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Organisational Learning of Absorptive Capacity and Innovation: Does Leadership Matter?

Abstract

Following the process-based definition of absorptive capacity, this study seeks to explore the mediating role of transformational and transactional leadership styles in the relationship between the three learning processes of absorptive capacity and innovation. Based on a survey in the United Arab Emirates (UAE), it was found that transformational leadership mediates the relationship between exploratory and transformational learning processes and innovation. It was also found that transactional leadership did not mediate the relationship between the internal exploitative learning process and innovation. Whilst several researchers have noted a need to develop a better theoretical understanding of the mechanisms explaining the interplay between absorptive capacity and innovation, we provide theoretical explanations of the underlying mechanism and further offer explanations as to why some firms are better able to convert external knowledge into strategic innovations when compared with others. The implications of these findings for theory and practice are delineated.

Keywords: Absorptive capacity, learning processes, transformational leadership, transactional leadership, innovation.

Introduction

The increasing complexity and high-velocity business environment has ensured focused attention on innovation as the key drivers of a company's long-term success (see Tzokas and Saren, 1997; Baker and Sinkula, 2002; Lyon and Ferrier, 2002; Bruni and Verona, 2009; Trantopoulos, Krogh, Wallin and Woerter, 2017). Many firms are increasingly seeking external knowledge to foster innovation in an effort to enhance their competitive advantage (Ireland, Hitt and Vaidyanath, 2002;

Zollo, Reuer and Singh, 2002; Chesbrough and Appleyard, 2007; Nonaka and von Krogh 2009). Absorptive capacity has emerged as a crucial source to assist firms in recognising new external knowledge, completing its assimilation and applying it to commercial ends (Cohen and Levinthal, 1990; Bongsun, Kim and Foss, 2016), which is the key to innovation success (Lynn, Reilly and Akgun, 2000; Chang and Cho, 2008; Rezaei-Zadeh and Darwish, 2016). Through departure from the original definition, various conceptualisations of absorptive capacity have emerged (Lane and Lubatkin, 1998; Nahapiet and Ghoshal, 1998; Lane, Koka and Pathak, 2006). This paper adopts the process-based definition, where absorptive capacity refers to a firm's ability to utilise external knowledge through the three sequential processes of exploratory, transformative and exploitative learning (Lane, Koka, and Pathak, 2006). Exploratory learning relates to the acquisition of external knowledge and corresponds with the notion of potential absorptive capacity (Zahra and George, 2002). Exploitative learning refers to applying acquired knowledge, and accordingly reflects the concept of realised absorptive capacity (Zahra and George, 2002; Xia and Roper, 2016). Transformative learning bridges these two processes, making reference to retaining knowledge over time (Garud and Nayyar, 1994; Lane et al., 2006). Accordingly, absorptive capacity is not static, but rather evolves through learning processes (Todorova and Durisin, 2007).

Although the impact of absorptive capacity on innovation is controversial, organisational mechanisms affecting the relationship between absorptive capacities and innovation is not well understood (see, for example: Jansen, Bosch and Volberda, 2005; Lane, Salk, and Lyles, 2001). In other words, a firm's ability to absorb new external knowledge can create significant benefits, such as innovation (Cockburn, Henderson and Stern, 2000); however, organisational mechanisms may have a different effect on the learning process of absorptive capacity and subsequently lead to different innovation performance outcomes (Zollo and Winter, 2002). This limited attention is

remarkable, especially since Cohen and Levinthal (1990) highlight the importance of organisational mechanism in influencing the effectiveness of absorptive capacity in contributing firms' innovative performance.

Although few studies trace the path of organisational mechanisms such as organisational culture, strategy, structure, coordination capabilities and environmental factors (see, for example, Fiol and Lyles, 1985; Carroll, 1998; Jansen et al., 2005), understanding of this particular relationship remains limited and largely conceptual (see, for example, Lane et al., 2001; Van Den Bosch, Volberda and De Boer, 1999). To date, limited attention has been directed towards linking leadership with the relationship between different dimensions of absorptive capacity and innovation. The lack of research regarding this particular link is also surprising, especially considering leaders are 'ultimately, account for what happens to the organisation' (Hambrick, 1989:5) and act as the guiding force behind organisational learning (Lahteenmaki, Toivonen and Mattila, 2001; Vera and Crossan, 2004). There is a growing literature emphasizing that leadership is one of the most important individual influential predictors of innovation and learning as they can directly decide to introduce new ideas into organization, set specific goals, and encourage innovation initiative from subordinates (Chen and Hou, 2016; Flatten, Adams and Brettel, 2015; Rosing, Frese and Bausch, 2011; Liu, et al., 2014; Jansen, Vera and Crossan, 2009; Nemanich and Vera, 2009). Creating an understanding of the mediating role of leadership in the interaction between organisational learning process of absorptive capacity and innovation can explain why, in a similar business environment, some firms are able to generate greater competitive advantages than others, through converting external knowledge into strategic innovations.

Therefore, the objective of this study is to address the following question: To what extent do different leadership styles, particularly transformational and transactional leadership styles, affect

the relationship between different learning processes of absorptive capacity and innovation in the context of an Arabian Gulf Country? There is some evidence which suggests transformational and transactional leadership styles facilitate absorptive capacity and innovation (Chang et al., 2015), although these results about the transactional leadership style are controversial. Additionally, most of these studies were conducted in Western context with limited reference to emerging economies. Hence, the institutional setting under study is of particular interest to probe our research question.

