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# Enhancing Entrepreneurial Orientation in Dynamic Environments: The Interplay between Top Management Team Advice-Seeking and Absorptive Capacity

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In this study we develop and test a model of how top management teams (TMT) can enhance entrepreneurial orientation (EO) in dynamic environments. From an upper echelons perspective, we argue that TMT external advice-seeking and TMT absorptive capacity interactively impact the ability of top managers to enhance EO when environments are dynamic. Our findings suggest that given the uncertainties and complexities arising in dynamic environments, TMT external advice seeking alone does not aid TMTs in devising entrepreneurial strategies. It is only when TMTs combine external advice seeking with absorptive capacity to make sense of the formulated judgments of dissimilar others that they achieve higher EO. We discuss implications for theory and practice.

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## Introduction

Entrepreneurial orientation (EO) entails the extent to which an organization's top managers emphasize risk-taking, proactivity, and innovativeness in firm strategy (Covin et al., 2006; Lyon et al., 2000; Miller, 1983). EO is an important underpinning of the extent to which entrepreneurial behavior in the firm is encouraged, undertaken, and rewarded (Lumpkin and Dess, 1996), and evidence suggests that more entrepreneurially oriented firms tend to perform better, especially in dynamic environments (Rosenbusch et al., 2013; Wiklund and Shepherd, 2005). Considering these performance benefits and in line with an emerging emphasis on drivers of EO in literature, Ruiz-Ortega et al. (2013) recently explored whether firms operating in dynamic environments are indeed more entrepreneurially oriented. Although the expected benefits of EO in dynamic environments are well documented, and EO is instrumental for capturing emerging opportunities, top managers may struggle to foster EO due to the increased uncertainty inherent to dynamic environments. Uncertainty may instead trigger conservative responses through reliance on familiar routines (Muurlink et al., 2012) and attempts to improve efficiency (Chattopadhyay et al., 2001). Thus, the question remains: *How can top managers enhance entrepreneurial orientation in dynamic environments?*

In this study we examine the role of the top management team (TMT) in enhancing EO in dynamic environments. While previous studies have mainly investigated the relation between EO and firm performance, we draw on upper echelons theory and bolster the increasing emphasis on TMTs in EO scholarship (Miller and Le Breton-Miller, 2011; Van Doorn et al., 2013). Upper echelons theory proposes that strategic choices reflect the idiosyncrasies of decision makers and recent studies indeed have highlighted the impact of compositional attributes of top managers on EO (Boling et al., 2015; Miller and Le Breton-Miller, 2011; Sciascia et al., 2013; Wales et al., 2013). However, we argue that going beyond demographic attributes is an important next step in understanding EO from an upper echelons perspective.

We extend upper echelons based inquiries into EO by contending that it is important to take into account the tendency of the TMT to acquire external information to improve judgment accuracy on emerging opportunities in dynamic environments. We develop this premise by drawing on the emerging literature on TMT external advice-seeking, which suggests that top managers rely on advisors to inform their judgments under uncertainty (McMullen and Shepherd, 2006) (e.g., such as the uncertainty inherent to dynamic environments (Fredrickson and Mitchell, 1984; Heavey et al., 2009b)). Given that entrepreneurial opportunities in dynamic environments require TMTs to process information that is relatively new to the firm, we additionally assess TMT absorptive capacity, i.e. their ability to filter, process, and assimilate new information (Zahra et al., 2009). TMTs may better capitalize on external insights that enable understanding of emerging and future opportunities in the environment when they have the absorptive capacity to adequately interpret these new insights and its implications for firm strategy (Goll et al., 2007).

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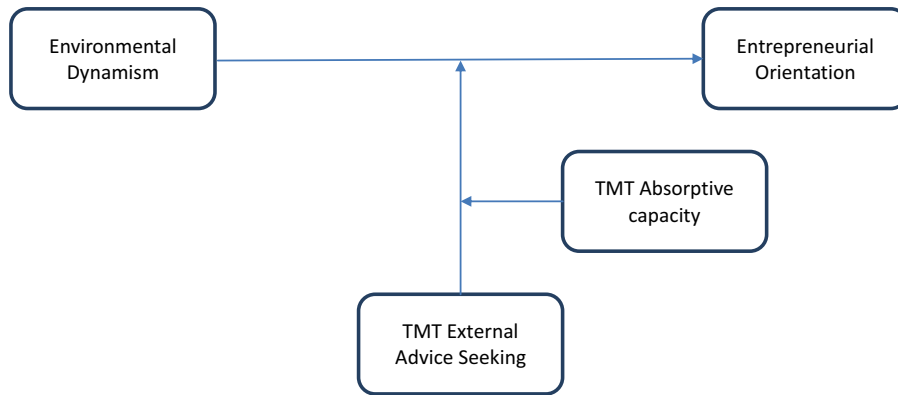


Figure 1. Conceptual model

We contribute to existing literature in several ways. First, this study applies an upper echelons lens and highlights how TMT behavioral attributes allow top managers to accommodate EO in dynamic environments (see Figure 1). This approach is timely and relevant, given recent studies that consider either environmental factors (Ruiz-Ortega et al., 2013) or top manager characteristics (Miller and Le Breton-Miller, 2011) as drivers of EO in isolation. Given the uncertainty inherent to dynamic environments, the information search dispositions of top managers and their ability to process new insights are essential for understanding how the TMT influences EO in dynamic environments.

