

Manuscript Details

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Title	Micro-foundations of Organizational Ambidexterity in the Context of Cross-Border Mergers and Acquisitions
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Abstract

Micro-foundational approaches can enable firms to develop organizational ambidexterity, which is critical to long-term prosperity. However, to date, few studies have examined how mergers and acquisitions (M&A)—processes reliant on knowledge transfer—provide a useful organizational context through which to understand the achievement of organizational ambidexterity. Considering organizational ambidexterity from the viewpoint of exploitative and explorative innovation, we examine how behavioural contexts (corporate entrepreneurship) and structure (integration) regulate knowledge transfer activities at the micro-foundational and firm levels within a cross-border M&A context. Analysis of 143 cross-border M&As completed by United Kingdom (UK) acquiring firms revealed that: (1) knowledge sharing between the acquirer and the acquired leads to organizational ambidexterity; (2) increased use of the acquired target's capabilities has a negative effect on organizational ambidexterity; (3) overall, capability sharing is positively related to organizational ambidexterity; (4) corporate entrepreneurship has both negative and positive moderating effects (on use of the acquired target's capabilities and capability sharing, respectively), while integration positively moderates the effects of knowledge sharing on organizational ambidexterity.

Keywords micro-foundations; organizational ambidexterity; corporate entrepreneurship; merger and acquisitions; capabilities; knowledge sharing

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Response to Special Issue Managing Guest Editor

1. Thank you for submitting your manuscript to Technological Forecasting & Social Change. I have completed the review of your manuscript and a summary is appended below. The reviewers recommend reconsideration of your paper following major revision. I invite you to resubmit your manuscript after addressing all reviewer comments. I look forward to receiving your revised manuscript as soon as possible. Kind regards, Prof. Manlio Del Giudice

Response:

Dear Professor Del Giudice, Thank you very much indeed for offering us this opportunity to revise our manuscript for your special issue at Technological Forecasting & Social Change. We are very grateful for this possibility and we have found the comments of our two anonymous reviewers to be clear, supportive and very helpful in revising our work. Motivated by your collective support, we have worked hard to revise the paper and we certainly feel it has improved and now responds to the points raised. In this report, we detail our responses and revisions to each of the reviewers' comments in turn. Thank you again for offering us this chance to revise our work, and we welcome the opportunity to have our work considered for your TFSC special issue. With kindest regards, The Authors.

Comment from Reviewer 1

Initial comments: This is an interesting and relatively well written paper focusing on micro-foundation of organizational ambidexterity in the context of cross-border M&As. Despite offering useful insights to the researched topic, the current draft can be improved further in different parts, and I present my comments in a step by step manner as follows.

Response:

Thank you very much for your kind comments and supporting our submission. We are extremely grateful to you. We also offer our thanks for your helpful and constructive comments in guiding us to revising our paper. Below you will find a summary of the actions taken in each instance to respond to your comments. Warm regards, The Authors.

Comment from Reviewer 1

1. Introduction section does a satisfactory job in introducing the topic and highlighting its importance. However, on page 4, second paragraph, the authors write "We reveal new insights....." This should be clarified further. Is the current study first one to specifically theorize and empirically analyze knowledge sharing among individuals and sharing and use of capabilities between acquirer and acquired firms in relation to OA? or is the current study analyzing these factors in a new context/focus area? In the same paragraph later, the authors write in second last line, "for managers, we present an empirical contribution.....". This sentence needs rewording and clarification, as empirical contribution is not for the managers. Finally, introduction section ends rather abruptly with references to some prior studies. The authors can make the

ending of this section look more academic e.g. presenting own arguments and referring to structure of rest of the paper etc.

Response:

Thank you for your generous words. Reviewer 2 in their Comment 1 also noted the strength of the Introduction, but also advised us to make some edits to the content. Specifically, we have organized it around the context, the gap, our response to that gap grounded in micro-foundations theory, and our contribution. This forms a classic 4 paragraph structure. In light of your positive comments about the first version of the Introduction, we did not make whole scale changes but instead focused on refinement, tightness and improvement of the existing paper.

With specific reference to your advice, we have revised the contribution paragraph as per your valuable suggestions, and added a new outgoing paragraph that presents the structure of the remainder of the article. Specifically, with respect to the first contribution, you are right in your summary, to the best of our knowledge, the current study is the first one to specifically theorize and empirically analyze knowledge sharing among individuals and sharing and use of capabilities between acquirer and acquired firms in relation to OA. We also revised the third contribution to speak directly to providing new managerial insight. We had meant to say that our empirical evidence led to these insights but realize now that it was a little underworked. Accordingly, we now focus the wording on providing managers with new insights on mechanisms that support initiatives to generate OA as a successful M&A outcome. We feel it is incumbent on scholars to provide new insights for managers, which is why we take the time to showcase this point here.

Comment from Reviewer 1

2. Literature review and conceptual framework section is also presented satisfactorily. In first sub-section where OA is addressed, last sentence "But long-term prosperity..." is unclear, and authors are recommended to clearly present the intended argument here. The discussion in third sub-section (Micro-foundations, OA and cross-border M&As) is very long and rather descriptive in nature. This discussion can be made more focused e.g. by developing a table, where key terms used like organization entrepreneurship etc are presented along with their conceptualization (with references) in the current paper. Also, page 7 is not divided into paragraphs, and this can be done to give a good academic look to the paper.

Response:

Thank you for your praise and also for your constructive guidance in further refining the literature review and conceptual framework section. Regarding the sentence "But long-term prosperity...", we have expanded the text around this sentence so that its intention is now clear. The meaning comes from a firm's failure to achieve OA. The text around the sentence has now been revised as follows: "*As a consequence, firms tend to specialize in one or the other, which increases the danger of succumbing to a competency trap (too much exploitation, endangering long-term survival) or a failure trap (too much exploration, endangering near-term survival). The long-term prosperity (i.e. pertaining to profitability, growth and success) of the firm requires it to take this tension as a starting point (Simsek, 2009) and organizing for OA in ways that balance exploration and exploitation and archives both activities to a high standard (Simsek et al., 2009).*"

Thank you for your recommendations about the third sub-section. Prompted by your observation, we have revised the subsection in two ways. First we sought to reduce the overall length of it with a focus on decreasing the degree of description. On re-reading the section in light of your comment, we realized that we were being too focused in referring to past text instead of concentrating on forming our conceptual reasoning. This leads to the second change. We then increased the density of discussion of the mechanisms underpinning the effects we expected to see among knowledge sharing, use of the target's capabilities, and sharing of capabilities with the target; corporate entrepreneurship and integration; and OA. That is, we fleshed out our theory originating from the micro-foundations view to explain the occurrence of OA in M&As. In terms of developing a table as suggested in your comment, we valued this thought and attempted this in our first pass at revising the paper. However, as we revised the text to soften the descriptiveness and increase the discussion aspect, we found that there was little text that could be transferred to such a table without deteriorating understanding and without causing a need for repetition in the text itself. Because of this, we have not implemented the table but hope that the improvements made to the text now add greater power to that section and supersede the need for one. We hope our considered approach is agreeable to you.

Also, thank you for pointing out the length of the original text on p.7. We have now broken down such long passages into paragraphs to provide an improved academic look. Many thanks again for your guidance.

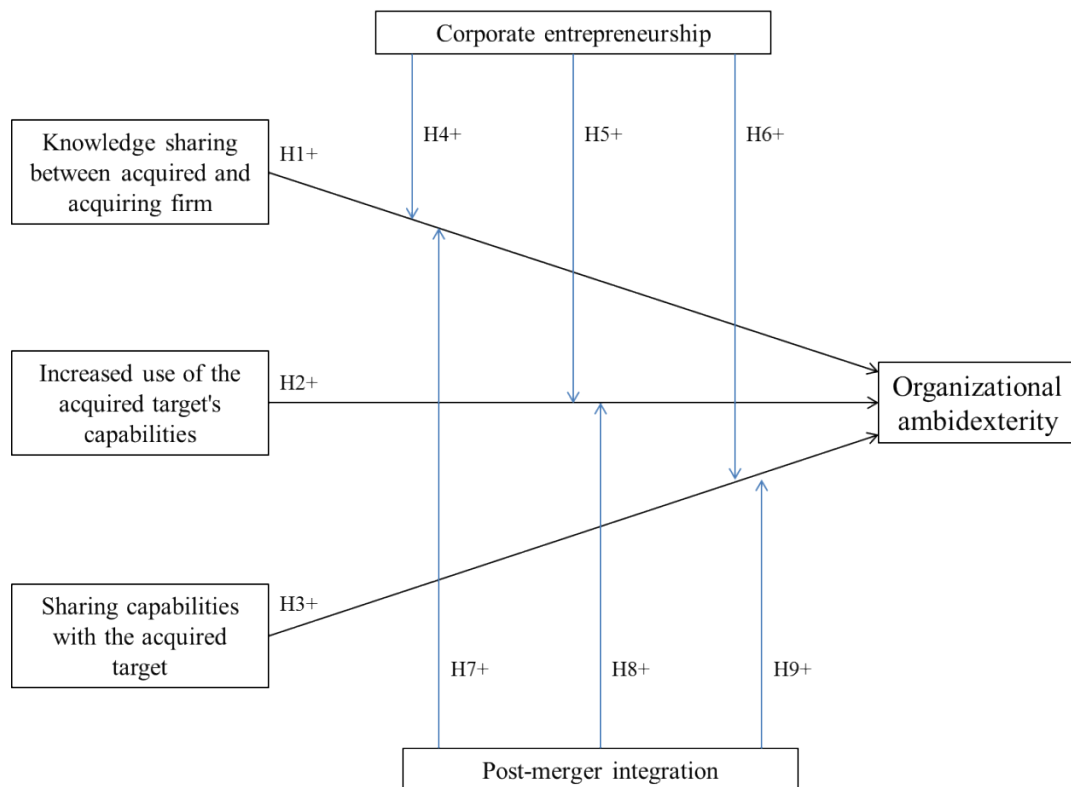
Comment from Reviewer 1

3. Study hypotheses are generally well argued and grounded in prior literature. However, the discussion on moderating hypotheses (4,5,6 and 7,8,9) can be specifically presented before each of them rather than presenting it together and then writing those hypotheses one after another. Also, as there are 6 hypotheses linked to multiple factors in the paper, presentation of a framework will add further value to the readability of the paper.

Response:

As advised, we have revisited the mapping and development of the hypotheses in relation to the argument. Furthermore, we have also added the presentation of a framework into our paper to aid in readability and in visualizing our hypothesized conceptual model. Here is the framework in question:

Figure 1: Conceptual Model of Ambidexterity in the Context of Cross-border M&As



Comment from Reviewer 1

- Methodological section covers the aspects needed in an academic research. The authors present clear and detailed description of data collection, as well as measures development and their efforts to address issues like common method bias. However, some justification regarding the use of OLS regression is needed, as the current draft does not offer that specifically.