Like countries such as Bahrain, Kuwait, Oman, Qatar and Saudi Arabia, the United Arab Emirates (UAE) is a member of the Gulf Cooperation Council (GCC). In addition, it is a member of the Organization of Petroleum Exporting Countries (OPEC), and about 40 per cent of the country's gross domestic product is based directly on oil and gas output (The World Bank, 2012). Since the discovery of oil in the UAE, the country has become a modern state with a high standard of living, rooted in deep Islamic based societal structures. Further, over the last few decades, the UAE has applied an economic developmental model that strongly emphasizes market liberalism and economic openness, embracing globalization while at the same time refraining from challenging the traditional neo-patrimonial leadership structure in the country (Hvidt, 2009). Furthermore, expatriates form the majority of the population in the UAE; notably, recent research reveals that, 99% of the employees in the private sector are expatriates (Al Waqfi and Forstenlechner, 2014). Therefore, the dominance of the international workforce across a wide range of jobs constitutes a unique environment challenging existing theories and concepts on leadership, learning processes, absorptive capacity and innovation. Moreover, the rapid economic and social development has created a large demand for foreign employees. Given the rapid emerging economy of the UAE and its demographic and social characteristics, organizations offer very different nature of jobs to a wide breath of expatriates (Haak-Saheem and Brewster, 2017). However, the government aims to

enhance the national participation in the workforce by enforcing localization policies (UAE Vision 2021). Similar to localization policies in other GCC countries, the UAE has embraced Emiratization to reduce reliance on foreign and increase local participation in the workforce. The impact of these and associated challenges on leadership, learning processes, absorptive capacity and innovation is not fully understood.

This study contributes to the existing literature in both theory and practice. Whilst scholarly work has noted the need to develop a better theoretical understanding of the mechanisms explaining the interplay between absorptive capacity and innovation (see, for example, Cockburn et al., 2000; Zollo and Winter, 2002; Jansen et al., 2005), we advance research on leadership and absorptive capacity by theoretically extending and empirically testing the role of different leadership styles in mediating the relationship between three different learning processes of absorptive capacity and innovation in an unconventional setting (Meyer and Peng, 2006). Notably, the context of an emerging market pushes for further contextualization to advance existing knowledge on the determinants of innovation such as leadership, learning processes, absorptive capacity. Hence, this study adds to the existing literature through providing new evidence from an Arabian Gulf emerging market setting.

This paper is structured as follows: firstly, we highlight key strands and current understating of the existing literature that seeks to link together leadership styles, learning processes of absorptive capacity and innovation, and, in the process, develop our hypotheses; secondly, we describe our methods, followed by providing an analysis and corresponding results; finally, we move on to our conclusions, discuss their broad relevance, and accordingly draw out the implications for theory and practice.

Literature Review and Hypotheses

Absorptive Capacity

The importance of absorptive capacity has been noted across the field of strategic management (Lane and Lubatkin, 1998; Nahapiet and Ghoshal, 1998) as a main source of competitive advantage (Tsai, 2001; Zahra and George, 2002) and the key to innovation success (Lynn et al., 2000; Chang and Cho, 2008). The level of prior related knowledge determines a firm's level of absorptive capacity (Cohen and Levinthal, 1990; Lane et al., 2006). Firms need to possess relevant prior knowledge in order to successfully absorb new knowledge (Tsai, 2001). This path dependent understanding is the key to determining a firm's absorptive capacity. Cohen and Levinthal (1990:135) also point out that it is 'useful to consider what aspects of absorptive capacity are distinctly organisational' as 'internal mechanisms that influence the organisation's absorptive capacity'. This suggests that mere exposure to relevant external knowledge is not sufficient in ensuring a firm's innovation success. Therefore, scholars have begun to consider the relationship of organisational mechanisms with different dimensions of absorptive capacity (for example: Lane, Salk and Lyles, 2001; Van Den Bosch et al., 1999). For example, Bosch et al. (1999) propose business strategy in an effort to explain whether it can strengthen or weaken the relationships between absorptive capacity and innovation outcomes. The outcome states that a first-mover strategy yields advantages when it comes to building-up absorptive capacity, whilst a follower strategy requires lower absorptive capacity.

A growing stream of research attempted to investigate the organizational mechanisms affecting learning (see, for example, Crossan, Lane and White, 1999; Lipshitz, Popper and Friedman, 2002; Lipshitz, Popper and Oz, 1996; Popper and Lipshitz, 2000). For instance, Crossan, Lane and White (1999) proposed the "4I framework" accentuating four key processes, namely intuiting,

interpreting, integrating and institutionalizing, as being critical to organizational learning. However, this 4I model does not explicitly address leadership. Popper and Lipshitz (2000) identified four specific roles for managers to facilitate organizational learning such as making learning as the central theme in the organization's strategy, institutionalizing organization learning mechanisms, introducing a learning culture, and creating conditions that support psychological safety and organizational commitment. Lipshitz and his colleagues (Lipshitz, Popper and Friedman, 2002) further proposed an integrative multifaceted model highlighting five organizational arrangements including structural, cultural, psychological, policy and contextual facet that are necessary for contributing learning to organization.

Yet, many aspects of institutions influencing absorptive capacity and innovation remain unexplored, notably how business processes engage with existing institutions in the context of an emerging market. Hence, absorptive capacity and innovation are critical to the social and economic development (Tödtling and Trippl, 2005). According to the national agenda of the UAE, a knowledge-based economy is key agenda of the government (UAE Vision, 2021). Rapid change and economic growth initiatives aim to replace oil dependency by diversifying the economy and build knowledge based infrastructure to ensure sustainable growth. However, at the outset many of the formal rules of the game were not clearly defined, resulting in tremendous uncertainty (Aulakh and Kotabe, 2008). In contrast to the Western countries, most large incumbent firms were in state ownership, while the private sector follows the lead of the government sector (Haak-Saheem, Festing and Darwish, 2016). This rapidly changing environment raises some important questions on the absorptive capacity of firms within this institutional context.

As the managerial challenges posed by the learning processes of absorptive capacity differ, different leadership styles may be critical in affecting the effectiveness of the three learning

processes of absorptive capacity on innovation (Berson, Nemanich, Waldman, Galvin and Keller, 2006; Waldman, Berson and Keller, 2009). Managing exploratory and transformative learning processes of absorptive capacity effectively requires openness and flexibility, while effective management of exploitative learning process of absorptive capacity depends on imposing control and mechanistic structure (Cepeda-Carrion et al. 2012; Rezaei-Zadeh and Darwish, 2016). The difference between the management of learning processes of absorptive capacity resides in the dynamic nature of it. Exploratory and transformative learning processes of absorptive capacity involve organisational change which demands flexibility and freedom (Todorova and Durisin, 2007). On the other hand, exploitative learning involves reusing external knowledge which can be addressed through control mechanisms (Sun and Anderson, 2012l; Zahra and George, 2002; Rezaei-Zadeh and Darwish, 2016).