Second, we advance literature on advice seeking by linking it to EO and arguing on its function in offering foreign judgments and recommendations for accommodating EO. Top managers have been shown to engage extra-organizational advisers as an important gateway for information to cope with non-routine decision making, a key activity in dynamic environments (McDonald and Westphal, 2003). Indeed, external advice seeking is seen as one of the basic practices in decision-making at the upper echelons level (Heavey et al., 2009a; Heyden et al., 2013; McDonald and Westphal, 2003) and provides senior managers with different perspectives and interpretations of the interface of the external environment and existing strategy (Budescu and Rantilla, 2000; McDonald et al., 2008). Advice can increase judgment accuracy and cultivates a better understanding of the urgency for entrepreneurial business solutions. Thus, we take the position that external advice-seeking may be an instrumental, yet underemphasized, boundary-spanning behavior through which executives can obtain insights to assist in navigating dynamic environments entrepreneurially.

Third, we assign boundary conditions to the utility of external advice and emphasize its important interrelation with absorptive capacity for evaluating the opportunities for enhancing EO in the face of environmental dynamism. Whereas external advice-seeking may increase a TMT's judgment accuracy of emerging threats and opportunities in dynamic environments, we go beyond this premise to suggest that TMTs may vary in their ability to assimilate the information acquired through advice-seeking and connect it to the established knowledge base of the firm and its key officers. Thus, we also contribute by theorizing on TMT absorptive capacity, which we conceptualize as a TMTs 'ability to value, assimilate, and apply new knowledge successfully to commercial ends' (Szulanski, 1996, 31). The importance of absorptive capacity in dynamic environments has been highlighted in previous studies but primarily at the firm level and not specifically in relation to external advice in dynamic contexts (Engelen et al., 2014; Liao et al., 2003). Our approach is consistent with upper echelons theory, where TMTs have been described as knowledge processing entities that aim to integrate knowledge from different levels and locations in order to formulate comprehensive strategy (e.g., Alexiev et al., 2010; Cho and Hambrick, 2006). Following Zahra et al. (2009), we consider absorptive capacity at the TMT level and argue that absorptive capacity will facilitate utilization of external advice when navigating dynamic environments (Cohen and Levinthal, 1990).

### Conceptual background and hypotheses

EO refers to the extent to which the top managers of the firm emphasize risk taking, innovativeness, and proactiveness (Miller, 1983). *Innovativeness* refers to the inclination to pursue new products and services (Lumpkin and Dess, 2001; Zahra and Covin, 1995), whereas *proactiveness* entails the tendency to take the initiative and achieve a first mover advantage (Covin et al., 2006). *Risk taking* in turn refers to the propensity to invest in ventures with an uncertain outcome (Lumpkin and Dess, 1996). Studies suggest that firm performance is increased when EO is commensurate with environmental requirements (e.g., Lumpkin and Dess, 2001) and that more entrepreneurially oriented firms indeed perform better in more dynamic environments (e.g., Wiklund and Shepherd, 2005). While studies traditionally have emphasized and confirmed the importance of EO on firm performance (e.g., Rauch et al., 2009), increasingly scholars are addressing the drivers of EO (Boling et al., 2015; De Clercq et al., 2013; Ruiz-Ortega et al., 2013). This is particularly important for understanding how top managers can enhance EO when operating in dynamic environments.

Dynamic environments are characterized by “rapid, discontinuous change in demand, competitors, technology, and/or regulations such that information is often inaccurate, unavailable, or obsolete” (Eisenhardt and Bourgeois, 1988, p. 816). Dynamic environments bring about both threats and opportunities to the firm, and studies show that more entrepreneurially oriented firms tend to thrive in these environments (Wiklund and Shepherd, 2005). Threats may include sunk costs to the firm due to existing product/market combinations becoming outdated or redundant in the face of new environmental demands (Baum and Wally, 2003; Covin and Slevin, 1989). On the other hand, dynamic environments also bring about opportunities that can be capitalized through an enhanced entrepreneurial profile (Lumpkin and Dess, 1996). Yet studies show that firms still vary in their ability to enhance EO to cope with dynamic environments (Ruiz-Ortega et al., 2013). As such, there is a gap in our understanding of the ways in which top managers may enable or constrain EO in dynamic environments.

Top managers play an important role in interpreting the environment and adjusting the entrepreneurial focus of the firm (Cho and Hambrick, 2006). Indeed, studies drawing on upper echelons theory (Hambrick and Mason, 1984) have shown that entrepreneurial strategy indeed reflects the preferences and beliefs (Lumpkin and Dess, 1996), motivational incentives (Li et al., 2008), resource allocations (Wiklund and Shepherd, 2003), and behaviors of the TMT (Van Doorn et al., 2013).

