THE DETERMINATION OF INTERNATIONAL ENTRY STRATEGY

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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ABSTRACT

Choosing an international entry strategy is one of the crucial decisions in global strategy. This choice is important because it has significant implications for the firm's operational efficiency and overall performance, and impacts what organizational forms and location decisions are made in the future. Although factors influencing this choice have been researched for decades, a theoretically agreed structure with clear empirical support has yet to be established. Much of the extant literature investigates the entry mode choice in a piecemeal manner, intertwining theories (e.g., internalization theory, institutional theory, the resource based view, the eclectic theory, and international process theory) while making use of a varied mixture of weakly comparable data sources (i.e., panel data, survey data, and qualitative interviews or case studies) and examining the factors at different levels of analysis (i.e., country, industry, and firm).

This doctoral research argues that one of the reasons that our understanding of entry mode choice has not advanced as quickly or as parsimoniously as possible is our failure to understand entry mode as a choice made by the managers. For example, some studies involve the manager solely as a representative of the firms (e.g., a type of "key" information about the firms). The managers *per se* are hardly considered to be decision-makers as their individual decision-making models are never investigated directly.

The goal of this research is firstly to review the extant literature statistically to determine what the research domain actually knows about this choice and then to advance on this by modelling international entry strategy at the level of the managers who make the decisions. This suggests interdependent research stages: a meta-analysis and a series of decision making experiments. The former synthesizes the diverse and inconsistent conclusions from previous studies and provides well-defined factors for the experimental designs. The latter tests whether the factors matter in making the decisions for decision-makers. Together these two stages allow the doctoral research to gain a more valid picture on international entry strategy and advance global strategy research by examining the importance of managerial models in determining strategic decisions.

In sum, this doctoral research brings into the global strategy literature a more behavioural focus as well as a window on the role of the managers as a critical source of

heterogeneity in strategic decisions and outcomes. Using meta-analytic structural equation modelling and random utility theoretic choice experimentation, this research is a significant advance on models that assume that a singular generalizable model of international entry strategy operates. This work helps advance the use of experimental approaches that directly examine managerial trade-offs in a manner that can account for many factors that are otherwise unavailable to those using secondary data sources and in a manner that avoids many of the problems associated with survey based approaches.

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Abstract

This doctoral thesis investigates the determination of international entry strategy, via two interdependent studies: a meta-analysis about determinants on the entry strategy, and a series of experiments with decision makers who choose the entry strategy. The former examines a capability-opportunity model by synthesizing findings from the extant literature of major theoretical streams (i.e., the rational and the process traditions), employing a meta-analytic structural equation modelling (SEM) method. The latter, based on the meta-analytic results, investigates decision-makers' strategic decisions via choice experiments designed specifically for examining decision models. Taken together, this doctoral research aims to (a) complement existing international business theories by proposing an integrative perspective to understand international strategic decisions; (b) contribute insights of international entry strategy into the international business literature as well as the broader body of strategic decision-making literature, and (c) bridge macrofoundations and microfoundations for international strategy research.

1. INTRODUCTION

Understanding the determinants of international entry strategy[1] is one of the most enduring research topics in the field of international business (IB), because this strategy is a critical organizational decision integrally entwined with choosing a global operating location (Buckley 2004), and has long-term consequences (Pedersen, Petersen & Benito 2002), such as performance after entry (Brouthers, Brouthers & Werner 2003) and future organizational form (Lu 2002). Despite the importance of this topic, and the more than half a century since IB arose as a distinctive discipline, a theoretically agreed

[1] In this doctoral research, "international entry strategy" is defined as a firm's decision on how to enter new foreign markets.

upon—and empirically supported—structure of the determination of international entry strategy has yet to be established.

Two intertwined theoretical traditions underpin the extant literature and describe the determination of international entry strategy in two disparate ways (Dunning, Devinney, Tallman, Mitchell & de la Torre 2004). One tradition is derived from trade theory and industrial organization economics, and grew from the work of Hymer (1976) and Kindleberger (1969). Buckley and Casson (1976), Dunning (1980), Barney (1986), and North (1990) are dominant theories in this tradition. It suggests that international entry strategy is a deliberate calculation of potential opportunities in a calculative model, since decision-makers attempt to pursue extra profit, rents, and resources in global markets. Another tradition is the internationalization process. It arises from the Uppsala paradigm and views an international market entry as one of the events in the process of internationalization (Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975). According to this theoretical tradition, choosing an international entry strategy is dominated by asymmetric information that requires experiential knowledge from previous internationalization activities (Welch & Paavilainen-Mäntymäki 2013).

The extant literature based on these theoretical traditions, to a large extent, explains the determination of international entry strategy, but the findings are typically provided in a piecemeal fashion. That is, various factors are examined at three levels (i.e., country, industry, and firm) with a combination of three data sources (i.e., secondary data, surveys, and interviews). This doctoral research argues that three of the reasons that our understanding of international entry strategy has not advanced as quickly, or as parsimoniously, as possible are:

(a) The neglect of distinguishing ‘determinants of international entry strategy’ from ‘influential factors of an international market entry’, because of a confusion between ‘entry opportunity’ (i.e., an opportunity or activity featured by various environmental and business conditions) and ‘entry strategy’ (i.e., a decision on how to enter an international market or seize the opportunity). A factor that influences an entry opportunity may not necessarily be a determinant on the entry strategy.

(b) Inappropriate attempts to make theoretical paradigms (i.e., the rational tradition and the process model) independent of each other, while individual events within a process can be examined by calculative methods.

(c) Our failure to understand international entry strategy as a decision made by executives who make judgments on international entry opportunities, and choose entry strategy according to their experiential knowledge and their firms' internationalization status.

This suggests two research questions based on a broader theoretical framework:

Research question 1: What determines international entry strategy?

Research question 2: What matters to decision-makers who choose international entry strategy?

The overarching goal of answering these questions is to advance our understanding of the determination of international entry strategy, through the better alignment of theoretical logic to empirical modelling. It suggests two interdependent studies.

First, I seek to synthesize the decisive factors suggested by the extant literature via a meta-analysis. This allows me to: (a) statistically summarize the findings of previous studies; (b) examine the capability-opportunity model (the upper panel in Figure 1) with empirical findings in the extant IB literature, and (c) gather elements for designing experimental instruments to test the decision model in the next study (the lower panel in Figure 1).

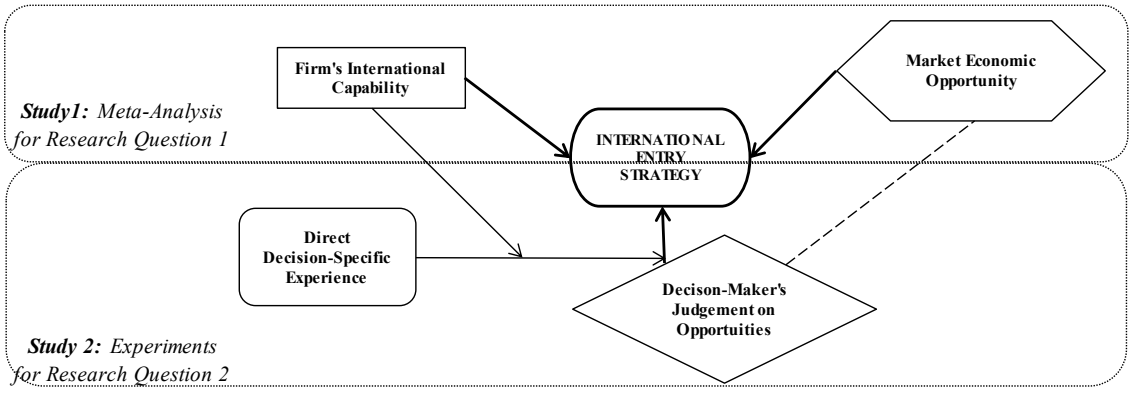

Figure 1 Conceptual Framework

In the second study, I attempt to model international entry strategy at the level of decision-makers by collecting data via a set of experiments. This allows me to: (a) observe decision-makers' trade-offs among international entry opportunities; (b) develop the decision-making model with statistical efficiencies, and (c) accommodate predominant IB theories for examining the extent to which influential factors—evidenced by the preceding stage—could influence decision-makers' choices.

The results of investigating both research questions stand to advance our thinking about both the determinants of international entry strategy and the role of the executive in IB strategic decisions. This promises to be of both scholarly and practical value.

2. THEORY AND RESEARCH QUESTIONS

2.1. Study 1: What determines international entry strategy?

In the IB literature, influential factors of a strategic decision can be classified into three 'exogenous' variables (i.e., country-specific, industry-specific, and firm-specific factors) (Buckley & Casson 1976). Typical country-specific factors include the macroeconomic situation (e.g., market size of a host country) and social elements (e.g., national culture traits). Industry-specific factors suggest the overall competition situation as well as that of peer firms. These two categories of elements shape the external environment in which a firm resides. The firm-specific exogenous variable reflects the idiosyncratic aspects of firms being studied. At this level, a firm's characteristics are taken into account. This is a clear way for both describing the complex internationalization activities and involving most factors in a decision-making process of international entry strategy, but the three-level classification is not parsimonious enough due to the confounding definitions of 'entry opportunity' and 'entry strategy'—as well as direct and indirect effects on international entry strategy.

An entry opportunity is, specifically, a chance for a firm to enter an international market. An opportunity consists of factors related to institutional environment, market demand status, resource supply, and the entry *per se* (e.g., profit and cost of a business activity in internationalization). These factors influence the extent to which an

opportunity is favourable to firms, and may exert indirect impacts on choosing an international entry strategy—despite the fact that choosing an entry strategy is directly determined by how much the opportunity is worth seizing. Firms—in fact, their decision-makers—endeavour to search and evaluate these business opportunities (Teece 2014). In other words, if international entry strategy is a free decision at the firm level, the impacts of country and industry may not directly affect this choice. Country-specific and industry-specific factors might be direct determinants, if entry mode becomes, for instance, a 'command' of a host country government. However, this is beyond the scope of the current research.

In addition to the 'opportunity', a firm's internationalization capability formed by international experience (Arregle, Hébert & Beamish 2006; Chiao, Lo & Yu 2010; Cho & Padmanabhan 2005; Li & Meyer 2009), international strategy (Dikova & van Witteloostuijn 2007; Gil, Nakos, Brouthers & Brouthers 2006; Harzing 2002), and global structure (Gil *et al.* 2006; Harzing 2002) may also determine what international entry strategy will be chosen, but the three effects are not conclusive in the IB literature. For instance, Pak and Park (2004) and Chiao *et al.* (2010) found that firms with more international experience are less likely to enter international markets via joint ventures, while Hennart (1991) found evidence for the opposite, and Kogut and Singh (1988) did not find international experience to have any significant impact on international entry strategy. In addition, some recent studies have shown different findings, such as moderating effects (Cho & Padmanabhan 2005) and the contextually varied influence of international experience (Li & Meyer 2009).

Unlike international experience, the impact of international strategy and global structure on international entry strategy seem consistent within the IB literature. Specifically, firms pursuing multidomestic strategies are more likely to favour low-commitment entry strategies (e.g., non-equity entry) (Dikova & van Witteloostuijn 2007; Hill, Hwang & Kim 1990), while a centralized international structure tends to encourage firms to pursue high-commitment strategies (e.g., wholly owned subsidiaries) for obtaining stronger control over subsidiaries (Davis, Desai & Francis 2000; Harzing 2002).

Besides a firm's internationalization, other firm-specific factors (e.g., firm size and structure) and industry-level factors (e.g., competition and peer firms) may also exert influence on international entry strategy by affecting a firm's internationalization. Thus, the current study includes all the factors for a more realistic model by employing the meta-analytic approaches discussed in 'Study 1: Meta-Analysis' section in the Methodology section.

2.2. Study 2: What matters to decision-makers who choose international entry strategy?

It is important to consider decision-makers at the time of examining firms' international entry, as decision-makers are vehicles of deciding international entry strategy. The burden of proof in this context is on researchers to show that firms' decisions are independent of (or dependent on) the heterogeneity of executives making relevant decisions (Devinney 2011). In particular, the rational tradition accounts little for managerial learning behaviour, which nevertheless lies at the core of the process tradition. Even so, the two streams overlap in investigating internationalization decisions (e.g., international entry strategy) made by executives. Thus, it would be appropriate to say that the gap between the two theoretical traditions may be due to the inappropriate level of analysis, as the conventional levels (i.e., country, industry, and firm) do not directly examine managerial decisions.

While the rational tradition searches for influential factors with variance-covariance approaches, the process tradition suggests that international decision-making is associated with executive's experience across specific internationalization activities (Johanson & Vahlne 2009; Welch & Paavilainen-Mäntymäki 2013). If it is impossible to access the symmetric information pertaining to all the factors related to an international entry opportunity, experienced executives initiate their calculations on known factors to aid them in making an optimal, if imperfect, decision. In such a situation, possessing direct experience of international entry strategy becomes vital, because such experiential knowledge can provide a framework for perceiving and formulating opportunities (Johanson & Vahlne 1977).

In addition, Kirzner (1997) and Shane (2000) found that direct experience has stronger impacts on recognizing opportunity than other experiential knowledge or personal characteristics. A superior ability to discover opportunities is derived from direct experiential knowledge and reflected in the formulation of final decisions that fit specific opportunities—rather than somehow catering to a variety of circumstances—because experienced executives are typically adept at handling the uncertainty related to international operations (Carpenter, Pollock & Leary 2003). On the other hand, recent research found that indirect experience (i.e., vicarious learning) may also influence executives' decisions in making strategies (Tuschke, Sanders & Hernandez 2014).

Besides the ability derived from experiential knowledge, the extant entry mode literature also suggests an association between experience and risk preference (e.g., Herrmann & Datta 2006). Such a link carries implications for executives' risk preferences when they face various investment opportunities when selecting entry strategies. Prior research indicates that foreign investors may encounter difficulties in assessing risks and uncertainties amongst potential investment opportunities, and, therefore, a new environment may lead them to choose safer or less risky options (Maekelburger, Schwens & Kabst 2012; Tsang 2005). In addition, decision-makers are likely to be heterogeneous in their risk preference towards foreign direct investments, due to variations in experiential knowledge of choosing an international entry strategy.

Furthermore, as choosing an international entry strategy is a corporate decision, not only are executives' judgments on an international entry opportunity modified by their own experience, but their experientially moderated judgments are subject to variation according to their firms' internationalization as well. However, how a decision-maker's experience interacts with a firm's internationalization, within the decision-making process, is still unclear. This doctoral research therefore employs experimental methods introduced in Section 3.3 to investigate how decision-specific experience and firms' internationalization may influence decision-makers' choice on international entry strategies.

3. METHODOLOGY

3.1. Pre-Study Research

Meta-analysis is a scientific approach for accumulating knowledge in a research domain, and provides a quantitative synthesis of literature using various statistical instruments. The pre-study investigates the topics discussed and the methods used in meta-analyses published in the top five IB journals from 2004 to 2012. It attempts to contribute the insights of meta-analytic methodology to the IB literature, and benefits this doctoral thesis by informing which meta-analytic approach should be taken to answer my doctoral research questions that lie at the cutting edge of IB theories.

3.2. Study 1: Meta-Analysis

To ensure a complete and representative dataset for this study, I employed multiple search strategies in order to filter the potential literature. After reading all papers in the literature reservoir, I developed a coding protocol that surveyed the primary studies to collect study characteristics and effect sizes (Lipsey & Wilson 2001). This procedure resulted in fundamental factors that are suggested by the extant literature as influencers of international entry strategy.

Then, I ruled out potential biases from uneven sample sizes, and computed mean effect sizes by accounting for both the number of effect sizes and their Spearman-Brown reliability (Hunter & Schmidt 2004). I also excluded extreme values that were five times larger than an average value (e.g., Meyer & Sinani 2009).

At the last stage of Study 1, I utilized 'two-stage meta-analytic structural equation modelling' (TSSEM, Cheung 2014) to construct the proposed capability-opportunity model. This method allows me to build latent variables (e.g., International Entry Opportunity) with factors revealed by previous studies. This method is superior to traditional approaches of meta-analytic SEM by avoiding potential problems, such as the difficulties of obtaining an appropriate sample size and the possibilities of including non-positive definite matrices (e.g., Chang, Rosen & Levy 2009; Reus & Rottig 2009).

3.3. Study 2: Choice Experiment

Most existing studies consider the heterogeneity of decision-makers as a statistical nuisance parameter in strategic decision-making models, and focus mainly on the aggregated effects at the firm level. At best, those studies control for the heterogeneity via socio-demographic variables, which, however, are only observable components of the heterogeneity. In addition, choosing entry strategy is contingent and experimental by nature (Buckley 2014). Thus, Study 2 aims to model decision-makers' decision by applying discrete choice experiment (DCE) methodology, which is designed to model heterogeneity via observing trade-offs between opportunities. The DCE methodology is derived from random utility theory (RUT, Manski 1977; McFadden 1974) and stated choice methodology (SCM, Louviere, Hensher & Swait 2000). DCE allows for direct measurement of decision-makers' trade-offs across a variety of scenarios (i.e., alternatives and potential options).

A combination of factors at different levels sets up an experimental scenario that can be compared to another scenario by executives who choose international entry strategy. An initial list of 25 factors that potentially influence an international entry strategy comes from (a) the meta-analysis in Study 1 and (b) three established IB scholars who recommend additional factors. The initial factors were screened by 28 executives via an experiment known as best-worst scaling (BWS)—an extension of the DCE method. It gives the relative importance of the factors and recommends the twelve most important factors in designing a DCE experiment. With the selected factors and their respective levels, I developed DCE instruments that consist of twenty-one choice-sets.

Respondents in this experiment are executives that were randomly invited though the alumni network of EMBA/MBA programs in top business schools in USA, Australia, and China. The sample size of the DCE experiment is defined by computing the S-efficiency via a Bayesian procedure (Bliemer & Rose 2010; Rose & Bliemer 2013).

The econometric aspect of analysis is the choice nested within the executives. Such a structure allows me to create choice-models that account for general tendencies and

heterogeneity across decision-makers. This is done by estimating multivariate probit model and multinomial logit model.

4. CONTRIBUTION

This doctoral research contributes new insights of international entry strategy to the IB literature by (a) providing a holistic model depicting determinants and influential factors of international entry strategy, and (b) investigating decision-makers' choices based on two theoretical traditions (i.e., the rational and the process). This research moves beyond the inconsistent arguments of the rational and the process traditions, and accommodates differences between the two theoretical paradigms, as well as multiple perspectives in determining international entry strategy. These also provide empirical evidence to complement IB theories and contribute to the larger body of literature on strategic decision-making.

This research employs two innovative methods: meta-analytic structural equation modelling and a set of choice experiments. The former allows me to construct latent variables that are not available in other empirical studies, and examines international entry strategy in a holistic model. With the experimental methods, I can bridge the microfoundation and macrofoundation of IB research, with the aim of providing new insights into IB theories. The experimental approach brings executive decisions back into strategic-decision models, and directly examines managerial trade-offs in a manner that can control factors with experimental manipulations, as well as in a manner that avoids many of the problems associated with survey-based approaches.

This research can benefit managerial decisions in two ways. On the one hand, the meta-analysis provides firms with a toolkit, which accounts for all the major factors that executives should consider while deciding upon the international entry strategy. On the other hand, the choice experiments reveal decision-making routines and advance our understanding of managerial decisions.

In summary, what leads firms to choose one international entry strategy in preference to others? Do factors suggested by theories matter to the decision-makers of

international entry? These questions are important for theory and practice, yet remain unanswered. Despite the large body of literature, previous studies neither integrate all major aspects into a complete picture nor truly account for managerial heterogeneity. This doctoral research endeavours to address these challenges and make contributions to the literature.

Endnotes

This doctoral research has three parts: (1) a pre-study, (2) a meta-analysis, and (3) an experimental study. Prior to thesis submission, all three parts went through peer-review processes. First, an early version of the pre-study has been published as two book chapters in the *Advances in International Management* (i.e., Buckley, Devinney & Tang 2013; Devinney & Tang 2013), where I worked as the corresponding author. Next, I presented an early version of the meta-analysis in the *39th European International Business Academy (EIBA) Annual Conference*. Being the leading author, I co-authored with Professor Timothy Devinney and Professor Peter Buckley in the latest version of the meta-analysis that is currently under second-round review at the *Global Strategy Journal*. Furthermore, as the first author, I presented an early version of the experimental study in the *Academy of International Business (AIB) 2014 Annual Meeting* and the *Academy of Management (AoM) 2014 Annual Meeting*. After revising the manuscript according to comments from two anonymous reviewers, I include the latest version of the experimental paper in this thesis.

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AN ASSESSMENT OF META-ANALYSES IN INTERNATIONAL BUSINESS

Abstract

This study reviews meta-analyses published in the international business (IB) domain and attempts to contribute to the IB literature by: (1) examining the merits and defects of meta-analytic methodology in comparison with conventional literature reviews; (2) recommending a meta-analytic procedure for IB research, and (3) gaining an understanding of the predominant methods used in IB meta-analyses. This chapter integrates major streams of meta-analytic methodology, demonstrated by summarizing research procedures and major issues in IB meta-analyses published from 2004 to 2012 in the top five IB journals. The findings of this study suggest potential improvements for IB meta-analytic research.

1. INTRODUCTION

As a quantitative method of synthesizing findings in a group of relevant but independent primary studies, meta-analysis copes with conflicts in literature through a variety of statistical techniques in order to build empirical constructions in a theoretical paradigm (Cooper, Hedges & Valentine 2009; Glass 1976; Hunter & Schmidt 2004; Lipsey & Wilson 2001). This study aims to outline meta-analytic procedures by summarizing widely accepted meta-analytic methods, reviewing meta-analyses published in the international business (IB) discipline, and suggesting ways to improve IB meta-analytic research.

While meta-analysis has, for decades, been widely used across a variety of disciplines (e.g., Glass 1976; Schmidt & Hunter 1977), only recently have the broader management and strategy disciplines seen a roaring growth of meta-analyses. The ISI Web of Science shows that the number of meta-analytic articles published within the management discipline increased from 28 to 220, between the 1980s and 90s. This

record increased to 744 in the first decade of 2000 (retrieved on 5 October 2012). However, as shown in the following sections, IB meta-analyses are not developed as well as those in other disciplines.

By its nature, IB research is multidisciplinary in scope and interdisciplinary in content and method (Thomas, Cuervo-Cazurra & Brannen 2011). This requires IB researchers to employ rigorous and systematic methods for clearly understanding *where* we are, *what* we know, in *what* ways we can improve on what we know and what we do, and in *which* direction we should go as a social science discipline. The four *"W's"* refer to optimal ways in which to synthesize past achievements, and conducting a literature review is a common practice by which to achieve this.

Literature reviews have been widely used in IB, and categorized in qualitative reviews (e.g., Brouthers & Hennart 2007) and quantitative syntheses (i.e., meta-analyses such as Stahl, Maznevski, Voigt & Jonsen 2010); however, the former seems more common. Taking entry mode choice as an example, there are more qualitative reviews (e.g., Brouthers & Hennart 2007; Canabal & White III 2008; Malhotra, Agarwal & Ulgado 2003; Slangen & Hennart 2007) than meta-analytic ones (e.g., Morschett, Schramm-Klein & Swoboda 2010; Zhao, Luo & Suh 2004). While qualitative reviews (i.e., narrative syntheses) provide valuable insights into IB theories, meta-analytic reviews go one step further by statistically integrating knowledge and examining the findings of primary studies. In particular, meta-analyses are capable of testing generalization, moderating effects, and new theoretical frameworks. This increases the reliability of the reviewed literature, and provides guidance on the future direction of IB research (Cooper *et al.* 2009).

In addition, meta-analysis solves the problem of insufficient power (i.e., sample size) in empirical studies (Lipsey & Wilson 2001). Specifically, it combines a set of independent primary studies that bear on the same research topic into a simple pattern of results, by correcting distorted primary findings arising from artefacts that may lead to conflicting conclusions (Hunter & Schmidt 2004). Because meta-analysis integrates findings of a large body of literature, this is particularly important in IB research where studies are typically conducted with available data (e.g., secondary data) or limited observations (e.g., surveys). Meta-analysis is also able to specify moderator variables—

such as which countries were examined—and future topics or sample domains, such as which countries need to be examined in the future. Thus, meta-analytic studies complement the narrative literature reviews, and primary studies, by integrating extant research with a particular focus. Meta-analytic techniques can also be powerful for improving IB research by highlighting where construct and model validity is weak (Farley & Lehmann 2001). Hence, IB is not simply an area where meta-analytic approaches can add great value, but also where meta-analytic approaches are critical to filling in the contextual moderators that are the hallmark of IB scholarship.

Meta-analysis arose as a reliable means of summarizing and integrating social science studies in the 1970s. Since then, meta-analysis has developed as an important tool that can assist researchers in various disciplines, and serves as an important complement to other approaches related to reviewing literature (Bohlin 2012). The importance of meta-analysis to specific disciplines is seen in the work of Bausell, Li, Gau and Soeken (1995), who examined meta-analyses published between 1980 and 1993 in two academic domains (i.e., social science and health science). Over this 13-year period, the number of meta-analyses grew at an annual rate of 14.7% , with 40 studies published in 1980, and 251 in 1992. Six years after that study, Lee, Bausell and Berman (2001) showed that this rate of growth had increased to 17% for each year between 1993 and 2000.

The current study focuses on the issues related to the meta-analytic methods used in the IB literature, and provides suggestions for improvement. Despite meta-analysis being a powerful approach to synthesizing findings in extant literature, one has to ensure that it is an appropriate method for her/his research objective/s (e.g., topics, research questions). In light of this, it is interesting to note that several prior studies use meta-analysis without providing any justification. Meta-analysis is suitable only when the extant literature is able to offer sufficient evidence to support a research topic.

Using data collected from an analysis of the application of meta-analysis in leading IB journals, the current study provides a thorough review of meta-analytic methods used in the IB discipline. The remainder of the chapter first offers a *general summary* of meta-analytic methodology, and then provides a *detailed analysis* of the method being used in 15 IB meta-analyses (published between 2004 and 2012 in five leading IB

journals). In addition to analysing the application of meta-analysis, this study articulates critical issues for consideration when applying meta-analytic methods in IB research. Finally, it offers suggestions designed to maximize the effective application of meta-analysis.

2. AN APPROACH OF QUANTITATIVE LITERATURE REVIEW

2.1. Rationale of Meta-Analysis

With attempts at knowledge accumulation—and ultimately, theory development—academic research advances scientific knowledge in two ways: (a) building theory on top of a foundation of previous research, and (b) introducing a paradigm different from previous ones (Card 2012). Both ways imply a prerequisite of thoroughly understanding the variability of results across various studies in the extant literature, and the relationships amongst the variables of interest. This prerequisite is not available by itself due to two barriers. The first comes from the finite cognitive ability of researchers, who are not able to follow, retain, and organize empirical findings across an entire body of literature. This becomes particularly crucial owing to the fast development of IT technologies that dramatically improve the availability of studies across all disciplines. The growing volume of literature makes it difficult for researchers to keep up-to-date in all areas. Another barrier arises from the huge diversity of methods, measures, and/or samples for examining a research topic. This increases the complexity of both separating significant discrepancies from acceptable sampling fluctuations, and assessing sources of disparity with conflicting results. To overcome these barriers, the common practice is to integrate the findings of previous studies by conducting a literature review—of which there are two broad types: the qualitative literature review (i.e., narrative subjective review), and the quantitative literature review (i.e., meta-analytic review). While both means are useful at overcoming the first barrier, only the latter can address both barriers.

Compared to qualitative methods, a quantitative literature review has multiple advantages. First, quantitative reviews are able to handle large volumes of studies that are published across diverse areas. For example, Taras, Steel and Kirkman (2012) meta-

analysed 451 primary studies on cultural indices over 49 countries and regions. These studies were derived not only from IB publications, but also from the publications of other disciplines. Reviewing such a large and diverse body of literature would be impossible for a qualitative reviewer. In addition to the capacity of examining large volumes of literature, divergent findings in literature also challenge the reliability of narrative reviews that interpret and deliver information in a more subjective way. When subjective ways are employed to weight and summarize primary studies, the direction and magnitude of potential biases are not able to be addressed. In contrast, a quantitative review (e.g., meta-analysis) can avoid this problem. Furthermore, it is not hard for a meta-analyst to integrate all artefacts (e.g., countries where a study was conducted, publication sources, etc.) that may distort a study's findings, while it is difficult for narrative reviewers to do the same. Finally, a moderating effect among variables is seldom available in narrative reviews, but is a common practice in meta-analyses (Hunter & Schmidt 2004).

In addition to these advantages, a well-conducted meta-analytic study can help researchers develop theories by: (1) revealing new knowledge that cannot be inferred from any single study; (2) statistically comparing results across various studies, and (3) answering questions that have not previously been discussed in any of the primary studies. For example, Van Essen, Heugens, Otten and van Oosterhout (2012) extend the understanding of compensation in contracting theory with the supplement of an institution-based view. They did so by meta-analysing the 'firm performance-executive compensation' relationship. The authors integrated the primary findings of contracting theory and the external data for institutional variables into multilevel models that enhance statistical significance via a cumulative sample size of over 600,000 observations.

In view of the above-mentioned advantages, meta-analysis has been widely used across a variety of disciplines, including finance, economics, sociology, marketing, and management since Glass's (1976) seminal work. For instance, Kirca and Yaprak (2010) found that 414 and 104 meta-analytic reviews were published in the top 25 management and marketing journals, respectively, from 1980 to 2009, while only 24 meta-analyses were related to IB research because of the seemingly very complex statistics in a meta-

analytic study for IB researchers. However, the truth is that anyone considering a literature review on a research topic can use meta-analysis by following a meta-analytic procedure (Rosenthal 1995).

2.2. Meta-analytic Procedure

Table 1 Major Issues in Meta-Analytic Study

Section	Major Query	Essential Options & Items
Research Specification	Definition of research questions	- stated research topic; - well-defined variables; - applicable to meta-analysis; - theoretical and practical context
Literature Retrieval	Data sources	- single / multiple database; - specific journal(s); - reference section of other article; - authors; - a combination of the sources
	Key terms & combinations	- key terms representing research topic; - combinations of key terms
	Other retrieval strategies	- e-mail listservers; - directly contacting authors; - browse of potential literature (e.g., reviews and eligible studies); - non-English publications;
Dataset Preparation	Effect size metric	- correlation; - mean; - (log) odds ratio; - multiple
	Inclusion criteria	- research topic; - empirical studies; - independence; - statistics for effect size; - other specifications (e.g., time period)
	Coding Procedure	- coding protocol (operational measures to effect size, study descriptors); - reliability (single / multiple coders)
	Correction	- transformation; - alleviation; - unreliability; - validity; - dichotomization;- range
	Outliers	- identifier (means of graphs, residuals, homogeneity statistics, sample-adjusted meta-analytic deviancy); - handle (trim, recode)
Data Analysis	Statistical information	- mean and standard deviation of effect size; - confidence intervals; - others
	Homogeneity analysis	- Q-test; - 75%-Rule or similar
	Moderator analysis	- fixed-, random-, and mixed- effects models
	Missing data	- contacting original authors; - likewise deletion; - pairwise analysis; - regression
	Publication bias	- identifier (funnel plot, statistical test); - evaluation (fail safe N, trime and fill)
	Additional data	- definition and proxy of external variable; - external sources
Report	Results	- statements about findings, generality, and limitations; - illustrating by figures, graphs, and tables
	Included studies	- reference list of included studies

A typical meta-analysis process involves five stages, they are: *research specification; literature retrieval; dataset construction; data analysis*, and *analysis report*, as demonstrated in Table 1. Each of the following sections outlines the major queries and essential options within each stage.

2.2.1. Research Specification

A well-formulated research question in a meta-analytic study is as crucial as in any other form of research. That is, the research question reflects: (1) areas that the meta-analytic study intends to investigate; (2) the conceptual framework in which a meta-analyst is interested, and (3) the domain in which conclusions can be drawn. Also, a competent meta-analyst will consider whether the topic is applicable to meta-analysis before beginning their work. In order to generate statistical validity, meta-analysis requires a reasonable number of empirical studies that report quantitative findings.

Meta-analysis also requires previous studies to provide comparable findings. If studies cannot be meaningfully compared, a meta-analytic study will not be able to obtain meaningful findings. It is usually not appropriate to include studies of discrepant topics in one meta-analysis as the analysis may encounter the problem of 'comparing apples with oranges' (Sharpe 1997). However, whether potential studies are '*comparable*' varies among research questions and ways of exploring the questions. While one researcher may hold a narrow view about a topic, another scholar may tend to have a broader vision and include more studies.

In addition to being in an identical conceptual domain, primary findings should fit into similar statistical forms, because only in the same statistical form can primary findings be statistically synthesized. While many statistical measures are convertible (e.g., *t*-statistics to correlation *r*), others cannot be converted meaningfully into a singular form (e.g., *t*-statistics to odds ratio *o*) (Lipsey & Wilson 2001). Similarly, the number of primary studies related to a specified research question should be large enough to achieve a minimum level of statistical power. Thus, a pilot literature search is suggested to ensure meta-analysts understand the research status of a topic and decide whether the topic deserves further effort.