As leaders act as the guiding force behind organisational learning (Lahteenmaki et al., 2001; Vera and Crossan, 2004), firms' absorptive capacity is no longer restricted to only the prior related knowledge, but also is largely influenced by different leadership styles. Absorptive capacity is a multidimensional construct (Volberda et al., 2010; Lane et al., 2006; Zahara and George, 2001) and it involves learning processes at individual, group and organizational levels (Sun and Anderson, 2010; 2012). Valuing, acquiring and assimilating external knowledge demands individual and group learning which occurs through a social process; i.e., group interaction and dialogue; individual and group level learning can turn into organizational level learning when organizations institutionalize new structures, systems, processes and routines (Sun and Anderson, 2010).

Throughout our analysis, the focus will be directed towards leadership style as one of important organisational determinant of absorptive capacity, simply because leaders play a role in forming

the context that affects the organisational learning, which fosters innovation (e.g., Hurley and Hult, 1998; McGill and Slocum, 1993; Mumford et al., 2002; Shalley and Gilson, 2004). Indeed, as Popper and Lipshitz (2000) rightfully pointed out that managers cannot only make learning a central element in the organization's strategy, but also instilling and institutionalizing learning culture. Different leadership is also crucial in determining a firm's expectation, aspirational level and motivation to innovate for emerging opportunities in the environment (McGrath, 2001; Berson, et al., 2006), which is key in contributing to the effectiveness of organisational learning (Vera and Crossan, 2004). In order to construct our analysis, we discuss two types of leadership: transformational leadership and transactional leadership (Avolio and Bass, 1991) as these two types of leadership paves the way to explore the most appropriate leadership styles for enabling absorptive capacity (Méndez et al., 2017). This analysis aims to deliver new evidence from an institutional stetting in which leadership has a multidimensional function. The leadership of the country, in particular the leadership style of the ruler on the Emirate Dubai has been identified as the main engine of the rapid growth and prosperity in the UAE (see e.g. Hvidt, 2009). The centralized approach—one of the defining characteristics of the developmental state paradigm in the UAE—has been reinforced by the traditional tribal (patrimonial) leadership style.

Transformational and Transactional Leadership Styles

Leadership style has been emphasised as the strategic factor shaping firms' potential to generate innovations by encouraging and cultivating an appropriate environment that promotes successful generation and the implementation of knowledge (Van de Ven, 1993; Nonaka and Takeuchi, 1995; Kavanagh and Ashkanasy, 2006). The role of leadership is critical in guiding strategy formulation and subsequent implementation in firms (Shrivastava and Nachman, 1989). This study applies the

‘full-range leadership theory’ conceptualised by Bass (1985) and developed by Avolio and Bass (1991), focusing on transformational and transactional leadership.

Transformational leadership embodies intellectual stimulation, individualised consideration, idealised influence and inspirational motivation (Avolio, Bass and Jung, 1999; Deichmann and Stam, 2015), a wide strategic vision about advantages of change and adaptation (Dess and Picken, 2000), transmits the importance of having a shared mission and infusing a sense of purpose, and has charisma (Bass, 1999; Bass and Avolio, 2000). Such leaders encourage good communication networks and a spirit of trust, enabling the transmission and sharing of knowledge and the generation of knowledge slack (Senge, 1990; Slater and Naver, 1995). Through inspirational motivation, the leader broadens and accordingly elevates the interest of his or her employees (Bass, 1990), and thus stimulates followers to think about old problems in new ways (Bass, 1985). Through their vision, values, role-modelling behaviour and use of other symbolic means, transformational leaders provide a focus point not only in facilitating the intra-organisational integration, but also in facilitating the level of cohesiveness between organisational members and the organisational unit (Boehm, Dwertmann, Bruch and Shamir, 2015). In the context of the UAE, empirical research supports the role of transformational leadership in influencing positively employees’ attitudes towards work and performance (Awamleh, Evans and Mahate, 2005). Moreover, transformational leadership becomes a critical factor in two ways. First, transformational is important to push the developmental agenda of the organizations and the country further by initiating and encouraging change (Haak-Saheem and Festing, 2017). Second, the management of the highly cultural diverse workforce require the leadership style which facilitates the intra-organisational integration, and the level of cohesiveness between organisational members and the organisational unit (Boehm et al., 2015).

In contrast, transactional leadership focus on promoting the individual interests of leaders and followers, and attaining the satisfaction of contractual obligations on the part of by both establishing objectives, and monitoring and controlling the results (Bass and Avolio, 2000). In transactional leadership, leader–follower relationships are based on a series of exchanges or bargains made between leaders and followers (Bass, 1985). Transactional leaders have a preference of risk avoidance, emphasising process rather than substance as a means of maintaining control (Epitropaki and Martin, 2005), and are more likely to be effective in a stable and predictable environment in which the monitoring of current activities against prior performance is the most effective strategy (Lowe, Kroeck and Sivasubramanian, 1996).

Although many scholars shed light on the impact of absorptive capacity on innovation, these researches tend to overlook an important question that spans beyond the issue of the relationship, such as leadership with different dimensions of absorptive capacity (Jansen et a1., 2005). Ample evidence reveals that leaders exert a significant influence on performance and absorptive capacity (see Table 1); however, understanding relating to the different learning processes of absorptive capacity and the influence exerted that ultimately affects innovation is rather limited and largely speculative (Garcia-Morales, Lorens-Monthes and Verdu-Jover, 2008). In a turbulent business environment, leaders are perceived as the key drivers enabling firm to recognise, assimilate and apply external knowledge so as to create superior organisational innovative performance (Barrett and Sexton, 2006; Grant, 1996). This becomes even more critical in the context of a rapid changing and growing environment of an emerging economy (Rettab, Brik and Mellahi, 2009). We take a fine-grained look at process-based absorptive capacity-organisational learning in an effort to understand questions, such as ‘to what extent does leadership affect the different organisational learning processes of absorptive capacity?’ and the related query of ‘whether or not leadership

plays an important role in the relationship between absorptive capacity and firm's innovation in the context of the UAE. Therefore, we specify the influence of different leadership styles in the following analysis of the three learning processes of absorptive capacity.