Response:

We thank you for your positive feedback here. The choice of OLS regression over structural equation modelling (SEM) was straightforwardly based on parameter-to-observation recommendations for the use of SEM. For instance, Bentler and Chou (1987) recommend at least 5 cases per parameter estimate (including error terms as well as path coefficients), while Stevens (2012) recommends that there be at least 15 cases per measured variable or indicator. We have 143 respondents in the dataset, seven constructs (as there are two constructs in the ambidexterity equation) and nine control variables. Accordingly, the number of parameters in the model means that we would not meet the required parameter-to-observation ratio to robustly employ SEM. OLS regression, then, is the logical choice and fits with the nature of the data, hypotheses, and the tests to be employed in examining moderation/interaction effects. Based on outlined rationale above, we have – having the manuscript length in mind and if you are agreeable (in the light of the explanation) – minimized inclusion of further explanation in the revision. We hope this meets with your satisfaction - References: Bentler, P.M. & Chou, C.P. (1987), “Practical issues in structural modeling”, *Sociological Methods & Research*, 16(1), 78-117. Stevens, J.P. (2012), *Applied Multivariate Statistics for the Social Sciences*. Routledge: New York.

Comment from Reviewer 1

5. Discussion and conclusion sections are relatively well written.

Response:

Thank you very much indeed. We appreciate your kind words and support.

Comment from Reviewer 1

6. Finally, the paper needs to be consistent in use of either British or American English. In current draft, there is occasional overlap. Also, the paper will benefit from professional proof reading.

Response:

Thank you for noting these points. The paper has received a thorough proofreading.

Comment from Reviewer 1

Closing comments: Good luck with the revision!

Response:

Thank you very much indeed. Once again, we would like to offer you our sincerest thanks for your support and constructive review of our paper. We hope you enjoy the revised version. Kindest regards, The Authors.

Comment from Reviewer 2

Initial comments: Using a micro-foundational approach, this paper has tried to explore the role of M&As in achieving organisational ambidexterity. The paper has used 143 responses from 593 sample UK firms and concludes that ambidexterity is enhanced by sharing knowledge and capability. The paper has also concluded that corporate entrepreneurship and post merger integration moderate the above mentioned relationship. The paper is very well written and there is a clear scope of making contribution to the literature. However, I have few points that need to be looked at before final consideration to publish the paper.

Response:

Thank you very much for your kind words and generous support for our submission! We are extremely grateful to you. Moreover, we found your comments insightful and helpful in revising our paper. Below we detail our responses to each of your comments in turn, and the actions we took accordingly to revise the paper. Warm regards, the Authors.

Comment from Reviewer 2

1. The introduction looks a bit like literature review with overwhelming number of citation at a very early stage. I suggest the paper to set the context at the outset followed by the research gap and contribution of the paper. It is essential to make the

readers know about OA and its necessity to organizational success. Micro-foundation approach also needs more elaboration and why this approach is so critical to OA research. The introduction should also include focused discussion on contributions of this study. Knowledge sharing could also be possible through joint ventures. Therefore, the choice of cross-border mergers and acquisitions as opposed to joint venture need some justification.

Response:

Thank you for your advice on how we might better structure the Introduction. At this juncture, we noted that Reviewer 1 was broadly happy with the original introduction and focused they focused their advice on the contribution paragraph (see Reviewer 1, Comment 1, and our accompanying response). However, we fully realize the significance of your comment and have acted accordingly to revise the Introduction, as we detail in our response to Reviewer 1.

First, we revised the Introduction following your advice into a classic 4 paragraph structure: (As suggested) we start with the context and a mini-literature review to set the scene, we construct the gap, we detail our response to that gap using theory, and we close with our contributions. In doing so, we attempted to reduce the density of references as per your suggestion while remaining mindful of the review aspect and need to set up both the state of the art and to validate the research gap (paragraphs 1 and 2). Also, we made sure to better integrate the M&A angle as per your suggestion and key the reader into cross-border M&As in our problematizing of the gap. By leveraging your advice and that of Reviewer 1 (Comment 1) we were able to further explain and set up our contribution ready for the Discussion section.

Second, with respect to your valuable comment about joint ventures, we could not find a satisfactory way to integrate that into the Introduction without causing a jarring effect in the reading. In turn, we first sought to say more about M&As more actively in developing the state of the art and the gap to reassure the reader of its importance and centrality. We then added a new paragraph to our Future Research sub-section of the Discussion in which we advocate the following: *“Finally, since we observe knowledge sharing to be a bedrock for OA, future research should consider alternative inter-organizational routes to new knowledge in which knowledge sharing is key, for example, joint ventures. Whether or not a joint venture can substitute for greater control over the context for OA is unclear. But as a key inter-organizational strategy, joint ventures require investigation in the burgeoning landscape of inter-organizational solutions to the OA puzzle.”*

We hope that you find this satisfactory. Many thanks.

Comment from Reviewer 2

2. Discussions supporting hypotheses need to be more robust. Specially, the discussions supporting the moderating effects integration and entrepreneurship are not very clear. Separate discussion could be better to support those hypotheses that established moderating effects.

Response:

Thank you for this observation. We have sought to readjust and restructure the discussion around the hypotheses. We now feel that the section works more fluently and coherently.

Comment from Reviewer 2

3. The sample period needs further justification. Why it was between 2012 and 2015? If memory and distortion problem of respondents are major concerns then why more recent period, say up to 2018 has not been selected?

Response:

Thank you for your comment. We believe that this issue has arisen due to our lack of clarity on the time at which data were collected and for this we offer our sincerest apologies. Data were gathered in the latter months of 2015 and so we identified July 2015 as a cut-off date and to go no further back in time than to 2012 for the aforementioned reasons and rationales.

Comment from Reviewer 2

4. Given the nature of the paper, the sample could be separated on the basis of total R&D expenditure to if the results differ between innovative (R&D intensive) and non-innovative firms.

Response:

We appreciate the idea underpinning your suggestion however there are two specific objections we have to this idea. First, the argument does not directly seeking to look at innovativeness in this paper and whether or not there are differential effects on ambidexterity by degree of innovativeness. Indeed, this would potentially lead to an entirely new paper embodying very different hypotheses, nevertheless we agree that this does offer a very worthwhile avenue for us to pursue in the future. Second, splitting the sample in this manner is another typical approach taken when looking for moderation effects (in this case, or R&D intensity or innovativeness). Again, this is not something that we are explicitly seeking to achieve in this work or indeed intimate. However, in taking on board your suggestion though, we do offer this as a valuable avenue for future research in the field, and add this accordingly to that section of our paper.

Comment from Reviewer 2

5. A separate section on implications of the study could make it better.

Response:

Thank you for your advice. We have broken down the Discussion section into two new subsections: Theoretical Implications and Managerial Implications, taking the opportunity to sharpen both sections as well, and ensuring their alignment with paragraph 4 of the revised Introduction.

Highlights

In the context of an analysis of cross-border M&As completed by United Kingdom (UK) acquiring firms

- Knowledge sharing between the acquirer and the acquired leads to organizational ambidexterity
- Increased use of the acquired target's capabilities has a negative effect on organizational ambidexterity
- Capability sharing is positively related to organizational ambidexterity
- Corporate entrepreneurship has both negative and positive moderating effects (on use of the acquired target's capabilities and capability sharing, respectively)
- Integration positively moderates the effects of knowledge sharing on organizational ambidexterity.

Micro-foundations of Organizational Ambidexterity in the Context of Cross-Border Mergers and Acquisitions

Abstract

Micro-foundational approaches can enable firms to develop organizational ambidexterity, which is critical to long-term prosperity. However, to date, few studies have examined how mergers and acquisitions (M&A)—processes reliant on knowledge transfer—provide a useful organizational context through which to understand the achievement of organizational ambidexterity. Considering organizational ambidexterity from the viewpoint of exploitative and explorative innovation, we examine how behavioural contexts (corporate entrepreneurship) and structure (integration) regulate knowledge transfer activities at the micro-foundational and firm levels within a cross-border M&A context. Analysis of 143 cross-border M&As completed by United Kingdom (UK) acquiring firms revealed that: (1) knowledge sharing between the acquirer and the acquired leads to organizational ambidexterity; (2) increased use of the acquired target's capabilities has a negative effect on organizational ambidexterity; (3) overall, capability sharing is positively related to organizational ambidexterity; (4) corporate entrepreneurship has both negative and positive moderating effects (on use of the acquired target's capabilities and capability sharing, respectively), while integration positively moderates the effects of knowledge sharing on organizational ambidexterity.

Keywords: micro-foundations; organizational ambidexterity; corporate entrepreneurship; merger and acquisitions; capabilities; knowledge sharing

INTRODUCTION

Organizations now operate under accelerated volatility, uncertainty, complexity and ambiguity in environments that are prone to unforeseen, rapid and frequent transformations (Bennett and Lemoine, 2014). Defined as an organization's ability to pursue simultaneous exploitative (i.e. known, predictable and bounded) and explorative (i.e. less known, uncertain, innovative and novel) innovations (Tushman and O'Reilly, 1996), organizational ambidexterity (OA) is essential for financial success (Cao et al., 2009; Junni et al., 2013) and the continued viability of the organization (O'Reilly and Tushman, 2013). However, the detailed conditions for successful OA continue to puzzle scholars and elude managers. While various organizational solutions for OA abound, mergers and acquisitions (M&As) have emerged as novel inter-organizational solutions (e.g., Bresciani et al., 2017; Lavie et al., 2010; Stettner and Lavie, 2014). However, to date, we have very little theoretical or empirical insight into how OA may be achieved in the complex circumstances presented by M&As. Therein, far less attention has been given to the micro-foundations of OA. We know very little about how lower-level activities, coupled with organizational mechanisms, influence an organization's ability to achieve OA (Miron-Spektor et al., 2018; Mom et al., 2018; Zimmermann et al., 2018). This oversight is troubling because in using M&As as a pathway to OA, the circumstances needed to galvanize employees to achieve OA intersect with the complexity of managing and integrating various aspects of the acquired firm.

The micro-foundations approach argues that organizational contexts, set or enable, interactions between individuals in sharing knowledge which gives rise to new organizational phenomena (e.g., Felin et al., 2012; Foss and Pedersen, 2016; Tran et al., 2019). Senior managers deploy M&As to achieve OA, but these can potentially generate OA only when the contexts in

which individuals act (e.g., Ahammad et al., 2015; Birkinshaw and Gupta, 2013; Simsek, 2009) across levels (Mom et al., 2018) are coordinated. In M&As, especially the cross-border variety, knowledge sharing is especially important (Im and Rai, 2008) to acquisition outcomes and is affected by integration activities (Meglio et al., 2015). In OA literature, studies of knowledge-sharing interactions are typically limited to standard exchanges within the line hierarchy (Mom et al., 2007, 2009). However, in M&As, these occur in less routinized contexts in which interactions are complex and subject to tensions (Bauer et al, 2016; Lavie et al., 2010; Stettner and Lavie, 2014). By not accounting for the interaction of organization and context, managers are left with significant challenges in implementing OA precisely because the methods, practices, and processes that an organization uses to attain OA are oversimplified (Birkinshaw and Gupta, 2013; O'Reilly and Tushman, 2013) and have escaped significant attention (Hughes, 2018; Koryak et al., 2018; Stettner and Lavie, 2014). To advance understanding of the foundations by which OA is achieved requires insights into circumstances of knowledge sharing among individuals. This is essential under changing conditions and, so too the varying contexts in which such activity takes place. This is therefore the aim of this study. We develop a theoretical and conceptual framework predicting how circumstances for knowledge exchange in an acquiring firm affect OA in the post-M&A stage. We posit that OA is a collective phenomenon that emerges from knowledge transfer in M&As. Drawing on the micro-foundations perspective, individuals are enmeshed in interactions within an organization (Felin et al., 2012) orchestrated by structure (Hodgson, 2012) and regulated by behavioural context (Coleman, 1990) that instigates those interactions required to compose collective phenomena such as OA (Felin and Foss, 2005, 2009; Barney and Felin, 2013). Without knowledge sharing routines among individuals, knowledge assets resident in employees remain inert. We further hypothesize that

OA relies on using capabilities drawn and shared among merging firms. Specifically, we hypothesize that M&A integration and circumstances through which individuals may conduct knowledge work, conceptualized as the firm's corporate entrepreneurship (Burgers and Covin, 2016; Kuratko et al., 2015), regulate the effects of individual knowledge transfer and capability sharing and use on OA.