After the pilot literature search, the meta-analyst needs to determine a specific research question that illustrates a meta-analytic study's objective(s) with independent and dependent variables. First, the to-be-analysed questions should have been addressed in primary studies, because only with existing findings can a meta-analytic study find new insights. This does not mean that meta-analysis cannot respond to new theoretical queries, but can only draw new conclusions based on extant studies. Next, the conceptual framework needs to be defined clearly to avoid two potential problems during the meta-analytic process: (1) the extant literature does not use identical terms (i.e., glossary and jargon) to the same concept, and (2) the same term represents different concepts or is operationalized in different ways. A precise definition of a research topic ensures consistent variables are included in a meta-analytic study. Furthermore, if a research topic is discussed across different academic disciplines, boundaries of the research topic have to be clear-cut. Otherwise, the meta-analyst will not be able to judge properly whether a primary study is related or not to the topic.

Finally, specifying research topics has three additional implications. First, there are always differences between conceptual and operational specifications. For example, a meta-analytic review on compensation has to specify the 'conceptual compensation' with operational measures, such as income, salary, and the gains from stock options. In other words, meta-analysts need to decide whether all or part of the operational measures (i.e., a broad conceptual specification) should be included in the study. This decision determines the literature search that occurs in the next stage. The second specification is to figure out what the meta-analytic study aims to reveal, that is, whether it is a description of events, a causal explanation of an event or a relationship between events. This directs an effect size measure in the third stage. The final specification is to illustrate the level of analysis, such as, an individual unit (e.g., a person or firm), a group of individuals (e.g., employees in a firm or firms in an industry/country) or the interrelationships across units and groups. The level of analysis impacts the establishment of analytic models in the fourth stage.

2.2.2. Literature Retrieval

Operational specification in the preceding stage suggests key terms (i.e., descriptors of a meta-analytic topic) used in searching for primary studies that provide previous research

findings for synthesizing in a meta-analytic study. Whether a meta-analytic study can obtain exhaustive and representative primary studies has a significant impact on the reliability and soundness of the meta-analytic study. On the one hand, if searching only within the most influential journals, meta-analysts may acquire primary studies that provide skewed findings (e.g., studies within one theoretical stream instead of broader theoretical perspectives). On the other hand, searching over-widely across the extant literature will waste time in examining and rejecting many positive but false hits (e.g., a word that has a meaning in one discipline but different meanings in other disciplines). A good search process neither ignores important data sources nor attempts to encompass too much literature that may potentially complicate a meta-analytic procedure. Thus, three strategies are commonly utilized for appropriate literature retrieval: (1) combination of key terms, (2) multiple data sources, and (3) multiple retrieval approaches.

First, combining key terms suggests using "AND", "OR" or blank spaces to logically combine key terms and their synonyms. For example, when meta-analysing the influence of cultural diversification on work teams, Stahl *et al.* (2010) applied the "AND" and "OR" to combine key terms of "team", "group", "culture", "diversity", "multicultural", "international", and "multinational". While some scholars suggest simple combinations for literature searches (e.g., Becker 2009), diverse and general combinations are more efficient than oversimplified ones, which may result in a narrow set of literature results. Without an adequate knowledge of extant literature, meta-analysts are unlikely to obtain a representative and unbiased collection of studies. By ruling out relevant studies at an early stage, some aspects of a research topic may inadvertently be omitted. Early exclusion may also produce inadequate literature for certain meta-analytic instruments (e.g., type of effect size).

Next, meta-analytic studies involve four data sources in order to achieve an adequate number of primary studies. The first source is electronic databases such as EBSCO, Elsevier, ProQuest. Using electronic databases has two advantages: covering a wide range of literature and often providing an 'automatic' search for combined key terms. Another source is journals that concentrate on specific topics (e.g., the *Journal of World Business* for IB studies) and are convenient for searching for literature within a

focused research area. The third literature source is the reference sections of articles that discuss the same research topic as the meta-analytic study. References, cited by authors of articles that are relevant to the meta-analytic topic, offer initial inclusion and result in 'snowball' effects. Finally, as meta-analytic studies may suffer from publication bias, if focused only on published literature. It has become common practice to search unpublished studies, which can be retrieved from electronic sources (e.g., SSRN 2012), mailing list servers (e.g., the *Academy of International Business*), and conference websites.

In accordance with these data sources, there are two fundamental approaches to retrieving primary studies. One is automatic search, which corresponds to electronic data sources. Another is manual search for browsing journals, searching in reference sections, and contacting authors to seek unpublished documents. As a single approach is inadequate to cover an entire body of literature, multiple approaches are often used. Multiple electronic databases are more likely than a single database to return a comprehensive bibliography for a given research topic. Additionally, the manual approach can supplement the search results of electronic sources.

2.2.3. Dataset Preparation

After conducting a search with the four data sources, meta-analysts are advised to browse all studies and documents in the bibliography to confirm the results of the retrieval. This does not suggest reading every article, but rather, collecting essential information including (from the most to the least important): conclusion and results; statistical models and data; sampling, and reference lists. Browsing is sometimes ignored by meta-analysts who sometimes believe that a detailed analysis acts as a substitute for this step. However, gaining extensive exposure to the extant literature helps meta-analysts grasp major issues and subsequently choose the most appropriate meta-analytic instruments such as effect size and study descriptors, inclusion criteria, and coding protocols.

Specifically, the effect size of a meta-analytic study is "the degree to which the phenomenon is present in the population, or the degree to which the null hypothesis is false" (Cohen 1988, pp.9-10). In other words, it encodes the primary findings of eligible

studies. A typical primary study often provides at least one of three types of results, namely, correlation (e.g., Pearson correlation $\boldsymbol{r}$, partial correlation $\boldsymbol{r_{xy,z}}$), standardized mean difference (i.e., Hedges' $\boldsymbol{g}$, Cohen's $\boldsymbol{d}$, and Glass's $\boldsymbol{g_{Glass}}$), and odds ratio (i.e., $\boldsymbol{\phi}$ or $\boldsymbol{o}$)[2], These potential effect sizes are derived from inferential statistics, descriptive data, probability levels of significance tests, and descriptive statistics (Card 2012). Research questions, as specified in the *Research Specification* (Section 2.2.1), suggest what effect size metric should be selected in order to describe an event, reveal causality, and/or uncover a relationship.

Once the effect size is chosen, meta-analysts can employ inclusion criteria to build a reservoir of eligible studies by screening primary studies obtained in the *Literature Retrieval* (Section 2.2.2) stage. A literature reservoir is a sample population for meta-analysing. An abundant reservoir is drawn from well-defined inclusion criteria that state explicitly which studies are eligible, and for what reasons. Inclusion criteria may vary in meta-analyses, but four common items are always included: (1) key terms (e.g., terms indicating research topics and/or objectives), (2) empirical studies in a specific domain (i.e., the boundary of research), (3) effect size metric (i.e., the object for synthesizing), and (4) independence for avoiding conclusion bias resulting from dependent studies.

Coding literature for a meta-analysis is similar to the data collection process in other empirical studies, but has three challenges for IB researchers. The first is the use of a single measurement to measure multiple constructs. For instance, the book value of annual profit is an accounting index showing firm's performance as well as an indicator of the firm's size. The next challenge is how to define a single construct that is measured in multiple ways. For example, 'firm size' is often operationalized by employment, assets, and sales. IB meta-analysts have to either choose one of them or integrate them into one construct (e.g., firm size) with justifications. The third challenge arises when some studies may provide results based on one or more subsamples. This requires meta-analysts to distinguish subsample characteristics from study results.

In addition to effect sizes, study descriptors are also defined in a coding protocol of meta-analysis. Coding study descriptors is a process of "interviewing" candidate studies

[2] In disciplines such as medicine and psychology, effect sizes such as 2x2 results and risk ratios are also chosen.

(i.e., potential primary studies to be included in a meta-analytic study) by coders with a coding protocol (Lipsey & Wilson 2001). Some study features (e.g., year of data collection) are related to effect sizes, and can become moderator variables (i.e., variables correlated with the magnitude of effect sizes). However, selecting descriptors is a trade-off between the broad range of study features and the limitation of published information. On the one side is that meta-analysis needs descriptive information and moderators to provide insights into the study results. On the other side, not every feature is widely reported in all studies. For example, some studies do not mention the time period when data were collected. Hence, it would be a waste of effort to code study descriptors that are rarely reported. Similarly, descriptors that are not relevant to the research topic do not benefit a meta-analytic study.

To code effect sizes and descriptors scientifically, meta-analysts need a well-prepared protocol that instructs coding process and maintains its consistency. A coding protocol consists of a coding form and a coding manual. The former collects information from primary studies, similarly to a questionnaire in a survey, with two sections for descriptors and effect sizes respectively. The coding manual provides detailed explanations of each item in the coding form. A good example of a coding protocol is provided by Hunter and Schmidt (2004, pp.479-492), in which the coding process is conducted by two or more independent coders. Multiple coders may, to some extent, avoid potential coding bias and mistakes resulting from a single coder, while coding process with multiple coders requires interrater reliability (IRR) for assessing potential inconsistency and error. Major indices of IRR include agreement rate and Cohen's Kappa (Orwin & Vevea 2009).

After the coding process, meta-analysts may obtain a set of raw data, which is considered imperfect for analysis, because effect sizes collected from primary studies may not present conceptual or theoretical constructs, but rather measures of the constructs. Many researchers believe that measures cannot be perfect because of a combination of three reasons: (1) unreliable or invalid measures from a variety of primary data sources; (2) imperfect ways of managing variables in the primary studies, and (3) biased samples in primary studies (Hunter & Schmidt 2004). Yet some

researchers think that making unnecessary correction to raw data may influence meta-analytic results (e.g., Glass 1976).

If IB meta-analysts believe that raw data are imperfect, they may consider two correction categories. The first category aims to produce desirable statistical properties (e.g., the transformation of correlation ***r*** to Fisher's ***z***) or to alleviate some known biases (e.g., the adjustment of Hedges' ***g*** for small sample size[3]). Another category of correction is artefact correction. It attempts to provide more accurate estimates and reduce variability among effect sizes by correcting methodological features (i.e., reliability and validity). Specifically, reliability means repeatability of a measure and its impact on the magnitude of the effect size, indexed as internal consistency (e.g., Cronbach's α, Cronbach 1951), interrater agreement (e.g., Cohen's κ, Cohen 1960), and test-retest reliability. The second correction is the validity of measures, which represents the consistency between a measure and the construct it measures. The common index of validity is a validity coefficient, which is a disattenuated correlation between the measure and the intended construct. The third type of correction aims to adjust artificial dichotomization of a variable that is naturally continuous, but artificially dichotomized. For example, annual sales are dichotomized as "large" and "small" by a cut-off value meant to represent large and small firm sizes. The final correction addresses sampling imperfections in primary studies. For instance, an influence on executive compensation may be executives' overseas experience and a firm's degree of globalization. If a primary study has samples of executives from multinational companies only, the correlation between compensation and overseas experience may need to be attenuated and corrected, because globalized firms are more likely to hire management teams with intensive international experience.

In addition, extreme values of effect size (i.e., outliers) may also deserve adjustment. As one purpose of a meta-analysis is to summarize the quantitative findings of a set of literature reasonably, outliers in raw data may distort the statistics and influence meta-analytic results. Outliers are traditionally identified by means of graphs (e.g., schematic plots), residuals, and homogeneity statistics (Hedges & Olkin 1985),

[3] If based on a small sample size, the standardized mean difference suffers from a slight upward bias (Hunter & Schmidt 2004).

and recently assessed by accounting for sample size and its variance across primary studies (Huffcutt & Arthur Jr. 1995). If extreme values are identified as outliers, IB meta-analysts may want to either eliminate the values or recode the extreme values into other dimensions or constructs.

2.2.4. Data Analysis

After creating a meta-analytic dataset, meta-analysts can begin their data analysis by (1) combining effect sizes, (2) computing distribution of effect sizes, and (3) examining homogeneity and moderators. Missing data, publication bias, and additional data, are also taken into account during the data analysis process.

In an optimal meta-analytic dataset, every effect size is statistically independent from others and represents one conceptual construct only. However, most datasets contain some effect sizes that are not able to be combined directly, because they may represent a same construct (e.g., revenue growth and profit increase for the construct of performance). If the effect sizes of two measurement proxies (i.e., revenue and profit) cannot be included in a single meta-analytic study at the same time, they have to be handled through one of the three approaches: (1) synthesizing an average value of the two effect sizes into the meta-analysis as a single effect size; (2) selecting one of them according to either measurement quality (e.g., the most commonly used effect size) or theoretical concept (e.g., meaningful interpretation), (3) placing different effect sizes into separate constructs (e.g., divide 'performance' into revenue performance and profit performance). A potential problem of these straightforward approaches is that the former two may lack meaningful information and the third one may increase analytic complexity and lead to ambiguous conclusions (e.g., revenue and profit are always correlated). An alternative method is to construct a statistical model that includes multiple effect sizes in one construct (e.g., a two-stage meta-analytic structural equation model, Cheung & Chan 2005), although this modelling method requires meta-analysts to know or estimate the covariance between dependent effect sizes (Gleser & Olkin 2009).

The second task of meta-analytic data analysis is to obtain a distribution of effect size by computing mean effect size and confidence intervals around the mean. Mean

effect size can be computed using two weights: estimated variance of an observed effect size, and sample size of an individual study (Card 2012).

The third analytic task is to examine homogeneity (or heterogeneity) by checking whether an effect size is the same effect size computed with an entire population of literature. In other words, a homogeneous distribution indicates that an individual effect size does not differ from the population sample. A major approach to analysing homogeneity is a *Q-test* (i.e., χ^2 with $k-1$ degree of freedom, where k is the number of effect sizes). A significant Q-statistic rejects the null hypothesis of homogeneity, indicating a heterogeneous distribution and the variability of effect sizes is likely to be greater than that of sampling errors. A non-significant Q-statistic is more likely to favour a fixed effects model (except for meta-analyses with small sample sizes), and a significant Q-statistic may suggest a random effects model to the meta-analytic study (Lipsey & Wilson 2001).

Another index of homogeneity is the "75% rule" (Hunter & Schmidt 2004). It divides the variability of observed effect size into two parts: (1) the study sampling error and (2) the cross study differences. If 75% or more of the observed variance results from a sampling error, the distribution of the observed effect size is considered homogeneous. Otherwise, it is considered heterogeneous. Similarly, Higgins, Thompson, Deeks and Altman (2003) developed the I^2 index to measure the magnitude (i.e., degree) of heterogeneity. I^2 provides a percentage of the variability among effect sizes that exist between studies, relative to the total variability.

As the fourth analytic task, moderation analysis aims to identify study features (e.g., publication information, research design, context) that may contribute to the heterogeneity of meta-analytic effect sizes by revealing associations between effect sizes (Card 2012). Potential moderators can be categorical (e.g., countries where the primary research was conducted) as well as continuous variables (e.g., the publishing or final year of a study).

In addition to the above analysis, three concerns are related to a meta-analytic study. They are: (1) missing data, (2) publication bias, and (3) additional data (i.e., data from non-primary-study sources). Missing data are inevitable in meta-analytic datasets and

cannot be thoroughly alleviated by meta-analytic procedures. Pigott (2009) suggests two strategies for accounting for missing data (i.e., contacting authors of studies with missing data, and employing statistical methods to "remedy" missing data) and three approaches to dealing with unavoidable missing values. The three approaches are listwise deletion (i.e., deleting the cases with missing values of a particular variable), pairwise analysis (i.e., estimating parameters by available data), and imputation (i.e., single regression or multiple regression—simply put, predicting the missing values by using a regression model).

Publication bias, the second concern, implies that published literature might not represent all relevant studies about a research topic, and therefore, their effect-size estimates may not demonstrate the distribution of population effect size (Hunter & Schmidt 2004). Another concern on publication bias is the "file drawer problem", implying that a meta-analytic conclusion is drawn from literature in one "file drawer" but not another. If using studies from another "file drawer", the meta-analytic results may be different. Sutton (2009) summarizes two methods—funnel plots and statistical tests—for identifying publication bias. Funnel plots depict a measure of sample size against that of effect size, and statistical tests include the nonparametric correlation test and linear regression tests. Two approaches can be used to evaluate the influence of publication bias—"fail safe N" in which the number of unpublished studies is calculated by integrating z-statistics corresponding to each study, and "trim and fill" that computes the number of studies that need to be trimmed off for obtaining a symmetric distribution of funnel plots.

Finally, the combination of primary studies and additional data gives meta-analysts extra opportunities to advance knowledge regarding an IB research question. Compared to data extracted from primary studies, additional data come from external resources out of the eligible studies for meta-analysis and benefit a meta-analytic study to investigate a research question that has not been examined in the extant literature. For example, when analysing changes of cultural values, Taras *et al.* (2012) employed GDP per capita to validate the meta-analytic effect size. The GDP figures were not from primary literature but external sources.

2.2.5. Analysis Report

The last stage of meta-analytic research involves reporting *what* the meta-analysts did, *what* they found, *what* the findings mean, and *whether* the research questions have been answered or resolved. Five components commonly appear in meta-analytic reports, that is, the title, introduction, methods, results, and discussion sections (Card 2012; Clarke 2009; Rosenthal 1995).

Specifically, a title of meta-analytic study is a concise statement that explicitly and accurately describes the meta-analysis. The introduction section develops the title by specifying the goals, questions and variables, and briefly introducing the principal findings. The methodology section generally discusses how the synthesized literature was searched and retrieved. This section also introduces how effect sizes are coded and what moderators are chosen. Furthermore, the statistical methods used in the meta-analysis are also described and justified in this section.

Following the method section, a results section that shows descriptive data of effect sizes and descriptors is normally provided before presenting the results. The homogeneity analysis is also presented in this section, together with significance tests, confidence intervals, and the results of moderator analysis. Finally, the discussion section explicates the findings and implications of the meta-analysis, and how they might future research. Meta-analysts may also use this final section in attempting to develop the findings into generalizable conclusions.

In presenting meta-analytic results, tables and figures are widely used to make the reports more readily understandable. Borman and Grigg (2009) suggest that tables can help the meta-analytic review display summary and original data. Figures such as forest plots, stem-and-leaf plots, and funnel plots can improve the reporting effects, as they provide visualized information that may be difficult for narratives to explain.

2.3. Limitations

As a statistical approach for reviewing primary studies, meta-analysis has inherent advantages as well as limitations. People cannot expect every primary study to

unequivocally answer a broad research question, nor can they expect every meta-analytic study to be impeccable.

First, although meta-analysts provide evidence extracted and integrated from a number of primary studies, meta-analytic results cannot lead to the same confidence as inferences provided by primary studies with random sampling (Cooper 2009). Thus, meta-analysts are not able to test relations solely dependent upon a meta-analytic dataset, unless advanced methods are involved (e.g., structural equation modelling). However, meta-analytic results can provide supports (or rejections) to the generalizability of primary studies over various facets and contribute future directions to a research topic.

Next, as meta-analysis synthesizes existing findings from previous research, it is post hoc by nature. A meta-analytic study is not able to test a hypothesis that has not been examined in a primary study. If a meta-analyst intends to test an a priori hypothesis regarding new variables rather moderators, additional data or advanced methods are required.

Meta-analysis is also criticized for its mixture of prior findings, quality of data sources, and significant reliance on statistical methodology. The most orthodox critique is the 'apples and oranges' problem, which states that meta-analysis mixes studies about 'apples' with those investigating 'oranges', and therefore, is not able to obtain meaningful results. This could indeed be a critical problem if a researcher attempts to synthesize literature on a broad topic. However, the 'apples and oranges' issue should not pose a problem for meta-analysts if they apply one of the following four approaches. First, 'coding apples as apples and oranges as oranges' means examining different research questions and effect sizes in separate categorises to elaborate similarity and disparity. Another way to address the problem is to apply multivariate and multilevel techniques to distinguish different effects amongst a set of variables. Rosenthal and DiMatteo (2001) suggest broadening the research topic from 'apples or oranges' to fruit. The last method is to include studies of either apples or oranges, and concentrate only on one narrow research topic.

In addition, meta-analysis is always frustrated by the quality of primary studies. Poor quality of primary studies may impede meta-analytic findings and lead to biased

conclusions, particularly when poorly designed studies lead to similar conclusions. This problem is also known as the 'garbage in, garbage out' problem. This is a common challenge, which all empirical research encounters, and can be avoided or alleviated only by using appropriate methods. One method is to employ rigorous inclusion criteria. The other is to use an index of research quality, such as study descriptors, as moderators (e.g., Greenland 1994).

The last criticism of meta-analysis regards its lack of qualitative finesse that narrative reviews possess, because narrative reviews are able to draw creative and nuanced conclusions from extant literature and can sometimes correctly exclude large swathes of confirmatory literature based upon logical deduction. However, this is the gap between all qualitative and quantitative studies.

3. METHODOLOGY

To examine the use of meta-analysis in the IB domain, the current study assesses meta-analytic studies published in IB journals, according to the meta-analytic procedure discussed in the preceding Section 2.2. I define IB journals according to the *Journal Quality List* (Harzing 2012) and categorize 18 journals as IB publications. Instead of including all eighteen journals, I investigated the top five IB journals for three reasons: (1) this study aims to understand the advanced level of meta-analytic research in IB; (2) pitfalls determined in top journals can be more beneficial for IB researchers, and (3) a shortlisted journal helped to concentrate on more details in every meta-analytic study.

The current study defines top journals by comparing the impact factor of *ISI Journal Citation Reports 2011* (ISI 2011), which suggests *Journal of International Business Studies* (JIBS), *Journal of World Business* (JWB), *Journal of International Management* (JIM), *International Business Review* (IBR), and *Management International Review* (MIR).

"Meta" was searched as a key word in title and abstract sections of articles published in the five journals, using databases such as Science Direct and ProQuest. I excluded articles regarding meta-factor, meta-construct, and articles referring to but not

conducting meta-analysis. In particular, I excluded studies using the title "meta-analytic review", if the studies failed to meet the strict definition of statistical meta-analysis (i.e., Takahashi, Ishikawa & Kanai 2012). I also excluded meta-analyses published before 2000, as I wanted to find the most current issues in meta-analytic research. This process ensured that only meta-analytic studies (e.g., meta-analytic reviews and meta-analytic tests) were included in this current study, and resulted in a list of 15 meta-analyses (Table 5 in Appendix 1). It is not an exclusive list of IB meta-analyses, but represents where IB meta-analytic research stands.

Based on the list, I first summarized the research topics being investigated in the published meta-analyses. Then, I reviewed the fifteen IB meta-analytic studies and evaluated their alignment with the major queries across the five criteria (Section 2.2). As only published information is available for assessing, this study understands the fact that the absence of essential items may be due to multiple reasons, such as the meta-analysts did not consider the items or/and the published study does not report necessary information (although the information is actually available with its authors). Also, this study does not purposely rank these studies in terms of their quality. Instead, it attempts to examine the status of meta-analytic research in IB by using these studies as illustrative examples. In addition, several of the articles report more than one meta-analysis.

4. RESULTS

4.1. Findings

Figure 2 depicts the amount and proportion of meta-analyses published in each journal, showing JIBS published the largest amount of meta-analytic studies in the past decade. Figure 3 illustrates both the number of published meta-analyses in every year since 2004[4] and the proportion of meta-analyses to all articles in the five journals in the corresponding years. It suggests that the number of published meta-analytic articles increased substantially in three of the last four years, despite the fact that meta-analytic

[4] No meta-analyses were published between 2000 and 2003 in the top 5 journals. Before 2000, there was only one meta-analysis published (i.e., Peterson & Jolibert 1995).

methods were not as widely utilized as other major methods over a longer period. For instance, in 2012 (the year in which the greatest number of meta-analysis papers were published), meta-analytic studies amounted to only 1.26% of the total number of studies published in the top five IB journals. Additionally, Figure 3 shows that the proportion of meta-analytic articles in IB journals remained at a constantly low level, and climbed above 1% only in 2009, 2010, and 2012.

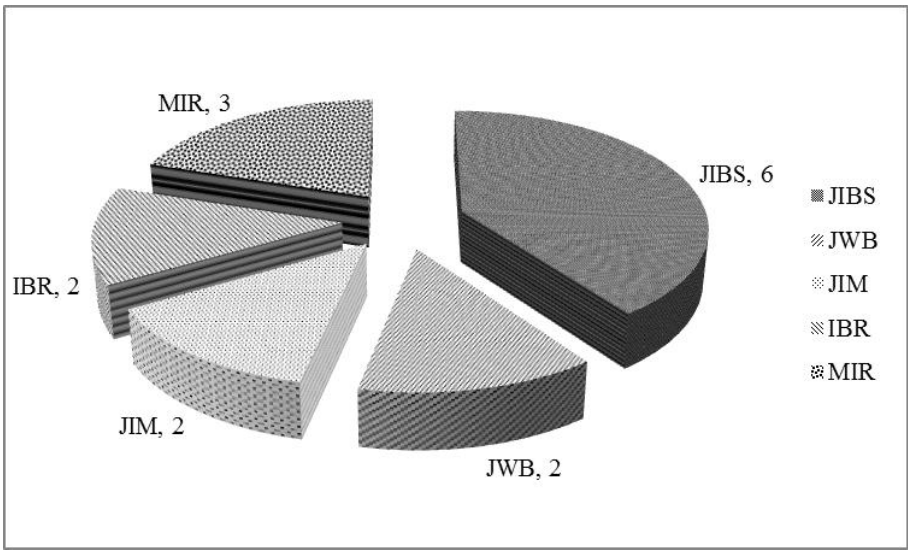

Figure 2 Meta-Analyses Published by IB Journals

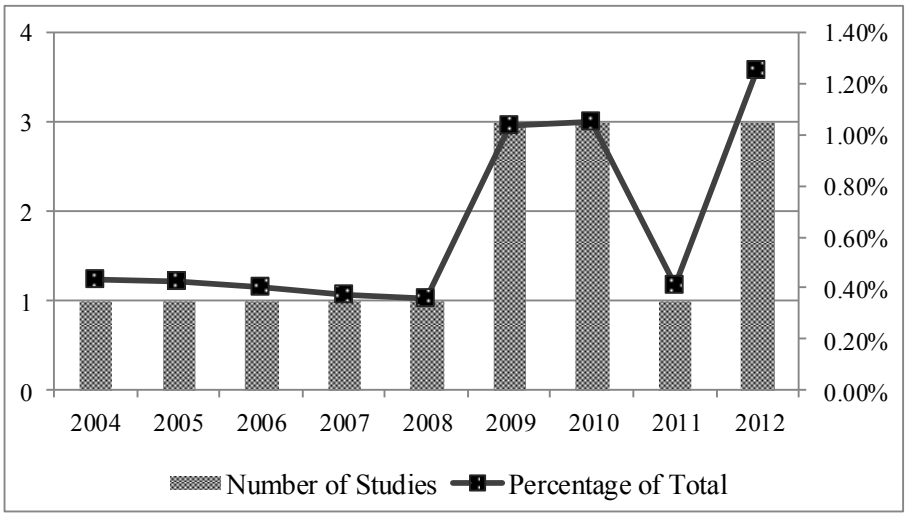

Figure 3 IB Meta-Analyses Published by Year

Table 2 Review of Meta-Analyses Published in the Top-5 IB Journals

Meta-analytic Study		Zhao, Luo & Suh, 2004	Tihanyi, Griffith & Russell, 2005	Garcia-Meca & Sanchez-Ballesta, 2006	Bausch & Krist, 2007	Magnusson, Baack, Zdravkovic, Staub & Amine, 2008
Research Topic		ownership-based entry mode choice	the effect of cultural distance on entry mode choice, international diversification, and performance	the factors that influence the accuracy of financial analysts' predictions	the relationship between internationalization and firm performance	the effects of cultural differences on MNE's entry strategy & performance
Section 1: Research Specification	stated research topic	Y	Y	Y	Y	Y
	theoretical and practical context	Y	Y		Y	Y
	well-defined variable	Y	Y	Y	Y	Y
	applicable to meta-analysis	Y	Y	Y	Y	Y
Section 2: Literature Retrieval	multiple databases		Y	Y	Y	Y
	search in specific journals	Y	Y	Y	Y	
	published reviews					
	key terms					
	combination of key terms					
	e-mail listserver					
	contacting author	Y	Y			
	selected literature				Y	Y
	non-English works					
Section 3: Dataset Preparation	appropriate effect size metric	Y	Y	Y	Y	Y
	inclusion criteria	Y		Y		Y
	coding information		Y	Y	Y	Y
	multiple coders		Y			
	correcting for effect size					
	identifying & handling outliers					
Section 4: Data Analysis	mean of effect sizes	Y	Y	Y	Y	Y
	standard deviation / variance	Y	Y	Y		
	confidence intervals			Y	Y	
	other statistics	Y			Y	
	homogeneity analysis	Y		Y	Y	
	moderator analysis	Y		Y	Y	Y
	missing data			Y		Y
	publication availabilitybias			Y	Y	
	additional data					
Section 5: Meta-analytic Report	findings	Y	Y	Y	Y	Y
	generality	Y	Y	Y	Y	Y
	limitation	Y	Y	Y	Y	
	figures /graphs					Y
	tables	Y	Y	Y	Y	Y
	included studies	Y	Y	Y	Y	Y
Count of *Y*s		18	17	20	20	17

Note: Y- Yes; a.r.- available upon request from the meta-analysts

Table 2 *Continued*

Meta-analytic Study		Fischer & Mansell, 2009	Meyer & Sinani, 2009	Reus & Rottig, 2009	Stahl, Maznevski, Voigt & Jonsen, 2010	Morschett, Schramm-Klein & Swoboda, 2010
Research Topic		employee's commitment across cultures	the local spillovers of FDI	the determinants of IJV's performance	the cultural diversity in work teams	the external antecedents of entry mode choice
Section 1: Research Specification	stated research topic	Y	Y	Y	Y	Y
	theoretical and practical context	Y	Y	Y	Y	Y
	well-defined variable	Y	Y	Y	Y	Y
	applicable to meta-analysis	Y	Y	Y	Y	Y
Section 2: Literature Retrieval	multiple databases				Y	
	search in specific journals				Y	Y
	published reviews	Y	Y		Y	Y
	key terms	Y	Y		Y	
	combination of key terms				Y	
	e-mail listserver			Y		
	contacting author	Y			Y	
	selected literature					
	non-English works					
Section 3: Dataset Preparation	appropriate effect size metric	Y	Y	Y	Y	Y
	inclusion criteria	Y	Y	Y	Y	Y
	coding information	Y	Y	Y	Y	Y
	multiple coders	Y			Y	
	correcting for effect size	Y		Y	Y	
	identifying & handling outliers		Y			
Section 4: Data Analysis	mean of effect sizes	Y	Y	Y	Y	Y
	standard deviation / variance		Y	Y	Y	Y
	confidence intervals			Y		
	other statistics	Y	Y			
	homogeneity analysis	Y	Y	Y	Y	
	moderator analysis	Y	Y	Y	Y	Y
	missing data	Y	Y	Y	Y	
	publication availabilitybias				Y	
	additional data	Y	Y			
Section 5: Meta-analytic Report	findings	Y	Y	Y	Y	Y
	generality	Y	Y	Y	Y	Y
	limitation	Y	Y	Y	Y	Y
	figures /graphs		Y	Y	Y	Y
	tables	Y	Y	Y	Y	Y
	included studies	Y (a.r.)	Y	Y	Y	Y
Count of *Y*s		23	23	21	27	18

Table 2 *Continued*

Meta-analytic Study		Steel & Taras, 2010	Judge, McNatt & Xu, 2011	van Essen, Heugens, Otten & van Oosterhout, 2012	Tara, Steel & Kirkman, 2012	Yang & Driffield, 2012
Research Topic		the factors shaping culture, the explanation of cultural variation, and the relationship between individual and national cultural values	the antecedents and effects of national corruption	the relationship between firm performance and executive compensation	the national cultural indices	the relationship between multinationality and performance
Section 1: Research Specification	stated research topic	Y	Y	Y	Y	Y
	theoretical and practical context	Y	Y	Y	Y	
	well-defined variable	Y	Y	Y	Y	Y
	applicable to meta-analysis	Y	Y	Y	Y	Y
Section 2: Literature Retrieval	multiple databases	Y		Y	Y	
	search in specific journals	Y		Y	Y	
	published reviews	Y		Y		
	key terms		Y	Y		
	combination of key terms					
	e-mail listserver	Y				
	contacting author			Y		
	selected literature	Y		Y	Y	
	non-English works					
Section 3: Dataset Preparation	appropriate effect size metric	Y	Y	Y	Y	Y
	inclusion criteria	Y	Y		Y	
	coding information		Y	Y	Y	
	multiple coders	Y	Y	Y	Y	
	correcting for effect size		Y	Y		
	identifying & handling outliers					
Section 4: Data Analysis	mean of effect sizes	Y	Y	Y	Y	Y
	standard deviation / variance	Y		Y		Y
	confidence intervals		Y			
	other statistics	Y				
	homogeneity analysis			Y		
	moderator analysis	Y	Y	Y	Y	Y
	missing data	Y	Y	Y		
	publication availabilitybias					Y
	additional data	Y		Y	Y	
Section 5: Meta-analytic Report	findings	Y	Y	Y	Y	Y
	generality	Y	Y	Y	Y	Y
	limitation	Y	Y		Y	
	figures /graphs	Y			Y	Y
	tables	Y	Y	Y	Y	Y
	included studies	Y (a.r.)	Y	Y	Y	Y
Count of *Y*s		24	19	24	20	13

Table 2 summarizes findings related to topics and procedures in the published meta-analytic studies, focusing on meta-analytic methodology rather than empirical or theoretical implications. Details related to the methodological analyses are elaborated in the following sections.