#### *TMT external advice seeking*

TMTs are considered to be the key decision makers within firms, yet they possess a limited capacity to understand and accurately judge the full array of opportunities and threats arising in dynamic environments (Van Doorn et al., 2013). As a result, TMTs often rely on advice from outside the firm, which can be beneficial for improving judgment accuracy on the implications of external events (Menon and Pfeffer, 2003; Vissa and Chacar, 2009). External advice comprises formulated judgments and recommendations on market dynamics, emerging opportunities, and the fit of potential opportunities with activities in place (Cohen and Levinthal, 1990; Miller et al., 1998). Indeed, “[e]xternal advice offers variety of interpretations as it embodies beliefs interpreted through different cognitive schemas, allowing for the framing of issues and answers in a broader perspective” (Heyden et al., 2013, 1333). Increased judgment accuracy gives TMTs more confidence in the grounding of their decisions and encourages them to take actions, such as stimulating risk-taking, proactive, and innovative behaviors to capture opportunities as they emerge in dynamic environments (Eckhardt and Shane, 2003; Staw et al., 1981). In this way, external advice may help reduce uncertainty around changes in the environment and allow top managers to more readily enhance their entrepreneurial posture. (Dutton and Jackson, 1987; Sharma, 2000; Simsek et al., 2010).

External advice seeking offers top managers a broader perspective on the current and future opportunities in the evolving business environment (Alexiev et al., 2010). In particular, it assists in informing TMTs of the consequences of environmental dynamism and is geared at obtaining inputs on forces that are beyond their direct control. Insights from outsiders inform firm strategy by highlighting opportunities and threats residing in blind spots, e.g., changes in consumer preferences (Dyer and Ross, 2008). It assists in identifying weak signals in the environment, e.g., emerging technologies (Heyden et al., 2015), or acts as an early warning system about impending changes, e.g., the development of substitute offerings (Reinhardt, 1984). External advice thus informs on the competitive arena TMTs are operating in and simultaneously offers a broader strategic repertoire to deal with environmental changes and their consequences in an entrepreneurial manner (Banbury and Mitchell, 1995).

*Hypothesis 1. TMT external advice seeking moderates the relation between environmental dynamism and EO in such a way that EO is expected to increase as the level of external advice seeking increases.*

#### *TMT absorptive capacity*

Although external advice is often assumed as beneficial (McDonald et al., 2008), it may be grounded in different assumptions and frames of reference than those embodied by TMT members, complicating its applicability to strategy formation. Indeed, advice may lack profundity as it may ‘fail to incorporate considerations regarding covert nuances and firm-specific idiosyncrasies, resulting in more generic, simplistic, and shallow judgments’ (Heyden et al., 2013, 1333). With increasing environmental dynamism, knowledge gaps may form between top managers that engage through a firm specific compass and external advisers that operate from a more general vantage point. While external advice is useful in dynamic environments for challenging established preconceptions (McDonald et al., 2008), information that strongly contradicts pre-existing beliefs and assumptions of top managers is often ignored, making it more difficult to draw concrete value from advice narratives as they unfold (Yaniv, 2004). Absorptive capacity of the TMT is instrumental in unpacking these external judgments and recommendations, and integrating them with existing strategies and associated viewpoints and beliefs of TMT members (Lane et al., 2006; Szulanski, 1996). Absorptive capacity allows top managers to weigh the applicability of advice and agree on which insights can be meaningfully distilled to capitalize on emerging opportunities through EO (Augier et al., 2001).

Next to complicating entrepreneurial decision making processes through reduced firm specificity, the extending knowledge gaps between top managers and external advisors in dynamic environments make it more difficult to filter essential information from more trivial inputs (Cohen and Levinthal, 1990). Absorptive capacity facilitates post-hoc synthesizing of potentially diverging advice narratives offered by different advisors, improving decision accuracy around external events (Zahra et al., 2009). With increasing environmental dynamism, judgments and opinions from outsiders on implications of

impending changes and emerging opportunities may become more heterogeneous (McDonald et al., 2008); for instance, advisors may differentially emphasize specific developments in the market while ignoring others. These contradictions encapsulated in the range of advice narratives can potentially increase uncertainty, reduce confidence and impede the ability to reach consensus on entrepreneurial strategies for coping with exogenous change. Top managers with higher absorptive capacity are better equipped to give meaning to the larger unstructured set of information that they are faced with (Zahra and George, 2002). They weigh the value of these different advices more comprehensively and synthesize them to capitalize on associated opportunities (Heavey et al., 2009b; Yaniv and Milyavsky, 2007).