Through a dataset of 143 responses from a sample of 593 UK firms having engaged in cross-border M&As, the study contributes new insights to micro-foundations of OA. First, the micro-foundations view predicts that the drivers of a desired organizational outcome occur at levels lower than the phenomenon itself (Felin et al., 2012; Foss and Pedersen, 2016), but, crucially, are regulated by the organizational context in which behaviour takes place (Coleman, 1990). To the best of our knowledge, our study is the first one specifically to theorize and empirically analyze knowledge sharing among individuals and sharing and use of capabilities between acquirer and acquired firms in the context of OA. Second, we demonstrate the sensitivity of the relationships between micro-foundational conditions and OA to organizational-level contingencies, yielding two new boundary conditions. The interactive effects among knowledge transfer activities, driven by individuals and the degree of corporate entrepreneurship and integration of the merging entities, shed light on new conditions that regulate micro-foundational activities to compose OA as a collective phenomenon. Micro-foundational activities alone are not sufficient in themselves to compose OA. Third, we provide managers with new insights on mechanisms that support initiatives aimed at generating OA as a successful M&A outcome. Embedding corporate entrepreneurship is a double-edged sword, increasing the benefits from using the acquired targets capabilities but diminishing the usefulness of sharing

capabilities with the target, whereas post-merger integration provides a basis for vital knowledge sharing as the bedrock for OA.

The remainder of the article is structured as follows: first, we review the literature on OA and the micro-foundations view to develop our conceptual model and hypotheses; second, we report the methodology for our empirical investigation followed by the results; third, we discuss our findings in light of the literature and generate our contributions. Our article closes with implications and directions for further productive research.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Organizational Ambidexterity

OA represents the degree to which organizations deploy exploitative and exploratory innovation modes (Andriopoulos and Lewis, 2009; Hughes, 2018) and reflects the simultaneous pursuit of both (e.g., Kouropalatis et al., 2012). Exploitative modes are focused on improving current cash flows and indicate conditions in which organizations operate within relatively known, predictable, and secure knowledge boundaries (Raisch and Birkinshaw, 2008; Simsek, 2009). Alternatively, because organizations also find themselves in less known, unpredictable, and more risk-filled environments where firm knowledge is either less well-developed or of little use, an exploratory mode is simultaneously required. An exploratory mode focuses on experimentation and discovery to create future cash flows (Hughes, 2018).

Exploration and exploitation are in tension with each other because their foci, degree of uncertainty, and speed and probability of return vary greatly. Consequently, firms tend to specialize in one or the other, which increases the danger of succumbing to a *competency trap* (too much exploitation, endangering long-term survival) or a *failure trap* (too much exploration,

endangering near-term survival). The long-term prosperity (i.e. pertaining to profitability, growth and success) of the firm requires it to take this tension as a starting point (Simsek, 2009) and organizing for OA in ways that balance exploration and exploitation and archives both activities to a high standard (Simsek et al., 2009).

The Micro-foundational View

Commonly, by *micro-foundations* we mean that the underlying conditions for an organizational or firm-level phenomenon occurs at one level below the focal level of analysis (Felin et al., 2012; Foss and Pedersen, 2016). This is commonly attributed to the individual level (e.g., Barney and Felin, 2013; Eisenhardt et al., 2010), but a strict focus on the individual is neither required nor best by itself. Rather, as set out by Felin et al. (2012) and Foss and Pedersen (2016), a baseline micro-foundation for a phenomenon at level N is at the level N-1, and these may include actors or processes or structures. Micro-foundations need not be reduced to individuals; it is an effort in reduction to locate mechanisms to explain an outcome in terms of other fundamental phenomena (Foss and Pedersen, 2016). It is useful to transcend the organization to consider how actors and/or the context they operate in enable an organizational outcome of interest. In our model, we account for this with knowledge sharing among employees, the use of capabilities or know-how among the acquired and acquiring firms, and the context in which organizational members are directed to behave. Interaction among employees (Abell et al., 2008) matters in the micro-foundations view because behaviour is not a solely rational choice (maximization) but includes a concern about the context within which interactions take place, in line with behavioural frameworks (cf. Foss, 2011).

A micro-foundational view of a collective phenomenon, then, relies on individuals, processes and interactions, and the structures (or context) within which they operate (Felin et al., 2012). That is, macro (firm) phenomena do exert an influence on lower-level phenomena (Coleman, 1990; Foss and Pedersen, 2016; Hodgson, 2012). We depict this as a function of the organizational context, structure, and effects it may have on OA in the context of cross-border M&As.

Micro-foundations, OA, and Cross-border M&As

Knowledge is a key micro-foundational aspect for enabling OA. Without knowledge sharing (Von Krogh et al., 2001), knowledge assets remain resident within individual employees and cannot be readily codified and transferred for the development of new and existing capabilities, innovation, or advantage (Grant, 1996), particularly within the organizational context of M&As (Sarala et al., 2016). Strategic interactions between individuals represent fundamental micro-level mechanisms (Abell et al., 2008), while routines and actions to share, and make use of, knowledge represent the mechanisms of interaction and aggregation in a micro-foundational view of OA (Felin and Foss, 2005). Theoretically, Helfat and Peteraf (2015) assert that proficiency among employees at exchanging and combining ideas and expertise with one another can lead to opportunity identification, new projects to be initiated and better problem-solving. Similarly, Gavetti (2005) suggests that employees' knowledge drives organizational search individually and collectively in ways that support the accumulation of capabilities. We thus infer that knowledge sharing among employees is the micro-foundational basis for OA.

Knowledge exchange can further occur by using the capabilities of the target firm and sharing capabilities between the acquirer and the acquired. For example, Paruchuri and Eisenman

(2012) examine the micro-foundations of research and development (R&D) capabilities through M&As (where ‘research’ represents exploration and ‘development’ represents exploitation), finding that the disruption caused by M&As changes the behaviour of inventors and their networks within the firm in ways that hinder the ability of the acquirer to obtain the R&D capabilities of the target. Extrapolated to the thesis of OA, we theorize that knowledge sharing among employees in the target and acquiring firms, the use of the target’s capabilities, and sharing capabilities with the target in an M&A transaction create the social integration and aggregation necessary for exploitation (as sharing knowledge will refine each other’s activities and produce consistency between both firms) and exploration (as the combination of new and previously unrelated matrices of knowledge should spark experimentation and new discovery), enabling OA to transpire.

Drawing from the micro-foundations view, we argue that the structure and context in which knowledge sharing, and the sharing and use of capabilities take place, conditions the extent to which OA is achieved. In micro-foundations terms, employees are enmeshed in different interactions within an organization (Felin et al., 2012). Their actions are informed by the structures and context of the organization and the extent to which these structures and contexts facilitate or hinder action (Foss and Pedersen, 2016; Hodgson, 2012). Conditions in the organization’s structure and context incentivize, or otherwise adversely impact, employees’ motivations and ability to perform explorative or exploitative behaviours. For example, the ability of organizational structures to mobilize human and intellectual capitals is tied theoretically to individuals’ subsequent combination of exploitative and explorative activities (e.g., Hodgkinson et al., 2014; Hughes, 2018; Kang and Snell, 2009). We therefore put forward

two contextual and structural contingencies: corporate entrepreneurship and post-M&A integration.

Corporate entrepreneurship (CE) (Burgers and Covin, 2016; Kuratko et al., 2015) reflects the attitudes and priorities of senior managers in their organization of the firm's activities. CE involves creating structures within the organization that facilitate autonomy (Burgers and Covin, 2016; Zahra, 1996). Risk-averse senior managers prioritize activities whose outcomes are proximate, certain and immediate (i.e. exploitative-mode innovation activities at best), whereas embracing CE advocates structures that promote taking initiative, acting boldly, and moving quickly. Autonomy becomes embedded across the organization. On the other hand, a firm's ability to manage exploration and exploitation simultaneously includes integrating specializations that reside within and across the firm's boundaries (Kauppila, 2010; Lavie et al., 2010; Paruchuri and Eisenman, 2012). In M&As, the extent of post-M&A integration can alter the extent to which the firm leverages knowledge and capabilities across the target and acquirer. A higher degree of integration changes the ways in which individuals across the target and acquirer work together, with knowledge sharing opportunities more widely available. Less integration means more autonomy, leaving individuals across the acquired and acquiring firms potentially isolated (more so for cross-border M&As). In this circumstance, opportunities to share knowledge are less noticeable.

In sum, organizations undertake M&As to gain access to essential knowledge and capabilities (Hagedoorn and Duysters, 2002; Schneckenberg et al., 2015; Scuotto et al., 2017). But such capabilities are frequently lost or destroyed - with innovation outcomes reduced - as a result (Paruchuri and Eisenman, 2012). We see this as a function of how the M&A is organized in ways that support (or not) a micro-foundational view of OA. Figure 1 presents our conceptual

model of the relationships among knowledge sharing, use of the target's capabilities, and sharing of capabilities with the target; corporate entrepreneurship and integration; and OA.

[Insert Figure 1 here]

HYPOTHESES

Antecedents to Organizational Ambidexterity

The utilization of knowledge is seen as essential for organizational transformation through innovation (Liu, Hodgkinson, and Chuang, 2014). Knowledge creation and learning occur at an individual level, and individuals provide their firm with the knowledge required (Spender, 1994). Therefore, it is not knowledge itself but rather employees' capability to share knowledge with other individuals in the firm that drives sustainable advantages (Grant, 1996). This is noted by Almor et al. (2014) who underline company survival through M&A which accrue ongoing benefits such as sales, knowledge and product bases. Knowledge sharing is defined as the collective ability of acquiring and acquired firms' employees to share and combine knowledge with each other (e.g. Collins and Smith, 2006). As acquiring and acquired firms share existing knowledge with each other, the combined firm can bring their advanced knowledge together and contribute to knowledge depth in each other (e.g., Prabhu et al., 2005). Thus, it is important to underline that as an antecedent to knowledge sharing, knowledge must exploitatively pre-exist in the firm prior to M&A. This point does not of course suggest that knowledge is not created exploratively as a product of the M&A, but it is necessary to appreciate the impact and role of pre-standing knowledge.