4.2. Topics

4.2.1. Culture

The effect of cultural factors is not only a prevalent IB research topic, but also a crucial meta-construct in IB research *per se*. Specifically, Tihanyi, Griffith and Russell (2005), and Magnusson, Baack, Zdravkovic, Staub and Amine (2008) examined how culture influenced an multinational company's (MNC) entry mode choice and performance. These two studies found similar results, suggesting that the effects of cultural factors on entry mode and performance are not statistically significant, although an MNC's home country, industry sector, time, and the operationalization of cultural difference/distance significantly moderate the effects. For example, while USA-based and Europe-based MNCs' entry strategies have significant associations with cultural factors, other countries' MNCs do not. At a micro level, Fischer and Mansell (2009) and Stahl *et al.* (2010) applied meta-analytic methods to synthesize the research of cross-culture work teams by integrating the findings about cultural effects in an MNC's working environment. The former authors found cultural factors had impact on different types of commitment, while the latter suggested that cultural effects varied among different contexts and research designs.

In contrast to the above-mentioned meta-analytic studies about culture, Steel and Taras (2010) considered culture to be a consequence (i.e., a dependent variable) of a set of factors. They found both micro features (e.g., age, gender, education, and socio-economic status) and macro characteristics (e.g., wealth and freedom) might determine an individual's cultural values. Meta-analysing the mean differences of cultural scores (i.e., survey results on cultural values) as well as several moderating effects (i.e., age, gender, wealth, and freedom), Steel and Taras (2010) conducted meta-analytic regressions taking the mean difference as dependent variables and the moderators as independent variables. The regression results show that moderating factors (i.e., age, gender, etc.) relate to deviations in the scores of previous surveys on cultural values. In

addition, Taras *et al.* (2012) applied meta-analytic techniques to review the evolution of a predominant cultural framework (i.e., Hofstede's cultural value dimensions, Hofstede 1980; Hofstede, Hofstede & Minkov 2010). The authors validated Hofstede's cultural values and found that Hofstede's scores have been declining in relevance due to cultural change and transmission gradually making current cultural values different from those calibrated over the past decades.

4.2.2. Multinational Performance

MNC performance is an important topic in the IB domain. Factors that may positively and negatively influence MNC performance attracted a great number of IB studies. This makes performance-related meta-analytic studies a major stream of IB meta-analysis. For example, Tihanyi *et al.* (2005) and Magnusson *et al.* (2008) examined the relationship between performance and cultural values. Also, Bausch and Krist (2007) and Yang and Driffield (2012) integrated a variety of influences on the association between an MNC's globalization and its performance. Among a variety of moderation effects, these authors found an MNC's country of origin was a significant factor influencing the globalization-performance relationship.

Similarly, Van Essen *et al.* (2012) examined the relationship between MNC performance and executive compensation. These authors found a moderately positive and considerably significant relationship between MNC performance and compensation, although this relationship varied dramatically across countries due to the different institutional structures that existed in each. Prior to Van Essen *et al.* (2012), Reus and Rottig (2009) analysed factors that may determine an MNC's performance in different host countries and found unique features of MNCs in China, with a significant negative effect of hierarchical control on partner conflict seen in China's samples when compared to non-China samples.

4.2.3. Entry Mode

As another important IB topic, entry mode also attracts some meta-analysts. Specifically, Tihanyi *et al.* (2005) and Magnusson *et al.* (2008) analysed how entry mode choice was impacted by cultural factors, and Zhao *et al.* (2004) and Morschett *et al.* (2010) studied

the determination of entry strategies. Based on Transaction Cost Theory, Zhao *et al.* (2004) constructed dimensions of determinants including cultural distance, country risk, international experience, and advertising intensity. Morschett *et al.* (2010) was not constrained by a single theoretical paradigm, but focused on 13 external determinants such as cultural distance, country risk, market growth, and volatility of demand. Since internal factors were not examined (e.g., international experience and advertising intensity), their meta-analytic results are potentially hard to generalize. For example, a strategic decision is impacted by a firm's experience (e.g., Delios & Beamish 1999), and constrained by the firm's marketing ability (e.g., Dikova & van Witteloostuijn 2007).

4.2.4. Remaining Studies

Rather than investigating the popular topics in IB, three meta-analytic studies selected different research focuses. Specifically, García-Meca and Sánchez-Ballesta (2006) found significant moderation effects of country, measurement, and time by synthesizing studies about factors that influence the accuracy of financial analysts' forecasts. Meyer and Sinani (2009) statistically reviewed the literature regarding positive spillovers of foreign direct investment. The authors found a curvilinear relationship between spillovers and the development levels of host countries. Also, Judge, McNatt and Xu (2011) integrated previous research on causes and effects of national corruption. Their results suggest that political/legal effects had the strongest relationship with corruption.

Although the top five IB journals do not observe a wide range of meta-analytic topics, recently published meta-analyses show improvements in terms of methodology. For instance, Zhao *et al.* (2004) aggregated data from only 38 primary studies, but Steel and Taras (2010) integrated data from 508 primary studies and Taras *et al.* (2012) summarized findings from 451 primary studies. In addition to the increasing number of primary studies included in a meta-analytic study, IB meta-analysts applied more deliberative and sophisticated meta-analytic approach to recent meta-analytic studies. For example, Fischer and Mansell (2009) and Van Essen *et al.* (2012) applied multivariate modelling techniques to synthesize findings, while the studies published earlier (e.g., García-Meca & Sánchez-Ballesta 2006) employed only basic statistical approaches to demonstrating patterns of integrated data (e.g., distribution and

relationship). This implies that advanced meta-analytic methods are gradually being utilized in answering more complex questions, and explaining more deep-seated phenomena that require more sophisticated and nuanced approaches.

However, a larger sample size and/or more complicated approach do not necessarily lead to a better meta-analytic study, unless the procedure that the meta-analytic study uses is also appropriate.

4.3. Procedures

4.3.1. Research Specification

To specify research topics, all of the fifteen IB meta-analytic studies addressed the four aspects: (1) an explicitly stated research topic; (2) an explanation of the concept in a theoretical and/or practical context; (3) a well-defined variable, and (4) the applicability of the research question/s to meta-analysis.

However, two of the fifteen meta-analytic studies did not set up the theoretical and practical contexts (i.e., García-Meca & Sánchez-Ballesta 2006; Yang & Driffield 2012), implying that the theoretical and practical context was not verified for establishing meaningful research questions and building connections between concepts (i.e., variables) and concrete events (i.e., the proxies of the variables). Specifically, García-Meca and Sánchez-Ballesta (2006) did not embed their meta-analytic study into a context that demonstrates the rationale of using effect sizes (i.e., why did the authors choose some effects sizes instead of others) and moderators, although they briefly mentioned the importance of their research and the extant literature related to variables of interest. Similarly, although Yang and Driffield (2012) used an attractive effect size metric (i.e., estimate of coefficient in a linear model) to disclose causal relationships, they neither verified the logic of choosing different measurements of performance and other moderators, nor explained how they defined the degree of multinationality, given that their study was aimed at examining the multinationality-performance relationship.

4.3.2. Literature Retrieval

Among the fifteen meta-analytic studies, only three articles (i.e., Stahl *et al.* 2010; Steel & Taras 2010; Van Essen *et al.* 2012) employed multiple searching strategies (i.e.,

searching in more than one database, major journals, and published literature reviews. Of the twelve remaining meta-analyses, five took advantage of two data sources (i.e., multiple databases and major journals, or journals and published reviews), while four drew from only one of the three major data sources (i.e., multiple databases, specific journals, or published reviews). Three meta-analyses searched for potential extant literature using only a single database (i.e., Judge *et al.* 2011; Reus & Rottig 2009; Yang & Driffield 2012).

Similar to data sources, key search terms (i.e., words used in the process of searching for literature) and their combinations (i.e., using 'and' or 'or' to integrate key terms) were only simultaneously reported in one study (i.e., Stahl *et al.* 2010). Key terms, but not combinations, were provided in another four meta-analyses, while the remaining ten IB meta-analyses did not mention what key terms were used in their searches. While the authors of these ten articles may have employed key words in their literature search, the fact that they did not disclose any key terms in searching literature makes it difficult for other IB researchers to know how eligible the primary studies were. In particular, other IB researchers who want to examine the same meta-analytic studies are not able to replicate their search results without key terms.

Among the top five IB journals, multiple literature-search strategies were more frequently reported in JIBS than other journals. For example, all meta-analytic studies in JIBS mentioned whether primary studies' authors were contacted for missing data and whether email list servers were used. On the other hand, all fifteen IB meta-analytic studies browsed pre-selected literature, but none of them collected data from non-English studies. This leaves the IB meta-analyses with a potential bias in primary data collection, particularly in the case of examining unpublished, but potentially relevant doctoral theses.

4.3.3. Dataset Preparation

Selection of the effect size metric is assessed by its link to research questions specified at the initial stage of a meta-analytic study. A good meta-analytic study selects an effect size metric that can demonstrate the essential concepts of a research topic, such as the phenomenon, association and causality. The fifteen IB meta-analyses applied traditional

effect size metrics (i.e., mean, correlation, and odds ratio) as well as uncommon ones (e.g., t-statistic in Meyer & Sinani 2009). Although the effect size metrics were generally well-justified for answering the research questions, inclusion criteria were not explicitly disclosed in all fifteen meta-analyses. Specifically, four studies did not explain what criteria were used to screen potential literature. Inclusion criteria are important because they define the eligible studies for meta-analysis and imply what the meta-analysis is about. The criteria are also important for other IB researchers who may want to replicate a meta-analytic study and understand the scope of analysis.

Coding procedures were more frequently explained. Authors of twelve meta-analytic studies provided coding information, and those of seven employed multiple coders to collect data from primary studies. In particular, the method of multiple coding was applied more often in studies published after 2009. Specifically, six of the seven multi-coded meta-analyses were published after 2009, but only one before 2009. This suggests that the reliability of data collection has gradually improved in recent IB meta-analyses.

Furthermore, the correction of artefacts was reported in only five meta-analyses published after 2009. In particular, the meta-analytic studies published in JIBS were more likely to correct for effect sizes (i.e., three out of six did this). Besides artefacts, the fifteen meta-analytic studies showed that many IB meta-analysts were not aware of the outliers in their datasets, because only one IB meta-analytic study discussed outliers.

4.3.4. Data Analysis

The fifteen IB meta-analyses described effect sizes by statistics of mean, standard deviation, and confidence intervals. These statistics display distributions of effect sizes, but only mean effect size was presented in every article. Standard deviations were available in ten meta-analytic studies. Confidence intervals were only provided by four meta-analyses. In contrast to the authors who did not provide sufficient of these essential statistics , some meta-analysts computed extra statistical data to facilitate their discussions. For example, Fischer and Mansell (2009), and Steel and Taras (2010) provided the correlation matrices of effect sizes and moderators used to infer the relationships of interest.

An important task in meta-analysis is homogeneity analysis. It provides evidence of the variability of studies by computing the probability that the variance of effect size is due only to sampling error. This is crucial for meta-analysts to determine whether significant moderation effects exist in effect sizes (Card 2012). However, only eight IB meta-analytic studies presented this item. Five out of eight studies were published in JIBS, and only one IB meta-analytic study present homogeneity analysis (i.e., Tihanyi *et al.* 2005). In contrast, this crucial analysis did not appear in any of the meta-analytic studies published in JWB and JIM.

Despite homogeneity analysis being absent from some of the fifteen IB meta-analytic studies, moderation analysis was provided by all but one IB meta-analytic study (i.e., Tihanyi *et al.* 2005). As a follow-up step to the homogeneity analysis, moderation analysis gives insights into the discrepancy between primary studies by finding whether features of the primary studies (e.g., year of publication, research design, and sample range), contextual factors (e.g., national economic status and institutional environment) or other substantive differences account for variations in effect sizes. Thus, the six meta-analytic studies that conducted moderation analysis without homogeneity analysis may confuse readers as to how the studies justified the need to examine moderation effects.

In addition, missing data are always inevitable in a meta-analytic dataset. In six of the fifteen IB meta-analyses, information regarding missing data was not reported. One reason might be that there was no missing data. However, even if there was no missing data, it is still useful to state explicitly whether missing data exists. If there were missing data, the way in which this was handled is important for users of the meta-analysis to judge, and to assess the research, and its results.

Similarly, publication availability bias is another issue that was not widely recognized, because only four articles among the fifteen IB meta-analyses identified and handled this problem. While moderation analysis can explain how publication features moderate effect sizes, the extent to which the distribution of available studies differ from the population distribution can be disclosed only by publication-bias analyses such as “fail safe N” (Rosenthal 1979). If there is a big difference between distributions of

available literature and the population, the representativeness or generality of meta-analytic findings will be weakened.

Finally, external data (i.e., data that are not collected from primary studies included in a meta-analytic study) are gradually being incorporated by IB meta-analysts. Before 2009, no additional data were involved in the published IB meta-analyses; however, five of the ten meta-analyses published after 2009 took advantage of additional data in their moderation analysis. The authors of these meta-analyses employed additional data to investigate research questions that were not addressed by extant studies, for example, Taras *et al.* (2012) and Van Essen *et al.* (2012). With additional data, both meta-analytic studies not only analysed previous findings but also expanded their analyses to reach conclusions that a single primary study may not be able to achieve. In Taras *et al.* (2012), additional data were collected from public databases (e.g., World Bank and the United Nations) and provided additional evidence related to how national cultural values evolved over decades. Similarly, when integrating the institution-based view into the meta-analysis of contracting-theory based literature, Van Essen *et al.* (2012) collected external data on institutional variables that were not available in the examined literature. Their meta-analytic findings extended the previous understanding on firm performance-executive compensation relationships, taking it from a theoretical framework to another paradigm.

4.3.5. Analytic Report

All fifteen meta-analytic studies reported findings and generality of conclusions, and included studies by illustrating them in tables, despite the fact that only eight applied figures and graphs. Among the eight studies, seven were published after 2009. In addition, only three of the fifteen meta-analytic studies did not explicitly report the methodological limitations of their meta-analytic procedures (i.e., Magnusson *et al.* 2008; Van Essen *et al.* 2012; Yang & Driffield 2012).

4.4. Journals

When retrieving potential literature, the meta-analytic studies published in JIM searched in other potential journals and extant literature reviews. The two articles in JIM also

provided standard deviation and variance in describing effect sizes, and presented the meta-analytic results with figures and graphs. Similarly, more meta-analytic studies published in JIBS contacted primary-studies' authors, investigated outliers, and conducted homogeneity analysis than those published in other IB journals. However, no meta-analytic studies in JIM disclosed major information, such as key terms, combination of key terms, correction of effect size, outliers, confidence intervals, homogeneity analysis or publication bias. The meta-analytic studies in JIBS, on the other hand, seldom left these out. Meta-analytic studies published in the remaining three IB journals also show outstanding points, for example, multiple coders utilized by meta-analytic studies in JWB, confidence intervals provided in MIR, and missing data uncovered in IBR. Yet, meta-analytic studies in JIBS and JIM were, overall, found to be better than the average level, as both addressed 22 and 21 meta-analytic issues respectively (Table 3).

The years after 2009 saw an improvement in meta-analytic methodology (Table 4), because IB meta-analytic studies collected data in ways that had never been used before (e.g., published literature reviews, and email list servers). However, after 2009, fewer meta-analysts took advantage of approaches such as multiple databases. In addition, some issues regarding data analysis, such as homogeneity analysis and publication bias, were worse in the period of 2009-2012. The former features a qualified meta-analytic study (Hunter & Schmidt 1990), and the latter indicates whether meta-analytic results are able to represent population literature (Rosenthal 1991).

5. DISCUSSION

5.1. Implications

Although the most recently published meta-analyses were significantly better, IB meta-analytic research can still improve. The first potential improvement relates to research topics. Four meta-analytic studies investigated different topics (i.e., spillover, corruption, leadership, and financial analysts' predictions, respectively) but the other eleven related to just three topics (i.e., culture, firm performance, and entry strategy). This reflects the 'hottest' topics in the IB discipline and indicates that IB meta-analysts have relatively narrow interests that exclude other important IB questions (e.g., emerging economies, managerial decisions about internationalization).

Table 3 Summary of Major Issues in Meta-Analyses Published in the Top-5 IB Journals

		Total (15)		JIBS (6)		JWB (2)		JIM (2)		IBR (2)		MIR (3)	
		Count	Ratio	Count	Ratio	Count	Ratio	Count	Ratio	Count	Ratio	Count	Ratio
Section 1: Research Specification	stated research topic	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	theoretical and practical context	13	87%	6	100%	2	100%	2	100%	1	50%	2	67%
	well-defined variable	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	applicable to meta-analysis	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
Section 2: Literature Retrieval	multiple databases	8	53%	3	50%	1	50%	1	50%	2	100%	1	33%
	search in specific journals	9	60%	4	67%	1	50%	2	100%	1	50%	1	33%
	published reviews	6	40%	4	67%	0	0%	2	100%	0	0%	0	0%
	key terms	5	33%	4	67%	1	50%	0	0%	0	0%	0	0%
	combination of key terms	1	7%	1	17%	0	0%	0	0%	0	0%	0	0%
	e-mail listserver	2	13%	0	0%	0	0%	1	50%	0	0%	1	33%
	contacting author	5	33%	5	83%	0	0%	0	0%	0	0%	0	0%
	selected literature	5	33%	1	17%	1	50%	1	50%	1	50%	1	33%
	non-English works	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Section 3: Dataset Preparation	appropriate effect size metric	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	inclusion criteria	11	73%	4	67%	2	100%	2	100%	2	100%	1	33%
	coding information	12	80%	5	83%	2	100%	1	50%	2	100%	2	67%
	multiple coders	7	47%	4	67%	2	100%	1	50%	0	0%	0	0%
	correcting for effect size	5	33%	3	50%	1	50%	0	0%	0	0%	1	33%
	identifying & handling outliers	1	7%	1	17%	0	0%	0	0%	0	0%	0	0%
Section 4: Data Analysis	mean of effect sizes	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	standard deviation / variance	10	67%	5	83%	0	0%	2	100%	1	50%	2	67%
	confidence intervals	4	27%	0	0%	1	50%	0	0%	1	50%	2	67%
	other statistics	5	33%	3	50%	0	0%	1	50%	0	0%	1	33%
	homogeneity analysis	8	53%	5	83%	0	0%	0	0%	1	50%	2	67%
	moderator analysis	14	93%	5	83%	2	100%	2	100%	2	100%	3	100%
	missing data	9	60%	4	67%	1	50%	1	50%	2	100%	1	33%
	publication availabilitybias	4	27%	1	17%	0	0%	0	0%	1	50%	2	67%
	additional data	5	33%	3	50%	1	50%	1	50%	0	0%	0	0%
Section 5: Meta-analytic Report	findings	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	generality	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	limitation	12	80%	5	83%	2	100%	2	100%	1	50%	2	67%
	figures /graphs	8	53%	2	33%	1	50%	2	100%	1	50%	2	67%
	tables	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
	included studies	15	100%	6	100%	2	100%	2	100%	2	100%	3	100%
Average per meta-analytic study		20.27	-	22.00	-	19.50	-	21.00	-	18.50	-	18.00	-

Table 4 Summary of Major Issues across Two Time Periods

		Total (15)		2004~2008 (5)		2009~2012 (10)		Changes between Periods
		Count	Ratio	Count	Ratio	Count	Ratio	
Section 1: Research Specification	stated research topic	15	100%	5	100%	10	100%	-
	theoretical and practical context	13	87%	4	80%	9	90%	Improved
	well-defined variable	15	100%	5	100%	10	100%	-
	applicable to meta-analysis	15	100%	5	100%	10	100%	-
Section 2: Literature Retrieval	multiple databases	8	53%	4	80%	4	40%	Worse
	search in specific journals	9	60%	4	80%	5	50%	Worse
	published reviews	6	40%	0	0%	6	60%	Improved
	key terms	5	33%	0	0%	5	50%	Improved
	combination of key terms	1	7%	0	0%	1	10%	Improved
	e-mail listserver	2	13%	0	0%	2	20%	Improved
	contacting author	5	33%	2	40%	3	30%	Worse
	selected literature	5	33%	2	40%	3	30%	Worse
	non-English works	0	0%	0	0%	0	0%	no change
Section 3: Dataset Preparation	appropriate effect size metric	15	100%	5	100%	10	100%	-
	inclusion criteria	11	73%	3	60%	8	80%	Improved
	coding information	12	80%	4	80%	8	80%	no change
	multiple coders	7	47%	1	20%	6	60%	Improved
	correcting for effect size	5	33%	0	0%	5	50%	Improved
	identifying & handlingoutliers	1	7%	0	0%	1	10%	Improved
Section 4: Data Analysis	mean of effect sizes	15	100%	5	100%	10	100%	-
	standard deviation / variance	10	67%	3	60%	7	70%	Improved
	confidence intervals	4	27%	2	40%	2	20%	Worse
	other statistics	5	33%	2	40%	3	30%	Worse
	homogeneity analysis	8	53%	3	60%	5	50%	Worse
	moderator analysis	14	93%	4	80%	10	100%	Improved
	missing data	9	60%	2	40%	7	70%	Improved
	publication availabilitybias	4	27%	2	40%	2	20%	Worse
	additional data	5	33%	0	0%	5	50%	Improved
Section 5: Meta-analytic Report	findings	15	100%	5	100%	10	100%	-
	generality	15	100%	5	100%	10	100%	-
	limitation	12	80%	4	80%	8	80%	no change
	figures /graphs	8	53%	1	20%	7	70%	Improved
	tables	15	100%	5	100%	10	100%	-
	included studies	15	100%	5	100%	10	100%	-

Another avenue for advancing IB meta-analyses is to broaden the resources used for finding primary studies. As the availability of studies varies across databases, a well-conducted meta-analytic study often searches multiple databases for broader and more complementary literature. An unrepresentative literature pool resulting from limited sources may bias conclusions of a meta-analytic study. Expanding sources may include the use of email list servers or contacting authors (to collect unpublished studies from potential researchers). Additionally, browsing candidate literature selected in the

previous steps may find missing studies in eligible bibliographies. Other important sources include (1) journals that concentrate on a specific area, (2) references cited by articles reviewing previous literature, and (3) IB researchers who are experts in a relevant research field. Also, while the majority of academic research is written and published in English, non-English studies may similarly investigate research topics of interest. Including the findings of non-English research may strengthen the credibility of IB meta-analytic results.

The next concern is related to better preparing datasets, particularly with regard to outliers. Outliers in a dataset may potentially result in a skewed distribution of effect size as well as biased meta-analytic findings. Yet only one IB meta-analytic study discussed outliers. There may be three reasons for the majority of authors not doing so. First, their meta-analytic datasets did not have any outliers, although a perfect raw-dataset rarely exists. Despite meta-analysts having a potentially perfect dataset, it is still useful to let readers of their meta-analytic studies know that there are no outliers. Second, the outliers had been trimmed or recoded, but not mentioned in the articles. The adjustment of original datasets by trimming or recoding is important information, which allows other researchers to judge and evaluate the data collection process, and should, therefore, be disclosed. Lastly, some IB meta-analysts might think it is unnecessary to take outliers into account. In fact, the distribution of an original dataset is always skewed by extreme values, but the typical purpose of a meta-analysis is to summarize the overall findings in a research domain (Lipsey & Wilson 2001).

The last issue in the meta-analytic studies in leading IB journals is the lack of advanced methods, such as Bayesian inference and meta-analytic structural equation modelling. Bayesian inference is important for IB meta-analysis for three reasons. First, it takes full account of uncertainty in parameter and model, by directly computing the likelihood of the variance component, while classical analyses provide a single value to describe a variance component—even in a random-effects model. The single component may not adequately convey the uncertainty of the estimated component of variance. Second, a Bayesian approach can take into account the researchers' subjective considerations with respect to specific studies. Last, if parameters can be estimated with limited observations only (i.e., primary studies in a meta-analysis), this approach can

solve the problem of lack of identification in classical analyses (Gelman, Carlin, Stern & Rubin 2004; Hedges 1998). Furthermore, meta-analytic structural equation modelling is also worthy of attention as it enables IB meta-analysts to investigate multiple associations simultaneously, rather than in individual pairs (Becker 2009; Cheung 2008). Doing so allows for the complex pattern of research questions in the IB discipline to be uncovered.

5.2. Conclusion

Understanding past achievements is crucial for IB researchers to develop the discipline (Buckley 2002). Meta-analysis is one of the best ways to summarize previous studies and search empirical generalizations. The soundness of summary and generalization depends on the fitness of the meta-analytic approaches that are applied. Negligence of any crucial issue may result in critical implications for the quality of a meta-analytic study. The current study comprehensively reviews meta-analytic approaches as well as practices in the IB discipline. The findings suggest that: (1) meta-analytic methodology quality varied among IB journals, as some publications paid more attention to meta-analytic issues than the others; (2) IB researchers are aware of a variety of meta-analytic techniques for accumulating and synthesizing previous literature to generate new knowledge, and (3) future IB meta-analytic studies can be improved in multiple ways. Rather than suggesting that IB meta-analysts address all of these aspects, this study attempts to outline general considerations that need to be emphasized, and highlights issues of which IB researchers should be aware in order to improve their meta-analyses.

While no methodology can be defined simply as 'correct' or 'perfect', there are some ways of conducting research that are superior to others, and these can be leveraged by IB meta-analysts if they address certain common goals. In addition, meta-analytic procedures vary in simplicity versus complexity, as well as clarity versus confusedness, but underlying the diversity of methods is a coherent set of fundamentals. This study has discussed these, and anticipates that IB researchers will include such considerations in their future meta-analyses.

As most meta-analytic methods are originally derived from other disciplines (e.g., psychology, education, and medicine), the IB domain needs to develop meta-analytic

procedures that can accommodate the unique features of IB research. In psychological, educational, and medical disciplines, experimental or quasi-experimental approaches are typically employed in empirical studies. Their results and findings are better standardized than results that we see in empirical IB research. The majority of IB research is conducted in a variety of ways, and utilizes a combination of primary and secondary data. Thus, the current common meta-analytic procedures need to be updated to fit the characteristics of IB studies.

Finally, meta-analysis is neither a substitute for primary research nor a replacement of qualitative literature reviews. Meta-analysis offers increased precision, reliability, and generalization pertaining to extant studies within a given research topic. Researchers would be better off treating meta-analysis as an opportunity for finding answers to their research questions, than as a substitute for critical experiments, which might lead to direct falsification. The criteria for assessing general IB studies may apply to IB meta-analysis (e.g., a study's theoretical contributions), which nevertheless are not included here. In addition, both the IB discipline and meta-analytic methodology are still maturing. New progress may update the criteria for judgment. This study is unable to cover all details of all types of meta-analyses, but rather highlights important and generalizable issues.

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Appendix 1

Table 5 Meta-Analyses in Top 5 IB Journals between 2004 and 2012

Reference	Journal	Research Specification		Literature Retrieval					
		Research Topic	**Theoretical Paradigm**	**Databases**	**Journal Searched**	**Restric-tion**	**Key Terms**	**Terms Combina-tion**	**Other Efforts**
Zhao, Luo & Suh, 2004	JIBS	ownership-based entry mode choice	Transaction Cost Theory	ABI/Inform	JIBS, MIR, AMJ, SMJ	*no*	*n.r.*	*n.r.*	consulting other researchers
Tihanyi, Griffith & Russell, 2005	JIBS	the effect of cultural distance on entry mode choice, international diversification, and MNE performance	*n.r.*	ABI/Inform; JSTOR	AMJ, ASQ, JIBS, JM, JMS, MIR, MS, SMJ	*no*	*n.r.*	*n.r.*	communicating with researchers
Garcia-Meca & Sanchez-Ballesta, 2006	IBR	the factors that influence the accuracy of financial analysts' predictions	*n.r.*	ScienceDirect; EJS Ebsco; SSRN; ABI Inform	JAR, JAE, TAR, JBR, JB, FA, AQS, IBR, JFE	*no*	*n.r.*	*n.r.*	including unpublised studies
Bausch & Krist, 2007	MIR	the relationship between internationalization and firm performance	Internalization; Learning; RBV; Eclectic	Business Source Premier; EconLit; ABI/Inform	SMJ, AMJ, JIBS, JBV, MIR, IBR	*no*	*n.r.*	*n.r.*	reference part search of selected literature; searching on the home pages of researchers
Magnusson, Baack, Zdravkovic, Staub & Amine, 2008	IBR	the effects of cultural differences on MNE's entry strategy & performance	Internationalization; Transaction Cost Theory	ABI/Inform; Business Source Premier	*n.r.*	*no*	*n.r.*	*n.r.*	reference part of selected articles
Fischer & Mansell, 2009	JIBS	employee's commitment across cultures	commitment and cultural theory	PsycINFO	*n.r.*	*no*	"organizational commitment"	*n.r.*	consulting published meta-analyses and reviews about the research topic; contacting 25 researchers for unpublised data
Meyer & Sinani, 2009	JIBS	the local spillovers of FDI	Competitive Dynamics Theory (awareness-motivation-capability framework)	EconLit	*n.r.*	*no*	"spillovers from technology transfer", "productivity FDI spillovers"	*n.r.*	internet; review papers; including unpublised studies
Reus & Rottig, 2009	MIR	the determinants of IJV's performance	the Agency Theory, the behavioral perspective	ABI/Inform	*n.r.*	*no*	*n.r.*	*n.r.*	listserves of AIB and AOB; relevant books and articles
Stahl, Maznevski, Voigt & Jonsen, 2010	JIBS	the cultural diversity in work teams	similarity-attraction, social identify & categorization, information-processing	ABI/INFORM, Business Source Premier, EconLit, PsychInfo, Science Direct, and the Social Science Citation Index;	relevant books and research journals	*no*	"team", "group"; "culture", "diversity"; "multicultural", "international", "multinational"	AND, OR	bibliographies, conference proceedings, Internet searches; including unpublised studies; consulting other researchers;
Morschett, Schramm-Klein & Swoboda, 2010	JIM	the external antecedents of entry mode choice	learning perspective of organizational capabilities; Transaction Cost Theory	Business Source Premier	JIBS, JIM, IBR, JBR, MIR	*no*	*n.r.*	*n.r.*	published reviews
Steel & Taras, 2010	JIM	the factors shaping culture, the explanation of cultural variation, and the relationship between individual and national cultural values	Ecological Inference; Divergence & Convergence Theory; Hofstede's paradigm	EBSCO; PsycINFO; ERIC; ProQuest; and ProQuest Digital Dissertations;	all relevant in 1980-2006	*no*	*n.r.*	*n.r.*	major books and reviews; reference part of selected studies; mailing list servers of the AIB and AOM; including unpublised studies
Judge, McNatt & Xu, 2011	JWB	the antecedents and effects of national corruption	institutional choice perspective	ABI/Inform	*n.r.*	*no*	"corruption"; "many countries"	*n.r.*	*n.r.*
van Essen, Heugens, Otten & van Oosterhout, 2012	JIBS	the relationship between firm performance and executive compensation	Institutional Based View	ABI/ INFORM Global, EconLit, Google Scholar, JSTOR, SSRN, and ISI Web of Knowledge	25 journals	*no*	"compensation", "incentives", "pay", "remuneration", "salary", "stock option"	*n.r.*	reviews and meta-analyses; reference part search (forward-tracing) of selected articles; contacting authors; including unpublished
Tara, Steel & Kirkman, 2012	JWB	the national cultural indices	Hofstede's dimensions	all major electronic databases	almost 100 journals of 1980-2010	*no*	*n.r.*	*n.r.*	reference parts of selected studies; citation checking by Google Scholar; mailing list-serves of AIB and AOM; unpublised papers; contacting authors
Yang & Driffield, 2012	MIR	the relationship between multinationality and performance	*n.r.*	*n.r.*	*n.r.*	*no*	*n.r.*	*n.r.*	*n.r.*

