) and correlation coefficients (Table 1A) support the insights from the literature - i.e., firms that are older, larger, and headed by males are more likely to export than their counterparts. Since the correlation coefficients between NPD and NME are relatively high ($r_{2010}= 0.518$; $r_{2012}= 0.514$; $r_{2014}= 0.544$; $r_{2010,2012,2014}= 0.527$), we tested for problems of multi-collinearity in the regression analyses. To do so, we calculated variance inflation factors (VIFs) for all of the explanatory variables for each of the datasets. All of the values are lower than the critical value of five — the VIFs for NPD and NME, respectively are 1.04 and 1.42 — suggesting that multicollinearity is unlikely

to be an issue. Nonetheless, as a precaution, we used the standardized values of NPD and NME

capabilities to reduce problems related to multicollinearity.

We estimated the likelihood of exporting using the following logistic (logit) equation:

$$\text{Prob}\left(\textit{Export} = 1\right) = \Lambda\left(x'\beta\right) \tag{1}$$

where $\Lambda(\square)$ stands for the logistic cumulative distribution function, and x is a vector of the

explanatory and control variables. We chose logit over similar probit models since they are

generalized linear models (GLMs) and as such, do not require normally distributed errors

(Greene, 2012). As a robustness check, we re-ran the regressions using probit models, and

confirm that our findings remained unaltered (results available upon request).

We estimate three logit models with an adjustment for robust standard errors. Table 2

reports the odd ratios, i.e. measures of effect size that capture the odds that an outcome will

occur given a particular exposure compared to the odds of the outcome in the absence of that

exposure. While NPD and NME are measured on a 5-point Likert scale, we enter them as

continuous variables in the regressions. This is a fairly common practice in social sciences

studies, particularly when successive categories (very poor, poor, average, strong, very strong)

are equally populated (Long and Freese, 2006).

_____Insert Table 2_____

Model I contains all the independent variables. We add the two-way interaction term

(NME-C*NPD-C) in Model II. Model III includes all these terms in addition to the EFI and

MC-related variables as they interact with NME and NPD capability (three-way interactions).

In Model 1, we note that the odds ratios on NME and NPD capabilities are consistently

greater than one and statistically significant, confirming our baseline assumption that both

organizational capabilities appear to have positive effects on SME exports. When interpreting

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the results from Models II and III, we adhere to Cohen and Cohen (1983) who warn that in the presence of higher-order interactions, the coefficients for the related lower-order terms convey no meaningful information. We also use graphs to facilitate the interpretation of the results. In Model II, we observe that the odds ratio for the interaction term (NME-C*NPD-C) is statistically significant and less than one ($\beta_6 = 0.940$), suggesting that the two capabilities act as substitutes to each other in incentivizing SMEs' export behavior. In other words, we cannot accept H1. In Model III, we observe that the odds ratios of the three-way interaction terms (NME-C*NPD-C*EFI and NME-C*NPD-C*MC) are both greater than one and statistically significant ($\beta_8 = 1.153$ and $\beta_{11} = 1.174$). We also plot these relationships. Figures 2 and 3 suggest that EFI = 1 and MC=1 are positively associated with the joint effects of NPD and NME capabilities on SME exports. On this basis, we accept H2 and H3. Taken together, these results suggest that while NME and NPD capabilities may be both individually conducive to SME exports as stipulated by the literature, complementarities between the two requires the presence of either EFI or MC. In their absence, these organizational capabilities seem to act as substitutes in the promotion of SME exports.

_____Insert Figure 2_____

_____Insert Figure 3_____

3.4. Further analyses and robustness checks

Intrigued by the rejection of 'H1', we conducted additional analyses using χ^2 tests of differences in the coefficient estimates to assess the relative strength that NPD-C and NME-C exert on exports throughout the specifications (Table 2). We find that NME capability (β_1) has a much stronger impact on SMEs' export decisions than NPD capability (β_2) - χ^2 differences = 20.44, p < 0.01 suggesting that in the absence of EFI or MC, exporting SMEs may be prioritizing NME-C.

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We also conducted robustness tests of our main findings. Firstly, we redid the analyses using an alternative measure of internalization that captures the intensity of exports, i.e. value of exports as a percentage of total sales. Since the value of the dependent variable for non-exporting SMEs is assumed to be zero, we were able to use the full sample. We first used a tobit model (Model IA, Table 2A) and found the results to be qualitatively consistent with our main findings. Next, we used a two-stage Heckman selection model, where the selection equation 'does the firm export or not?' addresses the potential non-randomness of exporting decisions (Model IIA). Since geographical location is considered to be unrelated to export intensity, we used 11 UK region dummies as exclusive restrictions for the selection equation (Filatotchev et al, 2001). The validity of the instruments is supported by further tests, including over- and under-identifying restrictions, and weak instrument tests. The coefficient estimate on the inverse Mill's ratio is also insignificant, suggesting little if any, selection bias. However, we note that the χ^2 test of independence between the selection and main equation in Model IIA is only rejected at the 10% level. Together, these tests provide some assurance that our results are robust to different measures of internationalization but they also suggest that our findings may be limited to explaining the 'yes/no to exports' decision of SMEs as opposed to the 'intensity' of export activities.

Secondly – and although self-reported intentions and perceived measures of capabilities feature widely in this literature – we recognize that NME, NPD, EFI, MC and the interactions between these variables, may not be exogenously determined. For instance, resource-constrained SMEs are more likely to have higher EFI, while success in foreign markets may naturally follow from the possession of stronger capabilities. To address these potential endogeneity issues, we re-estimated Model III of Table 2 using instrumental variables (IV) in a two-stage probit approach. More concretely, we treated all eleven predictors as endogenous variables, instrumented using: i) sector and regional dummies (and their interactions); ii)

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whether the manager perceived finance as the main obstacle to business success (*Finance Obstacle*); iii) whether the SMEs considers itself profitable (*Profitability)*; iv) and the ease with which SMEs can secure external finance (*Credit Rationing*). These were found to be insignificantly related to the export equation, justifying their use as valid instruments. Table 3A reports the regression results for the main, and eleven first-stage, equations, with abbreviated results for sector and regional variables. We note that, due to the complexity in fitting an IV model with so many endogenous variables, any comparison of the coefficient estimates with the primary findings requires caution. Nonetheless, our results relating to NME and NPD capabilities, their substitution effects, and the positive moderating effects of EFI and MC on the probability of exports remain largely unchanged.

Another way to tackle potential endogeneity is by establishing a temporal relation between the dependent and the independent variables, ideally by using lagged versions of the latter. Since our dataset is not constructed as a panel this was not possible. Instead, we compared findings between 'new exporters' – i.e. SMEs that are not currently exporting but planning to do so in the near future, 'repeat exporters', and 'non-exporters' (Table 4A). Coefficient estimates confirm our main results (Model IIA) while the multinomial logit regression suggests that our findings are likely to be driven by non-exporters (Model IIIA) and less by the intensity of export activities.

A final robustness issue is whether our results are specific to SMEs, as we argued, or do they also hold for larger firms. While our dataset only contains SMEs, we demonstrate that the strength of findings may be decreasing with firm size as measured by number of employees (Table 5A), providing some validation to the claim that the findings are SME-specific.