Exploitation innovation can be realized when those who in charge of the relevant activities build an understanding of what knowledge is possessed and how it is used in solving existing problems (Tang et al., 2015; Xu, 2015), thereby creating opportunities to expand outwards and further exploit innovations. Simply put, existing products, services, technologies, processes and the like can be improved upon by sharing knowledge (Kamaşak and Bulutlar, 2010). New avenues to exploration innovation meanwhile can be developed by increased knowledge sharing as this knowledge forms a basis for innovating new products, services, technologies, processes and the like (Bierly et al., 2009). Organizational ambidexterity, then, as simultaneous exploitation and exploration in innovation, should similarly be reliant upon knowledge sharing and an increased prevalence of knowledge sharing should create the climate for both forms of innovation to grow in the firm post M&A. Thus:

H1: Knowledge sharing between the acquired and acquiring firm is positively related to organizational ambidexterity of the merged firm.

Capabilities are long seen as means to innovation and ambidexterity. However, the context of M&As, and in particular cross-border M&As, provides a platform for the acquiring and acquired firms to gain access to capabilities that they may otherwise not have or be able to develop in isolation. Both sides in an M&A can gain through increased use and sharing of each other side's capabilities (e.g., managerial capabilities, technical capabilities). For instance, operational efficiency can be increased through the reconfiguration or use of existing capabilities (Capron et al., 1998) and their exploitation in revised competitive strategies. Beyond this, acquiring and acquired firms can complement the recipient firm's weaknesses, perhaps in

technical and commercial capabilities, with the sender firm's relatively strong capabilities in such areas (Capron et al., 1998; c.f., Phene et al., 2012), which improves their firm's market coverage and innovation capabilities (Capron, 1999). This raises the potential for combined firms to explore new avenues and arenas for innovation.

To create capability-based advantages and ensure that exploitation and exploration innovation can occur, it is important for increased use and sharing of capabilities between the target and the acquirer occurs at a high level. If not, then innovation and ambidexterity is likely to be stifled to the very same levels as pre-M&A within the acquiring and acquired firms as neither side is gaining through access to capabilities from each other to be able to improve. Intuitively then, we expect the following:

H2: Increased use of the acquired target's capabilities has a positive effect on organizational ambidexterity.

H3: Capability sharing is positively related to organizational ambidexterity.

The Moderating Role of Corporate Entrepreneurship

In a spirit of entrepreneurship, a close interplay between firm and individual or micro-foundational activities is central to both exploitative and explorative processes of innovation, yet it might involve conflicting situations if the individual's or micro-foundational activities clash with the firm's rational models. In this regard, research on CE shows how firms can stimulate such processes of innovation and entrepreneurship (e.g., Burgelman, 1983; Covin and Miles, 1999; Hornsby et al., 1993; Ireland et al., 2009). For example, Russell (1999) suggests that it is critical to have organizational support systems that offer resources, autonomy, and emotional

support for corporate entrepreneurs. This may be required in the context of M&As, and more so in cross-border M&As, as this context creates a potentially complex matrix as noted earlier in the paper (i.e., due to the confluence of two differing cultures and various levels of the organizations' operations – all situated within an OA environment exhibiting exploitative and explorative dimensions).

Within the CE literature, scholars have empirically demonstrated a linkage between corporate entrepreneurship and the role of managerial support (i.e., a form of micro-foundation) at multiple levels of the organization, as well as the importance of capabilities in effectively engaging CE (Burgers et al., 2009; Hornsby et al., 2009; Kelley et al., 2009). For example, Hornsby et al. (2009) found that the positive relationship between managerial support and the result of entrepreneurial actions was stronger for senior and middle managers than it was for lower level managers, whilst also suggesting that the capabilities to derive benefits for support of CE may vary by managerial level. Additionally, Burgers et al. (2009) employed the theoretical framework of ambidexterity and explorative/exploitative learning to examine how organizations structure their activities for successful corporate venturing and point to the capabilities needed to balance differentiation and integration to achieve the desired outcome. Also, Kelley et al. (2009) highlighted that the capabilities of organizational members from all managerial levels and divisions are required to form and manage networks that facilitate non-routine activities (e.g. innovation-based CE). In fact, these examples of studies on CE cover and contribute to important aspects of CE activities including structural, role of management at multiple levels, and organizational and managerial capabilities (see e.g., Phan et al., 2009), and thus reflect important aspects of micro-foundations of organizational ambidexterity in the context of M&As.

Based on the above discussions on CE, we argue that a greater need to consider and utilize knowledge-based resources (e.g. human capital, social capital and intellectual capital) is not only important for CE (Dess et al., 2003), but can equally foster innovation ambidexterity especially in the context of cross-border M&As. This is particularly true if committed and determined individual (or team of) senior and middle managers imbued with corporate entrepreneurial characteristics can effectively steer structural, managerial support at different levels and capabilities. In such cases, CE will favorably impact knowledge sharing and the use and sharing of capabilities post-M&A for enhanced innovation ambidexterity. Thus we propose:

H4: Corporate entrepreneurship positively moderates the effect of knowledge sharing on organizational ambidexterity.

In support of our argument, prior M&A research avers that the appropriation of knowledge-based assets of target firms' poses a challenge especially in knowledge-intensive M&As (Degbey 2015, 2016), as they may be tacit (Polanyi, 1963), embedded in individual managers, group or networks and "bundled" with other resources (Nonaka and Von Krogh, 2009), and thus emphasizing the primacy of CE to aid their sharing and use for improved OA. Similarly, Akkamanu et al. (2016) proposed an integrative model that emphasizes specific HRM practices and social capital mechanisms concurrently to influence employees' KSAs¹ for improved knowledge sharing in M&As. As CE provides a valuable source of sociocultural and behavioural effects on employees' KSAs, such concurrent configurations of human and social capital micro-foundations are likely to stimulate not only increased knowledge sharing but also increased use and sharing of capabilities from (and with) target firm for enhanced ambidexterity following M&As:

¹ Knowledge, skill and ability

H5: Increased use of the acquired target's capabilities has a positive effect on organizational ambidexterity, and this effect is greater as corporate entrepreneurship increases.

Simply put, the increased role of CE between acquiring and acquired firms in M&As is predicted to favorably moderate knowledge sharing as well as the use and sharing of capabilities from and with target firm to enhance ambidexterity. Consequently, we hypothesize that:

H6: Corporate entrepreneurship positively moderates the effect of capability sharing on organizational ambidexterity.

The Moderating Role of Integration

High levels of structural integration implies the standardization of operational processes, products, services, technologies and the like and to facilitate efficiency in decision-making, information-processing, problem-solving, and knowledge application across the combined firm (Jansen et al., 2006; Olson et al., 2005). Integration, then, appears the most appropriate approach to realize exploitation innovation (Puranam et al., 2006). Low levels of integration though imply that autonomy is being imparted upon the acquired firm involved in the M&A. Exploration innovation, within which a firm focuses its competitive strategy on a search for new ideas and solutions beyond its current knowledge sets and solves non-routine and emerging problems (Olson et al., 2005), requires organizational structuring that encourages flexibility. When competing in, or considering entry to, market or industry environments where customers and

markets' demands are uncertain, there is a greater need for autonomy (Burgelman, 2002; Nakata and Im, 2010), or perhaps less integration structurally. Thus:

H7: Integration positively moderates the effect of knowledge sharing on organizational ambidexterity.

In relation to integration and its effects on innovation, Zahra and Nielsen (2002) find that structural integration is required to benefit from explorative activity in order to provide the necessary structural conditions to integrate these innovations into existing activities. Furthermore, Jansen et al. (2006) examined large multi-unit firms and found no evidence to support a negative effect between elements of high integration (e.g., formalization) and explorative innovation while simultaneously finding support between increased connectedness and both exploration and exploitation in the large multiunit firms examined.

From the micro-foundation perspective then, integration implies increasing control and standardization in internal processes verses accepting lower levels for enhanced flexibility. For the purposes of this work however, we consider the moderating effect of structural integration on organizational ambidexterity. On balance, we expect positive moderation effects from structurally integrating the processes (etc.) of the firms involved in an M&A.

As discussed, knowledge sharing along with increased capability use and sharing between acquiring and acquired firms in M&As are predicted to enhance ambidexterity. Following the works of Jansen et al. (2006, 2009), we expect that higher degrees of structural integration will assist in leveraging knowledge and capabilities for the benefit of ambidexterity in innovation. Integration facilitates closer ties between the firms involved in the M&A and

provides a climate for structural processes and procedures to be in place for the increased sharing and use of knowledge and capabilities across the firms involved. Therefore:

H8: Increased use of the acquired target's capabilities has a positive effect on organizational ambidexterity, and this effect is greater as integration increases.

In so doing we expect organizational ambidexterity to be boosted as a result. Conversely, lower integration (or greater autonomy) between the units or firms reduces the potential for this to occur and sacrifices organizational ambidexterity. Put simply, neither exploitation nor exploration innovation can be fostered to the fullest extent possible as their underpinning knowledge nor capabilities are fully utilized. Consequently:

H9: Integration positively moderates the effect of capability sharing on organizational ambidexterity.

RESEARCH METHOD

Cross-border M&As are a vehicle for exploring and reinforcing existing strengths in a new setting and acquiring new knowledge and capabilities that are not domestically available (Seth et al., 2002). The achievement of OA is a highly salient dilemma in this context. For example, cross-border M&As enable the participants to replicate their competitive advantage in a new setting and exploit it with their partner firm's existing knowledge and capabilities (Seth et al., 2002). In turn, cross-broader M&As can contribute to increases in the productivity of existing resources and economies of scale in manufacturing, R&D, and sales (Bertrand, 2009; Bertrand

and Capron, 2015). Moreover, in a highly turbulent environment where firm survival and growth depend on speed, cross-border M&As emerge as an effective means of searching for external knowledge and capabilities that increase existing knowledge bases and can contribute to future innovation. Countries have their own national innovation system that shapes firm-specific innovation knowledge (Bertrand, 2009). Firms in the same country are likely to share experience and develop similar practices, procedures, and resources (Bertrand, 2009; Björkman et al., 2007), which create redundancy that limit the potential for the sharing and combination of existing knowledge and capabilities (Larsson and Finkelstein, 1999). From this point of view, a firm with reliance on a geographically local search for external knowledge and capabilities, which is the case of domestic M&As, can find them merely substituting for their existing knowledge sets. By contrast, external search beyond a firm's geographical boundary offers the firm an opportunity to tap into new knowledge and capabilities developed in the local market (Björkman et al., 2007; Bresman et al., 2010) and gain new ideas and insights that motivate new learning and innovation (Vaara et al., 2012).

Data Generation

Cross-border M&As completed between UK acquiring firms and non-UK acquired firms between January 2012 and July 2015 and with a 100% full equity stake purchased by the acquiring firms form the core sample. As data collection was undertaken in the latter months of 2015, this time period was chosen to prevent memory and distortion problems of respondents, which could take place when observations include a longer time span (Papadakis and Thanos, 2010); and to increase data reliability and validity, which can be impaired by the elapse of time due to high top management turnover (Capron, 1999; Sudarsanam and Mahate, 2006). The

sample selection criteria for this study were not restricted to industry sectors to enable the generalization of research findings to a wider population.