Next to the role of absorptive capacity in clarifying which informational elements matter for strategy formation and filtering essential aspects from the range of advice offered to TMTs, it also facilitates timeliness of decision making (Szulanski, 1996). Given the pace of change in dynamic environments, the ability to efficiently and swiftly process new information becomes an essential part of TMT's ability to enhance EO (Todorova and Durisin, 2007). Absorptive capacity aids real-time understanding, adding to the dialogue between TMT and external advisors, allowing TMTs to engage in more in-depth discussions on the implications of a changing environment and associated opportunities for enhancing EO. Absorptive capacity would suggest TMT members to grasp valuable elements in an earlier stage and if not individually, to quickly turn to others within the team who may aid in distilling relevant information from the broader advice narrative (Cohen and Levinthal, 1990). Dynamic environments boast increasingly shorter opportunity windows for capitalizing on entrepreneurial initiatives (Hambrick et al., 1996), and TMTs with the competence to value and assimilate external advice in a timely manner include more relevant information in decision making processes aimed at capitalizing on these short lived opportunities. Hence, with a timely grasp of the most recent environmental developments and its implications for firm strategy, top managers will be better equipped to enhance EO (Liao et al., 2003).

*Hypothesis 2. TMT absorptive capacity moderates the impact of TMT external advice seeking on the relationship between environmental dynamism and the EO of the firm in such a way that the positive effect of advice seeking is expected to increase when TMT absorptive capacity is higher.*

## Data and methods

### Research setting and data collection

For the purpose of this research, we randomly identified a sample of 9000 firms within the Netherlands from the REACH database. The survey was conducted in two instances. The independent and moderating variables have been measured in the 2008 survey. Our dependent variable was measured in the 2009 survey. The survey of 2008 resulted in an overall response rate of 10.8 percent. The survey in 2009 amongst the 970 firms that had responded to our survey in 2008 resulted in a response rate of 23.3 percent or 226 firms in total. Firms in the sample had a mean age of 36.2 years (S.D. 31.4 years) and a mean size of 226 employees (S.D. 1157). With respect to the different industries, we obtained responses from agricultural and natural resource firms (6%), semi-product manufacturing firms (18%), utilities and construction firms (19%), trading firms (5%), transport firms (9%), financial services (2%) professional service firms (25%), IT (5%), media (3%), semi-public sector (3%) and manufacturing firms (7%). Firms in the 2009 sample had a similar mean age, mean size and average TMT size as the sample in 2008; moreover, the industries within our 2009 sample were similarly dispersed as in the 2008 sample.

To test for non-response bias, we investigated potential differences between the respondents and non-respondents with respect to size in terms of number of employees, age of the firm and size of the TMT for both survey waves. No significant differences could be found at the ( $p < 0.05$ ) level, which indicates that non-response is not a problem with respect to the abovementioned aspects. To tackle additional reliability issues related to single informant bias, we collected data from a second TMT member for each firm. Response rate was lower than our primary survey but we managed to obtain a response rate of 18.4 percent from the lagged sample of 226 firms. Our interrater agreement scores ranged from .79 to .98, suggesting high overall agreement, and thus we conclude that single informant bias is not a problem within our sample (James et al., 1993). We also assessed the intra-class correlations which were significant at the .001 level, suggesting a strong level of interrater reliability (Jones et al., 1983). In terms of common method bias, we have taken care to temporally separate measurement. We further performed the Harman's one factor test on the items included in the regressions. We found multiple factors to be present and the variance was evenly dispersed among the factors. Finally, we checked whether a single latent method factor connected with all the item scales could improve the fit over a model with constructs represented as latent factors (Podsakoff et al., 2003). The chi-square fit statistics for this model with a common method factor included was not significant and we conclude that common method bias did not augment the hypothesized relationships (Podsakoff and Organ, 1986).

### Measurement and validation of constructs

The constructs utilized in this study are scales comprised of multiple items that have been tested by means of various analyses. The independent and mediating variables have been measured in the 2008 survey. Our dependent variable is measured in the 2009 survey.

## EO

We use a nine item scale for measuring EO proposed by [Covin and Slevin \(1989\)](#). It measures proactiveness, risk taking and innovation with 3 items each. The average of the individual items is used as the EO of the firm. The 9-item scale of EO is reliable at  $\alpha = .87$ . Confirmatory factor analysis reveals the 9 items of the construct load on one dimension (NFI = .92, CFI = .94, RMSEA = .07). For further validation of our measure for EO, we investigated the correlation with objective indicators of a firm's entrepreneurial posture, such as the average percentage of sales spent on R&D ( $r = .27, p < .01$ ) and the number of new products introduced in the past year ( $r = .30, p < .01$ ) ([Stam and Elfring, 2008](#)).

## Environmental dynamism

The 4-item measure for environmental dynamism is based on previous research ([Dill, 1958](#); [Jansen et al., 2006](#)). It taps into the rate of change and the instability that firms experience in the external environment. The four item measure proved reliable  $\alpha = .81$  and loads on one dimension with factor loadings between .71 and .81.

## External advice seeking

In line with previous literature, we adopted a 3-item scale for external advice seeking ([Alexiev et al., 2010](#); [McDonald and Westphal, 2003](#)). It taps into the advice sought with regard to the current and future strategy of the firm. The scale is reliable ( $\alpha = .93$ ) and factor loadings vary between .76 and .87. More specifically, we asked the respondents to rate: (1) the frequency of TMT's advice seeking; (2) the extent to which the TMT gathered advice with regard to their current strategy; and (3) the extent to which the TMT sought advice with regard to future strategy.