Table 5 *Continued*

Reference	Dataset Preparation					Data Analysis				
	Effect Size Metric	**Criteria for Inclusion**	**Coding Reliability**	**Correcting for Effect Size**	**Identification of Outliers**	**Basic Statistical Information**	**Homogeneity Test**	**Moderator Analysis**	**Missing Data**	**Publication Availability Bias**
Zhao, Luo & Suh, 2004	partial correlation	ownership-based entry mode; firm level; variables of transaction cost theory; 1986-2002	*n.r.*	*n.r.*	*n.r.*	sample size weighted mean; standard error; z-value; p-value; % of variance;	Q statistics	category analyses	*n.r.*	*n.r.*
Tihanyi, Griffith & Russell, 2005	correlation *r*	*n.r.*	2 coders; Cohen's κ	*n.r.*	*n.r.*	sample size weighted mean; variances	*n.r.*	*n.r.*	*n.r.*	*n.r.*
Garcia-Meca & Sanchez-Ballesta, 2006	correlation *r*	empirical; statistical information; independence	*n.r.*	*n.r.*	*n.r.*	sample size weighted mean; variances; confidence intervals	*Q* statistics	category analysis	if other statistics are available, then transfer	fail-safe N
Bausch & Krist, 2007	correlation *r*	*n.r.*	*n.r.*	*n.r.*	*n.r.*	sample size weighted mean; confidence & credibility intervals; z-statistics; average residual variance	75% Rule	category analysis	*n.r.*	file-drawer analysis; calculation of fail-safe N(x)
Magnusson, Baack, Zdravkovic, Staub & Amine, 2008	correlation *r*	correlations about variables of interest; sample size	*n.r.*	*n.r.*	*n.r.*	sample size weighted mean	*n.r.*	category analysis	contacting authors	*n.r.*
Fischer & Mansell, 2009	percent of maximum possible score (POMP mean); correlation r	non-experimental studies; commitment among working team; after 1990	two coders; the percentage agreement	Fisher's *z*	*n.r.*	sample size weighted; intercorrelation and rank-order correlation	Q statistics	category analysis; three-level hierarchical linear modeling	missing standard deviation is handled by the means;if missing country data, take region	*n.r.*
Meyer & Sinani, 2009	t-statistics	empirical; particular estimations	*n.r.*	*n.r.*	10 times larger than the mean	mean, standard deviation, correlation matrix	heterogeneity test	meta-analytic regression	missing data of a year replaced by the nearest year	*n.r.*
Reus & Rottig, 2009	correlation *r*	correlation matrices or *t*-statistics; independence; variables of interest; the operationalizations of constructs; the same constructs defined in another study	*n.r.*	by reliabilities, error variance, and correlation between perfectly measured variable	*n.r.*	sample size weighted mean; variances; chi-square	75% Rule; Q statistics	category analysis	missing reliability handled by an artifact distribution method	*n.r.*
Stahl, Maznevski, Voigt & Jonsen, 2010	correlation *r* (point-biserial and product-moment correlation)	statistical information; independence	2 coders; Cohen's κ	by sampling (point-biserial), reliability (self-reported data), and Fisher's *z* (product-moment)	*n.r.*	sample size, mean, confidence interval, range, variance	Q statistics	sub-sample comparison by Z-statisitcs	eliminating the missing categories	fail-safe N
Morschett, Schramm-Klein & Swoboda, 2010	regression coefficient (log odds ratio)	overseas value-added process (i.e.; no export)	*n.r.*	*n.r.*	*n.r.*	variance and sample-size weighted mean	*Q* statistics; forest plot	sub-sample comparison on vote counting scale	*n.r.*	*n.r.*
Steel & Taras, 2010	standarized Cohen's *d* (mean)	Hofstede's model with original data; codable data; commensurability with Hofstede's instruments	double coded; inconsistencies resolved by comparision	*n.r.*	*n.r.*	sample size weighted mean, standard deviation, correlation matrix	*n.r.*	hierarchical linear model	missing GDP data were assumed by that prior to publication	*n.r.*
Judge, McNatt & Xu, 2011	correlation *r*	conceptualized corruption; national level; multiple countries; empirical studies; direct relationship	2 coders; inter-rater reliability	by the mean reliability;	*n.r.*	sample size weighted mean; confidence and credibility intervals	*n.r.*	category analysis	contacting author; missing reliability replaced by estimate of National Academy of Science	*n.r.*
van Essen, Heugens, Otten & van Oosterhout, 2012	Pearson correlations; partial correlation coefficients	*n.r.*	2 coders; subsample; Cohen's κ	Fisher's *z*	*n.r.*	inverse variance weighted mean, standard error	Q statistics; I index	hierarchical linear model, weighted least squares-based regression	contacting author	*n.r.*
Tara, Steel & Kirkman, 2012	standarized Cohen's *d* (mean)	commensurability; instruments based on Hofstede; empirical suport for convergent validity	multiple coders; test-retest reliability	*n.r.*	*n.r.*	mean	*n.r.*	category analysis	*n.r.*	*n.r.*
Yang & Driffield, 2012	estimate of linear coefficient	*n.r.*	*n.r.*	*n.r.*	*n.r.*	mean, standard deviation, sample size	*n.r.*	meta-analytic regression	*n.r.*	regressing *t*-ratio of each estimate

Table 5 *Continued*

Reference	Other Information							
	# of Primary Studies (n)	Cumulative Sample Size (N)	# of Effect Sizes (k)	# of Variables from literature	Number of Moderators		Key References of Meta-analytic Procedure	Number of Hypotheses
					from literature	additional sources		
Zhao, Luo & Suh, 2004	38	24,111	106	5	5	*n.r.*	Hunter & Schmidt 1990, Hedges & Olkin 1985	no
Tihanyi, Griffith & Russell, 2005	66	9,135	*n.r.*	6	*n.r.*	*n.r.*	Hunter & Schmidt 1990	5
Garcia-Meca & Sanchez-Ballesta, 2006	38	1,245,098	59	7	3	*n.r.*	Lipsey & Wilson 2001, Rosenthal 1991, Hunter & Schmidt 1990	no
Bausch & Krist, 2007	41	7,792	146	6	5	*n.r.*	Hunter & Schmidt 1990, Rosenthal 1979	7
Magnusson, Baack, Zdravkovic, Staub & Amine, 2008	74	69,849	36	5	3	*n.r.*	Hunter & Schmidt 1990	no
Fischer & Mansell, 2009	164 (means) & 37 (correlations)	44,424 (means) & 10,533 (correlations)	*n.r.*	3	10	8	Lipsey & Wilson 2001, Hedges & Olkin 1985	8
Meyer & Sinani, 2009	66	121	*n.r.*	1	8	7	Stanley & Jarrell 1989, Lau, Antman, Jimenez-Silva, Kupelnic, Mosteller & Chalmers 1992, Thompson & Sharpe 1999	4
Reus & Rottig, 2009	66	26,927	165	5	7	*n.r.*	Hunter & Schmidt 2004	8
Stahl, Maznevski, Voigt & Jonsen, 2010	108	10,632	135	7	6	*n.r.*	Hunter & Schmidt 1990, Hedges & Olkin 1985, Lipsey & Wilson 2001, Rothenthal 1984	34
Morschett, Schramm-Klein & Swoboda, 2010	72	50,974	156	14	2	*n.r.*	Cooper & Hedges 1994, Lipsey & Wilson 2001, Kulik, Cohen & Ebeling 1980, Kulik, Kulik & Cohen 1980	14
Steel & Taras, 2010	508	2,115	36	8	4	3	Hunter & Schmidt 1990	9
Judge, McNatt & Xu, 2011	42	3,170	511	3	17	*n.r.*	Hunter & Schmidt 2004	8 propositions
van Essen, Heugens, Otten & van Oosterhout, 2012	332	659,810 (***r***) & 4,107,639 (partial-***r***)	592 (***r***) & 2415 (partial-***r***)	2	53	11	Lipsey & Wilson 2001, Hedges & Olkin 1985	4
Tara, Steel & Kirkman, 2012	451	225,177	914	4	1	22	Hunter & Schmidt 2004	no
Yang & Driffield, 2012	67	906,480	370	1	11	*n.r.*	Card & Krueger 1995	no

Note:

1. Journals in IB subject area are defined by the Journal Quality List (47th ed.) (Harzing; 2012)

2. The rank is made according to Total Cites and Impact Factor of Journal Citation Reports (Web of Knowledge; 2011)

3. The papers listed above are published between 2000 and 2012; Peterson & Jolibert in JIBS was the only one before 1995; no meta-analyses were published between 2000 and 2003.

4. "n.r." means not reported; ***n*** is the number of studies (i.e., the sample size of a meta-analysis); ***k*** is the number of effect sizes, which may or may not equal ***n***. When using correlation ***r***, for instance, if a study reports 2 ***r***'s regarding interesting variables, the ***n*** will be smaller than ***k***. ***N*** is the number of cumulative samples size, which is the total amount of sample sizes in the primary studies included in a meta-analytic study.

5. *AIM*-the Academy of International Business; *AOM*-the International Management Division of the Academy of Management; *JIBS*-the Journal of International Business Studies; *MIR*-Management International Review; *AMJ*-Academy of Management Journal; *SMJ*-Strategic Management Journal; *ASQ*-Administrative Science Quarterly; *JM*-Journal of Management; *JMS*-Journal of Management Studies; *MS*-Management Science; *JAR*-Journal of Accounting Research; *JAE*- Journal of Accounting and Economics; *TAR*-The Accounting Review; *JBR*-Journal of Business Research; *JB*-Journal of Business; *FA*-Finance and Accounting; *AOS*-Accounting, Organization and Society; *IBR*-International Business Review; *JFE*-Journal of Financial Economics; *JBV*-Journal of Business Venturing

WHAT DETERMINES THE DEGREE OF COMMITMENT IN FIRMS' INTERNATIONAL ENTRY STRATEGY? CAPABILITY AND OPPORTUNITY: A STRUCTURAL EQUATION MODELING META-ANALYSIS

Abstract

This study synthesizes the findings from 116 primary studies with the aim of understanding the key factors underlying the determination of firms' commitment levels in their international entry strategy. I argue that firms making such decisions not only consider their own capabilities but also evaluate the conditions associated with international opportunities. My meta-analytic structural equation modelling design complements prior research on firms' choices of international entry strategy in three ways: (1) by accommodating multiple factors suggested by multiple theoretical perspectives; (2) by incorporating a range of strategic decisions in international entry rather than focusing on a single type of entry mode; and (3) by offering a holistic model which presents and examines major determinants simultaneously. I join together the literatures in both the calculative and the process traditions into a capability-opportunity framework, demonstrating an alternative theoretical way to understand the determinants of international entry strategy, and enabling global strategy scholarship to rethink the extant knowledge on international entry strategy.

1. INTRODUCTION

In devising its international entry strategy, one of the most important factors that a firm takes into consideration is the matching of its firm-specific capabilities to the international opportunities it perceives as existing. Previous research on international market entry suggests that to increase its likelihood of success the firm should take into account what it is willing to commit via its choice of entry mode across a range of dimensions – e.g., physical, human and capital resources – as well as the enablers and constraints being faced in respect to the specific market entry alternatives the firm has

available (e.g., Anderson & Gatignon 1986; Brouthers 2002; Chang & Rosenzweig 2001; Delios & Beamish 1999; Harzing 2002).

While this logic sounds definitive, when I look at the research behind it in more detail I find that what this 'commitment' amounts to varies from study to study – both in terms of the form and level of commitment. For example, I see some studies focusing on different combinations of the form of the commitment (e.g., joint ventures vs. wholly owned subsidiary in Brouthers 2002; acquisition & greenfield vs. joint ventures in Chang & Rosenzweig 2001; acquisition vs. greenfield in Harzing 2002), while others are exclusively concerned with the level of commitment (e.g., minor, equal, and major ownership in Anderson & Gatignon 1986). In addition, what constitutes an enabler or constraint – both in terms of effect and degree – varies from study to study depending on the theoretical lens and empirical approach being applied by the researchers. For instance, the influence of cultural distance on the form of commitment has been discussed across a broad body of literature, some of which implies that it matters significantly (e.g., Harzing 2002; Kogut & Singh 1988) while others argue that it is irrelevant (e.g., Brouthers & Brouthers 2000; Contractor & Kundu 1998).

Part of this lack of clarity follows from the different theoretical lens being applied by the researchers, which leads to emphasis on different facets of commitment and different modes of empirical analysis. From a theoretical perspective, the work examining international entry strategic commitment falls into two general theoretical camps: the calculative and the process traditions (Dunning, Devinney, Tallman, Mitchell & de la Torre 2004; Van de Ven 2007). The former, calculative tradition, views the international entry decision as a deliberate calculation of costs, resources, and benefits (e.g., Barney 1986; Buckley & Casson 1976; Dunning 1980; Myers 1977). The firm's choices of country and mode of entry amount to a rational and considered decision, taking into account the firm's internal resources and the external opportunities in the market at the time. The alternative viewpoint, the process tradition, concentrates on the firm's prior experience, knowledge, learning, and accumulated capabilities, viewing international entry strategy as one single event in the international evolutionary process of the firm (e.g., Johanson & Wiedersheim-Paul 1975; Kogut & Zander 1993; Oviatt & McDougall 1994; Teece, Pisano & Shuen 1997). Studies based on the

internationalization process perspective argue that firms would not increase their commitment to international entry unless they gained sufficient experiential knowledge first (Johanson & Vahlne 2009).

While both the calculative and the process traditions have contributed a huge body of insightful explanations as to the determinants of international entry strategy, they remain at odds in terms of their theoretical emphasis; and the extant empirical findings do not provide a clear demarcation as to the validity of either perspective. To aid in resolving this dilemma, I suggest an alternative way to join together the merits of each approach in understanding firms' commitment levels in international entry by considering the commitment level as a strategic decision following on from the deliberative calculating of the firm's internal capabilities and external opportunities. This motivates me to search theoretical generalities by conducting a meta-analytic study with a state-to-art method introduced in the following sections.

In addition to the theoretically different perspectives, the literature is further confounded by a variety of incommensurate research methods (e.g., qualitative interview vs. quantitative archive data) and data sources (e.g., collected variously at the country, industry, and firm level). As a result, although the majority of factors constituting firm capabilities and market opportunities have been examined by both theoretical traditions, there is no single consistent framework accommodating these factors available in literature. This raises concerns regarding the divergent conclusions over which factors matter to, and what determines the form of, global entry strategy. Inconsistent conclusions impair the scholarly value of the extant literature and lead to many obscure recommendations for practitioners seeking normative guidance. However, integrating the inconsistencies is complicated by the fact that the theoretical perspectives were developed independently and tested using different, but at times overlapping, research methods. This also suggests that meta-analysis is one useful approach for summarizing previous studies and searching for empirical generalizations (e.g., Morschett, Schramm-Klein & Swoboda 2010; Zhao, Luo & Suh 2004), rather than debating whether or not we need more entry studies (Hennart & Slangen 2014; Shaver 2013) before we can establish what is known.

Prior meta-analyses on this topic have been limited by their relatively narrow scope and inappropriate emphasis on unilateral determination (i.e., where only one group of determinants is isolated at a time, thereby not accounting for structural effects). For example, the factors considered in Zhao et al. (2004) addressed country and industry setting, but were derived from one single theoretical framework (transaction cost economics); hence, excluding the potential effects revealed by other theories. Morschett et al. (2010) did not confine their analytic factors to one theory, but focused on external factors only. Two additional meta-analyses relate indirectly to the determination of international entry strategy (i.e., Magnusson, Baack, Zdravkovic, Staub & Amine 2008; Tihanyi, Griffith & Russell 2005), but these studies discuss entry mode as a secondary issue while investigating other topics. They suffer from limitations similar to the two previously discussed studies.5

Consequently, rather than a theoretically agreed and empirically integrated structure demonstrating the determination of international entry strategy, our understanding of this topic is still, surprisingly, piecemeal, despite the more than half a century that has passed since global strategy arose as a distinct discipline. This study complements the prior research by employing meta-analytic structural equation modelling techniques that are designed specifically to accommodate multiple causal relationships between factors suggested by multiple theoretical paradigms (Becker 2009). Such techniques are also valuable in providing holistic views of the determination of global strategic decisions (e.g., Reus & Rottig 2009).

My findings indicate that a firm's commitment levels in international entry are determined by the host market environment, the market economic opportunity (i.e., a potential entry's features such as relatedness to the firm's existing business and expected scale of investment), and the firm's internationalization capabilities, which are strengthened by the firm's generic capabilities (i.e., abilities and capacities that are not directly related to global business activities). I also capture the internal influence between the dimensions of these capabilities and the opportunities available, respectively. By integrating literatures of the two theoretical traditions (i.e., calculative and process traditions), my arguments and meta-analytic findings underscore the need

[5] Interested readers are referred to Buckley, Devinney & Tang (2013) for a review of meta-analytic studies published in the global strategy research domain.

for a dynamic theory of global strategic entry decision making, while also proposing a capability-opportunity framework for global strategic research.

2. THEORY AND HYPOTHESES

2.1. Theoretical Background

While the firm capability literature traces its roots to the work of Penrose (1959), and the market opportunity literature to Schumpeter (1934), only recently have studies in global strategy emerged (e.g., Teece 2014) which began addressing the simultaneous consideration of capability utilization and opportunity scanning. An integrated model of both capability and opportunity is important as I can easily find evidence that implies that international entry is not just about resource usage and acquisition but also about environment scanning and adaption. For instance, a firm with requisite capabilities might not always make aggressive decisions in the global market (Chen & Hennart 2002), because the firm needs to assess whether an international opportunity is worth taking by that firm at that point in time. Meanwhile, an international opportunity will not necessarily attract all firms. Firms in the same industry are quite heterogeneous, with each possessing different capabilities with respect to their ability to find and seize those opportunities and different criteria for assessing their viability and the importance of the opportunities. This suggests that although recognition of international opportunities is a subjective process, the opportunities themselves are objective phenomena that are known only to all collaborative parties who have certain capabilities (Shane & Venkataraman 2000).

I define a capability as the combination of resources that a firm utilizes to sense and seize market opportunities with the intent of generating superior performance (Danneels 2011; Helfat & Peteraf 2003; Teece 2007). A firm's overall capability involves managerial and operational capacities, as well as the ability and skill for developing sustainable competitive advantage by means of cross-border opportunities (Barney 1991). However, simply having a capability or set of capabilities is not the only thing that leads a firm to choose one strategy over another. It implies not only that the firm could take advantage of an international opportunity, but also that the firm is able to explore opportunities, identify whether the available international opportunities suit its strategy, and seize the appropriate entry opportunity.

I define an international entry opportunity as a chance for a firm to enter a new non-domestic market.[6] The notion of opportunity recognition is well established in the literature (e.g., Eckhardt & Shane 2003; Shane 2000; Zahra, Korri & Yu 2005), but what an opportunity is, and how components of an opportunity influence an international strategic decision, remains unclear. For example, while highlighting the goal of recognizing an opportunity, the international entrepreneurship research does not consider whether firms are capable of grasping and using such opportunities (e.g., Dimitratos & Jones 2005). In fact, international opportunities are never free (Toyne 1989). For instance, the complementary local assets in a host country have their owners, and there will be a cost for gaining access to those assets. These costs influence not only the entering firms' initial strategic decisions, but may also affect their consequent activities in the host country (Hennart 2009). In this study I propose that an international opportunity consists of two related dimensions: the factors underlying a host country's market environment (e.g., institutional environment and resource supply) and the market economic opportunity (i.e., the international entry *per se, s*uch as profit and cost of the entry itself). These factors influence the extent to which an opportunity is favourable to firms and, therefore, exerts influence on the choice of international entry strategy.

In addition to capability and opportunity, firms can choose to vary their commitment levels through various means; e.g., via the form of distributing their products (e.g., via franchising), via the proportion of ownership with foreign partners, and via the manner in which they establish international affiliates. Lower levels of commitment enable firms to enter a market by staging their commitments rather than rushing into an ambiguous environment (Malhotra & Gaur 2014). Relatively higher levels of commitment require firms to bear potentially greater risks in order to obtain greater profits (Cuypers & Martin 2010). This implies that a firm's commitment level to an international entry will be a function of both capability and opportunity, with these two determinants likely to influence the international entry strategy simultaneously.

Using these arguments, I develop hypotheses for how international entry strategy is

[6] This defers to the traditional definition of entrepreneurial opportunity. The international opportunity refers to an event and/or chance that can facilitate and benefit a firm's international business activates. An entrepreneurial opportunity focuses on an occasion of arbitrage (Kirzner, 1997) and a chance leading to supernormal profits (Shane & Venkataraman, 2000).

determined and influenced by different dimensions of capability and opportunity, with emphasis on the extent to which the firm commits itself to specific markets. I first provide an explanation for the effects of *capability* on choosing an international entry strategy and develop arguments for how particular capabilities can influence this strategic decision, and then discuss the influence of *opportunity*.

2.2. Capability

A capability (or capabilities) is (are) composed of those assets and resources that enable a firm to capture advantages by creating additional value, scaling them effectively in a manner that permits the firm to capture a portion of the added value (Teece 1977). However, it does not mean that a capability can always guarantee a firm's advantages in the international market. The capability can be an enabler as well as a constraint in the process of choosing an international entry strategy. To be an enabler, a firm's capabilities need to be meaningfully superior to other firms, because only an 'advanced' capability ensures that the firm can effectively differentiate itself in a manner that allows it to generate and capture sufficient rents to make a competitive difference over time (Liang, Lu & Wang 2012). In addition to being an enabler, a firm's capabilities may work as a constraint on what actions the firm can take (Teece 2014). For example, a firm with superior R&D capabilities may not choose to enter specific markets because those capabilities generate intellectual property that may be easily lost in weak legal environments.

The entry mode literature shows that a firm's international entry strategy needs a variety of capabilities, including managerial capabilities (e.g., operational efficiency and cost control, Boateng, Qian & Tianle 2008), organizational capabilities (Burgel & Murray 2000; Liang *et al.* 2012), R&D and innovative capabilities (Hennart & Park 1993; Liu, Xiao & Huang 2008; Yiu, Lau & Bruton 2007), and marketing capabilities (e.g., market exploration, response to customer needs, maintenance of customer relationships, brand identity development, Anand & Delios 2002; Fang & Zou 2009). Looked at in a more deliberative way, I argue that two generalized types of capabilities need to be distinguished when looking at the facilitation of an international entry decision. One is a set of *generic capabilities*, which guarantees a firm's overall management and operation, but does not directly influence the firm's international entry

decision. In other words, a firm needs generic capabilities to survive and succeed, even if it has neither global operations nor intends to go overseas. The other is the set of *international capabilities* that are directly related to the firm's global activities. These exert direct impact on the international entry strategy.

Generic capabilities may influence an international entry decision, but they do so indirectly. For instance, business diversity is an important aspect of a firm's management and operation, but it does not suggest that more diversified firms will be more likely to choose high commitment-level strategies for international entry (e.g., Slangen 2013). A further example is firm size, implying both the existence of the available resources for absorbing the high cost of entry in a new market (Erramilli, Agarwal & Kim 1997) and the capability for exploiting the new market (Hymer 1976). However, scale alone does not directly determine a firm's international entry strategy because a small firm can enter a foreign market with high as well as low commitment level strategies (Maekelburger, Schwens & Kabst 2012). Yet, this does not mean that generic capabilities have no effect on choosing international entry strategy. The literature has shown that generic capabilities serve as necessary, but not sufficient, foundations for international capabilities. In other words, the generic capability is a type of prerequisite for firms to build their international capability, although the generic capability might not directly determine an international entry strategy. For instance, a firm's management experience and knowledge are found to influence its international structure (e.g., Xu, Pan & Beamish 2004). Also, a firm's technology and know-how impact the way that firms implement internationalization and access competitive advantages (e.g., Chiao, Lo & Yu 2010).

Unlike generic capabilities, international capabilities are derived directly from international activities and movements and have a direct impact on international entry strategy. Given the varied commitment levels embedded in international entry strategies, a firm needs international capabilities to manage and control its international entry via appropriate international strategies and global controlling patterns (e.g., Pehrsson 2008; Xu *et al.* 2004). For example, the entry mode literature has found that international experience is related to a firm's commitment level when engaging in international market entry, although findings regarding the magnitude, directionality and importance

of that impact vary across studies. One argument is that international experience increases the likelihood of choosing a high commitment level strategy (e.g., full ownership, Cho & Padmanabhan 2005). The opposing thesis is that greater international experience allows firms to deal effectively with the costs associated with uncertainty and, hence, is more likely to lead to relatively lower commitment levels (e.g., shared ownership, Hennart 1991; Padmanabhan & Cho 1996). However, despite these divergent findings about international experience, mainstream work reveals that international capabilities increase the likelihood of a firm's choosing higher commitment level entry strategies. For instance, Padmanabhan and Cho (1996) found that foreign entrants that are familiar with a host country tend to choose a high-commitment strategy, such as wholly owned subsidiaries, while Harzing (2002) suggests that firms with a global-oriented strategy are more likely to maintain a high commitment level in their entry strategies.

Based on this discussion and existing literature I formulate the following hypotheses on the relationship between generic and international capabilities and a firm's international entry strategy commitment level:

Hypothesis 1a (H1a): A firm's generic capabilities do not directly exert significant impact on a firm's international entry strategy commitment level.

Hypothesis 1b (H1b): A firm's generic capabilities strengthen a firm's international capabilities.

Hypothesis 2 (H2): A firm's international capabilities positively impact on the firm's international entry strategy commitment level.

2.3. Opportunity

Prior research shows, and logic implies, that capabilities alone are not sufficient to drive strategic decisions; opportunities must exist into which capabilities are applied. I can look on the opportunities facing the firm as having two components. The first is the *market environment opportunity* – which I relate to the nature of the host country's market environment (e.g., its appropriateness in terms of institutional and cultural dimensions). The second is the *market economic opportunity* – which I relate to the

financial and economic returns associated with the entry in a specific host market.

A country that has larger market potential will theoretically be more favourable to foreign entrants as they expect to achieve more significant returns (Agarwal & Ramaswami 1992; Brouthers 2002; Terpstra & Yu 1988). In addition, the economic development stage of a country will influence entry choice (Cuervo-Cazurra 2007; Meyer 2004), as markets that provide plentiful personnel and managerial resources will lead to foreign firms choosing different entry strategies when compared to countries lacking those resources. Similarly, the economic and political environment faced by the potential entrant (Chan & Makino 2007; Pla-Barber, Sanchez-Peinado & Madhok 2010) also has significant impact on the firm's decisions. For example, a country's policy on foreign ownership will directly influence whether an entry opportunity is favourable or not (Brouthers 2002; Dikova & van Witteloostuijn 2007). In addition, political instability may strengthen the extent to which an entrant depends on local partners – i.e., a relatively lower commitment level (e.g., share-equity investment, Henisz 2003; Takahashi, Ishikawa & Kanai 2012). Furthermore, the similarity between home and host countries has important implications for international entry strategy, as similarity in environments will, theoretically, not disfavour foreign entrants, although previous studies do not provide consistent findings regarding the effects of country-differences (e.g., Magnusson *et al.* 2008; Malhotra, Sivakumar & Zhu 2011).

Furthermore, even if the host country's market environment is not favourable, firms may still want to execute an entry opportunity because a market economic opportunity is distinctly promising. When firms consider an entry opportunity, they judge whether the entry opportunity is attractive or not by integrating the market environment opportunity factors into the market economic opportunity's conditions (e.g., Liu *et al.* 2008). In other words, firms may still find profitable potential from an entry opportunity, despite an unfavourable host country market environment. For instance, a firm may prudently step into a currently unattractive market if the market economic opportunity is highly related to the firm's major business. From the firm's perspective, such an entry may not require much effort and can create a real option for the firm, either by increasing investment or disinvesting the operation in the future (Brouthers & Dikova 2010; Folta & Miller 2002). Firms will, therefore, favour an international entry strategy

that allows them to keep a closer eye on a host market that is currently not attractive but could develop more positively in the future. This implies that a market economic opportunity can be developed semi-independently of the host country conditions, although the international entry strategy is related directly to the market environment opportunity in the host country.

Furthermore, recent research into the variety of international strategies engaged in by MNCs has shown that firms consider the market economic opportunity *per se* as an important factor (e.g., Chen, Hu & Hu 2002; Estrin, Baghdasaryan & Meyer 2009; Li & Li 2010). The major concerns on this dimension are expected scale and the relatedness of the entry. For instance, Pan (1996) and Shan (1991) suggest that larger scale entry increases a firm's propensity to choose a lower commitment level, while Zhao and Zhu (1998) and Mutinelli and Piscitello (1998) find the opposite. Additionally, entering via a related business allows firms to accumulate and exploit relatively homogeneous product and market knowledge (Pehrsson 2008), while an unrelated expansion may make it difficult or impossible for the firm to operate effectively in new market because it is managing two different aspects of complexity (Barkema & Vermeulen 1998).

Thus, I argue that firms, *ceteris paribus*, will be more positively inclined toward higher commitment levels in market conditions where the market environment is better and where the market economic opportunity is available more immediately. However, the two dimensions are independent. I therefore hypothesize:

Hypothesis 3a (H3a): A favourable market environment opportunity has positive impact on an entering firm's international entry strategy commitment level.

Hypothesis 3b (H3b): A favourable market environment opportunity does not strengthen the impact of the market economic opportunity for an entering firm.

Hypothesis 4 (H4): An attractive market economic opportunity has positive impact on an entering firm's international entry strategy commitment level.

In addition to the above hypotheses regarding capabilities and opportunities, this study acknowledges the role of industry in making a strategic decision (e.g., an international entry strategy), where development of an industry may constrain a firm's

growth and an industry sector can represent the environment in which a firm resides. In fact, some prior studies on entry mode decisions included industry as an important control variable (e.g., Delios & Beamish 1999, Slangen 2013).

Providing a summary, this study illustrates the hypotheses and the estimated model together with industry effects in Figure 4.

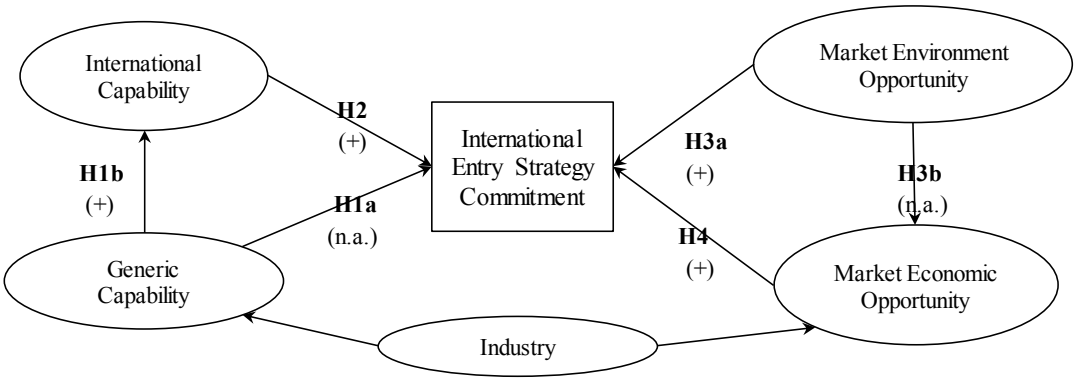

Figure 4 Study Hypotheses

Note:

International Capability(ies): Abilities directly derived from a firm's international activities and movements and having direct impact on the firm's global strategy.

Generic Capability(ies): Abilities that are not directly related to a firm's global business activities. If the firm conducts domestic business only, it may not need or have international capabilities but only those generic capabilities necessary to support its domestic operation.

Market Environment Opportunity: The nature of the host country's market environment (e.g., its appropriateness in terms of institutional and cultural dimensions).

Market Economic Opportunity: The financial and economic returns associated with an entry in a specific host market, including the potential entry's features such as relatedness to the firm's existing business and expected scale of investment.

3. DATA AND METHODS

3.1. Data Collection

3.1.1. Literature Retrieval and Inclusion Criteria

To ensure a complete and representative dataset for this study, I employed multiple search strategies (Devinney & Tang 2013). First, I searched in journals of international business, management, strategy, and marketing in six electronic databases (ABI/INFORM Global, JSTOR, EBSCO, Elsevier, ProQuest Business, and SSRN), using the key terms of 'ownership strategy', 'entry mode', 'establishment mode', 'ownership structure', 'joint venture', 'control mode', 'foreign direct investment', and 'multinational enterprise'. Second, I examined the references of previous meta-analyses related to my topic (i.e., Magnusson *et al.* 2008; Morschett *et al.* 2010; Tihanyi *et al.* 2005; Zhao *et al.* 2004) and major qualitative literature reviews regarding global strategy (e.g., Brouthers & Hennart 2007; Canabal & White III 2008; Malhotra, Agarwal & Ulgado 2003; Werner 2002). The references of published reviews complemented the search results from the preceding step, which may have overlooked literature due to potential limitations of the aforementioned databases. Third, I corresponded with well-established scholars in global strategy and international business/management domains to enquire about relevant unpublished works.[7] Fourth, I contacted 45 authors whose papers lacked the necessary statistics (i.e., articles published without the correlation coefficients between international entry strategy and its influential factors). Finally, to avoid missing any newly published papers, I used Google Reader (before July 2013) and Journal TOCs to keep up with the latest studies before I proceeded to the data-analysis stages.

I then screened the literature retrieved from the preceding steps using four criteria. First, I included empirical studies reporting statistical information that is requisite for the computation and investigation of effect size. In this study, I use correlation coefficients as effect sizes because these scale-free measures are readily interpretable for demonstrating associations between variables (Card 2012). Second, as international entry strategy may comprise a combination of ownership-based, control-based, and

[7] I did not find an unpublished study that was relevant to my topic and able to provide necessary statistics discussed later in this section.

establishment-based[8] decisions, I did not exclude any type of strategy. Indeed, previous literature has combined them into individual studies (e.g., Dikova & van Witteloostuijn 2007; Harzing 2002). Third, my dataset includes only studies that either examined variables based on different samples or investigated different variables with similar samples. Fourth, I excluded the extant meta-analyses of international entry, because meta-analysing meta-analyses are not consistent with this study and may call for the use of different methods. These efforts yielded a literature reservoir containing 118 primary studies (each primary study offers one correlation matrix) from 114 articles published between 1987 and 2014.