The Thomson One Banker database was used to determine the population and subsequent sampling frame. This is an M&A specialized database providing a variety of information on bidders and target firms. The initial population consisted of 1,658 cross-border M&A deals completed by 1,022 UK acquiring firms with full equity share during the period between January 2012 and July 2015. To construct the sample for this study, the starting population of 1,022 acquiring firms was screened on the criteria of location, firm status, and data accessibility. First, the population was screened for acquiring firms that relocated to their host country or any other country afterward the M&A. Location was confirmed from corporate websites and annual reports and defined as UK-based if their corporate websites and annual reports specified that they were addressed in the UK. Second, those firms who were not physically situated in the UK were eliminated. Some of the sample firms were registered as “a UK firm” to take advantage of double tax treaties though they were actually situated outside the UK. Physical location was confirmed by their replies to a survey invitation. For example, a firm replied that it was not in the UK but in another country in responding to a pre-notification correspondence. Third, firms who were acquired, ceased to exist, or went bankrupt after their most recent cross-border M&A were removed. Fourth, firms were excluded if no contact details were available or they exhibited a lack of data accessibility. Finally, firms that participated in cross-border M&As for investment purposes or on behalf of customers were excluded. Consulting firms such as investing and law firms purchased other firms without any intention to engage in post-acquisition conduct but merely for investing in them or on behalf of their customers. In this regard, it was inappropriate to include these investing and advisory firms in the sampling frame. This screening procedure

resulted in a workable sample of 593 acquiring firms. The survey instrument was pre-tested with a panel of academic experts in the field to ensure acceptable face and content validity. This led to some revisions in question and measurement item wording for clarity and key definitions were introduced into the instrument.

In implementing the survey the classical four-stage protocol of pre-notification, survey, first reminder survey, and second reminder survey was used. Data collection commenced by sending a pre-notification in June 2015. After a week, a survey link was sent out and two subsequent reminders at two intervals of two weeks afterwards. Therefore, the whole process of data-collection from sending a pre-notification to two survey reminders occurred between June 2015 and December 2015. While data collection started in late June 2015, any further instance of a company that had completed a cross-border M&A by the end of June 2015 (i.e., the start of July 2015) was added. The online survey for this study was sent to the UK-based senior-level managers of the 593 acquiring firms in the sample. The key respondents targeted included Chief Executive Officers, Chief Financial Officer, Chief Operating Officers, and Business Development Directors, who were likely to get engaged in M&A decisions and post-acquisition conduct and could provide accurate impression and perspectives on their M&A outcomes. Contact details were sourced from corporate websites, annual reports, and LEXIS/NEXUS UK.

In total, 143 fully complete responses were obtained after survey administration, representing a 24.1% response rate. 56 respondents were chief executives or in similar senior positions such as CEO, COO or CIO, (22.6%); 57 respondents were directors (11.3%); 8 respondents were vice presidents (5.5%); 9 respondents were senior managers (6.2%); 10 respondents were head of division (6.9%); and 3 respondents were 'others' such as associates (1.3%). In terms of specialist expertise or discipline declared by the respondents, 43 respondents

were in management (30%), 12 respondents in strategy (8.3%), 23 respondents in operations (16%), 10 respondents in finance (6.9%), 7 respondents as M&A specialist (4.8%), 21 respondents in business development (14.6%), 5 respondents in marketing (3.4%), 2 respondents in investment (1.3%), and 20 respondents in 'others' (13.9%) such as portfolio, performance and planning, global editor, technology, and product development. The average length of respondents' firm tenure was 10.24 years. On average, the respondent firms had 5,692 employees; 77 firms (53.8%) were publicly traded while 62 firms (43.4%) were privately held.

Non-response bias is initially examined by comparing early and late respondents. Statistical comparisons between groups reveal no significant differences. Then, a randomly selected a group of 20 non-respondents were assembled to compare against a random selection of 20 respondents along objective data relating to sales, net income, and number of employees. An ANOVA test revealed no significant differences between the respondents and non-respondents on these criteria (sales: $F = .07, p = .80$; net income: $F = 1.55, p = .22$; number of employees: $F = .34, p = .57$). It was concluded that non-response bias is unlikely in our dataset.

Study Measures

The survey relied on pre-existing measurement scales (7-point) to capture data on the focal constructs. Knowledge sharing was assessed by relying on items sourced from the work of Collins and Smith (2006). Use and sharing of capabilities from/to the target was captured by items sourced from the work of Capron et al. (1998). Corporate entrepreneurship measures were adapted from Miller (1989) and Hughes et al. (2007).

Organizational ambidexterity was captured by items adapted from the exploration and exploitation innovation scales of Jansen et al. (2006). However, to orient the items to the context

of M&As, we added an introductory sentence that asked the respondent to explicitly consider the items from the point of view of their firm and the target firm of their most recent merger or acquisition: “Thinking about your firm and the target firm of your most recent merger (or acquisition) now, how strongly do you agree or disagree with each of the following statements?” Measure items for integration were adapted and sourced from Datta and Grant (1990) and Zaheer et al. (2013).

A number of pertinent control variables were included in the model as relevant variables that control for possible firm, industry, and time effects that could affect the success of the cross-border M&A and the degree of ambidexterity (as the dependent variable). To this end, nine control variables were included in the analysis. The *type of M&A* was accounted for by a dummy variable (1 = Merger; 2 = Acquisition); *acquiring firm size* and *firm age* were accounted for by determining the number of employees and number of years of business operation respectively; the *time elapsed since completion of the focal M&A deal* was controlled for through determining the time difference (in years) from the date of the completion of the focal M&A deal with the time of data collection (deals completed within a year of data collection were given a score of 1 and each year of time difference incremented the score by a further 1). *Years of M&A experience* and the *number of previous M&A deals* were captured in order to control for experience effects. Industry effects were considered through capturing data on the *years of target market experience* (were the cross-border M&A deals into entirely new markets for the firm or to ones in which they were very familiar with in terms of years of experience) and *industry relatedness*. Industry relatedness is a dummy variable capturing the degree of difference in SIC codes between the acquiring and acquired firms in the M&A deal (0 = identical SIC codes; 1 = two-digit differences in SIC codes; 2 = four-digit differences in SIC codes). Finally, *relative firm sizes* were controlled

for by comparing the relative proportion of annual sales of the target firm of the cross-border M&A with that of the acquirer.

For the purposes of confirming factor structures and determining the robustness of the constructs, all items were subjected to principal components analysis (with varimax rotation) in IBM SPSS 25 and then confirmatory factor analysis (CFA) in LISREL 8.80 with maximum likelihood estimation. Acceptable model fit is demonstrated: χ^2 (df) = 878.55 (413); RMSEA = .08; CFI = .92; IFI = .92; Standardized RMR = .09. Measurement item properties are presented in Table 1 and construct robustness and descriptive statistics are presented in Table 2. All factor loadings are within acceptable ranges with all t-values being significant at $p \leq .01$ (Table 1). All constructs demonstrate good reliability and above minimum thresholds. Average variance extracted values are fine though the .44 for corporate entrepreneurship is below the preferred .50 threshold. Notwithstanding that however, the value is deemed acceptable as the square root of all AVE values exceed all correlations and so demonstrate discriminant validity (e.g., Kyriakopoulos et al., 2016).

Common Method Bias

A priori safeguards against common method bias were implemented following the suggestions of Podsakoff et al. (2003) and Spector and Brannick (1995): different response formats were used across questions; confidentiality and anonymity assurances given to respondents; emphasis placed on there being no 'right' or 'wrong' answers; measurement scales were placed in random order; non-idealized responses and wording neutrality were adopted; survey length was reduced; and detailed instructions for completing the survey were provided.

Prior to hypothesis testing, we used a Harman one-factor test in which all items are specified in a single factor analysis (principal components analysis with varimax rotation) (Podsakoff et al., 2003). The results demonstrate unacceptable fit and imply that common method concerns are not present as six factors are extracted with eigenvalues greater than 1. Together, all of the extracted factors explain 72.67% of variance and the largest factor identified only accounts for 18.81% of total variance. When the analysis is specified to look for only one single factor (and not extract any number of factors with an eigenvalue greater than 1), this single factor accounts for only 33.27% of variance, with all measure items in general demonstrating poor factor loading onto this single construct (loading range: 0.33 to 0.78). Second, and for robustness, this method was replicated in LISREL 8.8 using CFA. If common method bias is present, then a single factor will fit the data. Once again, this assertion is rejected: $\chi^2 = 2787.79$; $df = 434$; $\chi^2/df = 6.42$; $RMSEA = .20$; $CFI = 0.70$; $IFI = .70$; $NNFI = .68$; $GFI = .44$; $Standardized\ RMR = 0.15$. The χ^2/df ratio exceeds the recommended ≤ 2.00 cut-off suggested by Bollen (1989), $RMSEA$ exceeds the .08 level of acceptability as suggested by Hu and Bentler (1999), and the fit indices are far below the accepted 0.90 threshold. The model fit statistics along with the principal components analysis results imply a lack of common method bias in the data.

Subsequent to hypotheses testing, we identified a suitable marker variable and applied a partial correlation procedure (Lindell and Whitney, 2001; Podsakoff et al., 2003). ‘The number of years the firm had been competing in the host market’ was identified as a suitable marker variable that is theoretically unrelated and uncorrelated to any other variable measured (c.f., Hughes et al., 2018; Hodgkinson et al., 2016). Non-significant correlations ($p > .10$) were found between this variable and all other study variables (correlation value range: -.08 to .10).

Following this procedure, the correlations of the marker variable are partialled out of the correlations of the study variables. In using this adjustment, it is possible to examine whether the path coefficients and relationships differ in any way between the original results and the adjusted results. If significant changes occur, then the presence of common method bias would seem likely. Examining the original results (Table 3) and the results obtained after using the partial correlation procedure (Appendix 1) reveal no differences of note: no hypothesized paths lose statistical significance, nor change direction, nor are there any large deviations in regression coefficients or *t*-values, and all moderation conclusions remain the same. We accept that common method bias cannot be entirely excluded (Conway and Lance, 2010). However, the safeguards taken against common method bias and the results of the post-hoc tests adopted suggest it is highly unlikely that common method bias explains the original results found (Hughes et al., 2018; Hodgkinson et al., 2016). Accordingly, the original hypotheses testing results are presented henceforth.

[Insert Tables 1 and 2 here]

RESULTS

Hypotheses were tested through ordinary least squares regression in IBM SPSS 25. Careful consideration was given to the approach to calculate ambidexterity. For instance, there is the classical difference score (balance) approach (Cao et al., 2009) whereby ambidexterity is calculated through the absolute difference score of ‘explore – exploit’, and then there is the combined score [multiplicative] method of ‘explore * exploit’ (Lubatkin et al., 2006). These approaches are not without criticism but generally are well adopted in the literature (see Hughes,

2018, for a thorough discussion of this issue). Following guidance by Edwards (1994) and Lubatkin et al. (2006), we adopt the latter, multiplicative, approach to calculating ambidexterity. All results are presented in Table 3. For clarity and following established procedures, interaction terms are created from the mean-centered products of each interacting variable so as to reduce potential multicollinearity problems.