4. Discussion and Conclusions

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4.1 Theoretical contributions

Our study extends the RBV literature on SME internationalization in several ways. Firstly, it demonstrates that in the absence of EFI and MC, NPD and NME capabilities act as substitutes in incentivizing SMEs' export. Further analyses indicate that NME capability plays a more important role in affecting SMEs' export decisions than does NPD capability. This contradicts established tenets of the RBV literature which suggest that organizational capabilities and other strategic resources will complement each other in such context (Barney et al., 2011; Vomberg et al., 2015). We suggest that when faced with complex management situations such as export decisions, SMEs prefer to focus on fewer organizational capability and avoid the risk of diverting limited resources away from business operations (Lubatkin et al., 2006; Penrose, 2009).

But why NME - and not NPD – capability? RBV recognizes that organizational capabilities can be more effective than others depending on the business context (Grimes et al., 2007; Lefebvre et al., 1998). We know that NME capability helps SMEs anticipate the preferences of foreign customers, facilitates the development of marketing communications and pricing strategies that attract foreign customers, and enhances distribution channels and delivery operations (Krasnikov and Jayachandran, 2008; Morgan et al., 2012). Although NPD capability can help SMEs meet foreign customers' needs through the introduction of new products, the risks associated with these processes are higher, particularly for resource-constrained SMEs (Cassiman and Golovko, 2011; Esteve-Pérez and Rodríguez, 2013; Love and Roper, 2015; Bowersox et al., 1999). These findings enrich our understanding of how organizational capabilities impact upon SMEs' internationalization (e.g., Bianchi and Wickramasekera, 2016; Lefebvre et al., 1998).

Secondly, we demonstrate the important role EFI exert on SME exports through its effects on NME and NPD capabilities. In the process of accentuating their 'investment-

readiness', SMEs become better able to deal with management complexities and more adept at combining strategic resources that will facilitate export activities. In other words, EFI may be motivating firms to recruit experienced and capable managers which in turn incentivizes investments in a range of export-friendly capabilities (Mason and Harrison, 2004; Mason and Kwok, 2010). Our theoretical arguments and empirical findings thus connect two previously disjointed research streams — studies on SME organizational capabilities in export markets (e.g., Bianchi and Wickramasekera, 2016; Raymond and St-Pierre, 2013) and those on SME investment readiness (e.g., Mason and Kwok, 2010; Silver et al., 2010).

Finally, and for similar reasons, our results show that existing internal managerial capacity - as captured by owner-manager qualifications - positively moderates the joint effect of NPD and NME capabilities on SME exports. Since well-trained owner-manager are better at coordinating multiple operational routines and making complex management decisions (Graves and Thomas, 2006; Grimes et al., 2007; Gray, 2006), they are also likely to be better at deploying and coordinating organizational resources and capabilities in support of internationalization. In doing so, we enrich the existing body of RBV literature on managerial capacity and SME internationalization (Graves and Thomas, 2006; Hsu et al., 2013).

4.2 Managerial implications

Our findings also carry important managerial implications. In the context of pursuing export strategies, SME managers may be better off pursuing fewer capabilities. More concretely, the substitution effect we observe between NME and NPD capabilities on SME exports suggests that the deployment of both capabilities may create management challenges that can hamper the pursuit of export strategies. We also demonstrate that exporting SMEs give precedence to the development of NME over NPD capabilities, implying that the former may provide superior benefits during the process of internationalization. We recommend that

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resource-constrained SME managers focus on NME capability in the development of export strategies.

Furthermore, NPD and NME appear to interact as complementary capabilities when SMEs are seeking external funding and/or exhibits strong managerial capacity, but substitutes otherwise. In other words, SMEs with EFI and MC seem more able to exploit the benefits associated with the concurrent development of NPD and NME capabilities in export markets. In this light, SMEs that have a strong internal managerial capacity (i.e. a technically qualified manager/owner) or developed it in the context of securing external funds should be better able to capitalize on the combined benefits of NPD and NME capabilities.

4.3 Limitations and future research opportunities

Firstly, and despite our best efforts to contain identification problems, readers are advised to interpret the results as associations rather than causal effects. In other words, our empirical results are consistent with the proposed theoretical framework but they do not establish definitive causal links. To do so would require the use of large scale panel data that is currently unavailable to SMEs researchers. Second, while the SME dataset is large and based on sound sampling methods, its reliance on self-reporting can lead to various response biases (Malhotra et al., 2006). The design and use of objective indicators could help assess both the reliability and validity of these measures and potentially act as unbiased proxies. Third, we deliberately contained the set of organizational capabilities to facilitate the tractability of the empirical model and sharpen the theoretical and managerial implications of the study. However, as the body of theory develops, de-bundling these two capabilities is likely to enhance the quality and scope of the findings. It may also be the case that joint effects exists between other pairs of organizational capabilities (e.g., R&D and IT capabilities) not considered in the context of this study. Fourth, we note that, for firms that display 'high NME - Low NPD' capabilities

(Figure 2), the search for external funds is *not* motivated by or associated with a higher export probability. One possibility is that these firms adhere to a non-export growth strategy. This, too, requires additional investigation.

5. Conclusions

This study is motivated by the assumption that SMEs are currently underrepresented in export markets and that the gains from international trade could be spread more evenly by greater SMEs participation in export markets. Against this background, we use an RBV perspective to examine the combined effect of two important organizational capabilities (NME and NPD) in motivating resource constrained SMEs to enter export markets. Such research demonstrates that there are contexts in which SMEs should develop multiple capabilities concurrently and others in which these should be developed independently to minimise added managerial complexity. We showed that by enhancing the firm's ability to deal with complexity, intentions to seek external funding and internal managerial capacity are two factors that promote the development of export strategies that exploit multiple capabilities.

References

Acs, Z., Morck, R., Shaver, J. M., & Yeung, B. (1997). The internationalization of small and medium-sized enterprises: A policy perspective. Small Business Economics, 9(1), 7-20. DOI: 10.1023/A:1007991428526

Acs, Z. J., & Audretsch, D. B. (1988). Innovation in large and small firms: An empirical analysis. American Economic Review, 78(4), 678-690. DOI: https://www.jstor.org/stable/1811167

Acs, Z. J., & Terjesen, S. (2013). Born local: Toward a theory of new venture's choice of internationalization. Small Business Economics, 41(3), 521-535. DOI: 10.1007/s11187-012-9446-8

Añón Higón, D., & Driffield, N. (2011). Exporting and innovation performance: Analysis of the annual small business survey in the UK. International Small Business Journal, 29(1), 4-24. DOI: 10.1177/0266242610369742

Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The future of resource-based theory revitalization or decline? Journal of Management, 37(5), 1299-1315. DOI: 10.1177/0149206310391805

Bellone, F., Musso, P., Nesta, L., & Schiavo, S. (2010). Financial constraints and firm export behaviour. The World Economy, 33(3), 347-373. DOI: 10.1111/j.1467-9701.2010.01259.x

Bianchi, C., & Wickramasekera, R. (2016). Antecedents of sme export intensity in a Latin American market. Journal of Business Research, 69(10), 4368-4376. DOI: 10.1016/j.jbusres.2016.02.041

Bowersox, D. J., Stank, T. P., & Daugherty, P. J. (1999). Lean launch: Managing product introduction risk through response-based logistics. Journal of Product Innovation Management, 16(6), 557-568. DOI: 10.1016/S0737-6782(99)00016-8

Bratti, M., & Felice, G. (2012). Are exporters more likely to introduce product innovations? The World Economy, 35(11), 1559-1598. DOI: 10.1111/j.1467-9701.2012.01453.x