## Absorptive capacity

The 5-item measure for absorptive capacity is based on previous research ([Szulanski, 1996](#)). The measure developed by Szulanski, however, measures absorptive capacity at firm level so we recoded several items to match our conceptualization of absorptive capacity at TMT level. We reduced the scale to 5-items as several items did not logically fit the sphere of the TMT. The five item measure proved reliable ( $\alpha = .91$ ) and loads on one dimension, with factor loadings between .72 and .93. The measure is added in an appendix.

## Control variables

In this study, we control for a number of objective measures such as firm age, firm size, industry type, average level of education within the TMT and size of the TMT.

*Firm age* is deemed to be important as older firms are expected to become more inert over time ([Hannan and Freeman, 1984](#)), hence we adopt a measure for firm age by including the natural logarithm for the number of years since the firm was first founded. *Firm size* is expected to play a role in the entrepreneurial process as large firms are expected to have more resources available to pursue entrepreneurship. However, due to institutional forces they might lack the flexibility to benefit from this advantage. Another control variable is *TMT size*; it may influence the ability of the TMT to reach a timely consensus on strategic issues and TMT size may also increase absorptive capacity of the team. We further control for *TMT average education*; education is also expected to be associated with the absorptive capacity of the team and may aid in making sense of the evolving business environment. In addition, we control for industry effects by including an *industry dummy* for the selected industries.

## Results

In [Table 1](#), we present the descriptive statistics and the correlation matrix for the variables included in the study. With respect to issues related with multicollinearity, we calculated the variance inflation factors (VIF) for each of the regression

**Table 1**  
Correlation matrix

	Mean	S.D.	Log size	Log age	Size TMT	Education TMT	Environmental dynamism	Entrepreneurial orientation	External advice seeking	Absorptive capacity
Log size	1.74	.49								
Log age	1.39	.34	.07		n					
Size TMT	6.22	9.2	-.02	-.02						
Education TMT	1.99	.62	.18**	-.06	.06					
Environmental dynamism	4.50	1.29	.01	-.13*	.03	.08				
Entrepreneurial orientation	4.24	1.07	.14*	.01	.16*	.11	.20**			
TMT External advice seeking	3.92	1.42	.01	-.22*	.04	.10	.21**	.19**		
TMT Absorptive capacity	5.38	.84	-.01	.05	.02	.15*	.02	.36**	.13	

N = 226; \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

**Table 2**  
Regression results

	Model 1		Model 2		Model 3		Model 4	
	B	S.D.	B	S.D.	B	S.D.	B	S.D.
Constant	3.92	0.5	3.78	0.5	3.64	0.5	3.82	0.47
Log size	0.32	0.17	.35*	0.16	.35*	0.16	.39**	0.15
Log age	-0.34	0.24	-0.25	0.24	-0.13	0.25	-0.28	0.22
Size team	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.01
Education team	0.12	0.13	0.09	0.13	0.07	0.13	0.07	0.12
Industry 1	0.62	0.38	0.61	0.37	0.58	0.37	0.52	0.35
Industry 2	-0.32	0.51	-0.26	0.5	-0.31	0.5	-0.54	0.47
Industry 3	0.05	0.34	0.05	0.33	0.03	0.33	-0.02	0.31
Industry 4	-0.5	0.43	-0.39	0.43	-0.4	0.43	-0.39	0.4
Industry 5	0.03	0.27	0.08	0.26	0.09	0.26	-0.02	0.25
Industry 6	-0.25	0.27	-0.17	0.27	-0.16	0.27	-0.07	0.25
Industry 7	-1.01	0.64	-1.14	0.63	-1.11	0.63	-0.83	0.6
Industry 8	-0.27	0.22	-0.27	0.21	-0.24	0.21	-0.41	0.2
Industry 9	0.1	0.41	0.13	0.4	0.12	0.4	0.08	0.38
Industry 10	-0.44	0.47	-0.46	0.46	-0.45	0.46	-0.46	0.43
Environmental dynamism			.17**	0.06	.15**	0.06	.12*	0.06
TMT External advice seeking					.10	0.05	0.07	0.05
Environmental dynamism × TMT External advice seeking					0.02	0.04	-0.01	0.04
TMT Absorptive capacity							.43**	0.08
TMT Absorptive capacity × Environmental dynamism							0.08	0.06
TMT Absorptive capacity × TMT External advice seeking							0.07	0.07
Environmental dynamism × TMT External advice seeking × TMT Absorptive capacity							.11*	0.05
R-square		0.32		0.37		0.39		0.53
R-square adjusted		0.1		0.14		0.15		0.28

N = 226; \* p < 0.05; \*\* p < 0.01.

equations. The maximum VIF we found was 3.69 which was assigned to one of the industry dummies, and the maximum VIF assigned to one of the main constructs was 1.98, both well below the cut-off point of 10 (Neter et al., 1990). We also checked for heteroskedasticity using White's text (1980) but did not find any evidence that would lead us to suspect serious problems related to this issue. All interaction terms consist of mean-centered variables (Aiken and West, 1991).