[Insert Table 3 here]

Hypothesis 1 proposed that knowledge sharing would positively impact upon OA. This is supported ($t = 1.75, p \leq .05$). Hypothesis 2 supposes a positive effect from using the acquired target's capabilities on OA but this is refuted in the results ($t = -1.76, p \leq .05$). Hypothesis 3 relates to the direct positive effects on OA of sharing capabilities with the target company after M&A. This is supported ($t = 3.75, p \leq .01$).

We proposed that corporate entrepreneurship would have beneficial moderating effects on the previously hypothesized paths. Corporate entrepreneurship does not moderate the effect of knowledge sharing on OA (H4) ($t = .35, n.s$). Simply put, knowledge sharing is beneficial for ambidexterity regardless of the level of entrepreneurship. Reflecting on H5, however, reveals that use of the target's capabilities has a negative effect on OA under conditions of high corporate entrepreneurship ($t = -1.88, p \leq .05$). Thus, high corporate entrepreneurship reinforces the negative effects found in H2. Finally, the positive moderating effect of corporate entrepreneurship on the relationship between sharing capabilities and OA (H6) ($t = 1.86, p \leq .05$) is confirmed.

Integration was assumed in hypotheses H7, H8, and H9 to have a positive moderating influence on OA. This is borne out in the results for H7 whereby a positive moderating effect is found for integration on the relationship between knowledge sharing and OA ($t = 3.33, p \leq .01$). Hypotheses H8 and H9 are not supported and the degree of integration has no significant bearing here. All significant moderating effects are shown graphically as simple slopes in Figures 2 through 4.

[Insert Figures 2, 3 and 4 here]

DISCUSSION

We sought to rectify two significant limitations in the existing OA literature. First, the methods, practices, and processes that an organization uses to attain OA have escaped significant attention (Hughes, 2018; Koryak et al., 2018; Simsek, 2009), leaving managers with significant implementation challenges (Nosella et al., 2012) especially in the context of M&As (Stettner and Lavie, 2014). We attribute this failure to ignorance of the micro-foundational aspects of OA. Second, a root cause of the significant implementation challenges facing managers is an oversimplification of OA by scholars (Birkinshaw and Gupta, 2013; Hughes, 2018; O'Reilly and Tushman, 2013). We attribute this problem to a failure to reconcile two competing theoretical assertions: the Marchian (e.g., March, 1991; Jensen et al., 2006; Tushman and O'Reilly, 1996) view that exploration and exploitation present irreconcilable differences solved by complete structural separation versus the contextual view that the tension is a mere starting point in which 'dexterity' can be achieved by reconciling exploration and exploitation with contextual levers in its operating environment (e.g., Gibson and Birkinshaw, 2004; Hughes, 2018; McCarthy and

Gordon, 2011; Simsek, 2009). In our work, post-merger integration provides a structural solution while CE provides a contextual solution, and we find that both set boundary conditions for how micro-foundational aspects of knowledge sharing, use of the target's capabilities, and capability sharing with the target steer the behaviour of employees help give rise to OA. We offer two main contributions from these findings: (1) we provide a framework that reveals micro-foundations of OA in the context of M&As in which an outcome typically riddled with tensions can be facilitated by drivers at levels lower than the phenomenon itself; and, (2) we demonstrate the sensitivity of those micro-foundations to structural and contextual organizational contingencies. We now move to discuss these contributions to theory.

Theoretical Implications

First, our findings form a framework demonstrating how micro-foundations can assist in both resolving the tensions between exploration and exploitation (by improving OA) and exacerbating those tensions (by reducing OA). Exploration and exploitation associate with diametrically opposed structures, processes, strategies, and behaviours (Hughes et al., 2007; Koryak et al., 2018; March, 1991). In cases of cross-border M&A, we provide insight that knowledge sharing between the firm and the target and sharing capabilities with the target will enhance OA. To the best of our knowledge, our study is the first one specifically to theorize and empirically analyze knowledge sharing among individuals and sharing and use of capabilities between acquirer and acquired firms in relation to OA. We conclude that it is acts of knowledge sharing and sharing capabilities with the target that sets the micro-foundation for OA. Using the target's capabilities has a negative effect on OA. This implies a lack of fit or synergy in the M&A or that the newly-

formed combined company is lacking in the necessary insight to understand how to best make use of the target's capabilities.

These findings agree with the tenets of micro-foundations research agenda that processes for vital organizational outcomes occur at levels beneath the phenomenon itself (Felin et al., 2012; Foss and Pedersen, 2016) and supports the view that an outcome riddled with tensions (such as OA) can be resolved by treating the micro-foundations (Miron-Spektor et al., 2018). However, we also found, unexpectedly, that micro-foundational efforts to use capabilities from the target rise, as opposed to reduce, the tensions between exploration and exploitation and negatively affects OA. We conclude that using the target firm's capabilities are not necessarily a catalyst for successful negotiation of OA. Contrary to much of the literature on micro-foundations then, we reveal an activity that exacerbates and not reduce this crucial tension. Recently, Koryak et al. (2018) suggested that OA is a problem of attention steering. For example, knowledge sharing facilitates a more fluent movement across exploitative and explorative OA boundaries (Prieto and Pérez Santana, 2012) in the new combined firm. However, we suggest that the mere use of the target's capabilities orients managers' attention to a one-direction target of capabilities from the target to the acquiring firm. We believe this sets a perverse micro-foundation mechanism which favours exploitation only, and not exploration. The drive to harness synergies and cost savings from M&As coupled with the complexity of cross-border M&As (Ahammad et al., 2016) heightens that danger: one specialism (typically exploitation) may emerge causing its systems and routines to reproduce in a way that smother a capability from forming now and in the future for the missing specialism (typically exploration) (March, 1991). We conclude that the use of the target's capabilities is one such mechanism,

questioning and extending the literature on the micro-foundations of OA and the micro-foundations research agenda in turn.

Second, we demonstrate the sensitivity of the relationships between micro-foundational conditions and OA to organizational level contingencies. The micro-foundations research agenda is interesting because it seeks to reduce proximate causes of a phenomenon (the explanations of an outcome) to levels of analysis lower than that of the phenomenon itself (Felin et al., 2012; Foss and Pedersen, 2016). Many micro-foundational papers have emphasized individuals for this reason (Felin and Hesterly, 2007) although it does not have necessarily to involve a reduction to an individual person (Foss and Pedersen, 2016). Moreover, it is important to acknowledge that the micro-foundations view does not deny that higher-level phenomena may exert a causal influence on lower-level phenomena (Coleman, 1990; Foss and Pedersen, 2016). We find that CE and post-M&A integration can moderate (differently) the effects of knowledge sharing, use of the target's capabilities and sharing of capabilities with the target on OA. CE worsens the negative effect of use the target's capabilities on OA but augments the effect of sharing capabilities with the target on OA. Integration only augments the effects of knowledge sharing on OA. Nevertheless, integration does not have deleterious effects in this study and should be taken as a means to support OA creation.

Extending this contribution, we have demonstrated that knowledge *per se* is not mutually shared and generated by the presence of CE. Alternatively, capabilities (Abell et al., 2008) were nevertheless shown to be shared across the two organizations. CE can assist the newly combined entity in addressing challenges in the OA environment. This affirms and confirms the postulations of H6. While CE has been demonstrated not to play a significant role in knowledge sharing, it should nevertheless be noted that knowledge sharing still has a potent role to play

within organizational ambidexterity (following H1 and H3). Further, while CE is not significant in relation to knowledge sharing, we provide some insights into how the presence and operation of CE behaviour occurs in M&A settings. CE can potentially play a role in engendering innovative behaviours thus allowing both self-aggregated groups of individuals to move between exploitative and explorative states. Importantly, CE may also work to shape the structural aspects of mergers thus facilitating value that can be derived and exchanged with the acquired company. This might engender a degree of promotion of integration while respecting unit autonomy. In the light of the well-cited failure rate of many M&As (Gomes et al., 2013; Weber and Tarba, 2010), the development of a quantitatively verified, data-informed approach which combines structural and contextual solutions to OA is a valuable device for managers responsible for assuring the success of the post-merger business. By integrating a micro-foundational appreciation and understanding into strategic planning, actions and reactions, managers and employees are likely to build stronger contextual ambidextrous fabric in the organization, leading to potentially improved organizational outcomes.

Managerial Implications

Managers should work to create spaces and processes where the micro-foundations of OA may occur. These should comprise, for example, of a greater recognition of a role for micro-foundational self-aggregating work projects and interest groups. These would engender knowledge sharing and create stronger units which can, in turn, develop capabilities to chart the trajectory of OA. Equally, managers should clearly recognize that extant knowledge and capabilities reside in respective merging organizations prior to the merger and that it is an integral part of the role of the merger to ensure that these can be optimized through OA

processes. This is a responsibility of the managerial tiers of the combined organization. Integration is vital to support the knowledge sharing that forms the bedrock of the micro-foundations of OA, but corporate entrepreneurship has a trade-off when managers place emphasis on using the target's firm's capabilities, deepening its negative effect on OA. Relying on the target firm's capabilities is not appropriate strategy for OA, instead harming attempts at OA because the focus steers towards exploitative refinement, use and efficiency. Capability sharing is a better practice to support the micro-foundations of OA, and is further enhanced when corporate entrepreneurship is embedded in the organization. Managers are advised to focus the corporate entrepreneurial efforts of the firm on acts of sharing capabilities with the target.

Based on our findings, a strong focus on contextual solutions to OA is imperative in the post-merger phase. To nurture the context for OA, managers need, for instance, to generate projects and initiatives which are likely to harmonize, synergize and integrate the cultures, values and beliefs of the employees of the two fusing firms. Doing so enhances knowledge sharing needed for the emergence of OA. In addition, while a pre-disposition towards CE behaviours by the acquiring firm might *prima facie* be seen as operating as a positive catalyst for undertaking such transitions, this is not strictly the case. CE does not augment the context for knowledge sharing as a pathway to OA. Integration does. But, CE does augment the power of capability sharing as a foundation for OA, in part because sharing capabilities enables combining previously unrelated groups of capabilities in new ways to spark innovation efforts that are both exploratory and exploitative. In so doing, increased generation of new knowledge and knowledge sharing (even if relatively localized) are almost certainly by-products of this interaction.

Limitations and Future Research Considerations

Some limitations bear on our findings. This study targeted recent cross-border M&As that were completed specifically between January 2012 and July 2015. However, according to Bresman et al. (2010), it may take five years to bring about stable advantages to both acquiring and acquired firms after M&A completion. During the early stage of M&As, transition might still be in progress such that the M&A might not produce sufficient outcomes for both acquiring and acquired firms in our data collection timeframe. Therefore, future research could expand the time span and incorporate samples of firms that have stabilized their post-acquisition processes to improve the generalization of our research findings.