Cassiman, B., & Golovko, E. (2011). Innovation and internationalization through exports. Journal of International Business Studies, 42(1), 56-75. DOI: 10.1057/jibs.2010.36

Cowling, M., Liu, W., Ledger, A., & Zhang, N. (2015). What really happens to small and medium-sized enterprises in a global economic recession? UK evidence on sales and job dynamics. International Small Business Journal, 33(5), 488-513. DOI: 10.1177/0266242613512513

Danneels, E. (2012). Second-order competences and Schumpeterian rents. Strategic Entrepreneurship Journal, 6(1), 42-58. DOI: 10.1002/sej.1127

Deeds, D. L., DeCarolis, D., & Coombs, J. (2000). Dynamic capabilities and new product development in high technology ventures: An empirical analysis of new biotechnology firms. Journal of Business Venturing, 15(3), 211-229. DOI: 10.1016/S0883-9026(98)00013-5

22

DBIS - Department for Business Innovation & Skills. (2016). UK SMEs in the supply chains of exporters. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/524847/bis-16-230-smes-supply-chains-exporters.pdf (accessed on July, 2018).

DBIS. (2012). About DBIS. Retrieved from http://www.bis.gov.uk/ (accessed on March 2012).

Esteve-Pérez, S., & Rodríguez, D. (2013). The dynamics of exports and R&D in SMEs. Small Business Economics, 41(1), 219-240. DOI: 10.1007/s11187-012-9421-4

Filatotchev, I., Dyomina, N., Wright, M. and Buck, T. (2001). Effects of post-privatization governance and strategies on export intensity in the former Soviet Union. Journal of International Business Studies, 32(4), 853-871.

Filatotchev, I., Liu, X., Buck, T., & Wright, M. (2009). The export orientation and export performance of high-technology smes in emerging markets: The effects of knowledge transfer by returnee entrepreneurs. Journal of International Business Studies, 40(6), 1005-1021. DOI: 10.1057/jibs.2008.105

Golovko, E., & Valentini, G. (2011). Exploring the complementarity between innovation and export for SMEs' growth. Journal of International Business Studies, 42(3), 362-380. DOI: 10.1057/jibs.2011.2

Graves, C., & Thomas, J. (2006). Internationalization of Australian family businesses: A managerial capabilities perspective. Family Business Review, 19(3), 207-224. DOI: 10.1111/j.1741-6248.2006.00066.x

Gray, C. (2006). Absorptive capacity, knowledge management and innovation in entrepreneurial small firms. International Journal of Entrepreneurial Behavior & Research. DOI:10.1108/13552550610710144

Greenaway, D., Guariglia, A., & Kneller, R. (2007). Financial factors and exporting decisions. Journal of International Economics, 73(2), 377-395. DOI: 10.1016/j.jinteco.2007.04.002

Grimes, A., Doole, I., & Kitchen, P. J. (2007). Profiling the capabilities of SMEs to compete internationally. Journal of Small Business and Enterprise Development, 14(1), 64-80. DOI: 10.1108/14626000710727890

Guan, J., & Ma, N. (2003). Innovative capability and export performance of Chinese firms. Technovation, 23(9), 737-747. DOI: 10.1016/S0166-4972(02)00013-5

Hsu, W.-T., Chen, H.-L., & Cheng, C.-Y. (2013). Internationalization and firm performance of SMEs: The moderating effects of CEO attributes. Journal of World Business, 48(1), 1-12. DOI: 10.1016/j.jwb.2012.06.001

Jennings, P., & Beaver, G. (1997). The performance and competitive advantage of small firms: A management perspective. International Small Business Journal, 15(2), 63-75. DOI: 10.1177/0266242697152004

23

Kevill, A., Trehan, K., & Easterby-Smith, M. (2017). Perceiving 'capability' within dynamic capabilities: The role of owner-manager self-efficacy. International Small Business Journal, 35(8), 883-902. DOI: 10.1177/0266242616688523

Krasnikov, A., & Jayachandran, S. (2008). The relative impact of marketing, research-and-development, and operations capabilities on firm performance. Journal of Marketing, 72(4), 1-11. DOI: 10.1509/jmkg.72.4.001

Lefebvre, E., Lefebvre, L. A., & Bourgault, M. (1998). R&D-related capabilities as determinants of export performance. Small Business Economics, 10(4), 365-377. DOI: 10.1023/A:1007960431147

Long, J. S., & Freese, J. (2006). *Regression Models for Categorical Dependent Variables Using Stata*. College Station, Texas: Stata press.

Love, J. H., & Roper, S. (2015). SME innovation, exporting and growth: A review of existing evidence. International Small Business Journal, 33(1), 28-48. DOI: 10.1177/0266242614550190

Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. Journal of Management, 32(5), 646-672. DOI: 10.1177/0149206306290712

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in is research: A comparison of alternative approaches and a reanalysis of past research. Management Science, 52(12), 1865-1883. DOI: 10.1287/mnsc.1060.0597

Manova, K., Wei, S.-J., & Zhang, Z. (2015). Firm exports and multinational activity under credit constraints. Review of Economics and Statistics, 97(3), 574-588. DOI: 10.1162/REST_a_00480

Mason, C. M., & Harrison, R. T. (2004). Improving access to early stage venture capital in regional economies: A new approach to investment readiness. Local Economy, 19(2), 159-173. DOI: 10.1080/0269094042000203090

Mason, C. M., & Kwok, J. (2010). Investment readiness programmes and access to finance: A critical review of design issues. Local Economy, 25(4), 269-292. DOI: 10.1080/02690942.2010.504570

Morgan, N. A., Katsikeas, C. S., & Vorhies, D. W. (2012). Export marketing strategy implementation, export marketing capabilities, and export venture performance. Journal of the Academy of Marketing Science, 40(2), 271-289. DOI: 10.1007/s11747-011-0275-0

Murray, J. Y., Gao, G. Y., & Kotabe, M. (2011). Market orientation and performance of export ventures: The process through marketing capabilities and competitive advantages. Journal of the Academy of Marketing Science, 39(2), 252-269. DOI: 10.1007/s11747-010-0195-4

OECD. (2016). Entrepreneurship at a glance 2016. Retrieved from https://www.oecd-ilibrary.org/docserver/entrepreneur_aag-2016-

24

en.pdf?expires=1532338937&id=id&accname=guest&checksum=B91FD20D0916A7 00C1A63E6BA322F771 (accessed on July, 2018).

OECD. (2017). Enhancing the contributions of SMEs in a global and digitalised economy. Retrieved from https://www.oecd.org/mcm/documents/C-MIN-2017-8-EN.pdf (accessed on July, 2018).

Oi, W. Y. (1983). Heterogeneous firms and the organization of production. *Economic Inquiry*, *21*(2), 147-171. DOI: 10.1111/j.1465-7295.1983.tb00623

Penrose, E. (2009). *The Theory of the Growth of the Firm*. Oxford: Oxford University Press.