Table 2 presents the results for our proposed model. Model 1 presents the results with only the control variables included in the regression. As can be inferred from the table, none of the control variables play a significant role. Model 2 depicts the direct impact of environmental dynamism on EO ( $\beta = .17$ ,  $p < 0.01$ ). Model 3 captures the interaction between external advice seeking and environmental dynamism on EO, which was non-significant. Model 4 (EO) includes the proposed three-way interaction where TMT absorptive capacity is added to the equation. We find that indeed absorptive capacity plays an important role, putting externally sourced advice into perspective and aiding the TMT of the firm to establish EO in dynamic environments ( $\beta = .11$ ,  $p < 0.05$ ). In addition, we checked if the change in r-square between a model with all direct effects and two-way interactions and a model with the additional three-way interaction was significant, and this was confirmed at the  $p < .05$  level. In order to shed more light on the issue of the three-way interactions, the interaction effects on performance are plotted for low and high levels of external advice seeking, environmental dynamism and absorptive capacity. For this purpose, the mean value minus one standard deviation for low levels and the mean plus one standard deviation for high levels is used (Aiken and West, 1991). First, the differences between the interactions of external advice seeking and environmental dynamism for teams with low vs. high absorptive capacity are assessed (I and II). Afterwards, the differences of the slopes of high and low levels of advice seeking are compared across teams low and high in absorptive capacity (III and IV).

Figure 2 shows the interactions of environmental dynamism and external advice seeking for teams low and high in absorptive capacity. First, external advice seeking has a negative interaction with environmental dynamism for teams low in absorptive capacity (line 2 and 4), signaling that advice seeking may not be conducive for enhancing the EO of the firm when TMTs have a deficiency in their absorptive capacity. This is also substantiated when assessed with simple slope analysis ( $p < .05$ ). Second, we find a positive interaction between external advice seeking and environmental dynamism for teams high on absorptive capacity (lines 1 and 3). However, results of simple slope analysis imply that this difference is not significant ( $p > .10$ ).

Third, we find a positive impact of TMTs engaging in external advice seeking for TMTs accommodating a high rather than a low level of absorptive capacity; there is a significant difference between the slopes depicting high levels of external advice seeking when comparing TMTs with low vs. high levels of absorptive capacity (lines 1 and 2,  $p < .05$ ). Fourth, we do not find any effect for TMTs that refrain from external advice seeking when comparing TMTs with high vs. low levels of absorptive capacity (line 3 and 4). Together, this provides strong evidence that TMTs need to combine external advice seeking with absorptive capacity if they want to enhance EO while operating in dynamic environments.