Associated with the assumption that an acquiring and an acquired firm have a shared perspective on the amount and kind of knowledge and capability shared by each other (Capron et al., 1998), this study argues that an acquiring firm can accurately capture sharing activities with an acquired firm. Moreover, based on the assumption that an acquiring firm attends to acquired employees' emotions and takes into consideration their reaction to the M&A (Larsson and Finkelstein, 1999; Reus, 2012), this study assumes that they can accurately capture an acquired firm's willingness and capacities to share knowledge and capabilities. However, human assets cannot be controlled like tangible resources such as equipment and technologies (Kiessling et al., 2012). Without further evidence on knowledge sharing and capability sharing from the perspective of acquired employees, further extrapolation of our findings are constrained to the acquiring firm. This study would have benefited from further data from multiple respondents involved in the cross-border M&A deals. Taken together, future research has potential to provide additional insights on the micro-foundations of exploitation and exploration innovation, taking the viewpoints of not only an acquiring firm but also an acquired firm and their respective employees.

As we observe knowledge sharing to be a bedrock for OA, future research should consider alternative inter-organizational routes to new knowledge in which knowledge sharing is key, for example, joint ventures. Whether or not a joint venture can substitute for greater control over the context for OA is unclear. But as a key inter-organizational strategy, joint ventures require investigation in the burgeoning landscape of inter-organizational solutions to the OA puzzle.

Finally, microfoundational effects on OA may differ between firms that are more and less innovative. In diverting resources into M&A activity, firms may spend less in terms of R&D expenditure (and so typically perceived to be less innovative), but could gain in terms of innovativeness through OA (through explorative and exploitative innovation) and subsequent knowledge and capability sharing with acquired firms. Scholars and practitioners could better understand OA and its microfoundations in an M&A context, then, by seeing to examine if results differ between innovative (or R&D intense) and non-innovative (or less R&D intense) firms.

CONCLUSION

This study contributes to the micro-foundations of OA. By revealing the contingent value of employees' knowledge sharing activity on OA, we show that its contribution is regulated by integration as a structural contingency directing individual behaviour. The sharing and use of capabilities by individuals within the merging/acquiring firms also matter as micro-foundational factors, but their contribution is regulated by corporate entrepreneurship as a behavioural context for micro-foundations. In turn, the micro-foundations of OA rely on appreciating the integration between factors at multiple levels. Whilst light is shed on new conditions at play in this dynamic,

there is nevertheless an ongoing call for further theoretical and empirical scrutiny of the micro-foundations of OA.

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Table 1: Measurement item properties

Construct	Measurement Item	Standardised Factor Loading	t-value
Knowledge Sharing^a	Employees see benefits from exchanging and combining ideas with one another.	.84	12.11
	Employees believe that by exchanging and combining ideas they can move new projects or initiatives forward more quickly than by working alone.	.85	12.52
	Employees are proficient at combining and exchanging ideas to solve problems or create opportunities.	.82	11.83
	Employees do a good job of sharing their individual ideas.	.83	12.01
	Employees are capable of sharing their expertise to bring new projects or initiatives to fruition.	.86	12.66
	Employees are willing to exchange and combine ideas with their co-workers.	.80	11.36
Use of Target's Capabilities^b	Use of the target firm's innovation capabilities	.79	10.23
	Use of the target firm's know-how in processes	.90	12.00
	Use of the target firm's managerial capabilities (reporting, planning, tools, financial expertise)	.59	7.24
Share Capabilities with Target^c	Transfer of innovation capabilities to the target firm	.94	13.28
	Transfer of know-how to the target firm	.84	11.30
	Transfer of managerial capabilities to the target firm (reporting, planning tools, financial expertise)	.48	5.81
Corporate Entrepreneurship^a	Our firm excels at identifying opportunities.	.76	10.14
	Our firm always tries to take the initiative in every situation (e.g. against competitors, in projects and when working with others).	.80	10.96
	Our firm initiates actions to which other firms respond.	.73	9.50
	Our firm has a strong proclivity for high risk projects (with chances of very high return).	.50	5.99
	Our firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.	.72	9.36
	Our firm is often the first to market with new products and services.	.53	6.36
Exploration Innovation^a	Our firm actively introduces innovation in the firm.	.52	6.29
	We invent new products and services.	.77	10.32
	We experiment with new products and services in our market.	.93	13.40
Exploitative Innovation^a	We commercialize products and services that are completely new to the firm.	.73	9.65
	We frequently refine existing products and services.	.79	11.16
	We regularly implement small adaptations to existing products and services.	.95	14.79
	We introduce improvements to existing products and services for our market.	.93	14.48
Integration^d	We increase economies of scale in existing markets.	.54	6.83
	Market decisions	.77	10.48

Operating Decisions	.89	13.07
Human Resource Management	.77	10.59
R&D Activities	.83	11.73
Strategy Formulation	.65	8.34

^a All items anchored by 7-point agreement scales (1 = “Strongly disagree” to 7 = “Strongly agree”).

^b All items anchored by 7-point scales (1 = “Very little use” to 7 = “Significant use”).

^c All items anchored by 7-point scales (1 = “Very little transfer” to 7 = “Significant transfer”).

^d All items anchored by 7-point scales (1 = “No integration” to 7 = “Full integration”).

Table 2: Construct robustness and descriptive statistics

	α	CR	AVE	X1	X2	X3	X4	X5	X6	X7
X1 Knowledge Sharing	.93	.93	.70	.84 ^a						
X2 Use of Target's Capabilities	.79	.81	.60	.37**	.77					
X3 Share Capabilities with Target	.77	.81	.61	.39**	.30**	.78				
X4 Corporate Entrepreneurship	.83	.84	.44	.36**	.10	.38**	.66			
X5 Exploration Innovation	.85	.86	.67	.17*	.06	.38**	.40**	.82		
X6 Exploitative Innovation	.88	.89	.67	.32**	-.07	.30**	.46**	.36**	.82	
X7 Integration	.89	.89	.62	.51**	.33**	.43**	.24**	.14	.24**	.78
Mean				5.05	4.27	4.67	4.62	4.51	5.51	5.12
Standard Deviation				1.08	1.59	1.41	.93	1.39	1.05	1.53

CR Construct Reliability

AVE Average Variance Extracted

^a Numbers on the diagonals are square root of AVE** $p \leq .01$, * $p \leq .05$.

Table 3: OLS regression results

	Dependent Variable: Organizational Ambidexterity							
	Regression Model 1		Regression Model 2		Regression Model 3		Regression Model 4	
	β^1	<i>t</i> -value	β^1	<i>t</i> -value	β^1	<i>t</i> -value	β^1	<i>t</i> -value
Control Variables								
M&A Type	-.20	-2.12*	-.19	-2.25*	-.16	-2.02*	-.16	-2.01*
Acquiring Firm Size	-.10	-1.10	-.07	-.80	-.07	-.87	-.07	-.92
Acquiring Firm Age	.03	.31	.05	.54	.10	1.08	.11	1.22
Time Since Deal Completion	-.19	-2.06*	-.19	-2.12*	-.13	-1.51	-.17	-2.02*
Years of M&A Experience	-.08	-.66	-.06	-.49	-.02	-.18	.03	.23
Industry Relatedness	.04	.45	.02	.24	.01	.11	.04	.57
Number of Previous M&A	-.06	-.49	-.06	-.58	-.06	-.56	-.08	-.80
Years of Target Market Experience	-.05	-.49	-.08	-.94	-.07	-.86	-.05	-.66
Relative Firm Sizes	-.15	-1.56	-.15	-1.73*	-.09	-1.07	-.04	-.43
Direct Effects								
Knowledge Sharing			.10	1.09	.04	.42	.18	1.75*
Use of Target's Capabilities			-.13	-1.41	-.10	-1.13	-.16	-1.76*
Share Capabilities with Target			.42	4.70**	.29	3.05**	.35	3.75**
Interaction Variable (Multiplicative)								
Corporate Entrepreneurship					.35	3.86**	.30	3.32**
Integration					-.02	-.25	.04	.37
Interaction Effects (Corporate Entrepreneurship)								
× Knowledge Sharing							.04	.35
× Use of Target's Capabilities							-.21	-1.88*
× Share Capabilities with Target							.18	1.86*
Interaction Effects (Integration)								
× Knowledge Sharing							.42	3.33**
× Use of Target's Capabilities							-.03	-.27
× Share Capabilities with Target							-.12	-1.17
Model F-Value	1.31		3.78**		4.73**		4.45**	
<i>R</i> ²	.09		.28		.36		.45	

¹ Standardized regression coefficient.

Significance levels (one-tailed as hypotheses are directional):

** Significant at 0.01 level (critical *t*-value = 2.326).

* Significant at 0.05 level (critical *t*-value = 1.645).

Appendix 1: Testing for common method bias: Regression results after partial correlation procedure with the marker variable

	Dependent Variable: Organizational Ambidexterity							
	Regression Model 1		Regression Model 2		Regression Model 3		Regression Model 4	
	β^1	<i>t</i> -value	β^1	<i>t</i> -value	β^1	<i>t</i> -value	β^1	<i>t</i> -value
Control Variables								
M&A Type	-.20	-2.11*	-.19	-2.25*	-.16	-2.02*	-.16	-2.06*
Acquiring Firm Size	-.10	-1.12	-.07	-.83	-.07	-.89	-.08	-1.01
Acquiring Firm Age	.03	.32	.05	.56	.10	1.08	.11	1.25
Time Since Deal Completion	-.19	-2.05*	-.19	-2.13*	-.13	-1.53	-.18	-2.05*
Years of M&A Experience	-.08	-.63	-.05	-.44	-.02	-.16	.03	.24
Industry Relatedness	.04	.44	.02	.23	.01	.11	.05	.61
Number of Previous M&A	-.06	-.50	-.06	-.59	-.06	-.56	-.08	-.82
Years of Target Market Experience	.02	.26	.00	.04	-.02	-.29	.01	.09
Relative Firm Sizes	-.15	-1.53	-.15	-1.71*	-.09	-1.06	-.04	-.49
Direct Effects								
Knowledge Sharing			.10	1.03	.04	.41	.18	1.69*
Use of Target's Capabilities			-.12	-1.33	-.09	-1.09	-.16	-1.77*
Share Capabilities with Target			.42	4.75**	.30	3.09**	.37	3.88**
Interaction Variable (Multiplicative)								
Corporate Entrepreneurship Integration					.34	3.80**	.29	3.24**
					-.03	-.31	.02	.18
Interaction Effects (Corporate Entrepreneurship)								
× Knowledge Sharing							.04	.36
× Use of Target's Capabilities							-.21	-1.94*
× Share Capabilities with Target							.20	2.11*
Interaction Effects (Integration)								
× Knowledge Sharing							.43	3.44**
× Use of Target's Capabilities							-.14	-1.38
× Share Capabilities with Target							-.04	-.40
Model F-Value	1.25		3.76**		4.65**		4.49**	
<i>R</i> ²	.08		.28		.36		.45	

¹ Standardized regression coefficient.

Significance levels (one-tailed as hypotheses are directional):

** Significant at 0.01 level (critical *t*-value = 2.326).

* Significant at 0.05 level (critical *t*-value = 1.645).