3.1.2. Coding and Multiple Observations

I read all papers in the literature reservoir in order to develop a coding protocol that I utilized to survey the 114 articles to collect study characteristics and effect sizes (Lipsey & Wilson 2001). I took account of the operational measurement of a variable rather than the name of the variable in an article. In addition, I utilized a semantic integration approach to integrate and combine sparse terms that centre on a single primary meaning. For example, if two primary studies measured different variables (e.g., 'firm international experience' in Herrmann & Datta 2002; 'export intensity' in Lu 2002) using the same operational measurement (e.g., the ratio of overseas revenue to overall sales), I merged them into a single dimension (i.e., general international experience). I also conducted a two-round coding procedure for a reliable result that was indicated by Cohen's κ coefficients from 0.86 in all dimensions (Cohen 1960). Consensus on the inconsistent results was reached by reviewing the coding protocol and the included studies.

Next, if a study reported multiple effect sizes for a single dimension (e.g., culture indices of Hofstede and Schwartz in Drogendijk & Slangen 2006), I averaged them by accounting for both the number of effect sizes to be combined and their Spearman-Brown reliability (Hunter & Schmidt 2004).

[8] Examples of establishment-based decision are greenfield and acquisition (e.g., Harzing, 2002)

3.2. Latent Constructs and Manifest Measures

3.2.1. Dependent Variable

The coding process surveyed all articles in the literature reservoir in order to synthesize the commitment levels associated with international entry strategy and unify the values of commitment levels into a consistent pattern. First, I followed prior research and identified the commitment level as a variable measured by comparing one strategic decision with another. For instance, compared with a wholly owned subsidiary, a joint venture is, relatively speaking, indicative of a lower level of commitment in international equity entry. Similarly, a greenfield establishment is considered as a high-level commitment only if being compared with acquisitions in the same study. For international non-equity entry, if firms have foreign sales offices and their own distribution channels in a host country, it suggests that they have a higher level of commitment than those that simply export products to the host country market. The logic of this ordering is shown in Table 6.

Table 6 Coding Examples of Dependent Variable

High Commitment Level	**Low Commitment Level**
Equity entry	Non-equity entry
Wholly owned subsidiary	Joint venture
Greenfield	Acquisition
Own distribution office	Export
Sole control	Shared control
Big percentage of ownership	Small percentage of ownership
Majority ownership	Minority ownership

Note: Whether a commitment level is high or low depends on its counterpart in the same pair (row).

Next, I unified the raw values of these measures into a consistent direction by reversing the originally negative or positive signs of the effect sizes. For instance, some studies took 0 for joint venture and 1 for wholly owned entry (e.g., Brouthers 2002), while others employed 1 for a shared subsidiary and 0 for wholly owned one (e.g., Dikova & van Witteloostuijn 2007). To avoid potential problems from this divergence, I recoded the dummy variables to 0 for relatively low commitment (e.g., joint venture,

shared control, non-equity, acquisition), and 1 for the counterparts grouped into relatively high commitment and control (e.g., wholly owned subsidiary, major control, equity, greenfield), if a pair of these measures appeared in a single study (i.e., joint venture vs. wholly owned subsidiary, shared control vs. major control, non-equity vs. equity, and acquisition vs. greenfield). I did this by changing the sign (i.e., negative or positive) of the correlation coefficients that involved dummy variables that were not consistent with this recoding rule. I also carried out a similar process for studies that measured commitment levels by ordinal variables (e.g., minority, equality, and majority in Anderson & Gatignon 1986). As nearly all studies used either pairwise or ordinal comparisons on the commitment dimension it is relatively easy to convert each study dependent variable into a commitment measure based on Table 6.

3.2.2. Independent Variables

To test the hypotheses, I developed four latent constructs for representing the determinants proposed in the above section; i.e., international capability, generic capability, favourable market environment opportunity, and attractive market economic opportunity (when speaking about the generated latent constructs I will use only the singular).

Generic Capability is composed of four variables: (1) *Technology and tacit know-how*, measured by firms' R&D-related expenditures and experience, and marketing and training expenses (e.g., Brouthers & Dikova 2010); (2) *Business diversity*, representing whether or not a firm has business in more than one industry (e.g., Estrin *et al.* 2009); (3) *Management and operation experience*, indicating a firm's experience of management and operations gained in the domestic market and representing the firm's internal management skill, measured by integrating proxies such as years after being established and membership of an industrial group (e.g., Fortune 500) (e.g., Prashantham 2011; Richards & Yang 2007); and (4) *Firm size*, measured by synthesizing proxies including total sales, assets, and the number of employees (e.g., Brouthers, Brouthers & Werner 2003; Paul & Wooster 2008).

International Capability is reflected in five manifest measures: (1) *General international experience*, the accumulated knowledge from prior experience via

international activities, formed by synthesizing proxies such as the number of countries from which a firm has international business partners, years of having international business, the proportion of foreign assets (e.g., Kogut & Zander 1993; Lu 2002); (2) *International decision-specific experience*, indicating the experience of making strategic decisions related to an international entry, and mainly measured by operationalized variables including the number of years of using an international entry strategy and the number of different strategies being used (e.g., Malhotra *et al.* 2011; Padmanabhan & Cho 1999); (3) *International market knowledge*, representing firms' experiential knowledge in host country markets, measured by years in business, total sales, and the number of subsidiaries in a host country (e.g., Barkema & Vermeulen 1998; Li & Meyer 2009; Slangen 2013); (4) *International strategy*, measured by a dummy variable of 1 for a global-oriented strategy (e.g., cost leadership strategy in Davis, Desai & Francis 2000; intention of global integration in Luo 2001) and 0 for a local-focused strategy (e.g., product differentiation strategy in Davis *et al.* 2000; resource seeking strategy in Gil, Nakos, Brouthers & Brouthers 2006), and (5) *Global structure*, another dummy variable of 1 for relatively centralized control from the headquarters to the foreign subsidiary and 0 for comparatively autonomous international structure (e.g., Davis *et al.* 2000; Drogendijk & Slangen 2006).

Besides the two latent capability-constructs that I use for testing Hypotheses 1a, 1b, and 2, I also developed two opportunity-related latent variables for examining Hypotheses 3a, 3b, and 4. *Favourable Market Environment Opportunity* consists of five manifest measures: (1) *Potential market size*, which includes, for example, measures such as host country GDP, population, and income per capita (e.g., Malhotra & Gaur 2014; Uhlenbruck, Rodriguez, Doh & Eden 2006); (2) *Market munificence*, showing the supply of resources and production factors in a host country, exemplified by workforce size and education, lower average wage, the number of potential local partners (e.g., Boeh & Beamish 2012); (3) *Similarity between host and home country*, measured by reversing the positive-negative directions of cultural, geographic, linguistic, and other distances (e.g., Cho & Padmanabhan 2005; Cuypers & Martin 2010); (4) *Attractive policy for foreign firms*, integrated by operationalized variables such as economic freedom and openness, fewer market restrictions, and other incentives for attracting foreign firms (e.g., Arregle, Hébert & Beamish 2006; Shieh & Wu 2011), and (5)

Certain and safe host country market, measured by inversely integrating proxies such as country risk (e.g., index of International Country Risk in Chan & Makino 2007), perceptions about government policy (e.g., Brouthers, Brouthers & Werner 2008), and an efficient legal system (e.g., Meyer & Nguyen 2005).

Next, I investigated the impact of a market economic opportunity on the commitment level of an international entry strategy (Hypothesis 4) and the influence of the favourable market environment opportunity on the market economic opportunity (Hypothesis 3b) by establishing a latent construct, *Attractive Market Economic Opportunity*, via two manifest variables: (1) *Scale of the deal*, measured by synthesizing operationalized variables such as investment amount, sales and assets (e.g., Brouthers & Dikova 2010); and (2) *Relatedness of the deal*, representing whether the market economic opportunity is relative to a firm's major business, indicated by same or relative industry sectors and business lines (Slangen 2013).

3.2.3. Control Variable

As noted above, one of my objectives is to present a complete picture of determination on international entry strategy, via a holistic model that involves variables reflecting various aspects of consideration in prior research. This helps us identify the extent to which other variables may also exert influence on the choice of an international entry strategy. In addition, including an additional variable is crucial for enabling us to capture the complexity of the international entry strategy decision, which may include not only capability and opportunity, but also impacts on the two determinants. Toward this end, I incorporated a single control variable, *Industry*, by including three manifest variables: (1) *Competition*, synthesizing proxies such as the concentration ratio, the industry's marketing expenses, and the number of potential competitors; (2) *Industry development*, representing the growth and development of industry scale and technology (integrated by industry size and its growth regarding production, technology, and investment), and (3) *Industry category*, a dummy variable of 1 for firms in tangible product industries – industry sectors such as manufacturing and mining – and 0 for intangible products – such as business and consumer services.

Finally, to retain the comparability of these latent constructs, I unified all the

manifest measures by keeping their proxies in a same direction (i.e., positive to negative or 1 for more and 0 for less), as I had done for the independent variable.

3.3. Model Estimation

I apply a meta-analytic structural equation modelling (MASEM) technique known as two-stage meta-analytic structural equation modelling (TSSEM) to estimate the model given in Figure 4. The meta-analytic structural equation modelling method has been used in demonstrating complicated causal associations among variables (e.g., Reus & Rottig 2009). However, prior meta-analytic structural equation modelling studies in IB have exclusively employed the univariate correlation coefficient method, which takes the elements of a correlation matrix as independent amongst primary studies, and the correlation coefficients of each element are pooled across studies to form a pooled correlation matrix for fitting structural equation models. This approach potentially implies four statistical and practical problems in obtaining a correlation matrix for model estimation: (1) the difficulty of obtaining an appropriate sample size; (2) the possibility of including non-positive definite matrices into the pooled correlation matrix; (3) the neglect of sampling variation among primary studies, and (4) directly using a correlation matrix for structural equation models instead of involving a covariance matrix (Cheung & Chan 2005). With the TSSEM method I utilized a random-effects model and estimated the model in two stages to avoid these potential problems (TSSEM, Cheung 2014a).

I employ a random-effects model with an assumption that the included primary studies are random samples from a larger population (i.e., the included studies are merely a part of the entire population of research related to international strategic strategy) and the population correlation or covariance matrices vary across studies.

3.3.1. Stage 1: Estimating Pooled Correlation Matrix.

I first tested the 118 correlation matrices extracted from the primary studies and excluded non-positive definite matrices. This reduced my primary dataset to include 116 correlation matrices from 112 articles. I then estimated the pooled correlation matrix via a random-effects model that provided a vector of pooled correlation matrix and its

asymptotic sampling covariance matrix.

3.3.2. Stage 2: Fitting Structural Models.

Based on the vector and the matrix resulting from the prior stage, a correlation structural model is fitted with an asymptotically-distribution-free method (i.e., weighted lease square, WLS), the reticular action model (RAM, McArdle & McDonald 1984). This fitting procedure can be conducted with software packages such as metaSEM in R (Cheung 2014b). These packages compute goodness-of-fit indices similar to conventional SEM for testing whether the proposed model fits the meta-analytic dataset properly.

3.3.3. Robustness Consideration

As a robustness check and to generate a basis for the additional value of MASEM, I conducted two additional sets of analyses.

First, in addition to the results presented in the chapter I conducted additional MASEM analyses that considered other combinations of the latent constructs and their manifest measures. I also employed a fixed-effects model to examine the impact of capability and opportunity on firms' commitment levels in international entry strategy. I found the results of the research design presented here out-performed these other alternatives in terms of goodness-of-fit, as well as in terms of their theoretical implications.

Second, as MASEM differs significantly from bivariate meta-analysis, I conducted a traditional bivariate meta-analysis as well. The bivariate procedure provided for correlations between the nineteen influential factors and international entry strategy commitment, without considering the interactions among these factors. The bivariate findings, while largely consistent with the MASEM results, do not reveal differences that are uncovered by MASEM.[9] I address these differences in the Discussion section of this chapter.

[9] Interested readers are referred to the Supplementary Appendix C for details about the bivariate meta-analysis.

Table 7 The Number of Studies and the Accumulative Sample Size

Variables	1	2	3	4	5	6	7	8	9	10
1 International entry strategy		19,305	13,747	8,504	19,728	3,616	17,802	31,060	51,355	134,246
2 Competition	20		19,659	10,112	1,435	1,507	3,593	6,047	4,646	2,107
3 Industry development	14	14		25,410	3,118	152	2,353	21,793	22,119	1,677
4 Industry category	23	7	7		3,661	418	2,296	21,366	22,887	3,790
5 Technology & tacit know-how	34	8	4	12		1,031	10,726	23,434	18,831	8,982
6 Business diversity	7	2	1	2	4		1,171	2,418	1,106	754
7 Management & operation experience	21	6	4	6	12	1		17,659	12,698	9,765
8 Firm size	49	10	11	19	34	4	15		43,532	14,039
9 General international experience	47	9	10	16	28	2	14	40		30,237
10 International decision-specific experience	14	4	2	6	12	3	6	12	12	
11 International market knowledge	39	12	10	11	23	7	5	25	24	11
12 International strategy	12	2	1	2	7	1	2	8	11	1
13 Global structure	8	1	1	3	5	3	1	4	5	2
14 Potential market size	26	8	9	9	15	5	9	26	23	11
15 Market munificence	11	7	4	4	4	3	1	4	6	1
16 Similarity between host and home countries	49	18	17	16	23	7	15	34	36	14
17 Attractive policy for foreign firms	36	14	12	19	18	3	10	25	29	11
18 Certain & safe host-country market	38	14	9	16	23	4	12	26	29	12
19 Scale of the business deal	26	11	10	12	12	5	7	10	20	12
20 Relatedness of the business deal	27	10	8	12	14	5	8	13	20	13

Note: This table summarizes the use of specific variables in the primary studies. The triangle to the lower left of the diagonal contains the number of studies (n) employing that combination of variables. In other words, it shows the number of studies for which a correlation exists for the combination of variables.

Table 7 *Continued*

Variables	11	12	13	14	15	16	17	18	19	20
1 International entry strategy	148,093	3,273	7,979	132,962	7,936	177,178	39,091	157,927	50,133	153,051
2 Competition	11,132	201	2,516	4,403	8,243	21,450	22,699	16,447	22,061	4,823
3 Industry development	10,151	174	2,199	19,718	2,282	32,681	32,869	25,163	18,835	5,207
4 Industry category	7,447	404	559	18,705	1,025	28,430	30,948	28,392	13,196	7,980
5 Technology & tacit know-how	12,876	1,991	3,713	11,843	1,407	10,817	11,448	11,954	9,476	11,136
6 Business diversity	3,675	277	695	1,735	1,569	3,616	2,172	1,489	1,800	3,187
7 Management & operation experience	4,007	703	1,609	11,987	1,171	13,966	12,345	11,837	4,553	7,351
8 Firm size	15,969	2,122	3,436	36,249	2,652	38,142	36,459	33,733	9,373	13,208
9 General international experience	18,347	4,121	5,033	31,502	2,457	59,063	39,392	55,979	35,123	35,785
10 International decision-specific experience	113,591	160	418	119,205	246	135,870	11,413	134,973	25,556	131,042
11 International market knowledge		812	418	127,913	2,954	135,897	29,331	124,917	24,817	133,442
12 International strategy	5		1,225	513	948	1,443	1,349	2,572	719	160
13 Global structure	2	3		577	4,010	7,019	442	3,795	7,160	418
14 Potential market size	18	3	3		2,066	37,316	30,031	135,072	7,607	123,793
15 Market munificence	6	2	6	7		9,071	4,491	7,563	5,841	1,939
16 Similarity between host and home countries	26	8	6	22	9		51,907	175,288	49,910	149,356
17 Attractive policy for foreign firms	28	6	3	18	6	27		52,134	35,071	17,747
18 Certain & safe host-country market	21	9	5	23	11	31	30		48,880	138,060
19 Scale of the business deal	18	4	7	10	5	22	24	22		30,451
20 Relatedness of the business deal	25	1	2	10	3	21	18	15	17	

Note (*Continued*): For instance, the intersection of Row 3 and Column 2 shows14 studies included both Industry Development and Competition, and those studies had a total sample size of 19,659 (i.e., the intersection of Column 3 and Row 2). The triangle to the upper right of the diagonal shows the cumulative sample size; i.e., the number of total observations in all studies employing that combination of variables (N).

Table 8 Pooled Correlation Coefficients and Population Variability

Variables	1	2	3	4	5	6	7	8	9	10
1 International entry strategy (hight – low commitment)		0.0100 **	0.0169 *	0.0181 **	0.0105 **	0.0056	0.0225 **	0.0231 ***	0.0107 ***	0.0412 *
2 Competition (serious – mild)	0.0119		0.0569 **	0.0275 †	0.0088	0.0000	0.0172	0.0169 *	0.0088	0.0038
3 Industry development (developed/big – developing/small)	0.0294	0.0885		0.0634 †	0.0241	0.0000	0.0007	0.0202 *	0.0152 †	0.0000
4 Industry category (tangible – intangible products)	-0.0724 *	-0.0695	-0.0757		0.0004	0.0059	0.0082	0.0376	0.0222 *	0.0067
5 Technology & tacit know-how (more – less)	0.1057 ***	0.0346	-0.0664	0.0023		0.0198	0.0042	0.0348 ***	0.0139 ***	0.0201 *
6 Business diversity (diversified – conglomerate)	-0.0233	0.0111	0.0084	0.0003	-0.0939		0.0000	0.0189	0.0036	0.0000
7 Management & operation experience (more – less)	-0.0285	0.0330	-0.1337 ***	0.1083 *	0.0350	0.0314		0.0487 **	0.0119 *	0.0553 †
8 Firm size (large – small)	0.0529 *	0.1312 **	-0.0223	0.0888 †	0.0855 *	0.2228 **	0.2741 ***		0.0277 ***	0.0160 *
9 General international experience (more – less)	0.0763 ***	0.0096	0.0647	-0.0199	0.0613 *	0.1515 **	0.1081 ***	0.2752 ***		0.0711 *
10 International decision-specific experience (more – less)	0.0243	0.0226	0.0014	-0.0590	0.0494	0.0727 *	0.2378 *	0.1858 ***	0.2709 ***	
11 International market knowledge (more – less)	0.0046	-0.0091	-0.0039	0.0044	0.0701 *	0.0603	0.2172 *	0.2806 ***	0.3003 ***	0.1485
12 International strategy (global orientation – local focus)	0.0278	-0.0529	-0.2532 ***	-0.2333 ***	-0.0516	-0.0659	0.1134 **	-0.0520	0.0662 *	0.0885
13 Global structure (centranlized – autonomous)	0.1017 †	0.0225	-0.0597 **	-0.0478	0.0190	-0.0306	0.0701 **	0.0338	-0.0593 *	0.0638
14 Potential market size (large – small)	0.1069 **	0.0236	-0.0059	-0.0891 †	0.0157	0.0339	0.0475	0.0351 †	0.0562 †	0.1227 *
15 Market munificence (sufficient – deficient)	-0.0523 †	0.0896	0.1465 *	-0.0605	-0.0083	0.0787	-0.0480 †	0.0256	-0.0486	-0.0517
16 Similarity between host and home countries (similar – disparate)	0.0313	-0.0086	0.0029	0.0144	-0.0125	-0.0435	-0.0416 **	-0.0131	-0.0093	-0.0100
17 Attractive policy for foreign firms (incentive – contrained)	0.0285	0.0588 †	0.0318	-0.0428	-0.0132	-0.0362	0.0030	-0.0083	-0.0039	0.0378 *
18 Certain & safe host-country market (low – high uncertainty & risk)	0.0176	-0.0432	-0.0716 *	0.0099	0.0229	-0.0765	-0.0261	0.0062	-0.0321	-0.0344
19 Scale of the business deal (large – small)	0.0258	-0.0350	0.0700 *	0.0535 *	-0.0121	-0.0218	0.0209	0.0041	0.0158	-0.0421 †
20 Relatedness of the business deal (relative – not relative)	0.0898 **	0.0892 **	-0.0323	-0.0344 †	0.0989 ***	-0.1023 ***	0.0139	-0.0649 **	0.0085	0.0665

Note: This table synthesizes effect sizes from 116 primary matrices. Parentheses in the variables column show how the variables are measured. The triangle to the lower left of the diagonal contains the pooled correlation coefficients (*r*'s). The triangle to the upper right of the diagonal shows the Tau^2's of the corresponding correlation coefficients.
†p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.

Table 8 *Continued*

Variables	11	12	13	14	15	16	17	18	19	20
1 International entry strategy (hight – low commitment)	0.0320 ***	0.0502 *	0.0249 †	0.0291 ***	0.0057	0.0215 ***	0.0456 ***	0.0293 ***	0.0179 **	0.0233 ***
2 Competition (serious – mild)	0.0024	0.0000	0.0000	0.0061	0.0210 †	0.0037 *	0.0110 *	0.0295 *	0.0256 *	0.0074
3 Industry development (developed/big – developing/small)	0.0085 †	0.0000	0.0000	0.0054 †	0.0180	0.0090 *	0.0096 *	0.0064 †	0.0101 †	0.0098 †
4 Industry category (tangible – intangible products)	0.0078 †	0.0000	0.0000	0.0223 *	0.0141	0.0149 *	0.0189 **	0.0131 *	0.0053 †	0.0027
5 Technology & tacit know-how (more – less)	0.0216 **	0.0470 †	0.0025	0.0040	0.0000	0.0007	0.0073 †	0.0098 *	0.0061	0.0089 *
6 Business diversity (diversified – conglomerate)	0.0321 †	0.0000	0.0000	0.0044	0.0011	0.0055	0.0006	0.0201	0.0084	0.0022
7 Management & operation experience (more – less)	0.0356	0.0000	0.0000	0.0096	0.0000	0.0011	0.0060 †	0.0015	0.0101	0.0145 †
8 Firm size (large – small)	0.0375 ***	0.0270	0.0030	0.0060 *	0.0030	0.0041 **	0.0109 **	0.0060 *	0.0206 *	0.0051 *
9 General international experience (more – less)	0.0538 ***	0.0077	0.0014	0.0242 **	0.0183	0.0078 ***	0.0069 **	0.0159 ***	0.0083 *	0.0121 **
10 International decision-specific experience (more – less)	0.1068 *	0.0000	0.0000	0.0249 *	0.0000	0.0090 *	0.0014	0.0195 *	0.0043	0.0284 *
11 International market knowledge (more – less)		0.0044	0.0000	0.0263 **	0.0018	0.0141 **	0.0238 ***	0.0214 **	0.0037 *	0.0214 ***
12 International strategy (global orientation – local focus)	-0.0921 *		0.0171	0.0469	0.0000	0.0157	0.0068	0.0153 †	0.0000	0.0000
13 Global structure (centranlized – autonomous)	-0.0418	0.0670		0.0000	0.0015	0.0048	0.0007	0.0012	0.0114 **	0.0014
14 Potential market size (large – small)	0.1075 **	-0.1676	0.0712 †		0.0799 †	0.0977 **	0.0850 **	0.1139 ***	0.0271 *	0.0016
15 Market munificence (sufficient – deficient)	0.0463 †	0.0160	-0.0727 *	0.1670		0.0997 *	0.0891 †	0.1692 *	0.0001	0.0000
16 Similarity between host and home countries (similar – disparate)	0.0295	-0.0036	0.0039	0.0365	-0.0184		0.0240 ***	0.0631 ***	0.0113 **	0.0060 *
17 Attractive policy for foreign firms (incentive – contrained)	0.0054	-0.0086	-0.1219 **	0.0728	0.2615 *	0.0363		0.1003 ***	0.0078 **	0.0017
18 Certain & safe host-country market (low – high uncertainty & risk)	-0.0102	0.0200	-0.0312	-0.0447	-0.0464	0.1784 ***	0.0229		0.0114 **	0.0014
19 Scale of the business deal (large – small)	-0.0267	0.0522	-0.0367	0.0480	-0.0027	-0.0084	-0.0118	-0.0105		0.0051 *
20 Relatedness of the business deal (relative – not relative)	0.0036	0.1221	0.0189	0.0041	0.0641 **	0.0060	-0.0129	-0.0397 **	0.0182	

4. RESULTS

Table 7 presents two descriptive sample size statistics: (a) the number of studies that report correlation coefficients for a pair of variables, and (b) the cumulative sample size associated with those studies (that is, the sum of sample sizes of the primary studies that provide effect sizes for the pair of variables). I note that among the 190 effect sizes (i.e., correlation coefficients amongst pairs of variables), the associations between International entry strategy and Firm size as well as Similarity between host and home countries are the most commonly investigated relations, studied by 49 out of the 116 primary studies. The second most examined association is between International Entry Strategy and General international experience (47 primary studies). In contrast, 11 of the 190 effect sizes were reported by only one single primary study (e.g., the association between Business diversity and Industry development). When I look at the sample sizes of the studies, I see significant differences. For example, Business diversity and Industry development has a cumulative sample size of 152 in one primary study only, while the relationship of Similarity between host and home country and International Entry Strategy used in 49 primary studies is based on 177,178 observations.

Table 8 shows the pooled mean effect sizes (i.e., correlation coefficients in the lower left part) and the population variability (i.e., standard deviation in the upper right part), which result from stage 1 of TSSEM. I find six factors with statistically significant associations with a firms' commitment level in international entry strategy. These factors are *Technology and tacit know-how*, *Firm size*, *General international experience*, *Global structure*, *Potential market size*, and *Relatedness of the market economic opportunity*. I also find two factors with significant negative links. The negative effects are for *Industry development* and *Market munificence*, seemly suggesting that: (a) firms producing intangible products may be more likely to choose a high commitment level, and (b) generous resource supply in the host-country market is not certain for attracting high-level commitment from foreign entrant firms. In particular, seven of the eight statistically significant mean effect sizes are estimated with statistically significant standard deviations (i.e., the population variances of mean effect sizes), except for *Market munificence*. This suggests that in the literature there are materially meaningful associations between the commitment level of the market entry

and *Technology and tacit know-how*, *Firm size*, *General international experience*, *Global structure*, *Potential market size*, *Relatedness of the market economic opportunity*, and *Industry development*. Nevertheless, this does not mean these factors are causal determinants of international entry commitment but significant associations only. To obtain a causal relationship (i.e., determination), I use analyses based on the results of stage 2 in TSSEM, which provides evidence for testing hypotheses.

However, before reporting the results from the TSSEM stage 2 for hypothesis testing, I highlight an important issue in traditional moderator-based meta-analysis used to examine moderating effects of descriptors (e.g., country of origin in Yang & Driffield 2012) and indicators (e.g., chronological years in Taras, Steel & Kirkman 2012) on the mean effect sizes (e.g., linear coefficient and Cohen's *d* respectively). Using such models allows us to discover the disparity (e.g., among countries) or evolution (e.g., over a long period) of effect sizes. While this approach contributes to our knowledge based on prior research findings, meta-analysts such as Becker (1996) and Cooper and Hedges (2009) note that investigating the generalizability and consistency of research findings is equally important, which is exactly what my analysis is focusing on. For example, if a number of studies found that an influential factor had divergent effects on international entry strategy, it needs to be established why there are inconsistent findings (as is done in the moderator-based meta-analyses). However, it is also valuable to build our theoretical understanding of the consistent and influential factors being revealed by consistent tendencies in the extant conclusions. I am able to do so here because I employ a random-effects model with TSSEM, which takes into account the variance of findings, as well as the causal relationship revealed by prior research. This provides a holistic model involving major facets of influence as well as diverse findings about the influence.

Table 9 TSSEM Results for Testing All Hypotheses Simultaneously

	I		II		III		IV		V		VI	
	Industry		Generic Capability		International Capability		Market Environment Opportunity		Market Economic Opportunity		**International Entry Strategy**	
Variables	β	s.e.	β	s.e.	β	s.e.	β	s.e.	β	s.e.	β	s.e.
Control												
Industry												
Competition	-0.0369	2.0781										
Industry development	0.1067	3.6639										
Industry category	-0.1057	123.1977										
Predictor												
Generic capability											*H1a:* 1.2276	132.0681
Technology & tacit know-how			0.1318 **	0.0505								
Business diversity			0.2249 ***	0.0655								
Management & operation experience			0.3564	0.3247								
Firm size			0.8088	4.0305								
Industry			-0.8145	2.8215								
International Capability											*H2:* 0.0908 *	0.0383
Generic Capability				*H1b:*	0.5839 †	0.3183						
General international experience					0.6008	6.5338						
International decision-specific experience					0.3988	108.3220						
International market knowledge					0.5151	1.5125						
International strategy					0.0589	115.5098						
Global structure					-0.0230	0.0407						
Favorable Market Environment Opportunity											*H3a:* 1.8766 ***	0.0747
Potential market size							0.0062	0.1429				
Market munificence							-0.3875 †	0.2144				
Similarity between host and home country							0.2944	2.0653				
Attractive policy for foreign firms							0.0849	1.2128				
Certain & safe host-country market							0.4419	1.0153				
Attractive Market Economic Opportunity											*H4:* 2.5682 ***	0.0652
Favorable Market Environment Opportunity								*H3b:*	-0.6955	0.8872		
Scale									0.0373	0.0801		
Relatedness									0.1338 †	0.0696		
Industry									0.5782	6.7238		

Note: $\chi^2/df = 2.2654$, RMSEA = 0.0023, SRMR = 0.0644, TLI = 0.5698. †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.

Table 9 reports the TSSEM results,[10] presenting a model with reasonable goodness-of-fit (i.e., $\chi^2/df = 2.2654$, RMSEA = 0.0023, SRMR = 0.0644, TLI = 0.5698[11]). Columns I to V report the coefficients of the reflective manifest measures (e.g., *Technology and tacit know-how*, *Business diversity*, *Management and operation experience*, and *Firm size* in Column II) in a latent construct (e.g., *Generic Capability* in Column II), and the impact of other latent constructs (e.g., *Industry* in Column II). Column VI reports the impacts of determinants on firms' commitment levels in international entry.

Focusing on the effects of generic capability on international capability and international entry strategy, Hypothesis 1a proposes that better generic capability does not lead a firm to choose a higher commitment level, while Hypothesis 1b predicts that better generic capability will lead to better international capability. The results reveal a relationship between *Generic Capability* and *International Capability*. However, the effect is weak but directionally consistent with H1b (0.5839, $p < 0.10$ in Column III). Examining column VI, I see that *Generic Capability* does not influence *International Entry Strategy* significantly (1.2276, $p > 0.90$), a result consistent with H1a.

Hypothesis 2 posits that better international capability will result in a firm's decision to choose a higher commitment level, since international capability reflects the firm's skills, experience, and ability in handling international business, and implies a willingness to be involved in international entry. Column VI of Table 9 shows that *International Capability* has a positive and significant impact (0.0908, $p < 0.05$) on the commitment level, supporting H2. Combined with the results in Column III regarding *Generic Capability*'s insignificant influence on *International Entry Strategy*, but significant impact on *International Capability*, it implies an indirect influence of *Generic Capability* on *International Entry Strategy* through *International Capability*.

[10] A structural equation model showing more detail is in the Appendix.

[11] I assess the fit of model as per criteria suggested by: (1) Wheaton *et al.* (1977) – the ratio of χ^2 to the degree of freedom is smaller than 5.00; and (2) Hu & Bentler (1999) – including (a) the two-index presentation strategy combining RMSEA (the root mean square error of approximation) less than 0.06 and SRMR (the standardized root mean square residual) less than 0.09, and (b) an acceptable TLI (Tucker-Lewis index) between 0 and 1. My TLI index is relatively smaller than the optimal value (0.95) because: (i) TLI needs a baseline model for a comparable computation, but my model does not have an available comparative baseline, and (ii) the estimation approach (i.e., WLS) tends to result in a lower TLI value due to substantial and systematic differences from other methods (Cheung & Chan, 2009; Yuan & Chan, 2005).

Focusing on the impact of market environment opportunity, Hypothesis 3a proposes that a favourable opportunity in the host-country market will lead entering firms to choose a high commitment level strategy, while Hypothesis 3b implies that a favourable market environment opportunity does not influence the attractiveness of an international market economic opportunity. Turning to the results in Columns V and VI in Table 9, I find a significantly positive impact of *Favourable Market Environment Opportunity* on *International Entry Strategy* (1.8766, $p < 0.001$), strongly supporting H3a, and a negative and insignificant influence (-0.6955, $p > 0.40$) on *Attractive Market Economic Opportunity*, supporting the argument in H3b.

Finally, Hypothesis 4 predicts that an attractive market economic opportunity will make firms choose a high commitment-level strategy for international entry, because firms potentially will have more control over, and higher profit from, the attractive business opportunity via a higher-level commitment. As indicated in Column VI of Table 9, the impact of *Attractive Market Economic Opportunity* on *International Entry Strategy* is positive and statistically significant (2.5682, $p < 0.001$), supporting H4.

Two results for the control variable (*Industry*) are also worth noting. I find *Industry* does not significantly impact either *Generic Capability* or *Attractive Market Economic Opportunity*, implying insignificant indirect effects on *International Entry Strategy*. This is an interesting result as industry-related factors have been investigated as a very important group of effects in determining the international entry strategy (see Rows and Columns 2, 3, and 4 in Table 8), with many authors arguing for 'contingency based' theories of international entry (e.g., Kaynak, Demirbag & Tatoglu 2007). This suggests that it is necessary to rethink what I know and what I have examined about international entry strategy, as further discussed in the following section.