Table 1: An overview of research on leadership and AC

Leadership effects	**Key findings**
Leadership as an AC antecedent	- Managerial antecedents fosters developing AC (Rezaei-Zadeh and Darwish 2016; Volberda et al., 2010; Zahra and George, 2002). - Combinative capabilities, management cognition and individual knowledge development are three mechanisms that managers implement (Volberda et al., 2010; Van Den Bosch et al., 1999). - AC enhances organisational performance (Volberda et al., 2010; Lane et al., 2006; Zahra and George 2002; Van Den Bosch et al., 1999; Cohen and Levinthal, 1990). - New hired middle managers are change agents (Jones, 2006).
Leadership as facilitator of AC	- Transformational leadership is positively associated with AC (García-Morales et al., 2008). - Transformational leadership is enhances innovation (Flatten et al., 2015; García-Morales et al., 2008). - Both transformational and transactional leadership are positively affect AC (Flatten et al., 2015).
Leadership with multi-level influence	- Transformational leadership of top and middle management facilitates exploratory and transformative learning processes of AC (Sun and Anderson, 2012). - Transactional leadership of top and middle management facilitates exploitative learning processes of AC (Sun and Anderson, 2012).

Exploratory Learning Process

Based on the process-based definition of absorptive capacity, exploratory learning process refers to the acquisition of external knowledge and accordingly corresponds to the notion of potential absorptive capacity (Lane et al., 2006). Exploratory learning is frequently cited as a crucial source of innovation success (McGrath, 2001; Jansen, Van den Bosch and Volberda, 2006; Nooteboom, Vanhaverbeke, Duysters, Gilsing and van den Oord, 2007) which motivates by the need for change or exploiting an existing market opportunity (Zahra and George, 2002). Individuals have significant roles in facilitating the exploratory learning process of absorptive capacity (Sun and

Anderson, 2012) and their abilities and motivation to value and acquire external knowledge (Martinkenaite and Breunig, 2016). Leaders establish scanning mechanisms in order to recognise external knowledge sources (Cohen and Levinthal, 1990; Elenkov, 1997) where valuing new external knowledge depends on individual motivation and ability (Martinkenaite and Breunig, 2016). This mechanism enables firms to assimilate knowledge by integrating it within their existing knowledge base (Lenox and King, 2004). According to Arbussa and Coenders (2007), the exploratory learning process in the context of absorptive capacity constitutes two essential stages: recognise and acquire external knowledge.

Existing research on knowledge sources suggests that exploratory learning processes begin with individuals' intuitive insights and experience, in which they see novel connections (Behling and Eckel, 1991). Scholarly discussion highlights the role of transformational leadership in affecting followers' performance by influencing their self-identity, self-construal, self-efficacy, self-esteem, and self-consistency at multiple levels (Shamir et al., 1993; Van Knippenberg et al., 2004, Awamleh et al., 2005). Such explorative learning process can be facilitated by transformational leaders (Flatten, Adams and Brettel, 2015), who not only can create a vision of change and searching for new opportunities (Tichy and Ulrich, 1984; MacKenzie et al., 2001), but also facilitate such learning processes by broadening and elevating the interests of the employees and enabling them to think about old problems in new ways (Bass, 1990; 1995). By providing intellectual stimulation, transformational leadership encourages individuals to look at problems from different angles, and adopt generative and exploratory thinking processes (Sosik, Avolio, & Kahai, 1997; Deichmann and Stam, 2015). Acting as a role model in this respect, employees become more confident in their abilities generate new ideas through observational learning from such leaders (Bass & Avolio, 1990). Similarly, when leaders provide individualized consideration,

they show empathy and support for individual concerns and openness to new suggestions and approaches (Shin & Zhou, 2003). In such a leadership environment, employees may feel free to think in new ways, go beyond standard practices, and proceed with creativity without fear of penalties (Frese et al., 1999, Shin and Zhou, 2007). In this context, transformational leaders encourage individual and group learning by encouraging assumptions to be questioned, by motivating individuals to be inquisitive, take 'intelligent' risks and devise creative observations (Bass, 1998; Qu, Janssen and Shi, 2015), all of which play an important role in directly affecting creative individuals (for example: Amabile, Conti, Coon, Lazenby and Heron, 1996; Vera and Crossan, 2004) and challenging the existing level to influence organizational innovation (Hurley and Hult, 1998; Senge et al., 1994). However, existing research reflects on the role of leadership styles in mainly Western economically well developed countries. As the argument of contextual scholarly work matters (Pfeffer, 1993, Bamberger, 2008), we seek to examine the effect of transformational leadership on exploratory learning in the context of the UAE. Hence, we argue that this environment is of particular interest as it represents a larger cluster of emerging countries (GCC) and all of these countries are in the process of fast growth and development. Further, the given workforce composition (overreliance on expatriates on the one hand and localization forces on the other hand) challenges the boundary assumptions of the paradigms within which the theories on leadership and absorptive capacity are nested. Thus, we suggest:

H1: Transformational leadership mediates the effect of exploratory learning process on innovation.

Transformative Learning Process

Transformative learning is about assimilating external knowledge (Lane et al., 2006). It is held that transformative learning process is a key to maintain and reactivate knowledge over time. Many scholars argue that exploratory and exploitative learning processes are necessary but insufficient for sustaining superior firm performance as the timing for exploratory learning process depends on the time and dynamic environment (Argote, McEvily and Reagans, 2003; Garud and Nayyar, 1994). The accumulated knowledge generated from exploratory learning could also experience a short lifecycle due to employee turnover and the passage of time (Gold, Malhotra and Segars, 2001). Firms that are unable to maintain and reactivate knowledge could have effects that are as detrimental as the complete lack of assimilated knowledge (Argote et al., 2003; Marsh and Stock, 2006). Building a link between exploratory learning and exploitative learning, the transformative learning process enables firms to continuously manage knowledge retention in order to keep assimilated knowledge 'alive' (Lane et al., 2006; Marsh & Stock, 2006). Like exploratory learning, individual motivation and ability are essential to assimilate knowledge effectively (Martinkenaite and Breunig, 2016). Therefore, transformative learning process is essential to enabling firms to assimilate and reactivate knowledge for sustaining organisational performance (Rothaermel and Deeds, 2004).