Figure 1: Conceptual model of ambidexterity in the context of cross-border M&As

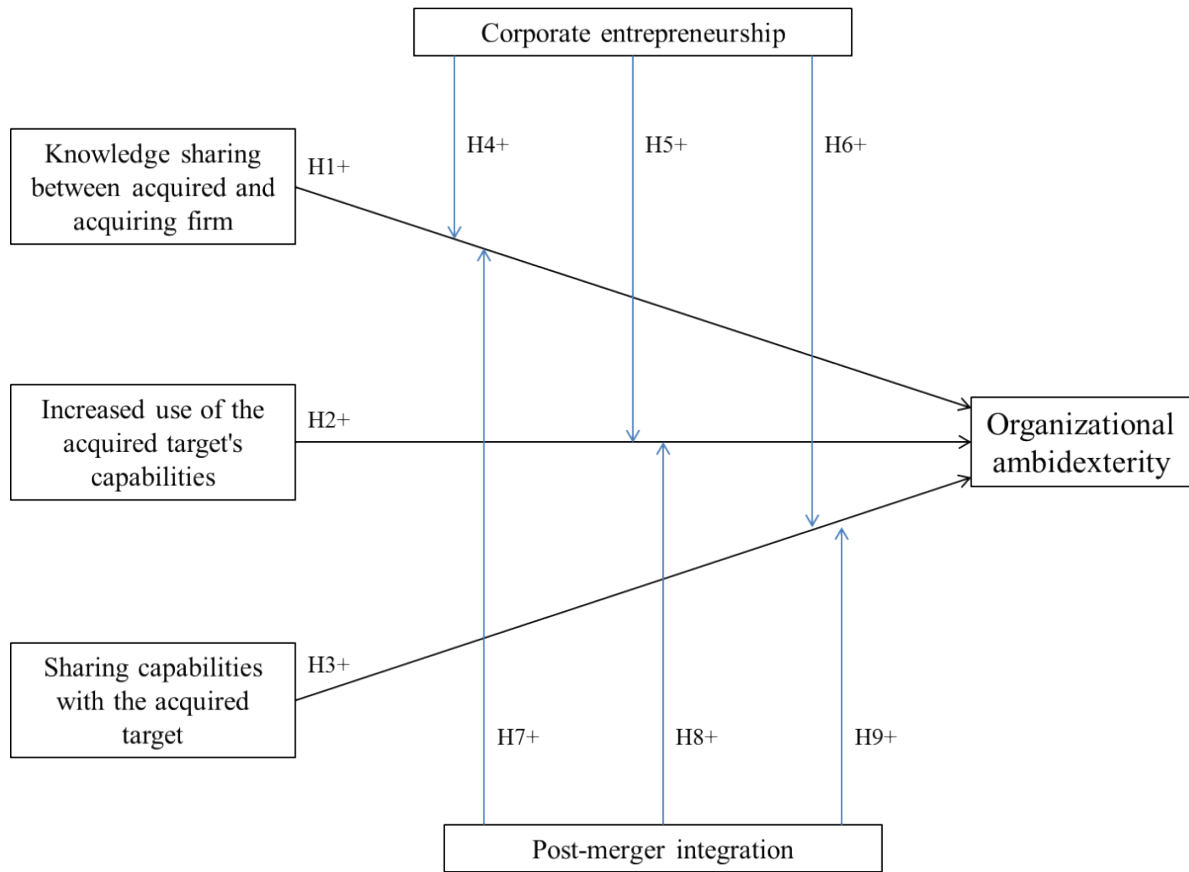


Figure 2: Moderating effect of corporate entrepreneurship on use of acquired target's capabilities

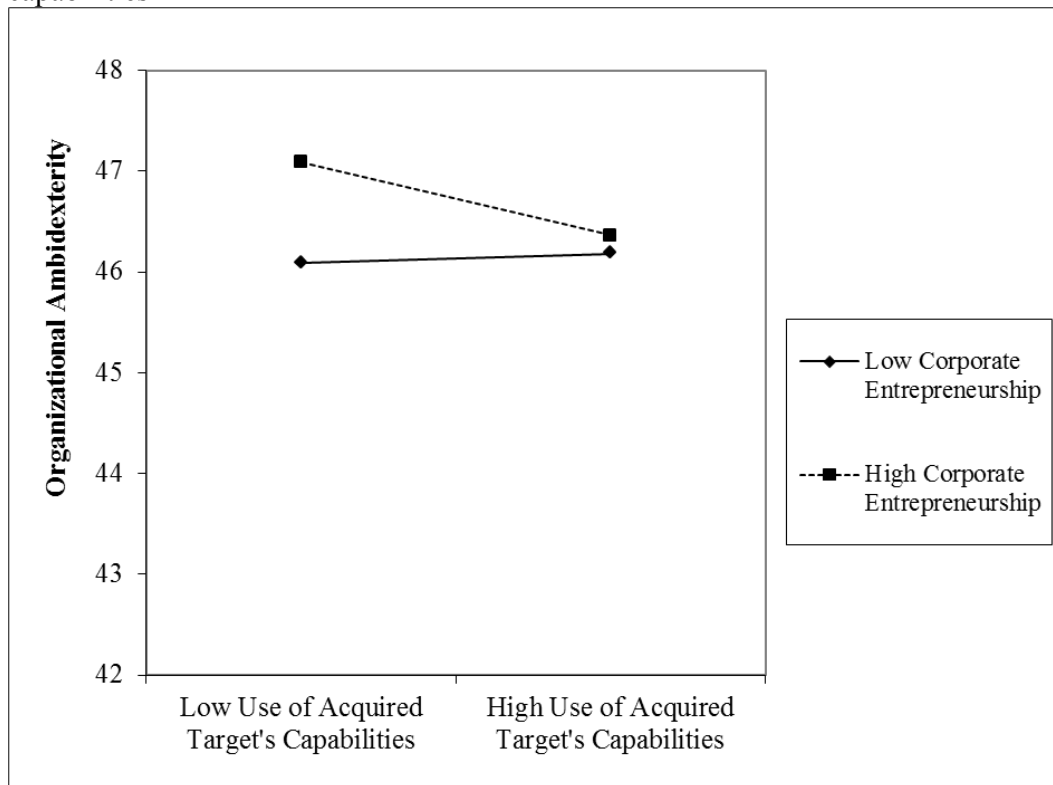


Figure 3: Moderating effect of corporate entrepreneurship on share capabilities with target

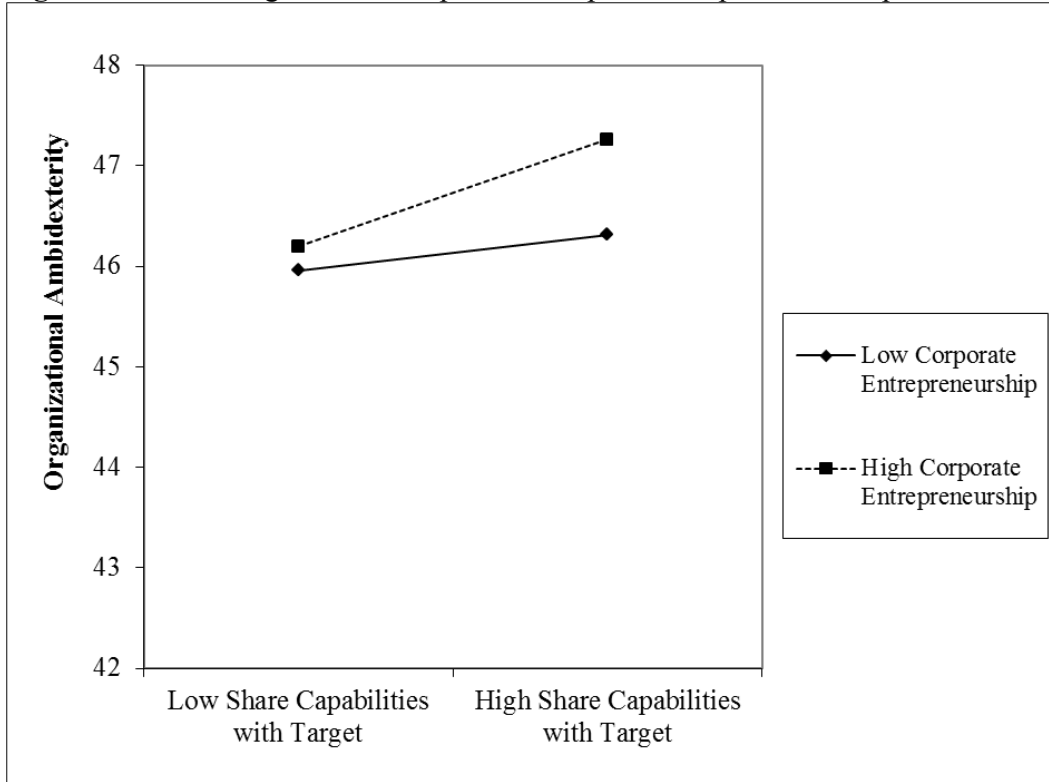
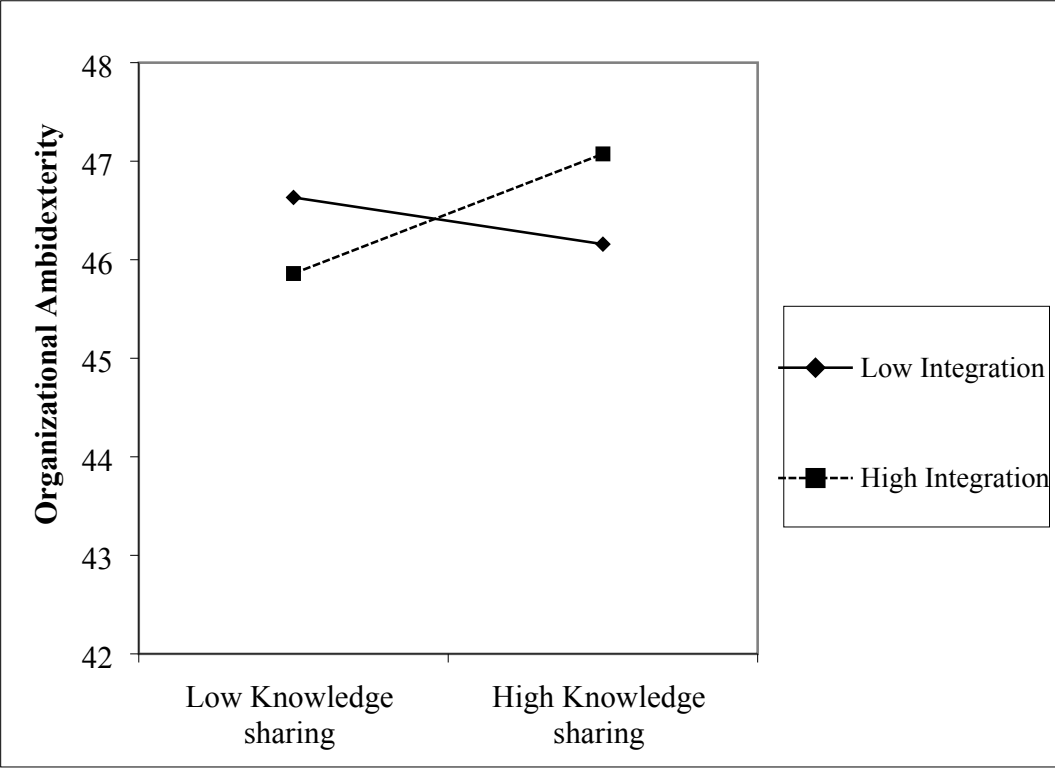


Figure 4: Moderating effect of integration on knowledge sharing



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