5. DISCUSSION

5.1. Contribution and Implications

This chapter offers several theoretical and empirical contributions to global strategy research. Specifically, I examine how capabilities and opportunities may influence a

firm's commitment with respect to its international entry strategy. I do this by trying to understand the overall tendencies seen in the empirical findings across the extant literature, as well as the associations between the dimensions composing firm capability and the international opportunity, respectively. While other theoretical perspectives on entry mode have been examined by previous meta-analyses (e.g., transaction cost economics in Zhao *et al.* 2004), my study highlights a new framework based on analyses of *capability* and *opportunity* – integrating major findings of the calculative and the process traditions. Although the capability-opportunity framework is not identical to a combination of the two theoretical streams, it aims to present a more parsimonious picture that depicts the determinants of a key global strategic decision in a slightly new perspective. My chapter contributes by arguing and showing that a global strategy is determined by capability and opportunity simultaneously, something that aligns global strategy thinking with emerging traditions in dynamic capabilities and strategic entrepreneurship.

My study integrates research in the calculative tradition (e.g., certainty and resources in host country market) with findings in the process tradition (e.g., international experience), and I contribute to both literatures by accommodating the major factors of both traditions, thus improving upon current knowledge of global strategic decisions. For example, prior entry mode studies showed how generic capabilities exert impact on global strategic decisions (e.g., Erramilli 1992). I find that generic capabilities provide support to firms' international capabilities, but do not significantly influence the strategic decision of commitment in international entry. Thus, it is valuable to rethink the effects of different capabilities on firms' globalization, and to re-examine which capability uniquely enhances the possibility of optimally (or semi-optimally) choosing a global strategy. My findings offer further evidence regarding the influence of opportunities in a global context, such as the insignificant relationship between host market environmental opportunity and host market economic opportunity.

The study's findings speak to the process tradition by demonstrating the value of joining together capability and opportunity and realizing the dynamic characteristics of capabilities as well as opportunities. It implies that strategic value is created not just by the firm's ability to develop its capabilities but also to do so in a manner that allows it to

evolve in a manner that allows it to capture opportunities. These follow a process that begins with generic capabilities but can evolve into international capabilities. It is the latter that drives the capability-opportunity combinations that influences a firm's global entry strategy. No doubt this process is likely to influence firms' decisions about other global activities, but it may be inappropriate to presume that capability and/or opportunity can solve all the puzzles of global strategy. By accommodating multiple theoretical paradigms and multiple influential factors, my meta-analytic approach enables this study to construct a holistic model of the determination of international entry strategy and estimate the diverse impacts of determinants simultaneously, reflecting to a large extent of the real decision-making situation. The TSSEM techniques I used in this chapter can be applied to many other studies investigating various global strategic decisions.

In addition to accommodating multiple theoretical paradigms and multiple influential factors, my meta-analytic approach enables this study to construct a holistic model of the determination of international entry strategy and estimate the diverse impacts of determinants simultaneously, reflecting to a large extent of the real decision-making situation. The MASEM methodology contributes reliable insights by examining the determination of a decision within a complete structure of relationships that would not be obtainable in traditional bivariate meta-analyses. I can see this when I compare my findings with those from a bivariate meta-analysis (given in Appendix C). First, the bivariate analysis implies that nearly everything studied mattered, with the exception of *Business diversity* and *International strategy*. While this might be theoretically useful information, it tells us nothing about the structural relationship amongst the variables and potentially serves to over- or under-state the influence of any single variable. It is also at odds with the MASEM results that show significant correlations amongst the measures; a fact that would imply that bivariate approaches would significantly inflate effect sizes. Second, three variables – *Firm size*, *International decision-specific experience*, and *International market knowledge* – do not show consistent effects when looked at via the two methods. These three variables have negative relationships with *International Entry Strategy* according to the bivariate meta-analysis, while indicating positive effects in the MASEM-pooled results (Column 1 in Table 8). Within the MASEM logic this may arise because the three variables are acting not individually but

as part of an input to a capability, something that is confirmed in Table 9.

For firms, my findings imply that they can improve their capabilities to respond to opportunities and can utilize the opportunity to shape their capabilities. For instance, prior research suggests that firms should consider creating opportunities rather than just finding opportunities (Teece 2014). My findings on the different components of an opportunity imply that firms might also consider employing the presence of various opportunities to develop capabilities for future opportunities. Furthermore, when choosing an international entry strategy, firms might not be influenced by the industry in which they reside. As shown in my empirical model, neither firms' capabilities nor international opportunities are significantly affected by industry. This may indicate that firms can concentrate on their capabilities, as well as the opportunities that suit those capabilities.

5.2. Limitations and Future Research Directions

I note several limitations of this study, which suggest some directions for future research. I introduced a state-of-the-art method (i.e., TSSEM) to examine a global strategic topic that has been long-debated, and to test a holistic model involving a number of factors suggested by multiple theoretical perspectives. However, such a research design might be challenged on the grounds of the potential flaws of the meta-analytic structural equation modelling methodology. For example, the traditional meta-analytic approach examines relations between variables in one or several pairs, while my approach literally shows 190 associations of 20 variables (i.e., $20 \times (20\text{-}1) / 2 = 190$). This implies exponentially more complex and informative findings than traditional methods, and so may embed phenomena that are potentially unexplainable by the current theoretical framework. In addition, despite of methodological advantages, the TSSEM approach suffers from some common problems as traditional meta-analyses, for example, the problems of primary studies' quality and 'oranges and apples' (cf., Cooper & Hedges 2009). Thus, it would be useful to extend my study by involving primary studies that do not examine international entry strategy, if such studies offer findings in relation to a pair of variables included here. For instance, I have limited observations of relation between *Industry development* and *Business diversity* because of the limited

attention given to this pair of variables in the international entry literature. In addition, one of the novel features of my method is that I construct latent variables that allow us to be able to investigate more *representative* determinants from a theoretical perspective.

Meta-analytic structural equation modelling design can complement prior research by integrating a number of factors suggested by the different theoretical paradigms, but I also recognize some of the limitations of TSSEM. For example, the random-effects model and the effect sizes (i.e., correlation coefficients) I use cannot address moderating effects, such as heterogeneity among host countries, due to insufficient information disclosed in the included primary studies; although the moderating effects could be studied conveniently through primary studies with first-hand or secondary data. I encourage future research on international entry strategy to try multiple research designs in order to leverage their strengths.

Furthermore, while my study investigates only strategy in international entry, the TSSEM method and my research design can be applied to many other types of global strategy topics. For example, the determinants of MNE performance have been studied for decades and no consistent conclusions have been reached (Yang & Driffield 2012). I believe that researchers can use meta-analytic structural equation modelling methods not only to investigate similar research topics but also to test the validity of extant theoretical models.

In addition, I propose an alternative model composed of capability and opportunity, accommodating most crucial factors suggested by the extant theories. However, some findings are still waiting for additional research to provide more evidence. For example, the indirect effects of *Generic Capability* need mediation studies to contribute further insights. Also, the insignificant influence of *Industry* on both *Generic Capability* and *Market Economic Opportunity* highlights a tendency on the part of research to want to argue for contingency approaches when a comprehensive examination of the evidence implies that simpler and more parsimonious models may be better.

Finally, my model shows that *Attractive Market Economic Opportunity* seems to be more important that other determinants. To a certain extent, it doubts some prior findings based on conventional global strategic theories, which tend to stress the

importance of firms' capability; although it is consistent with Buckley, Devinney and Louviere's (2007) finding that the return to investment is overwhelmingly the number one factor in a senior manager's market entry decision model. As a meta-analysis, this study merely summarizes the findings of the extant literature. Not having added new data to the model, I can only demonstrate effects that are consistent with mainstream arguments. The discrepancy may also imply we do not really understand what we already knew. Yet, this could be an arbitrary argument without further studies that test and challenge my findings with primary data.

6. CONCLUSION

This study employs the TSSEM method to investigate the determination of the level of commitment in international entry strategy by incorporating multiple theoretical perspectives into a capability-opportunity framework. My theoretical focus on the capability-opportunity framework complements prior international entry research. Empirically, I find that a firm's international capability, favourable market circumstance, and attractive international market economic opportunity can enhance the firm's commitment levels in international entry. However, the firm's generic capability does not exert direct impact on the international entry strategy but serves to strengthen the firm's international capability. My use of meta-analytic structural equation modelling methods brings new insights to the study of international entry strategy, and I also contribute to the global strategic literature by accommodating multiple theoretical perspectives, and by providing empirical evidence that delineates what global strategy scholarship knows about international entry strategy. My theoretic arguments and analyses therefore stress the integration of capability (a concept from the dynamic capabilities approach) and opportunity (a view from international entrepreneurship), two theoretic streams that have largely been developed independently. It is my hope that this study will inspire future research on international entry strategy, as well as on other global strategic decisions, using meta-analytic structural equation modelling methods.

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Appendix 2

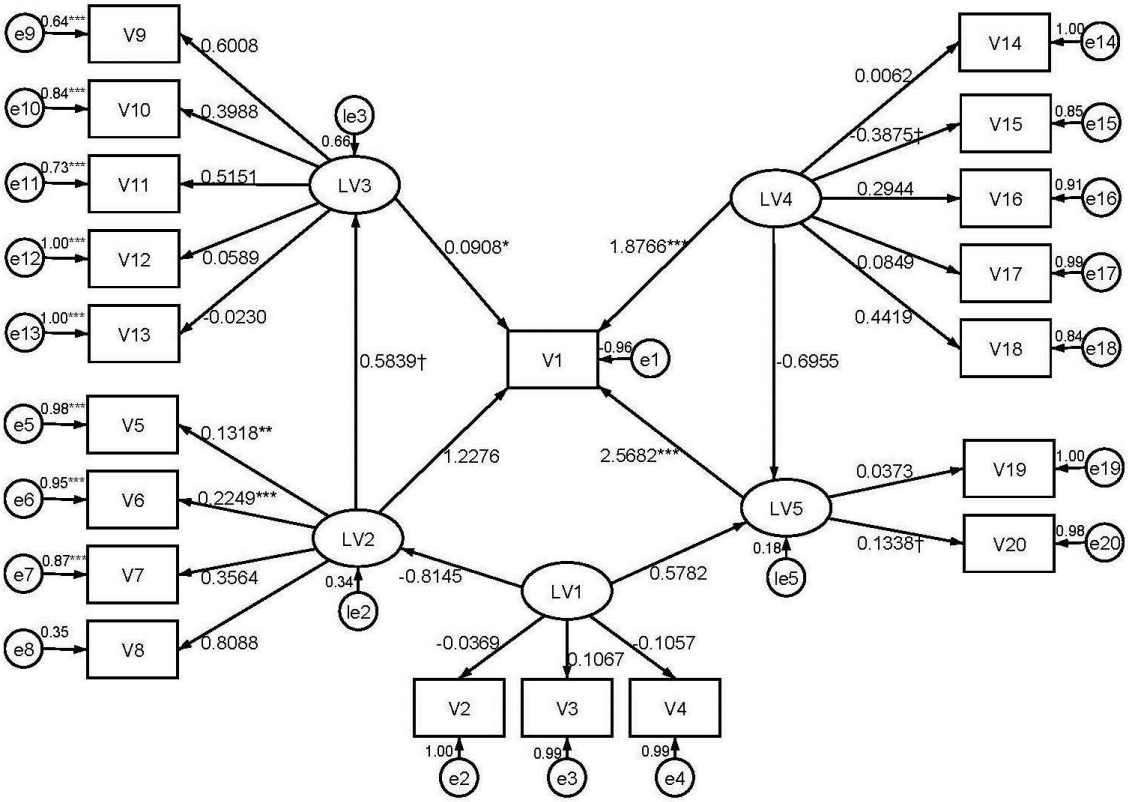

Figure 5 Structural Equation Model

Note: †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.

Index for Figure 5

V1: International entry strategy
V2: Competition
V3: Industry development
V4: Industry category
V5: Technology and tacit know-how
V6: Business diversity
V7: Management and operation experience
V8: Firm size
V9: General international experience
V10: International decision-specific experience

V11: International market knowledge

V12: International strategy

V13: Global structure

V14: Potential market size

V15: Market munificence

V16: Similarity between host and home countries

V17: Attractive policy for foreign firms

V18: Certain and safe host-country market

V19: Scale of the market economic opportunity

V20: Relatedness of the market economic opportunity

LV1: Industry

LV2: Generic Capability

LV3: International Capability

LV4: Favourable Market Environment Opportunity

LV5: Attractive Market Economic Opportunity

SUPPORTING INFORMATION

Supplementary Appendix A: List of Studies Included in the Meta-analysis [13]

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[13] * indicates an article contributes two matrices to the meta-analytic dataset.

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Supplementary Appendix B: Two-Stage Meta-Analytic Structural Equation Modelling: Random-effects Model

Two-Stage meta-analytic structural equation modelling

Two-Stage Meta-Analytic Structural Equation Modelling (TSSEM) is an advanced meta-analytic structural equation modelling (MASEM) method that synthesizes correlation or covariance matrices and fits the pooled matrix in structural equation models by integrating methods of meta-analysis and structural equation modelling. Prior to TSSEM, meta-analysts employed either univariate or generalized least squares (GLS) approaches to synthesize findings from primary studies[14].

Simply put, the *univariate* approach is used under the assumption that a correlation coefficient of a pair of variables is independent of other coefficients in the correlation matrix, and thus the approach of combining correlation coefficient matrices is the same as that of synthesizing a set of correlation coefficients. With the pooled matrix[15], this approach estimates structural equation models by treating the pooled matrix as an observed correlation matrix (Hedges & Olkin, 1985; Hunter & Schmidt, 1990, 2004). In the global strategy domain, Reus and Rottig (2009) gave an example of this method, while this approach is generally not recommended due to (1) the difficulty of obtaining an appropriate sample size; (2) the possibility of including non-positive definite matrices in the pooled correlation matrix; (3) the neglect of sampling variation among primary studies, and (4) directly using a correlation matrix for structural equation models instead of involving a covariance matrix (Becker, 2000, 2009; Cheung & Chan, 2005).

The *GLS* approach takes account of the dependence of correlation coefficients by combining correlation matrices from primary studies with GLS estimations and resulting in an asymptotic covariance matrix together with the pooled correlation matrix (Becker, 1992, 1995). However, this method is limited by its application to estimating regression models only. There is no closed form for estimating structural equation

[14] In meta-analysis, a *primary study* refers to one study included in an article. For MASEM, the *findings* are correlation coefficient or covariance matrices reported by primary studies.
[15] A pooled correlation matrix is synthesized from a group of correlation coefficient matrices.

models with a pooled correlation matrix by the GLS approach. This makes meta-analysts have to treat the GLS-pooled correlation matrix as the observed covariance matrix in fitting structural equation models without correcting the sampling variations across primary studies (e.g., Geyskens, Steenkamp, & Kumar, 1998).

Unlike the two conventional approaches, TSSEM estimates a pooled correlation matrix and fits the pooled matrix in structural equation models with the weighted least squares (WLS) method by involving the asymptotic sampling covariance matrix as the weight matrix (Cheung, 2008, 2014a, 2014b; Cheung & Chan, 2005, 2009). Details are discussed in the following section.

Random-effects TSSEM model

Meta-analysis has two types of models: fixed-effects models and random-effects models. The assumption behind fixed-effects models is that the population correlation matrices are homogeneous amongst all primary studies. In other words, the meta-analytic conclusions are drawn on the primary studies included in the meta-analysis. On the contrary, the random-effects model assumes that the included primary studies are random samples from a larger population (i.e., the included studies are merely a part of the entire population of research related to the meta-analytic topic) and the population correlation or covariance matrices vary across studies. Simply put, the population of correlation matrices in a meta-analysis is heterogeneous. In my meta-analysis about international entry strategy, it is more appropriate to estimate a random-effects TSSEM model because (1) the included 116 primary studies may not cover the population of studies regarding international entry strategy and (2) homogeneous analysis of the pooled correlation matrix shows heterogeneity in most estimation parameters. Specifically, a random-effects TSSEM model can be obtained by the following stages.

If the population model is

$$\rho_{random} = vechs(\mathrm{P}(\gamma)) \qquad (1)$$

where $vechs(\bullet)$ is a vector of the pooled correlation matrix, then the *i*th primary study will have its own specific random effects:

$$\rho_i = \rho_{random} + \mu_i \quad (2)$$

where ρ_i and μ_i are the population correlation vector and the study specific random effects in the *i*th primary study respectively.

Stage 1: Estimating the pooled correlation matrix.

After excluding non-positive definite matrices[16] and taking the column-wise non-redundant elements from the *i*th correlation matrix R_i, the correlation vector $r_i = vechs(R_i)$ in this matrix is

$$r_i = \rho_{random} + \mu_i + e_i \quad (3)$$

where $Var(\mu_i) = \mathrm{T}^2$ is the variance component of the study-specific random-effects, $Cov(e_i) = V_i$ is the known-sampling covariance matrix in the *i*th study. This correlation vector has $p*(p-1)/2 \times 1$ elements, where p is the number of elements in r_i. By assuming the distribution of data is multivariate normal, the log-likelihood of the *i*th study under a random-effect meta-analysis is[17]

$$\log l(\rho_{random}, \mathrm{T}^2; r_i) = \frac{1}{2}\left\{ p\log(2\pi) + \log\left|\mathrm{T}^2 + V_i\right| + (r_i - \rho_{random})^{\mathrm{T}}(\mathrm{T}^2 + V_i)^{-1}(r_i - \rho_{random})\right\} \quad (4)$$

The parameter estimates are computed by maximizing the sum of the log-likelihood of all included studies. This stage provides a vector of pooled correlation matrix $\hat{\rho}_{random}$ and its asymptotic sampling covariance matrix $\hat{V}_{random}$ for Stage 2.

Stage 2: Fitting structural models.

[16] Any *non-positive definite matrix* may lead to the zero value of pooled matrix.
[17] This equation provides the log-likelihood of a standard multivariate meta-analysis for normally distributed variables (cf., Cheung, 2013).

Based on the vector and the matrix resulted from the prior stage, a correlation structural model is fitted with asymptotically-distribution-free method (i.e., weighted lease square, WLS) by minimizing the fitting function[18]:

$$F(\hat{\gamma}) = (\rho_{random} - \rho(\hat{\gamma}))^{\mathrm{T}} V_{random}^{-1} (\rho_{random} - \rho(\hat{\gamma})) \quad (5)$$

where ρ_{random} and V_{random} are from stage 1. They are treated as fixed values in stage 2. Specifically, the ρ_{random} and $\rho(\gamma)$ are the $p' \times 1$ vectors ($p' = p * (p-1)/2 \times 1$) obtained by stringing out the lower triangular elements and excluding the diagonals in the sample and the correlation matrices R and $\mathrm{P}(\gamma)$ respectively. V_{random} is the $p' \times p'$ weight matrix and γ is a structural parameter vector.

In practice, the structural model in this stage is specified by the approach of the reticular action model (RAM, McArdle & McDonald, 1984) that has three matrices: A, S, and F. The matrix-A and matrix-S specify the asymmetric paths and the symmetric variance covariance matrices respectively. The matrix-F is a selection matrix that filters observed variables. This fitting procedure can be conducted with software packages such as metaSEM in R (Cheung, 2014b). These packages compute goodness-of-fit indices similar to conventional SEM for testing whether the proposed model fits the meta-analytic dataset properly.

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[18] This equation gives standard weighted least squares in structural equation modeling (cf., Cheung, 2014a)

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Supplementary Appendix C: Bivariate Meta-analysis

For a robust analysis, I conducted a traditional bivariate meta-analysis in addition to the meta-analytic structural equation modelling (MASEM) procedure. As a pre-test, the bivariate meta-analysis examines data collected for the MASEM. The bivariate findings provide for additional insights in the determination of international entry strategy commitment. Specifically, after collecting data for MASEM, I employed the following process to depict relationships between international entry strategy and the influential factors.

Bivariate Meta-analytic Process

I first ruled out biases and unreliability potentially resulting from uneven sample sizes across primary studies by reducing the distribution skewness of the product-moment correlation coefficients via Fisher's *z* transformation (Rosenthal, 1991). I then weighted the *z*-coefficient by an estimate of the inverse of their variance (i.e., N-3) when computing the mean effect sizes (Hedges & Olkin, 1985). After computing mean effect sizes (ES) and their 95% confidence intervals, I examined the homogeneity of the effect size distribution by computing *Q*-statistics of *ES'*s. A significant *Q*-statistic indicates a heterogeneous distribution of the ES (Lipsey & Wilson, 2001). Finally, I calculated I^2 index for measuring the degree of heterogeneity (Higgins, Thompson, Deeks, & Altman, 2003).

Findings

Table 10 shows the descriptive statistics of the bivariate meta-analysis. ES's in this table demonstrate correlations between nineteen influential factors and international entry strategy commitment, without considering the interactions among these factors.[19] Among these ES's, *Business diversity* and *International strategy* do not have definite effects because their 95% confidence intervals include zero. This implies that the two bivariate relationships are not in an anticipated direction. In other words, whether the two factors have negative or positive relationship with international entry strategy is not definite (Hunter & Schmidt, 2004).

[19] Interactive effects are shown in the findings of MASEM.

Furthermore, a comparison between Table 10 and Column 1 in Table 8 suggests that *Firm size*, *International decision-specific experience*, and *International market knowledge* do not show consistent effects within the two methods. Specifically, the three ES's have negative relationships with international entry strategy according to the bivariate meta-analysis (Table 10), while indicating positive effects in the MASEM-pooled results (Column 1 in Table 8). This might be a disparity between the two methods. On the other hand, it emphasizes the need to establish a holistic model for investigating the determination of international entry strategy by involving not only individual effects (i.e., the influence of a single factor on international entry strategy) but interactive effects (i.e., the influences among all factors) as well.

Finally, all *Q*-statistics are significant (i.e., $p < 0.001$), suggesting significant heterogeneity and implying that the ES's are better interpreted as average values than common true correlation values (Hedges & Olkin, 1985). This suggests that a random-effects model is appropriate for my MASEM.

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Table 10 Summary of Bivariate Meta-analysis

Variables	n	N	ES	-95% CI	+95% CI	Q	I^2	MI
V2 Competition (serious – mild)	20	19,305	0.036	0.022	0.050	170.82 ***	0.889	Yes
V3 Industry development (developed/big – developing/small)	14	13,747	0.031	0.014	0.047	139.65 ***	0.907	Yes
V4 Industry category (tangible – intangible products)	23	8,504	-0.095	-0.116	-0.074	127.18 ***	0.827	Yes
V5 Technology & tacit know-how (more – less)	34	19,728	0.090	0.076	0.104	160.42 ***	0.794	Yes
V6 Business diversity (diversified – conglomerate)	7	3,616	0.000	-0.032	0.033	32.10 ***	0.813	Yes
V7 Management & operation experience (more – less)	21	17,802	-0.103	-0.118	-0.089	388.79 ***	0.951	Yes
V8 Firm size (large – small)	49	31,060	-0.016	-0.027	-0.005	619.26 ***	0.922	Yes
V9 General international experience (more – less)	47	51,355	0.049	0.040	0.057	435.50 ***	0.897	Yes
V10 International decision-specific experience (more – less)	14	134,246	-0.018	-0.023	-0.013	538.94 ***	0.978	Yes
V11 International market knowledge (more – less)	39	148,093	-0.047	-0.052	-0.042	671.98 ***	0.943	Yes
V12 International strategy (global orientation – local focus)	12	3,273	0.001	-0.033	0.036	199.87 ***	0.945	Yes
V13 Global structure (centranlized – autonomous)	8	7,979	0.046	0.024	0.068	264.59 ***	0.974	Yes
V14 Potential market size (large – small)	26	132,962	0.138	0.133	0.144	457.81 ***	0.945	Yes
V15 Market munificence (sufficient – deficient)	11	7,936	-0.066	-0.088	-0.044	44.78 ***	0.777	Yes
V16 Similarity between host and home countries (similar – disparate)	49	177,178	0.042	0.037	0.046	2653.98 ***	0.982	Yes
V17 Attractive policy for foreign firms (incentive – contrained)	36	39,091	0.027	0.017	0.036	1200.89 ***	0.971	Yes
V18 Certain & safe host-country market (low – high uncertainty & risk)	38	157,927	0.197	0.192	0.202	2946.08 ***	0.988	Yes
V19 Scale of the business deal (large – small)	26	50,133	0.145	0.136	0.154	1072.48 ***	0.977	Yes
V20 Relatedness of the business deal (relative – not relative)	27	153,051	0.053	0.048	0.058	566.27 ***	0.956	Yes

Note: n=Number of studies; N=Cumulative sample size; ES=corrected average correlation coefficient; -95% CI=lower bound of the 95% confidence interval; +95% CI=upper bound of the 95% confidence interval; Q=value of chi-square distributed homogeneity statistic Q; I^2=the percentage of variability among effect sizes that exists between studies relative to the total variability among effect sizes; MI=moderation indicated. Parentheses in the variables column show how the variables are measured.

†p<0.10; *p<0.05; **p<0.01; ***p<0.001.

THE CHOICE OF INTERNATIONAL ENTRY STRATEGY: WHAT REALLY MATTERS TO DECISION MAKERS?

Abstract

This study investigates how direct experience may advance executives' decision making on international entry strategy. I find that experiential knowledge that is directly relevant to making decisions on international entry strategy can increase an awareness of international investment opportunities as well as the consideration of firms' internationalization status. Yet the experience neither leads to risk-preferring nor risk-avoiding decisions. My experimental design complements the global strategy literature in three ways: (1) incorporating two theoretical traditions (i.e., the rational and the process traditions) for examining decision-making models rather than narrowing down to and focusing only on impacts of individual factors; (2) providing direct evidence of the heterogeneity of executives' decision making on international entry strategy, and (3) accommodating multiple groups of factors to show how executives make decisions according to available opportunities. I join the prior findings of both calculative and process models together, and contribute to the literature with new insights into the effects of international experience on executive decision making.

1. INTRODUCTION

One of the important themes of global strategic management research is examining the source of heterogeneity in strategic decisions, among which the choice of international entry strategy is an enduring and highly debated research topic. It is crucial for other decisions such as global operation location (Buckley 2004) and long-term consequences (Pedersen, Petersen & Benito 2002) including performance after entry (Brouthers, Brouthers & Werner 2003) and future organizational form (Lu 2002). International entry strategy choice has been investigated for decades (Morschett, Schramm-Klein & Swoboda 2010; Tang, Devinney & Buckley 2013; Zhao, Luo & Suh 2004). However,

theoretical and empirical reasons that can explain explicitly why two identical companies reside in the same environment (location and industry) but choose disparate approaches to enter new global markets (e.g., Puma and Adidas, Hutzschenreuter, Han & Kleindienst 2010) have not been established. Specifically, research using calculative models (e.g., the eclectic paradigm) argues that the variance of choosing an international entry strategy comes from different firms' heterogeneous responses to environmental variations. For example, one reason for using different approaches to enter different host countries is that markets contain different potentials, suggesting various opportunities (Brouthers 2002) and implying disparities of competitive scales (Arora & Fosfuri 2000).

In contrast to the calculative method (the rational tradition) that seeks variances to explain determinants of international entry strategy choice, the process tradition stands alongside behavioural views about human behaviour and decision making (Welch, Benito & Petersen 2007). Literature with a process perspective argues that discrepancies in strategic decisions are based in the heterogeneity of international experience. For example, Johanson and Wiedersheim-Paul (1975) found that firms entered successively more physically distant markets with international entry strategy that requires increasingly higher levels of commitment, because experiential knowledge from different markets can alleviate fear in new environments.

While experiential knowledge may exert its influence to a certain extent, it does not directly determine an international entry strategy. Instead, experiential knowledge influences decisions through its effects on decision-makers' judgment, because international entry strategies are firm-level choices (Mintzberg, Raisinghani & Théorêt 1976), despite the fact that they are made by managers. An international entry opportunity features a group of such factors as a host country's market environment (e.g., economic growth) and the entry's conditions (e.g., investment scale).

Global strategic management literature provides a large volume of findings related to firms and the environment, accounting for both firm and environment heterogeneity as a source of variances in modelling strategic decisions. However, this is not able to explain and predict internationalization activities (Devinney 2011). For example,

Aharoni (2010) argues that the reason that firms do not have identical decisions is that executives who make strategic decisions do not have identical rationality or the same economic logic, but decision-making experience has an important impact on managerial rationality and logic.

In this study, I argue that executives are decision makers who choose international entry strategies by making judgments on foreign entry opportunities. Although previous studies have addressed executive ability and behaviour, by either considering the characteristics of the management team or the level of managers' cognition (e.g., Carpenter, Geletkanycz & Sanders 2004), they did not actually model a strategic decision made by decision makers but examined the impact of personal characteristics (e.g., age, experience) and individual cognition on strategic decisions.

In this study, I complement prior research on international entry strategy choice by employing experimental approaches that directly examine managerial decisions, in a manner that accounts for key factors that determine the choice of international entry strategy and specifies the experiential knowledge that has been accumulated by executives in previous internationalization activities. Executive decision making literature has recently provided experimental findings about international investment location choice (Buckley, Devinney & Louviere 2007) and the exchange of partners during international entry strategy selection (Reuer, Tong, Tyler & Ariño 2013). I aim to join this research stream by building arguments based on prior implications from two theoretical traditions: the rational tradition—with calculative methods—and the process tradition, which focuses on behaviours. As demonstrated in the following sections, understandings about influential factors, as revealed in the rational tradition, may be improved by considering the experiential knowledge of executives. In addition, the process tradition's explanation for how experience affects internationalization activities may be advanced by including variance-related variables.

This study responds to calls for the stresses on the microfoundations of strategic management research (e.g., Barney & Felin 2013), from the use of experimental methods, to move beyond the extant literature that relies on models with secondary data, interviews and surveys. While contributing to my knowledge on international entry

strategy, the extant literature is criticized for its piecemeal fashion. Noted by Buckley *et al.* (2007), results and data are invariably linked, with qualitative studies supporting international process theory, while surveys and secondary data support rational economic-based models. The findings of these models are, therefore, unable to parsimoniously reflect and explain the realities of global strategic decision making. In contrast, the experimental methods I used in this study bridge the macrofoundations and the microfoundations of strategic management, and bring managerial decisions back into global strategic decision models.

My findings indicate that experiential knowledge does not, as the process tradition predicts, lead to executives' risk-preferring decisions. However, the direct experience of choosing an international entry strategy advances the ability of experienced executives to recognize foreign investment opportunities. Also, the direct experience may enable an international entry strategy to suit firms' internationalization capability. By leveraging research from both the rational and the process traditions, my arguments and experimental findings highlight the need to incorporate theoretical streams, in order to fill gaps in empirical evidence and provide new insights into global strategic theories.

2. THEORY AND HYPOTHESES

2.1. Theoretical Background

Two intertwined theoretical traditions underpin the extant literature on choosing an international entry strategy (Dunning, Devinney, Tallman, Mitchell & de la Torre 2004). One tradition is derived from trade theory and industrial organization economics, and grows from the work of Hymer (1976) and Kindleberger (1969). Buckley and Casson (1976), Dunning (1980), Barney (1986), and North (1990) offer dominant paradigms in this tradition. It suggests that making a global strategic decision is a deliberate calculation (i.e., using a calculative model) of potential opportunities, because firms endeavour to pursue extra profit, rents and resources in global markets.

Grounding itself in the economics of industrial organizations and trade theory, literature in the rational tradition has been profoundly influenced by the development of

economics, and focuses considerably on the role of the industrial structure and the organization in determining associations between the environment and a firm (Devinney 2004; Tolentino 2001). In essence this tradition predicts that firms' strategic decisions are determined by a group of exogenous variables, including country-specific, industry-specific and firm-specific effects (Buckley & Casson 1976). With these exogenous variables, researchers can use the calculative model to parsimoniously explain complex phenomena (Buckley & Casson 1976). The calculative model is particularly salient in global strategic settings. It suggests that, prior to entering a new foreign market, a deliberate calculation of potential effects can not only ensure that expected profits are achieved and unnecessary costs are avoided once a market is entered, but it also prepares firms for uncertainties in a host country before entering (Brouthers 2013; Demirbag, Glaister & Tatoglu 2007; Sanchez-Peinado & Pla-Barber 2006). In short, according to the rational tradition, choosing an international entry strategy means a decision that embeds rational calculations of influential factors. Therefore, it is crucial to 'calculate' a host country's institution- and resource-related factors at the country level, and transaction-related factors at the firm level, while other factors (e.g., a firm's organization structure) that may be important but not selectable at the moment of making international entry strategy decisions.

Another theoretical tradition is internationalization process, arising from the Uppsala paradigm and viewing a global strategic activity as an event in the process of internationalization (Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975). According to this theoretical tradition, a global strategic decision is dominated by asymmetric information that requires firms to "learn" experiential market knowledge from previous internationalization activities, and use optimal means to manage risk (Welch & Paavilainen-Mäntymäki 2013).

Unlike the rational tradition that seeks economic explanations and predictions of internationalization activities, the process tradition is more grounded in behaviour-oriented views, such as management behaviour and decision making (Welch *et al.* 2007). According to the process tradition, direct experience of choosing an international entry strategy can be useful for decision makers because of the following reasons. Firstly, direct experience allows decision-makers to concentrate on more important factors.