In order to keep the accumulated knowledge 'active', firms need to add, eliminate, interpret and combine accumulated knowledge in different ways (Marsh & Stock, 2006). However, this process might be problematic due to various factors, including timing, a dynamic environment and employee turnover (Argote et al., 2003; Garud & Nayyar, 1994; Gold, Malhotra and Segars, 2001).

Open discussions and knowledge-sharing to stimulate the knowledge flow within the firm (Lane et al., 2006) becomes challenging in the context of fast changing and growing environments with

a highly fluctuated workforce (Haak-Saheem, 2016). For example, recent research argues that knowledge sharing in Saudi Arabia is influenced by the fast economic growth and the high turnover in organizations (Youssef, Haak-Saheem, Youssef, 2017). These conditions influence learning flow from an individual level to a group level; firm needs to build an organizational learning culture that promotes and encourages good communication networks. Furthermore, in such an environment, it is more challenging to develop trustful relationship which is critical to knowledge sharing within and across organizational units (Senge, 1990; Slater and Naver, 1995; Youssef et al., 2017).

However, transformative learning can be supported by transformational leadership (Bass, 1985). The recognised individual knowledge then can be converted into a shared institutional knowledge through group conversation, which then can be integrated into a sense of collective actions. Under such leadership, the assimilated knowledge kept in the organisational repository system can be openly discussed, shared and used to experiment with different tasks. Transformational leaders also foster a learning orientation where errors and concerns can be openly discussed (Goleman et al., 2001), encourage the expression of different views and ideas (Bass, 1999; Bass and Avolio, 2000), which is crucial to encourage learning flow from an individual level to an institutional level.

Compared with the transactional leadership style, which is closed and rule-bound (Nahavandi, 1993), transformational leadership allows employees to adapt to organisational culture, to break through learning boundaries, to share their learning experiences in such a way so as to transfer learning, and to realign it with the new vision as and when needed (Bass, 1998; To, Tse and Ashkanasy, 2015). Such knowledge flow and the presence of an open learning culture cultivated from transformational leaders is the key to retaining assimilated knowledge and accordingly enabling firms to re-activate when needed. By serving as ‘falsifiability models’ (Goleman et al.,

2001) and being accessible, transformational leaders generate positive attributions towards the transfer of learning within the organization. This behaviour can cascade down to middle or lower levels of management, which is essential in facilitating knowledge-sharing between different organisational units (Waldman and Yammarino, 1999; Jin, Seo and Shapiro, 2016). This cross-learning network accelerates the transfer of learning and accordingly facilitates the learning flow from the individual to the group, which is essential when aiming to achieve firms' facilitation of knowledge assimilation. Therefore, transformative learning process could lead to organisational innovation (Ali and Park, 2016; Ali et al., 2017) in the context of absorptive capacity when transformational leadership style is considered (Flatten, Adams and Brettel, 2015; Waddell and Pio, 2015; Sun and Anderson, 2012). The above discussion implies that the impact of transformational leadership on innovation is rather indirect, and that the relationship could be mediated by transformative learning process. In line with existing theoretical discussions (Bass, 1985; Awamleh et al. 2005), we argue that transformational leadership can support transformative learning in the context of the UAE and suggest the following:

H2: Transformational leadership mediates the effect of transformative learning process on innovation.

Exploitative Learning Process

In the process-based view, the exploitative learning process relates to applying acquired knowledge, and reflects the concept of realised absorptive capacity (Zahra and George, 2002). After evaluating potential applications, a firm applies the knowledge, which constitutes the actual exploitation step (Smith, Collins and Clark, 2005). Whilst the exploratory learning process focuses on recognising and assimilating external knowledge, the exploitative learning process emphasises

the application and develops new perceptual schemata (Jansen et al., 2005), which assists firms in converting acquired knowledge with the refinement and extensions of existing product or service (Tsai, 2001). Firms demonstrate a high level of exploitative learning as being positively linked with superior performance through the use of assimilated knowledge in the innovation process (Zahra and George, 2002). For example, research has shown that exploitative learning institutionalizes its behaviours of search, refinement and efficient execution over time which is desirable for knowledge assimilation process (Atuahene-Gima and Ko, 2001). Accordingly, there are two process stages of exploitative learning process in the context of absorptive capacity: transmuting the assimilated knowledge and applying this knowledge (Lane et al., 2006; Todorova and Durisin, 2007).

This field goes beyond recognising and assimilating external knowledge, and exploiting the learning process, but rather focuses on refinement, production, efficiency and execution (Jansen, Vera and Crossan, 2009). In order to successfully exploit the acquired knowledge, firms need to successfully combine existing knowledge with newly acquired external knowledge in order to innovate (Kogut and Zander, 1992; Tsai and Ghoshal, 1998). Repetition, replication, and incremental improvements in established practices and products result in both increased efficiency and proficiency in those activities (March, 1991). Whilst transformational leaders emphasise discovery and change, the essence of transactional leadership focus on motivate employees to reach agreed task goals and objectives by communicating expectations and rewarding people when they have met those objectives (Bass, 1985). Such refreshing and refining current learning enable transactional leaders play an instrumental role in motivating organisational members to use and take advantage of existing learning stored in the firm (Waldman et al., 2001; Deichmann and Stam, 2015). By doing so, transactional leadership not only promotes exploitative learning by motivating

organizational members to use and take advantage of existing learning stored in the firm's culture, structure, strategy, procedures, and systems (Vera & Crossan, 2004; Waldman et al., 2001), but also facilitates exploitative learning when they impose control over the implementation of knowledge (Waddell and Pio, 2015). These leaders exercise a maintenance role; and reinforce existing strategies, focus on increasing efficiency in current practices, and communicate the benefits of incremental refinements to existing innovation trajectories. Contingent reward and active management by exception behaviours provide the focus and discipline individuals need to concentrate on efficiency and to become consistently better at performing current routines (see Podsakoff et al., 1984; Bass 1985; Mackenzie et al, 2001).