Raymond, L., & St-Pierre, J. (2013). Strategic capability configurations for the internationalization of SMEs: A study in equifinality. International Small Business Journal, 31(1), 82-102. DOI: 10.1177/0266242610391325

Saboo, A. R., Kumar, V., & Anand, A. (2017). Assessing the impact of customer concentration on initial public offering and balance sheet–based outcomes. Journal of Marketing, 81(6), 42-61. DOI: 10.1509/jm.16.0457

Silver, L., Berggren, B., & Veghohn, F. (2010). The impact of investment readiness on investor commitment and market accessibility in SMEs. Journal of Small Business & Entrepreneurship, 23(1), 81-95. DOI: 10.1080/08276331.2010.10593475

Sirmon, D. G., & Hitt, M. A. (2009). Contingencies within dynamic managerial capabilities: Interdependent effects of resource investment and deployment on firm performance. Strategic Management Journal, 30(13), 1375-1394. DOI: 10.1002/smj.791

Tan, A., Brewer, P., & Liesch, P. (2018). Rigidity in SME export commencement decisions. International Business Review, 27(1), 46-55. DOI: 10.1016/j.ibusrev.2017.05.002

Valdaliso, J., Elola, A., Aranguren, M., & Lopez, S. (2011). Social capital, internationalization and absorptive capacity: The electronics and ICT cluster of the Basque country. Entrepreneurship & Regional Development, 23(9-10), 707-733. DOI: 10.1080/08985626.2010.505268

Van de Ven, W. P. M. M., & Van Praag, B. M. S. (1981). The demand for deductibles in private health insurance: A probit model with sample selection. Journal of Econometrics, 17(2), 229-252. DOI: 10.1016/0304-4076(81)90028-2

Villar, C., Alegre, J., & Pla-Barber, J. (2014). Exploring the role of knowledge management practices on exports: A dynamic capabilities view. International Business Review, 23(1), 38-44. DOI: 10.1016/j.ibusrev.2013.08.008

Vomberg, A., Homburg, C., & Bornemann, T. (2015). Talented people and strong brands: The contribution of human capital and brand equity to firm value. Strategic Management Journal, 36(13), 2122-2131. DOI: 10.1002/smj.2328

Wu, J., Si, S., & Wu, X. (2016). Entrepreneurial finance and innovation: Informal debt as an empirical case. Strategic Entrepreneurship Journal, 10(3), 257-273. DOI: 10.1002/sej.1214

Yalcinkaya, G., Calantone, R. J., & Griffith, D. A. (2007). An examination of exploration and exploitation capabilities: Implications for product innovation and market performance. Journal of International Marketing, 15(4), 63-93. DOI: 10.1509/jimk.15.4.63

Yang, C.-H., Chen, J.-R., & Chuang, W.-B. (2004). Technology and export decision. Small Business Economics, 22(5), 349-364. DOI: 10.1023/B:SBEJ.0000022213.61143.37

Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. Academy of Management Review, 27(2), 185-203. DOI: 10.5465/amr.2002.6587995

Zou, S., Fang, E., & Zhao, S. (2003). The effect of export marketing capabilities on export performance: An investigation of chinese exporters. Journal of International Marketing, 11(4), 32-55. DOI: 10.1509/jimk.11.4.32.20145

Online Appendix

Table 1A: Correlation Coefficients between Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Export	1.000															
2. External Financing Intention (EFI)	0.040*	1.000														
3. Managerial Capacity (MC)	0.048*	0.040*	1.000													
4. New Market Entry Capability (NME-C)	0.167*	0.061*	0.038*	1.000												
5. New Product Development Capability (NPD-C)	0.213*	0.060*	0.024*	0.527*	1.000											
6. Size (Employee)	0.151*	0.124*	0.078*	0.062*	0.096*	1.000										
7. Firm Age (4 to10)	-0.042*	-0.001	0.043*	0.026*	0.025*	-0.122*	1.000									
8. Firm Age (above10)	0.075*	-0.019	-0.051*	-0.040*	-0.040*	0.174*	-0.827*	1.000								
9. Production	0.267*	0.033*	-0.040*	0.069*	0.070*	0.102*	-0.060*	0.080*	1.000							
10. Construction	-0.115*	-0.047*	-0.022	-0.082*	-0.030*	-0.050*	0.014	-0.010	-0.132*	1.000						
11. Transport, Retail/Distribution	-0.011	-0.013	-0.090*	0.075*	-0.000	-0.066*	0.007	-0.039*	-0.278*	-0.223*	1.000					
12. Business Service	0.055*	-0.036*	0.088*	-0.041*	0.008	-0.035*	0.043*	-0.037*	-0.188*	-0.151*	-0.317*	1.000				
13. Other Service	-0.158*	0.031*	0.088*	-0.014	-0.027*	0.074*	0.014	-0.009	-0.223*	-0.179*	-0.376*	-0.255*	1.000			
14. East of England	0.005	-0.002	0.006	-0.002	-0.006	-0.008	-0.008	0.003	0.006	0.003	0.002	0.000	-0.010	1		
15. London	0.065*	0.004	0.032*	0.006	0.037*	0.056*	0.036*	-0.032*	-0.076*	-0.043*	-0.000	0.083*	0.043*	-0.097*	1.000	
16. North East	-0.008	0.002	0.013	0.014	0.008	0.004	-0.005	0.004	0.019	0.008	-0.007	-0.008	-0.002	-0.047*	-0.053*	1.000
17. North West	-0.030*	-0.021	0.006	-0.002	-0.007	0.020	0.009	-0.017	-0.005	-0.006	0.000	0.014	0.008	-0.082*	-0.092*	-0.045*
18. South East	0.032*	-0.013	-0.007	0.026*	0.018	0.001	-0.002	-0.001	-0.012	-0.006	0.020	0.013	-0.007	-0.112*	-0.126*	-0.062*
19. South West	-0.029*	-0.020	-0.003	-0.003	-0.012	-0.022	-0.006	0.010	-0.001	0.002	0.011	-0.004	-0.009	-0.088*	-0.098*	-0.048*
20. West Midlands	-0.007	-0.008	-0.011	0.011	0.000	-0.004	-0.008	0.003	0.036*	-0.001	-0.032*	-0.002	0.014	-0.080*	-0.090*	-0.044*
21. Yorkshire and The Humber	-0.024*	-0.003	-0.004	0.011	0.007	-0.011	-0.002	0.006	0.028*	0.008	-0.019	-0.019	0.016	-0.076*	-0.085*	-0.042*
22. Wales	-0.048*	0.014	0.02	-0.029*	-0.022	-0.017	0.012	-0.014	-0.022	0.008	0.011	-0.019	-0.002	-0.120*	-0.135*	-0.066*
23. Scotland	-0.052*	0.023	-0.028*	-0.010	-0.009	-0.007	-0.017	0.018	0.010	0.008	-0.004	-0.036*	-0.000	-0.103*	-0.116*	-0.057*
24. Northern Ireland	0.108*	0.024*	-0.021	-0.018	-0.007	-0.002	-0.017	0.026*	0.023	0.031*	0.014	-0.024*	-0.051*	-0.080*	-0.090*	-0.044*
25. Family-Owned	-0.071*	-0.049*	-0.090*	0.000	-0.021	-0.163*	-0.022	0.036*	0.012	0.077*	0.146*	-0.107*	-0.162*	0.011	-0.089*	-0.019
26. Women-led	-0.116*	-0.002	0.031*	0.019	-0.011	-0.086*	0.035*	-0.043*	-0.093*	-0.086*	-0.009	-0.067*	0.200*	-0.011	-0.033*	-0.010
27. Ethnic Minority-led	-0.032*	0.051*	0.019	0.019	0.022	-0.031*	0.056*	-0.089*	-0.053*	-0.053*	0.061*	-0.007	0.034*	-0.009	0.208*	-0.001
28. Owner Age	0.014	-0.066*	-0.155*	-0.075*	-0.043*	-0.058*	-0.169*	0.245*	0.050*	-0.007	-0.034*	0.017	-0.036*	0.019	-0.058*	0.001
29. Profitability	0.048*	-0.045*	0.010	0.031*	0.029*	0.073*	0.021	0.020	0.031*	-0.002	0.006	0.027*	-0.059*	-0.007	-0.013	-0.025*
30. Turnover	0.217*	0.057*	0.049*	0.101*	0.065*	0.554*	-0.095*	0.131*	0.094*	-0.007	0.026*	-0.024	-0.079*	-0.005	0.082*	0.008
31. Credit Rationing	-0.026*	0.166*	0.002	-0.015	-0.003	-0.024	0.025*	-0.054*	-0.026*	0.033*	0.005	-0.022	0.018	-0.012	-0.006	0.008
32. Business Plan	0.093*	0.147*	0.104*	0.157*	0.140*	0.238*	0.022	-0.034*	0.034*	-0.086*	-0.090*	0.032*	0.120*	-0.010	0.007	0.013