Prior experience in choosing an international entry strategy provides important lessons (Nielsen & Nielsen 2011) and facilitates the application of heuristic or analogical approaches when making other similar decisions (Bingham & Eisenhardt 2011; Gavetti, Levinthal & Rivkin 2005). Secondly, choosing a particular international entry strategy implies a particular level of commitment that is influenced by the knowledge both of a market and relevant strategic activities (Johanson & Vahlne 2009). Thus, experience can link the process of choosing an international entry strategy to the reality of internationalization. Even if a firm does not possess any privileged knowledge that can be used for identifying foreign market opportunities, the firm can still leverage the benefits of experiential knowledge by focusing on its internal resources (e.g., prior experience) (Barney 1986; Denrell, Fang & Winter 2003; Shane 2000). Furthermore, while general international knowledge is important, directly relevant experience is the key to making such specific strategic decisions as international entry strategy (Padmanabhan & Cho 1999), alliance (Hoang & Rothaermel 2005) and acquisition (Nadolska & Barkema 2007). In other words, the direct experience is more critical than any other form of international experience for executives choosing an international entry strategy.

Although some researchers attempt to position the internationalization process model as a rational approach (Johanson & Vahlne 2009), this theoretical tradition emphasizes the effects of experiential knowledge and risk-aversion—suggesting the use of boundedly-rational methods (e.g., heuristic and analogical approaches) that does not stand in the same line with the calculative model. Despite theoretical differences between them, the process method and the rational model have an identical aim of investigating firms' internationalization activities. For instance, both theoretical traditions converge upon the research of international entry strategy, although the process tradition takes it as an outcome of executives' experiential knowledge, while the rational tradition accounts little for managerial learning behaviour, which is at the core of the process tradition.

2.2. Research Hypotheses

Based on the arguments of rational and process traditions, I develop hypotheses for how decision-specific experience can benefit a managerial decision model (i.e., a calculative model) in an international context. First, I provide a brief explanation regarding the impact of influential factors on choosing an international entry strategy. Then, I develop arguments that discuss how direct experience can alter the decision-making models of executives—particularly their responses to international investment opportunities.

Influential factors of choosing an international entry strategy are observed across two categories: (a) a firm's external market environment, and (b) the firm *per se*. On the one hand, the external environment is observed at two levels: (a) country-level, typically involving the macroeconomic situation (e.g., market size of host country) and social elements (e.g., national culture traits), and (b) industry-level that includes an industrial sector in which a firm resides, as well as the characteristics of the sector, such as industrial scale and concentration ratio. On the other hand, firm-specific (i.e., firm-level) factors reflect the idiosyncratic aspects of the firms being studied, particularly regarding their foreign entries, that is, a firm's international transactions. A firm's characteristics are taken into account at this level and exemplified by the expectation of their foreign entry profitability (e.g., Kim & Hwang 1992), as well as their internationalization scale (e.g., Gleason & Wiggenhorn 2007).

The two theoretical traditions, that are the rational and process traditions, investigate these factors in distinct ways. The rational tradition investigates influential factors by assuming that an international entry strategy is chosen at a point of time, or some sequential points of times. While the rational research hints at managerial impacts of a management team's demographics (Herrmann & Datta 2006) including professional experience (Roth 1995) and international experience (Daily, Certo & Dalton 2000), rational-tradition studies examine these factors at firm-level because of an inappropriate assumption that firms, rather than executives, make decisions. The process tradition, on the other hand, regards international entry strategy as a result of accumulating experiential knowledge, which is gained as part of an ongoing process. Both arguments are true to a certain extent, because a decision on international entry

strategy is the result of making trade-offs amongst available opportunities according to previous decision-making experience.

In fact, firms may consider multiple international entry strategies that are potentially available in a host market. The potential strategy can be a wholly owned subsidiary, joint venture, or non-equity entry. These alternatives represent different levels of (a) investment in a foreign country, (b) commitment to foreign resources and (c) control on a foreign subsidiary, and therefore imply varied responses to potential risk in a new international market. Previous studies showed that choosing an international entry strategy is responsive to avoiding risk and uncertainty (e.g., Demirbag *et al.* 2007; Sanchez-Peinado & Pla-Barber 2006). This implies that a choice on international entry strategy reflects the way in which firms manage and control risk in a new foreign market. For example, foreign investors may encounter difficulties in assessing risks amongst potential investment opportunities, and thus a new environment may make the investors choose safer or less-risky options (e.g., non-equity entry) (Maekelburger, Schwens & Kabst 2012; Tsang 2005).

Some firms gradually enter foreign markets with (potentially) more beneficial and controllable modes of entry, by which the experiential knowledge—accumulated during previous period(s)—makes risk-taking more desirable and comfortable for executives (Johanson & Vahlne 2009). Such a link carries further implications for executive risk preference during international entry strategy selection. Specifically, when decision makers consider available opportunities for a foreign investment, they can mitigate risk by linking prior experience of choosing an international entry strategy to their potential choices (Maekelburger *et al.* 2012).

Decision makers are likely to be heterogeneous in their risk preference for foreign direct investments due to variations in experiential knowledge regarding international entry strategy choice. For example, executives who have direct experience in choosing an international entry strategy are expected to make better decisions—that can respond to the variation of foreign investment activities—than those who do not have relevant experience (Reuber & Fischer 1997). This implies that attitudes to risk and ways of

dealing with uncertainties are a function of both international experience and international investment choices.

The extant literature provides sufficient findings about this function. For example, Erramilli (1991) found that executives with direct experience are not only more aggressive about entering a foreign market, but prefer international entry strategies that require high levels of investment as well. Herrmann and Datta (2006) showed that more-experienced CEOs tend to enter global markets by means of acquisition or greenfield, while less-experienced CEOs are more likely to step into new foreign markets via joint ventures, because executives are more inclined to make decisions in which they are most confident (Nielsen & Nielsen 2011; Tung & Miller 1990). In contrast, inexperienced executives may be more likely to choose an international entry strategy with lower levels of investment (Herrmann & Datta 2002, 2006).

However, it is possible that executives with direct experience may become more cautious in new environments, because these executives are aware of potential pitfalls in an international entry. Athanassiou and Nigh (2002) found that international experience may result in informal networks that benefit decision making in cross-national contexts, because non-decision specific international experience can also provide inimitable knowledge and professional connections globally that make executives more confident about international operation and management (Daily *et al.* 2000). In addition, executives who do not have direct experience in international entry strategy may have exposure in second-hand information and obtain vicarious knowledge that can facilitate indirectly experienced executives' decision-making on international entry strategy (Tuschke, Sanders & Hernandez 2014). In particular, it is almost impossible to find an executive who does not have any international experience that, for example, may be obtained by traveling and studying overseas, public information, and peer firms' international activities. Thus, I expect that decision-specific experience may not make executives have different preferences in risk in choosing an international entry strategy. Specifically, the hypothesis is as follows:

Hypothesis 1: Direct experience does not differentiate executives' risk preference related to international entry strategy.

In addition to risk preference, the international entry strategy literature provides diverse and even divergent observations of a factor's impact on international entry strategy choices. For instance, the influence of cultural distance on international entry strategy has been discussed across a broad body of literature that indicates a conflict between significance on the one hand (e.g., Harzing 2002; Kogut & Singh 1988) and irrelevance on the other (e.g., Brouthers & Brouthers 2000; Contractor & Kundu 1998). As suggested earlier, these controversial arguments may result from the ignorance of executives who have idiosyncratic experiential knowledge in choosing an international entry strategy, because international experience serves as a proxy for cross-cultural knowledge that ensures the success of international strategy (Sambharya 1996). Erramilli (1991), for example, suggests that executives with profound international experience are more likely to possess the capability of dealing with cross-cultural conflicts, and therefore, the international experience of executives increases their propensity to enter less culturally-similar markets.

In respect to executives' international experience, the process tradition suggests that making a global strategic decision is associated with executive's experience across decision-specific internationalization activities (Johanson & Vahlne 2009). If it is not possible to access the symmetric information pertaining to all factors related to an international investment opportunity, experienced executives initiate their calculations on available information and make an optimal, if not perfect, decision. In such a situation, possessing direct experience of international entry strategy becomes vital, because such experiential knowledge can provide a framework for perceiving and formulating opportunities (Johanson & Vahlne 1977). Kirzner (1997) and Shane (2000) found that prior experience has a stronger impact on recognizing opportunity than other experiential knowledge does. A superior ability to discover opportunities is reflected in the formulation of a final decision that fits an opportunity, rather than somehow catering to a variety of circumstances, because experienced executives should be adept at handling the risk related to international operations (Carpenter, Pollock & Leary 2003).

Thus, international experience can facilitate executives' awareness of potential opportunities (Tihany, Ellstrand, Daily & Dalton 2000)—a superior capability in global markets. For example, Bingham and Eisenhardt (2011) found that the learning process

tend to accumulate experience that may help firms search and seize opportunities. Thus, I expect that although direct experience may not make executives have different preference in risk (as hypothesized above), executives with direct experience in choosing an international entry strategy are more likely to clearly know what factors are more meaningful than others. The application of these ideas, which relate to influential factors and the direct experience of choosing an international entry strategy, leads to the following hypothesis:

> *Hypothesis 2a: Experienced executives seek fewer factors than inexperienced executives for choosing an international entry strategy.*

In addition to the above discussion, I understand that choosing an international entry strategy is not a personal decision but a firm's business choice, even though it is made by executives. A decision influenced by a decision-maker's experience is still subject to her/his firm's internationalization status. Specifically, when there is an international investment opportunity, decision-makers will assess the opportunity as well as the firm's internationalization status. In parallel with the arguments developed above, experienced decision-makers are more likely to consider their firms' internationalization when choosing an international entry strategy for their firms. This suggests that, for an international investment opportunity, the influence between firms' internationalization and executives' decision-specific experience is expected to be positively related. I therefore hypothesize:

> *Hypothesis 2b: A firm's internationalization exerts more influence on the judgment of inexperienced executives than that of experienced executives.*

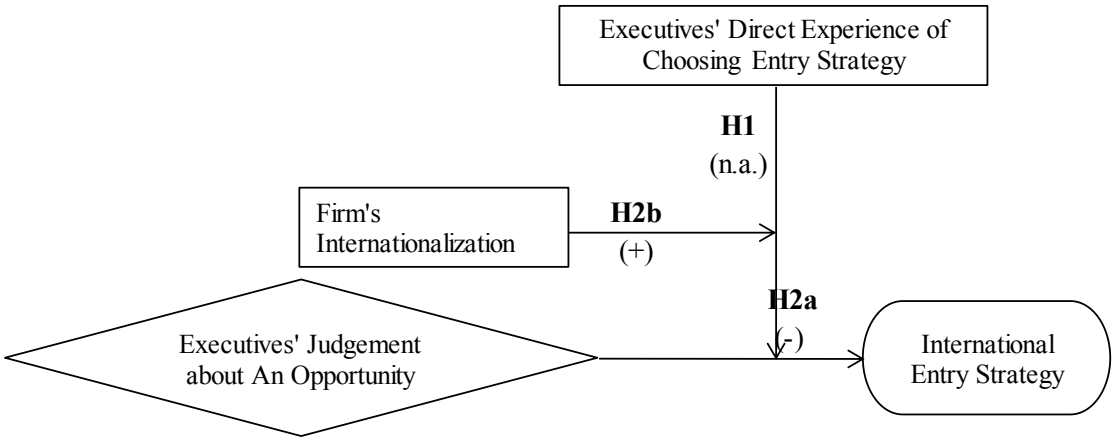

Figure 6 Hypotheses Tested in the Study

3. METHODS AND RESEARCH DESIGN

3.1. Methodology

In this study I used a quasi-experimental technique known as discrete choice experiment (DCE) to collect data for testing the hypotheses shown in Figure 6. DCE has been used in different streams of global strategic management research, in particular, to investigate how decision makers process available information to make trade-offs among potential opportunities for firms (e.g., Buckley *et al.* 2007). Using this methodology I gave 21 pairs of experimental scenarios (i.e., entry opportunities) to participants and asked them whether they chose an international entry strategy for seizing one of the two entry opportunities in each pair. The chosen opportunity was an optimal option for an international entry strategy. Each pair of international investment opportunities were presented in a single table and described using a set of 12 influential factors of international entry strategy. While the set of factors remained constant across all of the investment opportunities, the level of each factor (i.e., the value of each factor) was experimentally manipulated and varied in opportunities as described in the section below (Research Design). As a group, the chosen opportunities—described by 12 factors whose values vary across scenarios—and the corresponding international entry strategy were then analysed to determine statistically the weights the participants attached to the 12 influential factors.

The DCE approach used in this study is developed from an integration of random utility theory (RUT) and stated choice methodology (SCM). Given the basic assumption of utility maximization, the RUT argues that choosing one alternative from a set of alternatives (i.e., entry opportunities in this study) amounts to making a trade-off among the alternatives by evaluating their utilities and selecting the alternative with the highest utility (Manski 1977; McFadden 1974). Behavioural models of the RUT imply that either adding a constant value to the utility of all the alternatives or multiplying the utility of every alternative by a constant value cannot change the highest utility and hence the decision maker's choice (Train 2009). In this study, the underlying assumption is that participants are conditional maximizers, and therefore attempt to make the best choice amongst the entry opportunities. In addition, the SCM employs stated-preference data collected from sets of hypothetical scenarios to illustrate virtual decision situations and provide multiple observations per participant (Louviere, Hensher & Swait 2000). This DCE approach is appropriate to this study because: (a) it places participants in a variety of structured scenarios rather than ask for historical information about previous decisions; (b) it offers more information by acquiring multiple observations per participant, and (c) it provides sufficient variability for behavioural modelling.

The DCE methodology is capable of complementing other research techniques, because in non-experimental studies the information on international entry strategies that were not used, as well as opportunities that were not chosen, is not available. In addition, most studies on entry mode choice, establishment choice, governance choice, and international entry strategy more generally, have an inappropriate auxiliary assumption that is that one international entry strategy is eligible for only one international entry opportunity. In fact, when a firm faces an international entry opportunity, the firm may have more than one alternative strategy. The firm may also decide not to take the international entry opportunity. The auxiliary assumption exists because a majority of extant literature uses either secondary data which display a match pattern (i.e., an entry strategy matches an international opportunity), or conventional surveys that ask for participants' experience and revealed preference.

Furthermore, despite many of the insights offered by the previous studies, these studies, at best, provide indirect evidence on executives' decision making. For example, conventional survey data asks about executives' choices and decisions, but—due to inherent problems in the two conventional survey settings—has a limited capacity to observe genuine choice decisions. The first setting is a question collecting such information as managers' socio-demographics and firms' features (e.g., the questions about 'international experience' and 'regional experience' in Dikova & van Witteloostuijn 2007). In this case, the survey asks nothing about decision choices, but collects data for variables at the firm level. Another setting is a question that asks managers to report outcomes and factors of decisions (e.g., the questions about 'entry mode' and 'technological intensity' in Dikova & van Witteloostuijn 2007). In this instance, the survey does not observe genuine decision-making behaviour involving trade-offs among choices, but rather collects either self-reported revealed-preference data or stated-preference data. Self-reported revealed-preference data pertains to choices that have already been made and are, therefore, weak predication indicators. Self-reported stated-preference data from conventional questionnaires (e.g., Likert scale) make basic marginal preference errors (i.e., the importance attached to a decision on top of its current level of satiation, see Maseland & van Hoorn 2009) and hence, are not able to precisely explain choice decisions.

Using the DCE methodology, this chapter aims, in the empirical part, to improve upon the methodological limitations outlined above, by applying approaches that are specifically designed to model the heterogeneity of choice decision. The DCE methodology enables this study to examine managerial trade-offs directly in a manner that controls for factors with experimental manipulations—otherwise unavailable to those using secondary data sources—and in a manner that avoids many of the problems associated with conventionally survey-based approaches.

Table 11 Twelve Factors Included in the DCE Experiment

Factor	Description and Levels
Quality of legal system (I)	The legislative and judicial system of the host country operates with: Level (1) quick, effective and transparent rule-of-law; or Level (0) limited effectiveness and transparency with considerable delays in gaining legal decisions
Trade and other structural barriers (I)	"Barrier" means any trade protection, regulations, and other requirements meant to increase the cost of foreign goods and services relative to those produced or offered locally. For a foreign company, this host country has: (1) no barriers; or (0) high barriers
Government interference (I)	The government of the host country you are entering is known to: (1) not interfere with legitimate business activities; or (0) periodically interfere with legitimate business activities for political reasons
Potential market growth (DS)	Compared to the current market size, the overall potential sales growth in the host country (i.e., a foreign country where your company is entering) is, over the next five years, expected to: (3) 10%; (2) 5%; (1) be equal; or (0) - 5%
Potential market size (DS)	Compared to your home market, the physical size of the host market in terms of sales potential is expected to be: (3) 20% larger; (2) 10 % larger; (1) the same; or (0) 10% smaller
Host market fluctuation/stability (DS)	Market fluctuation (stability) means significant and irregular increase and decrease in the level of sales. In the first five years after entry, your company's sales in the host market are estimated to fluctuate between: (1) -5% to 5%; or (0) -10% to 10%
Resources in the host country (DS)	Raw material, assets and technologies that your company needs to conduct business effectively in the host country are expected to be: (1) easily accessible (you can easily buy/acquire factors/resources in the host country); or (0) accessible but with some difficulties (you cannot easily buy/acquire factors/resources in host country without some effort and expense)
Infrastructure in the host country (DS)	Transportation system, communication network and commercial property in the host country are expected to: (1) satisfy the needs of a foreign company's new business; or (0) hardly satisfy the needs of a foreign company's new business
Expected profitability of the new entry (T)	Compared to the standard for companies in your industry in your home market, the profit of this new entry (i.e., your company's new business activity in the host country) is expected to be: (3) 10% higher; (2) 5% higher; (1) the same; or (0) 5% lower
Expected payback period (T)	If your company enters this foreign market, the number of years before the new investment pays off is expected to be: (1) no longer than 5 years; or (0) more than 5 years
Repatriation of profit (T)	Repatriation of profit implies the freedom of transferring profit from the host country back to your company's headquarters. If entering this host market, your company could: (1) freely transfer profit back to the headquarters; or (0) face restrictions on transferring profit back to your home country
Production/operational cost (T)	Compared to production and operation costs in your home country, the manufacturing and operating costs in the host country would be: (3) 10% lower; (2) 5% lower; (1) the same; or (0) 5% higher

Note: In the parentheses, *I*= Institution-related factor; *DS*= Demand-Supply-related factor; *T*= Transaction-related factor; Level (*0*) = Base level in econometric models.

3.2. Research Design

A two-stage procedure was used to select the influential factors of international entry strategy choice rigorously and establish a parsimonious set of international investment opportunities. As one of the most enduring research topics in the field of global strategic management, the factors that influence international entry strategy choice can be found within a vast body of literature, which suggests a variety of effects that involve all aspects of firms and environments where firms reside. However, the results are divergently mixed and, therefore, this study was required to obtain an expansive list of influential factors. To develop this list, I first conducted a meta-analysis that synthesized findings in the extant literature. This meta-analytic process produced an initial list of 21 factors (Tang *et al.* 2013). Based on these factors I consulted three well-established scholars in the global strategic research domain. They recommended four extra factors.

The subsequent list of 25 factors was presented to 28 executives[20] using an experimental approach known as best-worst scaling (BWS). The BWS allowed this study to define the relative importance of potential determinants of international entry strategy choice (Finn & Louviere 1992)[21]. This led to the identification of 12 determinants that had positive BWS scores, suggesting us to select the 12 most important factors that represent institution-, demand/supply-, and transaction-related impacts on international entry strategy choice (Table 11).

Using the selected 12 factors and their levels (i.e., values of the factors), I developed a DCE instrument that consists of a group of experimentally paired scenarios. A combination of factors at different levels set up an experimental scenario (i.e., an entry opportunity) that was compared to another opportunity by executives who participated in the experiment. A pair of opportunities, with questions that allowed participants to make decisions on international entry strategy, formed a choice set (see example in Figure 7).

[20] These executives are EMBA/MBA alumni from three leading business schools in the United States, Australia and China.
[21] Initial factors tested in the BWS are listed in Table 15 in Appendix 3. An example of BWS is in Figure 8 and the BWS scores are in Figure 9 in Appendix 3.

Your company is now facing a pair of international investment opportunities. You are asked to consider each opportunity and an appropriate mode of entry. Consider your role as one who is making recommendations to the Board of Directors of your company.

If you suggest choosing an opportunity, please tick the *Opportunity 1* , *Opportunity 2* , or *Neither* box according to the specific entry mode (i.e., wholly owned, joint venture, without equity investment). That is, we would like you to tell the board of your company if the investment described (in each table) is attractive enough for you to choose it or if it is simply not worth considering at all.

Choice Set #	**Opportunity 1**	**Opportunity 2**
Potential market growth	equal to home market	minus five percent
Potential market size	as same as home market	ten percent smaller
Host market fluctuation (stability)	between five and minus five percent	between ten and minus ten percent
Expected profitability of the new entry	ten percent higher	five percent lower
Expected payback period	more than five years	no longer than five years
Repatriation of profit	face restrictions	freely transfer
Resources in the host country	accessible with difficulties	easily accessible
Infrastructure in the host country	satisfy business needs	satisfy business needs
Quality of legal system	quick, effective and transparent rule-of-law	delays with limited effectiveness and transparency
Trade and other structural barriers	no barriers	high barriers
Production/operational cost	same as in home country	ten percent lower
Government interference	periodically interfere	not interfere
(1) If your company will establish a **wholly owned subsidiary**,		
which opportunity would you recommend ?	☐ Opportunity 1	☐ Opportunity 2 ☐ Neither
(2) If your company will establish a **joint venture**,		
which opportunity would you recommend?	☐ Opportunity 1	☐ Opportunity 2 ☐ Neither
(3) If your company will enter the market **without equity investment** (e.g., export, franchise),		
which opportunity would you recommend?	☐ Opportunity 1	☐ Opportunity 2 ☐ Neither

Figure 7 An Example of a Part of the DCE Choice Set

For a robust experimental design, that is, the approach to obtain optimal combinations of factors and their levels, I compared five strategies for constructing the DCE instrument—including random methods (i.e., randomly pairing factors and their levels into choice sets, e.g., Reuer *et al.* 2013), Huber & Zwerina criteria (Huber & Zwerina 1996), the L^{MA} method (Louviere *et al.* 2000), the Street-Burgess method (Street & Burgess 2007), and SAS macros (Kuhfeld 2010). I decided upon using the SAS macros method because: (a) it can provide orthogonal designs that aid in data collection for hypotheses testing; (b) I could easily obtain D-efficiencies of potential designs and select a design with the lowest D-error; and (c) it can provide a relatively smaller design (i.e., an instrument with fewer choice sets) compared to other strategies. While a smaller design might not be perfectly efficient in all aspects (e.g., D-efficient, A-efficient and C-efficient), this study did not require faultless design because a perfect design would not provide significant benefits for testing my hypotheses, and I could control sample size for estimating parameters efficiently (Bliemer & Rose 2010; Rose & Bliemer 2013). In particular, a small design was crucial for this study because all participants are executives who do not typically have the time to complete long tasks in choice experiments. Consequently, I developed a DCE experimental instrument that consists of 21 choice sets (i.e., scenarios) and a demographic questionnaire collecting data about (a) the participants' experience of choosing an international entry strategy and participating in other internationalization activities, and (b) information for covariates—these are discussed in the following section.

3.3. Data Collection

The experimental instrument was pilot tested with (a) five executives, one of whom had just finished an international market entry while others were not directly involved in choosing international entry strategies, and (b) 25 part-time MBA candidates in a top business school, six of whom had recently participated in the process of choosing an international entry strategy. I used the pilot test to determine the clarity of instructions in the experimental instrument, layout of individual questions and choice sets, and definitions of the factors and their levels. I then refined the instrument according to the feedback received from the participants.

I collected data for hypotheses testing from executives invited via alumni networks of EMBA/MBA programs in three top business schools in the United States, Australia and China. I distributed a total of 266 copies of experimental instrument (i.e., choice sets and demographic questionnaire), and received 156 responses after several reminders, which suggested a 59 per cent response rate. Several missing values were found in 15 participants' responses to the experimental scenarios. These responses were excluded from my experimental dataset. An additional 23 responses were excluded due to missing values for estimating choice models (this is discussed in more detail in the following section). The remaining 118 experimental results were from 33 experienced executives and 85 inexperienced executives[22], providing 7,434 observations for each international entry strategy (i.e., 21 choice sets per participant and three choices per choice set, that is: choosing opportunity 1 or not; choosing opportunity 2 or not, or choosing neither opportunity).

In addition, I used the Bayesian procedure to compute the efficient sample size for estimating the parameters in the choice models with an optimal D-efficiency (Bliemer & Rose 2010; Rose & Bliemer 2013). The results of this procedure recommended an efficient sample size ranging from 3 to 193 with a D-efficiency of 0.213, which indicates that the sample size of this study is able to fulfil the model specification and identification requirements of the experimental design. In particular, the sample was fairly representative, that is, with 28% of participants with direct experience in choosing an international entry strategy, and 67% with indirect experience or other types of international experience. During the experiment the participants worked for companies headquartered in the Asia-Pacific region, Europe or North America. Descriptive statistics of the participants' backgrounds and their company information are shown in Table 12.

[22] "Inexperienced" does not mean that a participant has no experience about international entry strategy, but means the participant is not directly experienced in choosing international entry strategy, despite the fact that she/he has been involved in other types of international strategies (e.g., location choice).

Table 12 Descriptive Statistics of Participants

Panel A: Participants

	Experienced	Inexperienced	All Paticipants
Overall			
n	33	85	118
N	2079	5355	7434
Reporting Level(s) to the Global CEO			
0 (She/he is the global CEO)	3.39%	3.39%	6.78%
1	11.02%	4.24%	15.26%
2	15.25%	6.78%	22.03%
3	11.02%	11.02%	22.04%
4 or more	31.36%	2.54%	33.90%
Her/his Management Position is Based in			
Global headquarters	11.86%	23.73%	35.59%
Regional headquarters	5.93%	19.49%	25.42%
Branch/division in the home country	8.47%	16.95%	25.42%
Foreign subsidiary	1.69%	11.02%	12.71%
Other	0.00%	0.86%	0.86%
Years of Working in this Management Position			
Less than 5 years	18.64%	44.92%	63.56%
5 to 10 years	9.32%	24.58%	33.90%
11 to 15 years	0.00%	2.54%	2.54%
Years of Working in the Current Firm			
Less than 5 years	11.02%	33.90%	44.92%
5 to 10 years	14.41%	29.66%	44.07%
11 to 15 years	2.54%	5.93%	8.47%
More than 15 years	0.00%	2.54%	2.54%
Internationalization Activities Personally Involved			
No involvement (excl. entry decisions)	2.54%	27.12%	29.66%
Import/export	11.86%	17.80%	29.66%
Ownership negotiation	8.47%	6.78%	15.25%
Cross-country alliance	6.78%	5.08%	11.86%
Merger & acquisition	9.32%	9.32%	18.64%
International trade	10.17%	15.25%	25.42%
Location choice	9.32%	6.78%	16.10%
Establishment choice	11.02%	7.63%	18.64%
Other	3.39%	6.78%	10.17%

Note: Experienced = Participants who has been directly involved in a decision-making process of entry mode choice; Inexperienced = Participants who do not have direct experience of choosing entry mode; n = number of participants; N = number of observations for each entry mode.

Table 12 *Continued*

Panel B: Firms

	Experienced	Inexperienced	All Paticipants
Location of the Headquarters			
Asia-Pacific	23.73%	48.30%	72.03%
Europe	0.00%	5.08%	5.08%
North America	3.39%	14.30%	17.69%
missing value	1.00%	4.20%	5.20%
Age of the Firm			
Less than 5 years	1.69%	3.39%	5.08%
5 to 10 years	5.93%	13.56%	19.49%
11 to 20 years	9.32%	18.65%	27.97%
More than 20 years	10.17%	34.75%	44.92%
Not sure	0.00%	2.54%	2.54%
Major Business in the Industry of Providing			
Manufacturing	5.93%	11.86%	17.79%
IT	5.08%	13.56%	18.64%
Financial Service	2.54%	14.44%	16.98%
Others	14.40%	32.19%	46.59%
Annual Revenue (US$)			
Below 10 million	3.39%	5.08%	8.47%
10 to 100 million	1.69%	15.25%	16.94%
100 to 1,000 million	6.78%	12.72%	19.50%
1,000 to 10,000 million	3.39%	8.48%	11.87%
more than 10,000 million	11.86%	22.04%	33.90%
not sure	0.85%	8.47%	9.32%
Organization Control Structure (Centralization vs. Autonomy)			
Centralization - 1	0.85%	6.78%	7.63%
2	5.93%	14.41%	20.34%
3	4.24%	11.86%	16.10%
4	3.39%	5.08%	8.47%
5	1.69%	7.64%	9.33%
6	0.85%	3.39%	4.24%
7	2.54%	6.78%	9.32%
8	5.08%	8.47%	13.55%
9	0.00%	6.78%	6.78%
Autonomy - 10	3.39%	0.85%	4.24%

Table 12 *Continued*

Panel C: Firm's Internationalization

	Experienced	Inexperienced	All Paticipants
Number of Countries that the Firm has Subsidiary			
No	1.69%	14.41%	16.10%
1 to 5	7.63%	21.19%	28.82%
6 to 10	4.24%	5.08%	9.32%
11 to 20	6.78%	7.63%	14.41%
More than 21	7.62%	19.49%	27.11%
Not sure	0.00%	4.24%	4.24%
Percentage of Foreign Sales to Global Turnover			
Zero	0.85%	12.71%	13.56%
0 to 10%	10.17%	12.71%	22.88%
11 to 30%	10.17%	12.71%	22.88%
31 to 50 %	0.00%	12.71%	12.71%
More than 50%	5.94%	8.47%	14.41%
Not sure	0.85%	12.71%	13.56%
Internationalization Strategy (Multidomestic vs. Global)			
Multidomestic - 1	3.39%	3.39%	6.78%
2	3.39%	5.93%	9.32%
3	2.54%	17.80%	20.34%
4	4.24%	9.32%	13.56%
5	1.69%	4.24%	5.93%
6	1.69%	5.08%	6.77%
7	5.08%	6.78%	11.86%
8	5.08%	10.17%	15.25%
9	0.00%	7.63%	7.63%
Global - 10	0.85%	1.69%	2.54%
Motivation of Internationalization			
Following customers	6.78%	26.27%	33.05%
Seeking particular resources	11.02%	11.02%	22.03%
Chasing long-term profitability	19.49%	38.14%	57.63%
Competing with competitots	7.63%	25.42%	33.05%
Learning from peer companies	5.08%	16.10%	21.19%
Exploiting an existing competence	12.71%	19.49%	32.20%
Others	0.85%	3.39%	4.24%

3.4. Variables and Models

3.4.1. Variables

To test my hypotheses, I categorized participants into two groups: (a) experienced executives or (b) inexperienced executives (i.e., without direct experience in choosing an international entry strategy). I defined an experienced executive as someone who had personally participated in the decision-making process of choosing an international entry strategy. A participant who did not fit in the definition was grouped as an inexperienced executive in terms of international entry strategy choice. While other types of international experience might have effects on international entry strategy, the direct experience gained from a specific internationalization activity has been shown to be the most significant influence on relevant decision making (Johanson & Vahlne 2009).

I followed prior research to focus on three international entry strategies: (a) wholly owned subsidiary (WOS), (b) joint venture (JV), and (c) non-equity (NE). While there are other classifications of international entry strategies (e.g., greenfield versus acquisition and fully-controlled versus partly-controlled, amongst others), the ownership-defined international entry strategies were straightforward for participants to understand. The DCE instrument asked participants to choose one opportunity from each pair of investment opportunities and match it to each international entry strategy (see Figure 7). Thus, three dummy dependent variables are measured—'choosing WOS or not', 'choosing JV or not', and 'choosing NE or not'. The three-category approach enables this study to test Hypothesis 1 that predicts the association between decision-specific experience and risk-preference related to the international strategic choices.

To capture the superior ability which direct decision-specific experience gives to decision-makers in terms of identifying opportunity and responding firms' internationalization status (i.e., Hypotheses 2a and 2b), I developed three groups of factors for simulating the international entry reality. First, I used *Quality of legal system* (i.e., the legislative and judicial system of the host country), *Trade and other structural barriers* (i.e., trade protection, regulation, and other requirements meant to increase the cost of foreign goods and services relative to those produced or offered locally), and

Government interference (i.e., whether the government of the host country interferes with legitimate business) in order to describe the institutional environment in a host country. Next, five factors were included to describe demand and supply in a host country. These factors are: *Potential market growth*—compared to the current market size, the overall potential sales growth in the host country, *Potential market size*—compared to the home market, the physical size of the host market in terms of sales potential, *Host market fluctuation/stability*—significant and irregular increases and decreases in the level of sales, *Resources in the host country*—raw material, assets and technologies that a company needs to conduct business effectively in the host country, and *Infrastructure in the host country*—the transportation system, communication network and commercial property in the host country. Finally, the potential of a business deal was gauged by four factors: *Expected profitability of the new entry*, the profit of this new entry compared to companies in a participant's industry and home market; *Expected payback period*, the number of years before the new investment pays off; *Repatriation of profit*, the freedom of transferring profit from the host country back to your company's headquarters, and *Production/operational cost*, the manufacturing and operating costs in the host country.