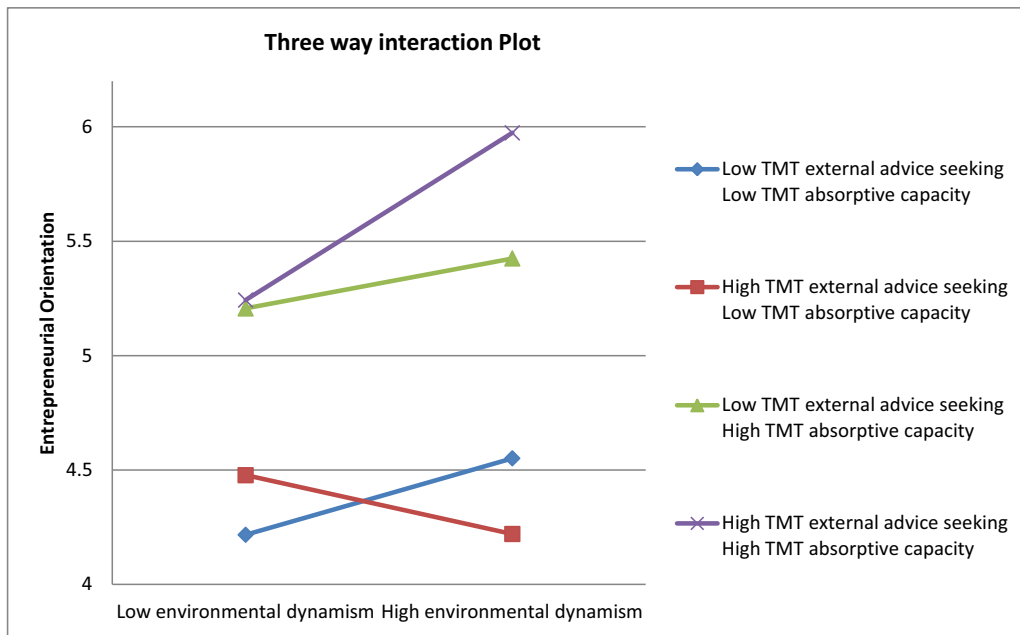


Figure 2. Interaction plot

## Discussion and conclusion

In this study, we have examined how key TMT factors (i.e., TMT external advice-seeking and TMT absorptive capacity) influence the ability of firms to establish EO in dynamic environments. We have theorized that external advice-seeking is a key boundary spanning activity of TMTs that equips them with rich, novel, and up-to-date informational ammunition for enhancing EO in dynamic environments. However, we have taken care to argue that firms will be more enabled to absorb insights obtained through TMT external advice-seeking and accommodate EO, when TMTs have the capability to value, assimilate, and apply new informational insights in a comprehensive and timely manner. Thus, our proposed model suggests that to understand TMT underpinnings of the ability to accommodate EO in dynamic environments, we have to consider the complex interaction between TMT boundary-spanning search behavior as well as the ability of TMTs to promptly and integratively translate these insights into an entrepreneurial strategic posture. Our theory and findings have several implications.

### Theoretical implications

#### Accommodating EO in dynamic environments

Our study resonates with a shift in thinking from EO as an antecedent of firm outcomes, to a more in depth understanding of EO drivers. In particular, linking to the literature on environmental factors and EO (Ruiz-Ortega et al., 2013), we have built on a more contingency fit interpretation (e.g. Wiklund and Shepherd, 2003) of EO by looking at the extent to which TMTs capture the entrepreneurial opportunities arising in dynamic environments. This contrasts studies that have emphasized achievement of high levels of EO as an implicit or explicit objective in and of itself. Rather, we develop the premise that EO is not a stable within and between-firm trait, but TMTs in particular have discretion in their ability to steer entrepreneurial motivation and policy to pursue EO. This approach allows us to provide a more comprehensive range of prescriptions to scholars and practitioners alike, as we do not assume that low EO is detrimental to firm functioning by default (Wales et al., 2011). Instead, we build on previous studies that have emphasized that EO provides additional benefits to firms when navigating a dynamic environment (Rosenbusch et al., 2013; Wiklund and Shepherd, 2003) and investigate how TMTs play a particularly key role in the accuracy of this alignment.

From this conceptualization, we can develop recommendations for TMTs aiming to enhance EO in dynamic environments. In doing so, we can help managers with their resource allocation and policy choices to help optimize allocation of key resources to ensure both short-term efficiency seeking and longer-term opportunity seeking. Although it is intuitive that TMTs facing a dynamic environment are expected to enhance EO to enable them to keep up with the changing competitive landscape, our study adds to the understanding of how TMTs may succeed in this task. Our approach adds another

emphasis to EO scholarship and practice by focusing on actionable TMT factors that can explain variation in how to maintain a dynamic strategic fit between the environment and EO. In particular, we have drawn on the literature on advice-seeking to understand how TMTs' boundary spanning search behaviors can assist in offering insights on the threats and opportunities arising in dynamic environments.

#### *TMT advice-seeking*

We have focused on how the infusion of informational insights obtained through external advice influences the judgment accuracy of TMTs on the implications of environmental dynamism. Our study focused on external advice seeking as a driver of EO in dynamic environments as it enables TMTs to maintain an updated map of changing environmental landscapes and the resultant opportunities and threats that appear on their radar. In line with studies that have highlighted the value-added of advice-seeking for key dimensions of EO (e.g., [Alexiev et al., 2010](#); [Dyer and Ross, 2008](#)), we have hypothesized that external advice seeking would provide an initial foundation for enriching and updating the understanding of environmental cues for enabling EO. Interestingly though, our results show that external advice by itself does not influence a TMT's ability to establish EO in dynamic environments.

One explanation could be that simply seeking external advice adds to cache of informational insights, but does not necessarily synthesize understandings. As such, seeking more advice might become associated with information overload. This is particularly challenging as advice from different actors outside organizational boundaries may prove to be too contradictory and or insufficiently applicable to the realities of the organization, leading to an inability to achieve consensus along TMT attention and priorities. When overwhelmed by informational insights, especially discrepant ones, threat-rigidity theory informs us that decision makers restrict their information processing and become biased toward tried-and-true beliefs ([Staw et al., 1981](#)). From an upper echelons interpretation, TMTs that are unable to process information often end up being committed to the status quo ([Geletkanycz and Fredrickson, 1993](#)), as TMTs are unable to distill those strands of advice that would potentially add to existing strategy leading to misalignment and potentially undermining the extant beliefs and assumptions of TMTs by creating additional uncertainty ([McDonald et al., 2008](#)).

#### *Absorptive capacity of TMTs*

The upper echelons perspective is primarily a theory of information processing ([Cho and Hambrick, 2006](#)). Yet previous studies have mainly focused on the characteristics of TMTs to explain their information processing capabilities (cf. [Alexiev et al., 2010](#)). TMT absorptive capacity complements these studies by suggesting that although characteristics are informative for how information is processed, the presence or absence of particular compositional characteristics does not necessarily imply that TMTs have the ability to recognize the valuable elements of new informational insights or apply them sensibly to leverage the extant knowledge base of the firm. As such, a heterogeneous TMT could engage in critical debate of insights that are less relevant ([Van Doorn et al., 2013](#)), leading to a lower ability to instill the entrepreneurial focus that has been consistently argued to provide additional benefits in dynamic environments. In turn, we have drawn on insights from organizational learning literature ([Cohen and Levinthal, 1990](#)) and adapted the key concept of absorptive capacity to the TMT level. We have further advanced the theoretical notion of TMT absorptive capacity as a promising concept for upper echelons scholarship ([Zahra et al., 2009](#)).