In addition to assist employees to understand that organization-focused ideation is an important work goal, a transactional leader may also be effective in explaining how that goal may be reached. They stimulate the learning flow across organisations by assigning a strong value to organisational rules, procedures and past experiences, and also by providing training programmes that disseminate existing learning in an effort to guide actions and decisions (Shrivastava, 1983). Individuals and groups also will be rewarded for devising new ways of exploiting current products, services and markets (Jansen et al., 2005). Under these conditions, exploitative learning is more likely to be positively linked with a better firm innovation performance. Focusing on the rule-based ways of getting the work done, highlighting the importance of efficiency, consistency, getting tasks done, and achieving convergent thinking, transactional leaders can be positively linked with the execution and application of the exploitative learning process (Deichmann and Stam, 2015; Flatten et al., 2015; Waddell and Pio, 2015; Sun and Anderson, 2012; Jansen et al., 2009). Such task-focused leadership not only encourages disseminate existing learning to guide

future actions and decisions (Schrivastava, 1983) but also champions the advantages of incremental change, efficiency and continuity (Bass, 1985).

Given the turbulent environment of the UAE, the impact of transactional leadership has a stabilizing and facilitating impact on exploitative learning process of absorptive capacity on innovation. For example the majority of the employees in the private sector are expatriates with a temporary employment contract and the resident visa is connected to their work contract, whereas, most of the nationals prefer to work in the public sector (Forstenlechner & Mellahi, 2011). Most recent research (see, for example, Haak-Saheem and Brewster, 2017) shows that financial incentives are the most important motivation for different groups of expatriates to relocate to the Gulf countries; in this sense, expatriates are highly mobile and move to new jobs, if the new offer is financially more rewarding. Hence, employee retention is a major challenge for many organizations in contexts like the one under study. Further, the cultural diversity connected to multiple languages act as a barrier to exploitative learning process; given these dynamics in the workforce, we argue that transactional can ensure stability and therefore we suggest that:

H3: Transactional leadership mediates the effect of exploitative learning process of absorptive capacity on innovation.

Methods

Sample, Procedure and Measures

The data for this study were drawn from a stratified random sample from employees in different sectors (education, banking; healthcare; hospitality; consultancy; and government entities) in the UAE, as shown in Table 2. We were interested in drawing a random sample which would be

representative of the population on some characteristic of interest. For example, we aimed to include employees with different nationalities, gender, educational background, and positions in the organizations or organizational sector.

After corporate approval had been gained via inter-organizational mailing systems, the self-administered questionnaire was employed. Potential respondents were assured that participation was entirely voluntary. Discussions on the purpose and value of participation were held with the heads or managers of diverse units across the targeted organizations. Due to the collectivistic culture (Hofstede, 1983), personal interaction was an appropriate approach to encourage potential participants to complete the questionnaires. Completed questionnaires were collected by the researchers and a team of research assistants. The final sample size included 986 answers generated from 1,400 distributed questionnaires, providing a response rate of 70.4%. The targeted sample consisted of full time employees working across the different sectors in the country. We focus on the individual level as the unit of analysis because of the level of theory and nature of variables under consideration (see Rousseau, 1985; Piccolo and Colquitt 2006).

Measurement

Scales were built in order to measure the learning processes of absorptive capacity, leadership styles and innovation. These measures were developed based on the existing literature. We developed scales to measure the exploratory, transformative and exploitative learning processes of absorptive capacity, as based on the work of (Garud & Nayyar, 1994; Szulanski, 1996; Jansen et al., 2005; Smith et al., 2005; Marsh & Stock, 2006; Todorova & Durisin, 2007; Arbussa & Coenders, 2007). Questions were measured on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. In relation to leadership scales, we measured transformational leadership

style by adopting the scale of Garcia-Morales, Llorens-Montes, and Verdu-Jover, (2008). Garcia-Morales et al. (2008) have established a scale of five items to measure transformational leadership based on the scales developed by Podsakoff, Mackenzie and Bommer (1996); transactional leadership, on the other hand, was measured based on the MLQ (Form 5X) scale, which was developed by Bass and Avolio (1995), and further used by other scholars (see, for example, Mackenzie et al, 2001). All leadership-related questions were measured on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Further, we used a three-item scale for measuring innovation, which was developed by Garcia-Morales et al., (2008); Garcia-Morales and colleagues have based their innovation scale on the work of Miller and Friesen (1983). Their scale was unidimensional with high reliability and validity (for more details, see Garcia-Morales et al. 2008). Innovation items were also measured on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. In an effort to further attest to these measures, different types of reliability and validity were computed for the present measures, as shown in the next section. Finally, it is also suggested that firm size and age affect the development of the learning process of absorptive capacity (see Lane et al., 2006). Hence, firm size and age are used as control variables, measured respectively in natural logs (see: Kimberly, 1976; Darwish, Singh, and Wood, 2015) by the number of employees in each company and the number of years the company has been in operation.