Table 1A: Correlation Coefficients between Variables (Continued)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
16. North West	1.000															
17. South East	-0.107*	1.000														
18. South West	-0.084*	-0.114*	1.000													
19. West Midlands	-0.076*	-0.104*	-0.081*	1.000												
20. Yorkshire and The Humber	-0.072*	-0.099*	-0.077*	-0.070*	1.000											
21. Wales	-0.115*	-0.157*	-0.122*	-0.111*	-0.106*	1.000										
22. Scotland	-0.099*	-0.134*	-0.105*	-0.095*	-0.091*	-0.144*	1.000									
23. Northern Ireland	-0.076*	-0.104*	-0.081*	-0.074*	-0.070*	-0.111*	-0.096*	1.000								
24. Family-Owned	0.007	0.001	0.022	0.007	0.010	0.007	0.005	0.025*	1.000							
25. Women-led	-0.001	-0.007	-0.005	0.001	-0.001	0.035*	0.033*	0.014	0.057*	1.000						
26. Ethnic Minority-led	-0.006	-0.012	-0.042*	0.024*	-0.025*	-0.045*	-0.047*	-0.051*	0.010	-0.009	1.000					
27. Owner Age	-0.007	0.033*	0.012	0.022	0.003	-0.015	0.029*	-0.048*	0.072*	-0.037*	-0.091*	1.000				
29. Profitability	0.011	0.009	0.013	-0.011	-0.014	0.019	-0.008	0.01	0.041*	-0.044*	-0.030*	-0.041*	1.000			
30. Turnover	0.008	0.020	-0.025*	-0.027*	-0.021	-0.016	-0.023	-0.01	-0.118*	-0.122*	-0.024	-0.040*	0.089*	1.000		
31. Credit Rationing	0.004	-0.003	-0.002	-0.004	-0.004	0.003	0.018	0.006	-0.022	0.011	0.017	-0.015	-0.113*	-0.024	1.000	
32. Business Plan	-0.005	0.002	-0.013	0.003	-0.006	0.011	0.019	-0.005	-0.182*	0.022	-0.014	-0.095*	-0.022	0.146*	0.039*	1.000

Notes: N = 8,559. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

Table 2A: Robustness Check – Alternative Measure of Internationalization

Predictors	Dependent Variable = Export as % of Sales	
	Model IA (Tobit)	Model IIA (Heckman)
New Market Entry Capability (NME-C) - β_1	11.596***	5.535***
	(1.693)	(1.768)
New Product Development Capability (NPD-C) - β_2	4.403***	-3.006*
	(1.707)	(1.800)
External Financing Intention (EFI) - β_3	-2.580*	-3.474***
	(1.426)	(1.333)
Managerial Capacity (MC) - β_4	8.575***	3.524**
	(1.722)	(1.700)
NME-C * NPD-C - β_5	-4.965***	0.314
	(1.370)	(1.507)
NME-C * EFI - β_6	-1.114	-0.428
	(1.577)	(1.551)
NPD-C * EFI - β_7	2.091	1.328
	(1.567)	(1.502)
NME-C * NPD-C * EFI - β_8	3.116**	-0.490
	(1.296)	(1.326)
NME-C * MC - β_9	0.672	0.559
	(1.825)	(1.828)
NPD-C * MC - β_{10}	-1.021	2.593
	(1.831)	(1.876)
NME-C * NPD-C * MC - β_{11}	3.208**	-0.564
	(1.489)	(1.596)
Control Variables		
Size (Employee)	0.000	-0.020
	(0.016)	(0.014)
Firm Age (4 to10)	9.445***	0.508
	(2.747)	(2.854)
Firm Age (above10)	11.848***	-4.042
	(2.610)	(2.782)
Production	38.292***	-7.968*
	(3.756)	(4.502)
Construction	-17.973***	-18.150***
	(4.255)	(4.658)
Transport, Retail/Distribution	10.450***	-12.874***
	(3.667)	(4.021)
Business Service	15.016***	-13.012***
	(3.783)	(4.179)
Other Service	-8.830**	-13.250***
	(3.840)	(4.132)
Profitability	1.773	-2.938**
	(1.490)	(1.408)
Turnover (£Mil)	0.907***	0.287***
	(0.079)	(0.075)
Credit Rationing	0.498	0.382
	(2.337)	(2.194)
Family-Owned	-6.559***	-3.124***
	(1.226)	(1.140)
Women-led	-13.147***	-1.322
	(1.580)	(1.717)
Ethnic Minority-led	-6.559**	3.741
	(2.694)	(2.572)
Owner Age	0.188***	0.076
	(0.055)	(0.051)
Business Plan	2.184*	-0.832
	(1.221)	(1.133)
Constant	0.053***	38.958***
	(0.014)	(7.606)
Inverse Mills Ratio		-4.135
		(3.144)
Region effect	Yes	Yes
Year effect	Yes	Yes
N	11,689	11,689
Uncensored N		2,930
Log likelihood	-17,385.93	-19,342.85
$\chi^2 (\rho = 0)$		3.81*
Overidentifying restriction test of instruments: Sargan χ^2		23.237***
Weak identification test of instruments: Cragg-Donald Wald F		25.340**
Underidentifying restriction test of instruments: Anderson-Rubin χ^2		273.116***

Notes: *** $p < .01$; ** $p < .05$; * $p < .10$. The new market entry and product development variables are standardised to reduce the possible effect of multi-collinearity. Standard errors reported in parentheses. The first stage, selection equation of the hackman model is the same as Model III, Table 2 (except for using probit), and 11 UK region dummies are used as exclusion restrictions. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