We have argued that TMT absorptive capacity represents a previously underemphasized competency of TMTs. In particular, TMT absorptive capacity provides a more refined vantage point from which we can understand how valuable and novel insights are valued, assimilated, and sensibly applied to steer entrepreneurial policy of the firm. The interpretative function of absorptive capacity indeed enables TMTs to recognize the valuable elements in newly acquired advice. In particular, we have looked at the absorptive capacity of TMTs and argued that external advice seeking is primarily beneficial when TMTs are able to value, assimilate, and apply acquired informational insights, thereby more effectively engaging with entrepreneurial opportunities and threats inherent to dynamic environments. An important implication is that TMTs with lower absorptive capacity do not necessarily benefit from external advice seeking, as they potentially amplify the uncertainties as presented by the rapidly changing environment (as emphasized by [Figure 1](#)). TMTs faced with dynamic environmental conditions hence need to develop sensitive antennae for recognizing the valuable elements in new informational inputs providing additional understanding on how EO may help to effectively navigate dynamic environments. As such, our initial theorizing and test of TMT absorptive capacity lays the foundation for new interesting questions on the competencies of TMTs and how they can influence EO.

We also developed, tested, and applied a measure for absorptive capacity pertaining to the TMT level. Our findings are in line with previous research that echoed the importance of absorptive capacity at the senior leadership level ([Zahra et al., 2009](#)). While the latter study focused on boards, i.e. non-executives, of threshold firms specifically, we find that absorptive capacity remains an important quality of TMTs aiming to accommodate EO. Where extant research has underlined the role of absorptive capacity at the organizational level ([Engelen et al., 2014](#)), the specific role of TMTs in directing EO makes inquiry into absorptive capacity at the TMT level an appealing proposition. TMTs are often a direct representation of the organization, with executives from different functional areas and with distinct expertise foci ([Cannella et al., 2008](#); [Van Doorn et al., 2013](#)). Absorptive capacity draws on these distinct expertise areas to inform a better understanding of the environment, current activities, formulated judgments by outsiders and their interrelation as evidenced by previous studies on TMT heterogeneity (e.g. [Alexiev et al., 2010](#)).



### Limitations and future research

Our study is prone to several boundary conditions that offer fruitful avenues for future works. First of all, we have looked at the relationship between environmental dynamism and EO by using a one year lag. It would be advisable to investigate how EO would fluctuate over a longer period of time as well. In addition, further validation of approaches to measuring environmental dynamism could be considered in future research. A longitudinal approach would enable us to monitor the impact of fluctuations in environmental dynamism and related shifts in EO. The concept of absorptive capacity is interesting to research at the upper echelons level; however, future studies could further incorporate multilevel approaches to investigate the joint impact of absorptive capabilities at different levels within the firm. For instance, it would be interesting to assess multi-unit firms and assess how TMT and unit-level absorptive capacity interacts to inform local activities.

Future inquiries into external advice seeking could benefit from adopting additional granularity, e.g. in terms of the sources of external advice, their relationship with the TMT and the characteristics of the overarching network (Carpenter and Westphal, 2001; Elfring and Hulsink, 2003; Hoang and Antoncic, 2003), especially as different network ties, e.g. weak vs. strong ties, have been argued to provide distinct benefits and drawbacks for entrepreneurial outcomes (Jack, 2005). Adopting a network lens may also aid in enhancing the representation of advice in terms of frequency and the origin of advice on current vs. future strategic pathways (Van Doorn et al., 2015). Whereas external advice from actors that are more distant from the TMT has been argued to be more instrumental for informing on emerging environmental developments, there may be clear knowledge gaps that prohibit the application of newly discovered insights in future strategic profiles. Future studies could also incorporate a broader notion of TMT characteristics and investigate how combinations of TMT compositional attributes would influence individual dimensions of EO. For example, it would be interesting to assess EO from a more comprehensive configurational perspective and increase understanding on how TMTs may adjust EO given specific environmental or organizational conditions.

Overall, our study opens doors for many interesting studies on advice seeking and absorptive capacity, both at the TMT level and more multi-level oriented approaches. These studies are much welcomed as the dialogue on advice seeking and absorptive capacity remains a much current debate.

### Appendix

5-item TMT Absorptive capacity scale (7-point scale, based on Szulanski, 1996):

- Our TMT is in tune with the state-of-the-art in our field of business.
- Our TMT is able to quickly integrate and/or apply new knowledge.
- We quickly know who is most knowledgeable with regard to newly acquired knowledge.
- Our TMT has the competencies to quickly gauge the value of new knowledge.
- It is well known who can help solve problems associated with new knowledge.

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