Table 2: Demographic characteristics of the respondents

	f	%
A. Gender		
Male	622	63.08
Female	364	36.92
B. Age		
18-29	280	28.4
30-39	360	36.5
40-49	205	20.8
50-59	121	12.3
60 & over	20	2.0
C. Education		
Some College	125	12.68
Bachelor	625	63.39
Master's Degree	205	20.79
PhD	31	3.14
D. Work Experience (in years)		
1-4	205	20.79
5-14	432	43.81
15-24	209	21.20
25-34	105	10.65
35 & higher	33	3.35
No data	2	0.20
E. Sectors		
Services	190	19.27
Manufacturing	106	10.75
Construction	171	17.34
Retail and Wholesale	134	13.59
Gas and Petrochemical	83	8.42
Financial	196	19.88
Media and Communication	106	10.75

Data Analysis

The present study employed the partial least squares-structural equation modelling (PLS-SEM) in an effort to test the proposed hypotheses. PLS-SEM is a component-based estimation procedure. In comparison to covariance-based SEM, PLS-PM requires less stringent assumptions related to

the measurement levels of the manifest variables, multivariate normality, and sample size (see Hulland, 1999; Chin et al., 2003). In testing the SEM, the two-stage approach suggested by Hulland (1999) was adopted. Hulland's (1999) approach suggests the valuation of the measurement model in the first stage and the assessment of the structural models in the second stage. The former assesses the reliability and validity of the study measurements, whilst the latter illustrates the statistical support provided for the hypothetical relationships amongst constructs.

To address the adequacy of the measurement model, this study evaluates the reliability, convergent validity and discriminant validity of the constructs (Hulland, 1999). As shown in Table 3, the measures have shown convergent validity since the item loadings are statistically significant and greater than the 0.5 threshold (Hair et al., 2009; Kock, 2015); the average variance extracted (AVE) for each construct is greater than the .5 cut-off (Fornell and Larker, 1981), whilst the composite reliability and Cronbach's alpha are greater than the .7 cut-off (Nunnaly, 1978; Fornell & Larcker, 1981; Nunnally & Bernstein, 1994), except for innovation and transactional leadership with Cronbach's Alpha of .657 and .621, respectively, which still fall within the acceptable range based on the more relaxed threshold of .60 (see, for example: Nunnally and Bernstein, 1994). On the other hand, the measures, as a whole, have discriminant validity based on the Fornell & Larker (1981) criterion since the square roots of the AVE (diagonal elements in Table 4) are larger than the correlations of the constructs (off-diagonal elements).

Table 3: Item loadings, average variance extracted and composite reliability of the constructs

	Standardized item loading	AVE	CR	CA
Innovation (INV)		.595	.814	.657
INV1	0.781**			
INV2	0.814**			
INV3	0.715**			
Transformational Leadership (TFL)		.551	.859	.795
TFL1	0.779**			
TFL2	0.782**			
TFL3	0.761**			
TFL4	0.719**			
TFL5	0.664**			
Exploratory Learning Process (ELP)		.528	.848	.775
ELP1	0.754**			
ELP2	0.755**			
ELP3	0.770**			
ELP4	0.700**			
ELP5	0.646**			
Transformative Learning Process (TLP)		.509	.812	.709
TLP1	0.688**			
TLP2	0.722**			
TLP3	0.720**			
TLP4	0.648**			
TLP5	0.621**			
Exploitative Learning Process (EVLP)		.501	.818	.723
EVLP1	0.688**			
EVLP2	0.696**			
EVLP3	0.689**			
EVLP4	0.699**			
EVLP5	0.670**			
Transactional Leadership (TCL)		.570	.799	.621
TCL1	0.703**			
TCL2	0.791**			
TCL3	0.768**			

** $p < .001$; AVE = average variance extracted, CR = composite reliability; CA = Cronbach's alpha

Table 4: Square roots of AVE and correlation coefficients

	1	2	3	4	5	6
1. Innovation	(**0.771)**					
2. Transformational Leadership	0.419	(**0.742)**				
3. Exploratory Learning Process	0.363	0.512	**(0.727)**			
4. Transformative Learning Process	0.367	0.514	0.434	**(0.713)**		
5. Exploitative Learning Process	0.364	0.516	0.434	0.497	**(0.708)**	
6. Transactional Leadership	0.185	0.169	0.192	0.204	0.179	**(0.755)**

Overall, the convergent validity, discriminant validity and reliability statistics reveal that the construct measurements are sufficiently strong to enable subsequent structural model estimation. In addition, the goodness of fit and quality indices of the structural equation model as a whole show strong statistical evidence that the estimates of the structural equation model are acceptable. Based on the criteria discussed in Kock (2015), the following goodness of fit and quality indices of the model are within the acceptable range: Average path coefficient (APC) =.199(p<.001), Average R-squared (ARS) =.225 (p<.001), Average adjusted R-squared (AARS) =.223 (p<.001), Average block VIF (AVIF) = 1.467 (acceptable if <=5, ideally <=3.3), Average full collinearity VIF (AFVIF) =1.473 (acceptable if <=5, ideally <=3.3) and Tenenhaus GoF (GoF) =.345 (small >= 0.1, medium >= 0.25, large >= 0.36).

The results of the structural model in Table 5 reveal that the total effect of Exploratory Learning Process (ELP) on innovation is positively significant (β=.203, p<.001, f^2=.075). Moreover, the direct effect of ELP on innovation is positively significant (β=.117, p<.001, f^2=.043). Notably, the

indirect effect of ELP on innovation—which is the difference between the total effect and direct effect—is also positively significant (β=.086, p<.001, f^2=.032). The beta coefficient associated with this indirect effect can be also calculated as the product of the two direct effects' beta coefficients for the two path segments making up the indirect effects (Bollen and Stine, 1990; Kock, 2015). Further, our findings indicate that the effect of ELP on innovation is mediated by transformational leadership; thereby, H1 is supported. Based on the rule of thumb of Cohen (1988), the extent of mediation effect of transformational leadership on the exploratory learning process and innovation is small (f^2=.032). In social sciences, effect sizes are often seen as very small (Rosnow & Rosenthal, 2003). The latter has led to difficulties in the interpretation of the effect sizes (Ferguson, 2009). Research limitations and failure to control for other relevant predictors could be two of the main reasons why researchers may have such a small effect size (see Ferguson, 2009). This small effect size, although significant, encouraged us to attempt to understand what factors might account for the difference. The latter is further discussed in the last section of the paper.

The analysis of the data for H2 on the same table (Table 5) reveals that the total effect of Transformative Learning Process (TLP) on innovation is positively significant (β=.218, p<.001, f^2=.086), whilst its direct effect is also positively significant (β=.128, p<.001, f^2=.050). Further, the indirect effect of TLP on innovation is positively significant (β=.090, p<.001, f^2=.035). Taken together, these findings imply that transformational leadership mediates the effect of TLP on innovation; thereby, H2 is supported.