Table 3A: Robustness Check – Endogeneity Using Two-Stage Probit Model

	Main Eq (2nd Stage)	Endogenous Variables (1st Stage)										
	Prob (Export)	NME-C	NPD-C	NME-C * NPD-C	EFI	MC	NME-C * EFI	NPD-C * EFI	NME-C * NPD-C * EFI	NME-C * MC	NPD-C * MC	NME-C * NPD-C *MC
Instruments												
Finance Obstacle		0.059**	0.027	-0.052*	0.181***	-0.002	0.049***	0.012	0.065***	0.046**	0.030	-0.035
		(0.026)	(0.026)	(0.030)	(0.011)	(0.010)	(0.133)	(0.013)	(0.015)	(0.023)	(0.023)	(0.027)
Credit Rationing		-0.052	0.008	0.039	0.228***	0.004	-0.059***	-0.044**	0.132***	0.035	0.014	0.027
		(0.037)	(0.037)	(0.042)	(0.163)	(0.014)	(0.019)	(0.019)	(0.022)	(0.033)	(0.033)	(0.038)
Profitability		0.047**	0.057***	-0.020	-0.025**	0.001	-0.021*	0.001	-0.020	0.020	0.025	-0.001
		(0.023)	(0.023)	(0.026)	(0.010)	(0.009)	(0.012)	(0.012)	(0.014)	(0.020)	(0.021)	(0.024)
Sector/Region Effect		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Predictors												
NME-C	-1.639											
	(1.080)											
NPD-C	2.245**											
	(0.923)											
NME-C * NPD-C	-1.903**											
	(0.776)											
EFI	-0.829*											
	(0.441)											
MC	-1.635**											
	(0.703)											
NME-C * EFI	-0.437											
	(1.003)											
NPD-C * EFI	0.085											
	(0.995)											
NME-C * NPD-C * EFI	2.038***											
	(0.714)											
NME-C * MC	4.428***											
	(1.230)											
NPD-C * MC	-2.225**											
	(1.100)											
NME-C * NPD-C * MC	1.077											
	(0.882)											
Control Variables												
Size (Employee)	-0.003***											
	(0.001)											
Firm Age (4 to10)	0.374***											
	(0.129)											
Firm Age (above10)	0.706***											
	(0.128)											
Turnover (£Mil)	0.011**											
	(0.005)											
Family-Owned	-0.128*											
	(0.073)											
Women-led	-0.445***											
	(0.079)											
Ethnic Minority-led	-0.172											
	(0.137)											
Owner Age	0.007*											
	(0.004)											
Constant	0.461											
	(0.716)											
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	11,689											
χ^2	574.56***											

Notes: *** $p < .01$; ** $p < .05$; * $p < .10$. The new market entry and product development variables are standardised to reduce the possible effect of multi-collinearity. Standard errors reported in parentheses. 11 UK region dummies included. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

# Table 4A: Robustness Check – Endogeneity Using Export Intentions

Predictors	Model IA: Logit New Exporter (1) vs. Non-Exporter (0)	Model IIA: Logit New & Repeat Exporter (1) vs. Non-Exporter (0)	Model IIIA: M-Logit (Base = Exporter) Non Exporter	Model IIIA: M-Logit (Base = Exporter) New Exporter
New Market Entry Cap (NME-C) - β_1	1.448**	1.535***	0.643***	0.959
	(0.213)	(0.113)	(0.043)	(0.147)
New Product Development Cap (NPD-C) - β_2	1.171	1.307***	0.793***	0.905
	(0.195)	(0.101)	(0.053)	(0.154)
External Financing Intention (EFI) - β_3	1.605***	1.087	1.024	1.624***
	(0.207)	(0.074)	(0.060)	(0.220)
Managerial Capacity (MC) - β_4	1.404*	1.215**	0.732***	1.019
	(0.245)	(0.101)	(0.052)	(0.185)
NME-C * NPD-C - β_5	1.049	0.838***	1.255***	1.318**
	(0.116)	(0.051)	(0.067)	(0.153)
NME-C * EFI - β_6	0.842	0.986	1.039	0.859
	(0.108)	(0.070)	(0.064)	(0.119)
NPD-C * EFI - β_7	1.140	0.958	0.891*	1.025
	(0.154)	(0.070)	(0.057)	(0.146)
NME-C * NPD-C * EFI - β_8	1.126	1.179***	0.859***	0.962
	(0.111)	(0.068)	(0.044)	(0.104)
NME-C * MC - β_9	0.843	0.932	0.997	0.829
	(0.136)	(0.075)	(0.072)	(0.141)
NPD-C * MC - β_{10}	1.148	0.969	1.068	1.249
	(0.203)	(0.081)	(0.078)	(0.225)
NME-C * NPD-C * MC - β_{11}	0.952	1.122*	0.852***	0.823
	(0.115)	(0.075)	(0.050)	(0.106)
Control Variables				
Size (Employee)	0.996*	1.001**	0.999	0.996**
	(0.002)	(0.001)	(0.001)	(0.002)
Firm Age (4 to10)	1.086	1.549***	0.671***	0.734
	(0.203)	(0.206)	(0.077)	(0.151)
Firm Age (above10)	0.604***	1.530***	0.563***	0.353***
	(0.114)	(0.193)	(0.062)	(0.072)
Production	1.559	3.304***	0.155***	0.239***
	(0.467)	(0.553)	(0.025)	(0.077)
Construction	0.671	0.414***	1.671***	1.110
	(0.214)	(0.084)	(0.306)	(0.390)
Transport, Retail/Distribution	0.659	1.351*	0.532***	0.354***
	(0.190)	(0.222)	(0.083)	(0.110)
Business Service	0.870	1.320	0.427***	0.376***
	(0.256)	(0.227)	(0.069)	(0.120)
Other Service	0.451***	0.603***	1.181	0.536*
	(0.139)	(0.105)	(0.195)	(0.178)
Profitability	0.803*	0.993	0.940	0.762**
	(0.103)	(0.072)	(0.058)	(0.102)
Turnover (£Mil)	0.993	1.029***	0.964***	0.952***
	(0.008)	(0.004)	(0.004)	(0.011)
Credit Ratio	1.241	1.041	1.007	1.235
	(0.231)	(0.122)	(0.098)	(0.244)
Family-Owned	1.025	0.833***	1.268***	1.307**
	(0.123)	(0.050)	(0.066)	(0.161)
Women-led	0.686**	0.636***	1.684***	1.193
	(0.101)	(0.047)	(0.110)	(0.182)
Ethnic Minority-led	1.195	1.020	1.316**	1.541**
	(0.244)	(0.125)	(0.146)	(0.330)
Owner Age	1.001	1.006**	0.995**	0.994
	(0.005)	(0.003)	(0.002)	(0.005)
Business Plan	1.326**	1.116*	0.864***	1.116
	(0.159)	(0.066)	(0.045)	(0.138)
Constant	0.038***	0.007***	17.756***	0.702
	(0.020)	(0.002)	(4.542)	(0.395)
Region Effect	Yes	Yes	Yes	
Year Effect	Yes	Yes	Yes	
N	8,619	11,689	11,689	
Log Pseudolikelihood	-1,384.02	-4,219.94	-6,902.76	
Pseudo R^2	0.077	0.212	0.162	

Notes: *** p < .01; ** p < .05; * p < .10. NME and NPD are standardised to reduce the possible effect of multi-collinearity. A firm is a *New Exporter* it is not exporting now but intends to export in the future. A firm is a *Serial Exporter* if it has exported continuously over the past three years. A *Non-Exporter* is a firm neither exporting now nor intending to export in the future. Coefficients are reported as odd ratios (relative risk ratios for Model IIIA) with robust standard error in parentheses. 11 UK region dummies included. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