Furthermore, as mentioned in the Introduction section of this chapter, one of my objectives was to consider different theoretical streams in a choice experiment. My experiment attempts to reflect the reality of decision making, which involves not only the executives' preferences but also other variances that can influence international entry strategy choice. This is important for global strategic researchers to understand the complexity of executives' decision-making on international entry strategy choice, which suggests this study should include the arguments of mainstream theories as well as others. This also enables this study to test the hypothesis related to firm's internationalization (i.e., Hypothesis 2b). Specifically, I accommodated a number of internationalization effects by incorporating three covariates (i.e., *Firm's international experience*, *Motivation for internationalization*, and *International strategy*) in my analyses for both experienced and inexperienced models.

Specifically because a *Firm's international experience* indicates the firm's level of market knowledge, which helps the firm deal with institution differences between host and home countries (Delios & Beamish 1999; Slangen & Hennart 2007), I first tested the effect of a firm's international experience on institution-related factors (i.e., legal system, trade and other structural barriers, and government interference). Taking account of both the scope and intensity of internationalization, I computed this covariate by summing the standardized values of "the number of countries where a firm has a subsidiary or subsidiaries" and "the ratio of foreign turnover to global turnover".

Secondly, I included a covariate that represented the diversity of a firm's *Internationalization motivation*. I did this by counting the number of different motivations that a firm has for entering an international market. As a firm's international motivations are directly related to market status (i.e., demand and supply) of a host country, this covariate was used to examine effects on potential market growth, potential market size, host market fluctuation/stability, resources in the host country, and infrastructure in the host country.

I investigated the effects of the covariate of *International strategy* on entry transaction-related factors including expected profitability of the new entry, expected payback period, repatriation of profit, and production/operational cost. This covariate was measured with a value between 1 for multi-domestic strategy, and 10 for global strategy (Roth 1992). The value was selected by participants in the demographic questionnaire attached in the DCE experiment.

3.4.2. Statistical approach

Five considerations for model estimation determined the statistical approaches I used. Firstly, because the 21 pairs of opportunities were presented sequentially, observations of the 21 choice sets from each executive are not independent. Secondly, the decisions made regarding WOS, JV, or NE are not independent. This requires using econometric approaches that accommodate for potential correlation in error elements across different opportunities. Thirdly, the responses were not collected at the same time and thus, did not form cross-sectional data. Also, examining hypotheses on how variables form

executives' decision models requires testing the differences between parameters and their variances of the models, at the same time. And finally, I need to use econometric models for testing hypotheses on dependent variable (i.e., Hypothesis 1), independent variables (i.e., Hypothesis 2a), and moderator (i.e., Hypothesis 2b). To address these issues simultaneously, I used two models: multivariate probit model and multinomial logit model.

I employed the multivariate probit model that is able to (a) address three equations (i.e., WOS, JV, and NE) simultaneously; (b) compute probabilities of all choices after model estimation; (c) handle random preference variation and panel data with temporally correlated errors, and (d) allow for patterns of substitution (Train 2009). This model is used for testing Hypothesis 1, which proposes risk preference related to the outcome of decision making (i.e., dependent variables), by computing the probability of both outcomes of (1) choosing all potential modes (i.e., WOS, JV, and NE) for one international entry opportunity—indicating a commitment to potential risk by taking any possible means to catch the opportunity—and (2) choosing none of the three potential modes—demonstrating the strongest risk aversion for an international entry opportunity. In addition to probabilities calculated from the multivariate probit model, I estimated a multinomial logit model for testing Hypotheses 2a and 2b, because this model (a) gives a closed form of probabilities that are readily interpretable and (b) allows correlation between utilities that a participant assigns to the various opportunities. To use this model, I constructed a multinomial dependent variable—0 for choosing none, 1 for NE only, 2 for JV only, 3 for WOS only, 4 for JV and NE, 5 for WOS and NE, 6 for WOS and JV, and 7 for choosing all three—implying the risk-taking level of commitment in an order from low to high.

4. RESULTS

Hypothesis 1 posits that direct experience in making decisions on international entry strategy does not make executives show disparate preference in risk with regards to choosing an international entry strategy. This hypothesis is based on the assumption that

both direct and indirect experience can enable executives to be aware of the risk underlying an international entry strategic decision. Computing mean probabilities based on the results of multivariate probit model (Table 16 in Appendix 3), Table 13 displays the probabilities of choosing all potential modes and choosing none of them by experienced and inexperienced executives (Panel A and B respectively). This indicates that experienced executives' mean probability of "choosing-all" is identical to inexperienced probability, so is the "choosing-none", suggesting that when encountering an identical foreign investment opportunity, executives with direct experience show neither more nor less risk reference than inexperienced executives. Thus, Hypothesis 1 is supported.

Table 13 Mean Probabilities for Choosing-All and Choosing-None

Panel A: Experienced Model

	Mean	SD
Choosing All	0.18	0.11
Choosing None	0.50	0.14

N=2079, n=33

Panel B: Inexperienced Model

	Mean	SD
Choosing All	0.18	0.08
Choosing None	0.50	0.12

N=5355, n=85

Table 14 Multinomial Logit Models

Variables	**Experienced** [1]	**Inexperienced** [2]	**Aggregate** [3]
Determinants			
Quality of legal system (I)	0.169	0.267 **	0.245 **
Trade and other structural barriers (I)	0.263 *	0.062	0.093 †
Government interference (I)	-0.320	0.411 *	0.320
Potential market growth (DS)	0.096	0.068 *	0.070 *
Potential market size (DS)	0.111 *	0.119 ***	0.118 ***
Host market fluctuation /stability (DS)	-0.122	-0.062	-0.076
Resources in the host country (DS)	0.178	0.025	0.055
Infrastructure in the host country (DS)	0.042	0.034	0.038
Expected profitability of the new entry (T)	0.389 ***	0.042	0.140 **
Expected payback period (T)	0.092	0.131 †	0.120 †
Repatriation of profit (T)	0.402 *	0.296 *	0.327 **
Production/operational cost (T)	0.031	0.082 *	0.069 *
Covariates			
Firm's international experience			
Effect on quality of legal system	-0.049	-0.150	-0.126
Effect on trade and other structural barriers	-0.204 †	0.054	-0.001
Effect on government interference	0.477	0.086	0.092
Diverse motivations			
Effect on potential market growth	0.032	0.009	0.018
Effect on potential market size	-0.033 *	-0.020 *	-0.024 **
Effect on host market fluctuation /stability	0.038	0.008	0.015
Effect on resources in the host country	-0.024	0.010	0.005
Effect on infrastructure in the host country	-0.007	0.026	0.014
International strategy			
Effect on profitability of the new entry	-0.048 **	0.007	-0.009
Effect on expected payback period	-0.004	-0.013	-0.010
Effect on repatriation of profit	-0.039	-0.023	-0.028 †
Effect on production/operational cost	0.000	-0.005	-0.004
Log pseudolikelihood	-664.00	-1788.15	-2479.92
Wald χ^2	174.94***	203.47***	210.39***

Note: Independent variables are polynomial-coded.

Dependent variable: 0 - Choosing none, 1 - NE only, 2 - JV only, 3 - WOS only, 4 - JV and NE, 5 - WOS and NE, 6 - WOS and JV, 7 – Choosing all

† p<.10; * p<.05; ** p<.01; *** p<.001

Focusing on the difference between the decision-making models of experienced and inexperienced executives, Hypotheses 2a predicts that the experienced executives would concentrate on fewer factors than inexperienced executives for choosing an international entry strategy. Comparing the results in the Column 1 and 2 of "Determinants" panel in Table 14 (i.e., the decision-making model of experienced and inexperienced participants), I first note that two significant factors in the experienced model do not have significant effects in the decision-making model of inexperienced executives (i.e., Trade and other structural barriers, and Expected profitability of the new entry). This indicates both barriers in a host country and potential profits of an entry are more important for experienced executives to make decisions on international entry strategy. Similarly, five factors are significant only in the inexperienced executives' decision model (Column 2 in Table 14). These factors are Quality of legal system, Government interference, Potential market growth, Expected payback period, and Production/operational cost. Although two factors (i.e., Potential market size and Repatriation of profit) have significant effects in both decision models of experienced and inexperienced executives, the number of significant factors in the inexperienced model suggests that inexperienced executives need to consider more factors than experienced executives in choosing an international entry strategy. In other words, experienced executives focus on crucial information (for them) rather than considering as many factors as inexperienced executives do. Thus, Hypothesis 2a is supported.

Hypothesis 2b proposes that decision-makers with direct experience in choosing an international entry strategy will be more significantly influenced by their firm's internationalization status (i.e., international experience, internationalization motivation, and international strategy), while inexperienced executives will be less likely to do so. The results in the Covariates panel in Table 14 show firms' internationalization effects are significant in each of the three groups (i.e., institution, demand-supply, and entry transaction) for experienced participants. The three effects are International strategy on profitability (i.e., -0.048), Diverse motivation on potential market size (i.e., -0.033), and International experience on barriers (i.e., -0.204). In contrast, only one effect (i.e., Diverse motivation on potential market size) is significant in the inexperienced model (i.e., -0.020), indicating that inexperienced executives do not show the same ability as

experienced executives in considering firms' internationalization during choosing an international entry strategy. This suggests support for Hypothesis 2b.

Combining the above discussion regarding the three hypotheses suggests that direct experience on choosing an international entry strategy has limited impacts on executives' decision making. Specifically, when experienced and inexperienced executives were presented with identical international investment opportunities and the same available international entry strategies, direct experience did not cause significant differences in risk preference. From this point of view, there is no significant difference between directly experienced or inexperienced executives. On the other hand, direct experience does contribute to executives' ability to concentrate on key factors that may be crucial for international entry strategy. Whether an investment opportunity appears attractive to an experienced executive depends on the significant variables in the decision-making model. For example, a higher expected profitability of the new entry (i.e., the significant 0.389 in Column 1 of Table 14) may contribute to what is an attractive opportunity for an experienced executive. Similarly, direct experience strengthens executives' capability of considering firms' internationalization in their decision on international entry strategy, demonstrated by the significant covariate effect of international strategy on profitability (i.e., -0.048 in Column 1 of Table 14).

In addition to reporting the results of my hypotheses testing, I should highlight some important findings from the aggregate model (i.e., Column 3 of Table 14) that indicates that all entry transaction related factors have significant impacts on executives' decisions on international entry strategy (i.e., Expected profitability of the new entry, Expected payback period, Repatriation of profit, and Production/operational cost). In particular, comparing these factors with the remaining factors (factors related to market opportunity—institution- and demand/supply-related factors), I note that not all market related factors are crucial for executives' decision. This complements the extant literature and indicates differences between what academic research suggests and the actions of executives (Tang, Devinney & Buckley 2014).

Finally, one of the different effects between the experienced and inexperienced models is particularly worth noting. Specifically, for experienced executives,

profitability (i.e., Expected profitability of the new entry) is the most important factor (i.e., significant 0.389 in Column 1 in Table 14), while this factor does not significantly influence international entry strategic decisions of inexperienced executives who care more about potential market size (i.e., significant 0.119 in Column 2 in Table 14), indicating a gap in international strategic understanding between experienced and inexperienced decision-makers.

5. DISCUSSION AND CONCLUSION

5.1. Contributions and Implications

This study contributes to global strategic management research and practice in several ways. First, I investigate how direct decision-specific experience can facilitate the choice of international entry strategy in order to understand the effects of decision-maker's experience, international entry opportunity, and firms' internationalization on international entry strategy. While theories from both the rational and the process traditions have been used separately to examine the impacts of exogenous factors as well as executives' experience on international entry strategy choice, this study highlights the potential of building on my knowledge by bridging both theoretical perspectives to offer new insights into the determination of international entry strategy. Prior research, which tested the impact of executives' experience on international entry strategy choice, gave divergent findings on associations between international experience and risk preference in making global strategic decisions, and my study offers contributions by arguing and demonstrating that the experiential knowledge accumulated directly from international entry strategy choice does not affect confidence in taking risks related to international strategy, but ensures decision-makers address key information as well as their firms' internationalization.

My study investigates factors that were not only synthesized from empirical studies via a meta-analysis but pre-tested through a BWS experiment as well, ensuring the study's implications for both global strategic research and managerial decisions, and I contribute to both the rational and the process literatures by incorporating multiple entry

strategies (i.e., WOS, JV, and NE). For example, prior entry mode research has an assumption that one strategy (e.g., WOS) is independent of the others (e.g., JV and NE). I find that these strategic options are correlated. Thus, it is important to accommodate these strategic options in an entry scenario to examine how decision-makers make trade-offs between opportunities by adjusting strategic choice to fit the features of the opportunities. This method would also be valuable in future studies of strategic decisions such as partner choice and location choice.

For global strategic research focusing on modelling executives' decisions theoretically, my chapter shows the value of accommodating multiple potential determinants and strategic options into empirical analyses. If an international strategic decision is determined by multiple features of an international opportunity, findings from simultaneously considering their effects would be a significant application to global strategic decisions. Apart from an aggregate model, I also find that decision-specific experience leads decision-makers in heterogeneous decision-making processes. Experienced decision-makers prefer a rule of thumb, making decisions by considering fewer factors than inexperienced decision-makers. By employing an experimental approach, I am able to establish disaggregate models for experienced and inexperienced decision-makers. The experimental methods I used can be applied to many other global strategic decisions.

With regards to managerial decisions, my findings suggest that risk-preference bias does not exert significant impacts on decision-making models between decision-makers who have or do not have direct experience. Nevertheless, my arguments and findings suggest that experienced decision-makers are more likely to identify international opportunity through calculating trade-offs among representative factors. Furthermore, my findings encourage decision-makers to involve the decision-making process of international entry strategy, as the directly decision-specific experience ensures they adopt a strategy that fits their firms' international operation.

5.2. Limitations and Future Research Directions

I note several limitations of my study that suggest directions for future research. First, I followed prior research and estimated decision-making models of one single group of entry strategies, that is, WOS, JV, and NE (e.g., Herrmann & Datta 2006). Nonetheless, this research design is likely to limit the generalizability of my findings to other groups of decisions (e.g., greenfield versus acquisition). Thus, it could add contributions by conducting experiments that examine other categories of international entry strategy. In addition, one of the novel features of my experimental research design is that I can observe multiple options chosen for an international opportunity, and this can advance my knowledge in matching strategy to available opportunity. The underlying assumption is that all options (i.e., WOS, JV, and NE) are available, but, for example, WOS is not allowed in some host countries in some industries (e.g., retail bank in China). Thus, it would add knowledge, if future research could relax this assumption and test scenarios with limited strategies.

Furthermore, one of the methodological innovations of my experimental approach is that I can examine the complex decision making model with structured experimentation, by presenting an identical version of the experimental instrument to participants and asking them to make their own choices. Given that I did not investigate the historical choices of experienced decision-makers, it would be interesting to involve both stated-preference data (i.e., experimental results) and real experience. For example, experienced decision-makers' prior decisions on choosing WOS may provide additional information in estimating a decision-making model on WOS.

Finally, my study contributes insights to the literature of managerial experience by comparing decision-makers with and without direct decision-specific experience. A dummy variable helped us measure the variable of experience, but managerial experience has multiple dimensions including time (e.g., an international entry strategy was chosen recently or years ago), diversity (e.g., decision-specific experience about one strategy or many strategies), and outcome (e.g., a decision leads to positive or negative results). These dimensions imply multiple effects of experience on strategic decisions. I believe that future research can use the DCE methodology to not only

examine general differences between experienced and inexperienced decision-makers, but also to examine empirically the within-group heterogeneity of decision-makers, for example, whether the diversity of experience may lead experienced decision-makers to apply different decision models.

5.3. Conclusion

In this chapter, I employ experimental approaches to investigate executives' choices on international entry strategies. My theoretical underpinning of the rational and the process traditions enables this study to investigate both experience-related risk preference for and exogenous factors of international entry strategy. This complements prior research on international entry strategy as well as executives' experience in global strategic management, and I argue that executives' experience does not lead to risk preference (or aversion) behaviour in international contexts, despite the fact that experience helps executives make decisions with more specific foci. My use of the DCE method responds to calls for microfoundations in strategic management research and my contribution incorporates multiple categories of factors to replicate global decision making, and offers direct evidence for executives' decision making models for choosing an international entry strategy. My theoretical arguments and analyses consequently associate the rational tradition with the process tradition—two predominant theoretical streams that underpin global strategic research. It is my hope that this study can inspire a holistic framework by which two theoretical partners can work together to benefit each other and consequently advance our understanding of a highly complex domain.

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Appendix 3

Table 15 Factors in Best Worst Scaling Experiment

#	Factor	Definition
1	**Incentives from home country**	Policies and/or other stimulus from home-country government for encouraging companies to invest overseas
2	**Potential market size**	Number of potential customers and their demand in the host country
3	**Potential market growth**	Expected increase of demand in the host country
4	**Market fluctuation/stability**	Significant and constant increase or/and decrease of demand in the host country in the first five years after entry
5	**Trade and other structural barriers**	Any trade protection, regulations, and other requirements meant to increase the cost of foreign goods and services relative to those produced or offered locally
6	**Workforce** in the host country	Potential employees for your company in the host country
7	**Infrastructure** in the host country	Transportation system, communication network and commercial property for foreign companies in the host country
8	**Resources** in the host country	Raw material, assets and technologies that are accessible for your company in the host country
9	**Local partners**	Local companies that are willing and allowed to do business with foreign companies in the host country
10	**Intellectual property and science & technology** (host country)	Protection on intellectual property and the level of science & technolgy in the host country
11	**Legal system** (host country)	System of legislation and judiciary in the host country
12	**Government interference** (host country)	Interference from the host-country government on legitimate business activities
13	**Governmental bureaucracy** (host country)	Governmental system in which business proposals/appeals are dealt with in the host country
14	**Conversion and repatriation of profit**	Obtaining profit from a subsidiary in the host country and transferring the profit to your company's headquarters
15	**Taxation** (host country)	The host country's tariffs and state tax on foreign companies
16	Host-country's **Regulations on ownership and governance**	Rules on ownership and governance of your company's subsidiary in the host country. For example, some countries may allow a foreign company to wholly own its subsidiary, while others may only permit joint venture with local companies.
17	**Preferential policies** for foreign companies	The host country's special policies for attracting foreign companies. Examples of thes policies include subsidies on commercial property, industrial park close to raw materials etc.
18	**Cultural distance**	Degree of cultural difference between peoples in the home and host countries
19	**Geographic distance**	Flight hours between capital cities of the home and host countries
20	**Matching successful actions**	Following similar investments on the part of a key multinational competitor and/or other successful companies in the same market
21	**Existing business relations** in the host country	Your company's current business relations in the host country
22	**Business line for entering**	Specific business that your company will do in the host country. This business line may be same or different to your company's primary business.
23	**Production/operational cost**	Operational and/or production costs of a foreign subsidiary/branch in the host country
24	**Profitability**	Expected profit from the new entry
25	**Payback period**	Number of years before the new investment paying off

Please indicate which factor matters most and which matters least to you in your choice of entry strategy. Please select **ONLY** one in right and left column respectively.

Matters the MOST	Factors	Matters the LEAST
□	Matching successful actions	□
□	Existing business relations in the host country	□
□	Business line for entering	□
□	Production/operational cost	□
□	Profitability	□

Figure 8 An Example of BWS Choice Set

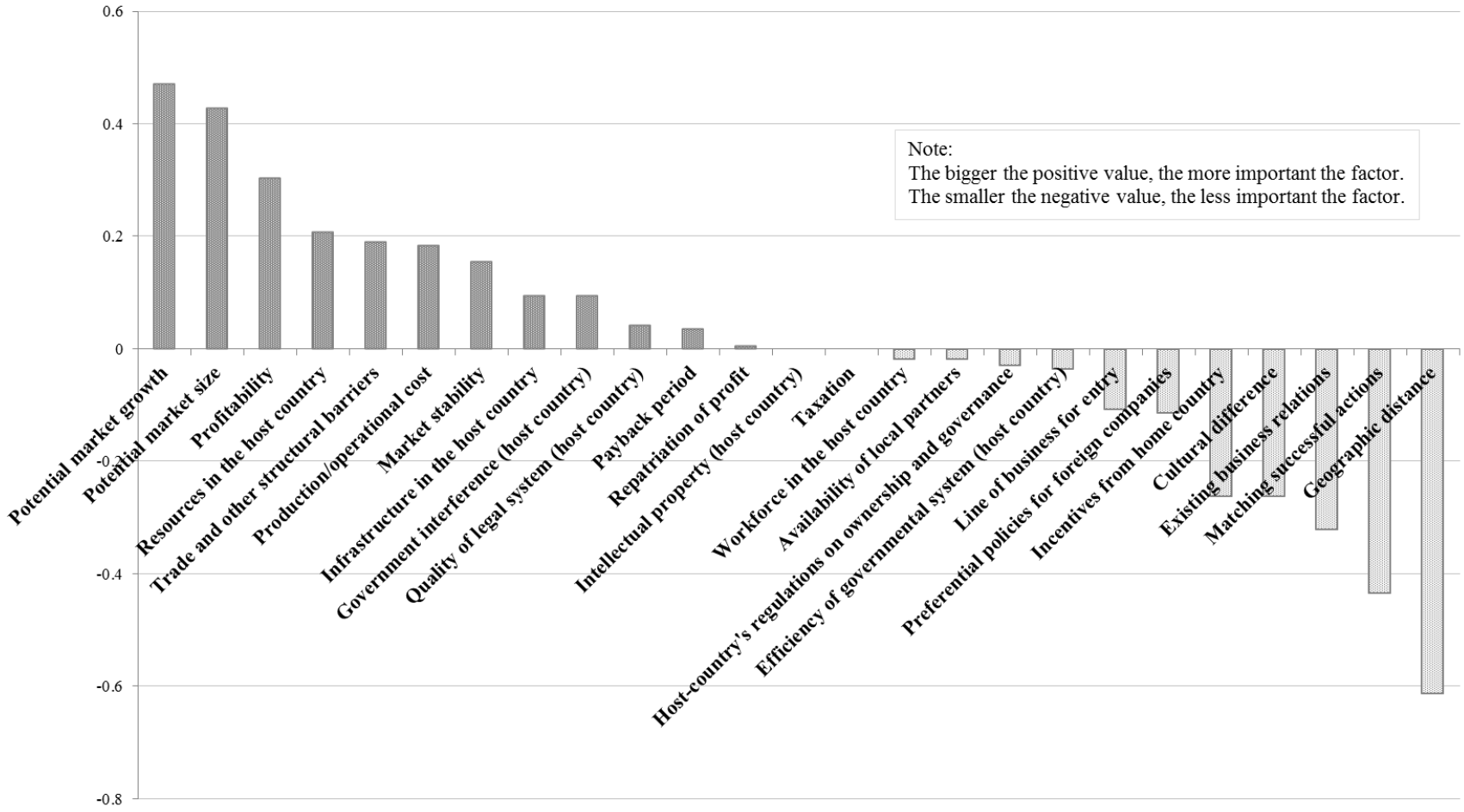

Figure 9 BWS Scores

Table 16 Multivariate Probit Model

Variables	Experienced WOS	Experienced JV	Experienced NE	Inexperienced WOS	Inexperienced JV	Inexperienced NE
Determinants						
Quality of legal system (I)	0.171 ***	0.046	0.062 †	0.145 ***	0.080 *	0.100 **
Trade and other structural barriers (I)	-0.015	0.043	0.084 †	0.064 **	0.074 **	0.086 **
Government interference (I)	0.194	0.108	-0.026	0.270 ***	0.323 ***	0.281 ***
Potential market growth (DS)	0.084 **	0.120 ***	0.086 **	0.061 ***	0.053 ***	0.042 **
Potential market size (DS)	0.020	0.017	0.015	0.046 ***	0.046 ***	0.040 **
Host market fluctuation /stability (DS)	-0.017	-0.017	-0.032	-0.011	-0.045 †	-0.026
Resources in the host country (DS)	0.135 *	0.024	0.037	0.029	0.036	0.008
Infrastructure in the host country (DS)	0.059 †	0.042	0.007	0.055 *	0.038	0.023
Expected profitability of the new entry (T)	0.216 ***	0.196 **	0.206 ***	0.015	0.022	0.011
Expected payback period (T)	0.026	0.080	0.045	0.142 *	0.099	0.183 *
Repatriation of profit (T)	0.341 *	0.289 *	0.109	0.181 *	0.212 **	0.204 *
Production/operational cost (T)	0.075 †	0.068 *	0.045	0.035	0.057 *	0.071 ***
Covariates						
Firm's international experience						
Effect on quality of legal system	-0.008	-0.005	0.025	-0.007	-0.030	-0.036 *
Effect on trade and other structural barriers	-0.024	-0.028	-0.049 †	0.007	0.015	0.014
Effect on government interference	0.001	0.047	0.105 *	-0.015	-0.007	0.009
Diverse motivations						
Effect on potential market growth	0.000 ***	0.000 ***	0.000 ***	0.000	0.000	0.000
Effect on potential market size	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Effect on host market fluctuation /stability	0.000 ***	0.000 **	0.000 ***	0.000	0.000	0.000 **
Effect on resources in the host country	0.000	0.000	0.000	0.000	0.000	0.000
Effect on infrastructure in the host country	0.000 ***	0.000 *	0.000 *	0.000	0.000 †	0.000
International strategy						
Effect on profitability of the new entry	-0.030 ***	-0.022 *	-0.025 *	0.006	0.002	0.005
Effect on expected payback period	-0.001	0.007	0.001	-0.021 †	-0.005	-0.010
Effect on repatriation of profit	-0.035	-0.026	0.000	-0.005	-0.022 †	-0.021
Effect on production/operational cost	-0.008 ***	-0.002	-0.003	0.001	-0.001	-0.006 †
Constant	-0.525 ***	-0.500 ***	-0.460 ***	-0.536 ***	-0.550 ***	-0.528 ***
Log pseudolikelihood		-3134.73			-8328.32	

FINDINGS AND FUTURE RESEARCH

1. INTRODUCTION

This doctoral research is comprised of three interdependent studies (i.e., a pre-study, a meta-analytic study, and an experimental study) to provide a comprehensive understanding of the determination of international entry strategy. The extant literature pertaining to this strategy is rooted in two theoretical traditions: the rational tradition and the process tradition (Dunning, Devinney, Tallman, Mitchell & de la Torre 2004). While the previous studies derived from both theoretical traditions contribute to my knowledge of international entry strategy, they suggest diverse factors about, and sometimes divergent impacts of these factors on, this strategy. While these factors and impacts are part of a variety of conceptual frameworks, the decision-making role of decision-makers was not included formally. This current doctoral research, therefore, aims at providing a holistic picture to depict both determinants of international entry strategy and decision-makers' strategic choices related to these determinants, via meta-analytic methods and experimental approaches.

The meta-analytic study synthesizes influential factors suggested by the extant literature and allows for: (a) summarizing the previous findings with statistics; (b) examining the capability-opportunity model with empirical findings in the extant IB literature, and (c) gathering elements that are used to design experimental instruments for the choice experiments.

In addition, the choice experiments investigate decision-making models related to international entry strategy at the level of decision-makers. The experiments allow for: (a) observing decision-makers' trade-offs among international entry opportunities; (b) inferring decision-making models with statistical efficiencies, and (c) accommodating predominant IB theories to examine the extent to which influential factors—evidenced by the meta-analysis—could influence decision-makers' choices.

In the remainder of this epilogue, I review briefly the specific research questions addressed, the main findings, and the limitations that suggest directions of future research.

2. A SUMMARY OF FINDINGS

This thesis focuses on identifying determinants of international entry strategy within a framework of capability, opportunity, and decision-maker. To implement the two major studies (i.e., the meta-analytic study and the experimental study), I first reviewed meta-analytic studies published in the IB domain. Then, I synthesized findings of the extant literature by constructing a meta-analytic structural equation model. And last, I investigated decision-makers' choices on international entry strategy by a series of choice experiments.

With the pre-study (i.e., the review of IB meta-analyses), I examined the merits and defects of meta-analytic methodology in comparison with conventional literature reviews, and evaluated predominant methods used in IB meta-analytic studies. Results of the pre-study show that meta-analytic studies published in the leading IB journals lack advanced methods such as meta-analytic structural equation modelling. Meta-analytic structural equation modelling is worthy of attention, as it enables IB meta-analysts to investigate multiple associations simultaneously, rather than in individual pairs. In addition, the pre-study findings suggest that: (1) meta-analytic methodology quality varies among IB journals, as some publications pay more attention to meta-analytic issues than the others; (2) IB researchers are aware of more meta-analytic techniques for accumulating and synthesizing previous literature to generate new knowledge, and (3) future IB meta-analytic studies can be improved in multiple ways.

In the meta-analytic study, I synthesize findings from 116 primary studies and joined together the literatures in both the calculative and the process traditions into a capability-opportunity model. The model shows that better generic capability does not lead a firm to choose a higher commitment level, although better generic capability will positively contribute to a firm's better international capability. On the other hand, better

international capability will result in a firm's decision to choose a higher commitment level, since international capability reflects the firm's skills, experience, and ability in handling international business, and implies a willingness to be involved in international entry. Regarding the impact of market environment, I find that a favourable opportunity in the host-country market will lead entering firms to choose a high commitment level strategy, while a favourable market-environment-opportunity does not influence the attractiveness of an international market-economic-opportunity. Similarly, an attractive market-economic-opportunity will make firms choose a high commitment-level strategy for entering an international market.

Through the experimental study, I bring decision-makers into the decision-making models and find that experiential knowledge that is directly relevant to making decisions on international entry strategy can increase the awareness of international investment opportunities as well as the consideration of firms' internationalization status. However, direct decision-specific experience leads neither to risk-preference nor risk-aversion decisions, despite the fact that the experiential knowledge differentiates decision-making models of decision-makers. More specifically, direct experience in making decisions on international entry strategy does not make decision-makers show disparate preferences in risk with regards to choosing an international entry strategy. Also, experienced decision-makers concentrate on fewer factors than inexperienced ones for choosing an international entry strategy, and experienced decision-makers are more significantly influenced by firms' internationalization status (i.e., international experience, internationalization motivation, and international strategy) than the inexperienced decision-makers.

3. CONTRIBUTION

This doctoral research contributes new insights into international entry strategy to the IB literature by proposing a triadic framework (i.e., capability, opportunity, and decision-maker). It shows its power in explaining the determination of international entry strategy by integrating multiple factors with managerial decisions. In particular, this

framework provides empirical evidence to complement IB theories and contribute to the larger body of literature on strategic decision-making.

With two innovative methods (i.e., meta-analytic structural equation modelling and a set of choice experiments), this research examines international entry strategy in a holistic model and explores decision-makers' trade-offs with experimental manipulations. These research approaches also enable this research to benefit managerial decisions in two ways: the meta-analytic study provides firms with a toolkit that accounts for major factors that firms should consider, and the choice experiments demonstrate decision-making routines and advance our understanding of managerial decisions.

4. LIMITATION AND FUTURE RESEARCH

As a doctoral thesis, this research has several limitations, implying directions for future research. First, the proposed framework (with capability, opportunity, and manager) is tested in two separate studies which give a comprehensive illustration of the determination of international entry strategy. Yet the research design would probably be improved by simultaneously considering different levels (i.e., the firm level and the manager level). Thus, it would add contribution by employing multilevel models to investigate international entry strategy at both firm- and decision-maker- levels.

In addition, while the innovative methods that I used in the thesis complement the extant literature in multiple ways, these methods have several limitations. For example, in the meta-analytic study, a random-effects model may not address moderating effects, such as heterogeneity among host countries. Also, the experimental study can be improved by including real experience (i.e., an actual decision made by decision-makers who participated into the experiments) in the model estimation.

Despite the limitations, this doctoral research contributes not only to the extant literature about international entry strategy, but also suggests future directions for me to extend my doctoral study to (a) test the currently proposed framework in other

international strategic settings and (b) examine other international strategic decisions particularly in an uncertain environment. One particular implementation of this idea is to test how uncertainty influences collaborative innovation (CI) in a global/international context.

Specifically, CI is, by its very nature, a highly unpredictable business activity that involves (a) multiple partners who need to be directed toward a mutually desired objective for identifying and solving problems, resolving conflicts, and creating new products and businesses (Ketchen, Ireland & Snow 2007) and (b) unforeseen innovative output—we hardly know beforehand whether an innovation will work as expected, and history reveals a constant stream of organizational interdependencies that led to failures and disasters (Midgley 2010). It is also well known that international collaboration embeds extra uncertainty due to the facts such as asymmetric information (Reuer & Ragozzino 2014) and institutional gaps (Arregle, Miller, Hitt & Beamish 2013). This exacerbates the potential uncertainty of innovation-oriented collaboration between a firm and its international partners.

Although considerable academic and practical attention has been devoted to better understanding international collaboration and innovation management respectively, the literature is largely silent on the contingent and equally important "decision-making" aspect of international CI that contains inherent uncertainty derived from both internationalization and innovation. In sum, my future research within this direction will attempt to answer the important questions of "How do firms and their managers — working in highly uncertain contexts—make strategic decisions on collaborative innovation with cross-border partners?"

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