Table 5A: Robustness Check – The Effect of Firm Size

Predictors	Small and Micro Businesses (# Employees < 50)	Medium-Sized Enterprises (# Employees = 50 to 249)
	Dependent Variable = Export	
New Market Entry Capability (NME-C) - β_1	1.484***	1.637**
	(0.103)	(0.395)
New Product Development Cap. (NPD-C) - β_2	1.232***	1.331
	(0.087)	(0.292)
External Financing Intention (EFI) - β_3	0.937	0.896
	(0.063)	(0.109)
Managerial Capacity (MC) - β_4	1.339***	1.390*
	(0.103)	(0.273)
NME-C * NPD-C - β_5	0.797***	0.865
	(0.044)	(0.182)
NME-C * EFI - β_6	0.970	0.963
	(0.066)	(0.139)
NPD-C * EFI - β_7	1.096	1.158
	(0.079)	(0.161)
NME-C * NPD-C * EFI - β_8	1.156***	1.099
	(0.064)	(0.134)
NME-C * MC - β_9	1.028	0.968
	(0.078)	(0.236)
NPD-C * MC - β_{10}	0.954	0.831
	(0.074)	(0.186)
NME-C * NPD-C * MC - β_{11}	1.176***	1.042
	(0.072)	(0.224)
Control Variables		
Size (Employee)	1.008***	1.001
	(0.003)	(0.001)
Firm Age (4 to10)	1.446***	1.621
	(0.174)	(0.696)
Firm Age (above10)	1.718***	1.964*
	(0.199)	(0.798)
Production	6.523***	3.922***
	(1.237)	(1.404)
Construction	0.726	0.264***
	(0.155)	(0.105)
Transport, Retail/Distribution	2.353***	0.693
	(0.436)	(0.244)
Business Service	3.006***	0.854
	(0.566)	(0.313)
Other Service	1.151	0.288***
	(0.223)	(0.104)
Profitability	1.040	1.186
	(0.070)	(0.176)
Turnover (£Mil)	1.071***	1.026***
	(0.015)	(0.005)
Credit Ratio	0.994	0.887
	(0.104)	(0.226)
Family-Owned	0.809***	0.800*
	(0.047)	(0.095)
Women-led	0.633***	0.513***
	(0.044)	(0.088)
Ethnic Minority-led	0.738**	0.796
	(0.091)	(0.199)
Owner Age	1.007***	1.002
	(0.003)	(0.005)
Business Plan	1.141**	0.905
	(0.065)	(0.118)
Constant	0.039***	1.001
	(0.011)	(0.001)
Region Effect	Yes	Yes
Year Effect	Yes	Yes
N	9,548	2,141
Log Pseudolikelihood	-4,377.50	-1,087.17
Pseudo R²	0.159	0.239

Notes: *** $p < .01$; ** $p < .05$; * $p < .10$. The new market entry and product development variables are standardised to reduce the possible effect of multi-collinearity. Coefficients are reported as odd ratios with robust standard error in parentheses. 11 UK region dummies included. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

Figure 1: Conceptual Framework
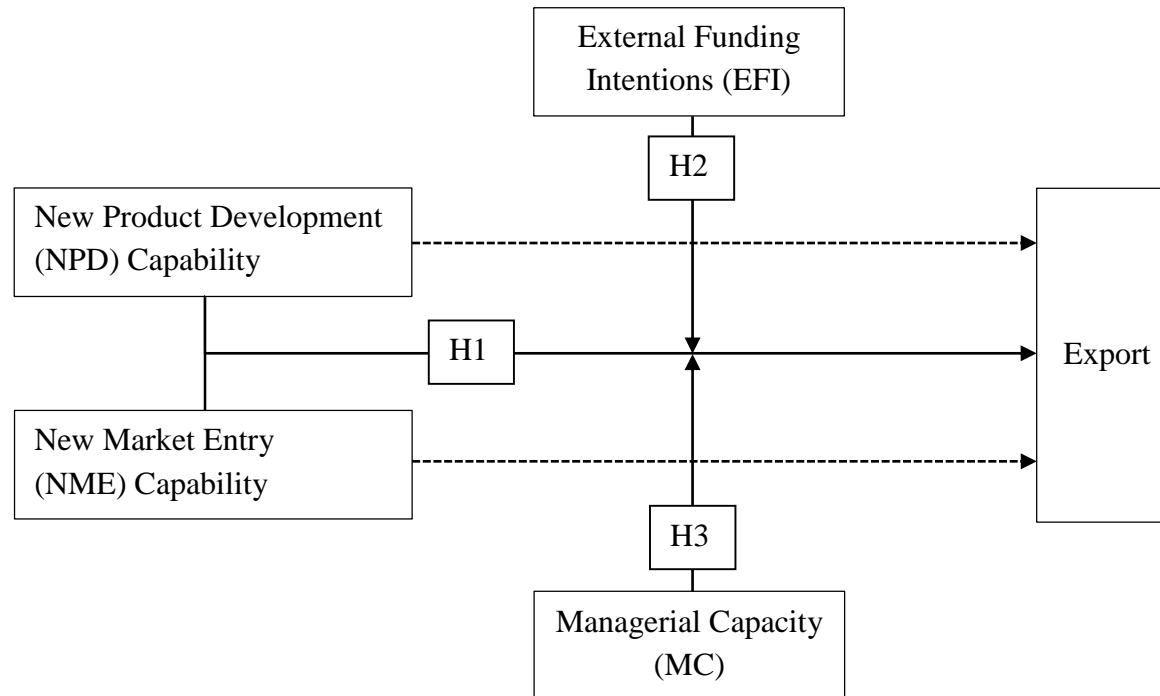
Note: Dotted lines represent the current status of academic research.

Table 1: Variable definition and descriptive statistics

Variables	Measurements/Definition	Full Sample (N = 11,689) Mean	Standard Deviation	VIF	Export = 1 (N = 3,070) Mean	Export = 0 (N = 8,619) Mean
Export	Firm selling goods/services or licence product outside the UK (0,1)	0.263	0.441	-	-	-
External Financing Intention (EFI)	Firms likely to use external finance (0,1)	0.289	0.453	1.04	0.314	0.280
Managerial Capacity (MC)	Owner manager with qualifications (0,1)	0.815	0.388	1.06	0.848	0.803
New Market Entry Capability (NME-C)	1 = v. poor to 5 = v. strong	2.898	1.199	1.40	3.308	2.752
New Product Development Capability (NPD-C)	1 = v. poor to 5 = v. strong	3.277	1.162	1.42	3.606	3.159
Size (Employee)	No. of employees	26.838	41.670	1.13	37.503	23.039
Firm Age (4 to10)	Firm age: 4 to 10 years	0.226	0.418	3.20	0.194	0.238
Firm Age (above10)	Firm age: >10 years	0.705	0.456	3.40	0.763	0.684
Production	Sector dummy	0.144	0.351	4.50	0.300	0.089
Construction	Sector dummy	0.097	0.296	3.47	0.039	0.117
Transport, Retail/Distribution	Sector dummy	0.318	0.466	7.16	0.309	0.321
Business Service	Sector dummy	0.179	0.383	5.24	0.213	0.166
Other Service	Sector dummy	0.228	0.419	6.20	0.120	0.266
Turnover	Sales from the past 12 months in £ mil	3.206	7.387	1.51	5.800	2.282
Profitability	Firm generating a surplus (profit) in the last 12 months (0, 1)	0.793	0.405	1.05	0.824	0.782
Credit Ration	Firm rejected partly/fully finance applied in the last 12 months (0, 1)	0.070	0.256	1.05	0.062	0.074
East of England	Region dummy (base = East Midlands)	0.079	0.270	2.12	0.081	0.099
London	Region dummy	0.097	0.296	2.41	0.130	0.079
North East	Region dummy	0.026	0.158	1.38	0.024	0.085
North West	Region dummy	0.072	0.259	2.03	0.059	0.026
South East	Region dummy	0.127	0.333	2.69	0.145	0.077
South West	Region dummy	0.082	0.275	2.14	0.067	0.121
West Midlands	Region dummy	0.069	0.254	1.98	0.064	0.087
Yorkshire and The Humber	Region dummy	0.062	0.241	1.89	0.052	0.071
Wales	Region dummy	0.145	0.352	2.88	0.118	0.065
Scotland	Region dummy	0.110	0.313	2.50	0.084	0.155
Northern Ireland	Region dummy	0.069	0.253	1.99	0.116	0.119
Family-Owned	Family owned (0,1)	0.607	0.488	1.11	0.548	0.628
Women-led	Women-led business (0,1)	0.231	0.421	1.08	0.150	0.260
Ethnic Minority-led	Ethnic minority-led (0,1)	0.055	0.229	1.08	0.045	0.059
Owner Age	Owner's age	49.902	10.982	1.13	50.163	49.809
Business Plan	Firm with a formal written business plan	0.515	0.500	1.16	0.590	0.488

Notes: Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands. Weights applied.

Table 2: Regression Results

Predictors	Dependent Variable = Export		
	Model I	**Model II**	**Model III**
New Market Entry Capability (NME-C) - β_1	1.513***	1.531***	1.533***
	(0.042)	(0.043)	(0.102)
New Product Development Capability (NPD-C) - β_2	1.214***	1.215***	1.255***
	(0.035)	(0.035)	(0.083)
External Financing Intention (EFI) - β_3	1.028	1.025	0.953
	(0.054)	(0.054)	(0.056)
Managerial Capacity (MC) - β_4	1.431***	1.430***	1.346***
	(0.094)	(0.094)	(0.096)
NME-C * NPD-C - β_5		0.940***	0.793***
		(0.021)	(0.042)
NME-C * EFI - β_6			0.965
			(0.059)
NPD-C * EFI - β_7			1.105
			(0.070)
NME-C * NPD-C * EFI - β_8			1.153***
			(0.058)
NME-C * MC - β_9			1.009
			(0.072)
NPD-C * MC - β_{10}			0.928
			(0.067)
NME-C * NPD-C * MC - β_{11}			1.174***
			(0.069)
Control Variables			
Size (Employee)	1.001	1.001	1.001
	(0.001)	(0.001)	(0.001)
Firm Age (4 to10)	1.478***	1.474***	1.479***
	(0.170)	(0.170)	(0.170)
Firm Age (above10)	1.821***	1.821***	1.831***
	(0.200)	(0.200)	(0.201)
Production	6.309***	6.280***	6.282***
	(0.996)	(0.991)	(1.001)
Construction	0.611***	0.610***	0.611***
	(0.111)	(0.110)	(0.111)
Transport, Retail/Distribution	1.920***	1.915***	1.918***
	(0.297)	(0.296)	(0.299)
Business Service	2.379***	2.367***	2.364***
	(0.377)	(0.375)	(0.378)
Other Service	0.881	0.879	0.878
	(0.144)	(0.143)	(0.144)
Profitability	1.079	1.079	1.080
	(0.066)	(0.066)	(0.066)
Turnover (£Mil)	1.038***	1.038***	1.038***
	(0.005)	(0.005)	(0.005)
Credit Ratio	0.974	0.977	0.974
	(0.093)	(0.093)	(0.094)
Family-Owned	0.785***	0.788***	0.789***
	(0.040)	(0.041)	(0.041)
Women-led	0.609***	0.607***	0.607***
	(0.039)	(0.039)	(0.039)
Ethnic Minority-led	0.755**	0.753***	0.750***
	(0.083)	(0.082)	(0.082)
Owner Age	1.005**	1.005**	1.005**
	(0.002)	(0.002)	(0.002)
Business Plan	1.151***	1.149***	1.144***
	(0.059)	(0.059)	(0.059)
Constant	0.049***	0.050***	0.053***
	(0.012)	(0.013)	(0.014)
Region Effect	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
N	11,689	11,689	11,689
Log Pseudolikelihood	-5526.524	-5523.090	-5513.285
Pseudo R^2	0.179	0.179	0.181
Test of Coefficient Estimates (Chi-square)			
$\beta_1 = \beta_2$	20.44***	23.17***	3.25*
$\beta_6 = \beta_7$			1.62
$\beta_4 = \beta_8$			22.37***
$\beta_4 = \beta_{11}$			13.29***

Notes: *** $p < .01$; ** $p < .05$; * $p < .10$. NPD and NME variables are standardised to reduce the possible effects of multi-collinearity. Coefficients are reported as odd ratios with robust standard error in parentheses. 11 UK region dummies included. Base categories: Firm Age = less than 3 years; Sector = Agriculture; Region = East Midlands.

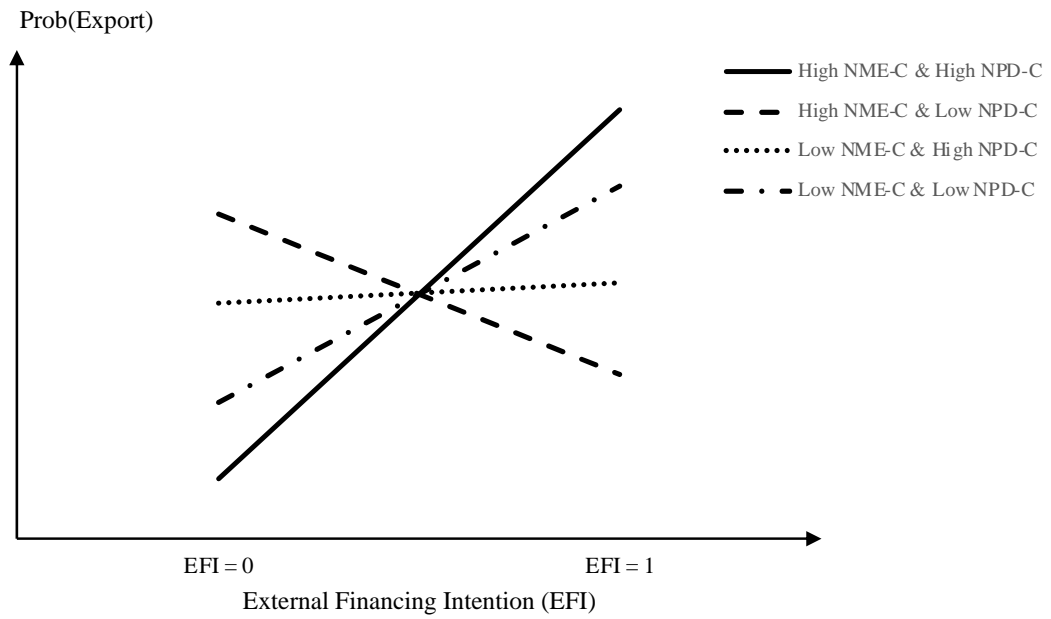**Figure 2. Three-way Interaction (Different Levels of NPD-C/NME-C Given EFI)**

Figure 3. Three-way Interaction (Different Levels of NPD-C/NME-C Given MC)