In regard to the data for H3 in Table 5, it is shown that the total effect of Exploitative Learning Process (EVLP) on innovation is positively significant (β=.132, p<.001, f^2=.052), whilst its direct

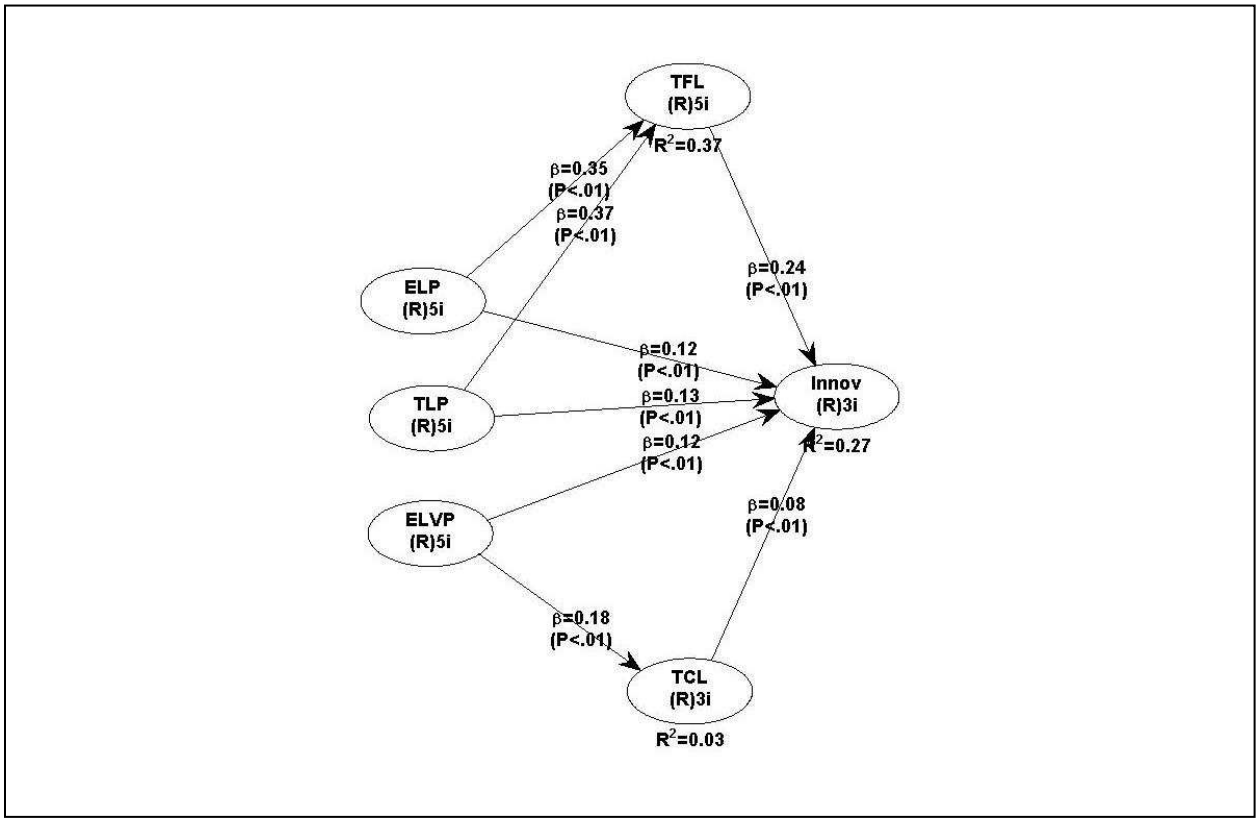
effect is also positively significant (β=.118, p<.001, f^2=.016). In addition, the indirect effect of EVLP on innovation is non-significant (β=.015, p>.05, f^2=.016). These findings imply that transactional leadership does not mediate the effect of exploitative learning process on innovation, which further implies that H3 is rejected. The results of the proposed model are also shown in the mediation model in Figure 1. We further discuss all results in the next section.

Table 5: Total, direct and indirect effects

	Standardized path coefficient (β)	p-value	Effect size (f^2)
H1: ELP → TFL → INV			
Total Effect:			
ELP → INV	.203	.000	.075
Direct Effects:			
ELP→ TFL	.354	.000	.182
TFL →INV	.244	.000	.111
ELP → INV	.117	.000	.043
Indirect Effect:			
ELP → INV	.086	.000	.032
H2: **TLP → TFL → INV**			
Total Effect:			
TLP → INV	.218	.000	.086
Direct Effects:			
TLP → TFL	.369	.000	.193
TFL →INV	.244	.000	.111
TLP → INV	.128	.000	.050
Indirect Effect:			
TLP → INV	.090	.000	.035
H3: EVLP→TCL→INV			
Total Effect:			
EVLP → INV	.132	.000	.052
Direct Effects:			
EVLP → TCL	.182	.000	.033
TCL →INV	.081	.005	.016
EVLP → INV	.118	.000	.016
Indirect Effect:			
EVLP → INV	.015	.257	.006

The effect size is the Cohen's (1988) f-squared coefficient: .02=small, .15=medium, .35=large.

Figure 1: The mediation model



Notes: A. TFL= Transformational Leadership. TCL= Transactional Leadership. ELP=Exploratory Learning Process. EVLP= Exploitative Learning Process. TLP=Transformative Learning Process. **B.** The research hypotheses tested in this model are: H1: Transformational leadership mediates the effect of exploratory learning process on innovation. H2: Transformational leadership mediates the effect of transformative learning process on innovation. H3: Transactional leadership mediates the effect of exploitative learning process of absorptive capacity on innovation

Discussion and Conclusions

Understanding the relationship between different learning processes of absorptive capacity and innovation is complicated when taking into account the need to consider multiple levels of analysis. An understanding of the process by which learning processes lead to firm-level outcomes must incorporate constructs at the level of the individuals and relationship amongst them. It was held that micro-level theories are valuable and provide better explanations in the context where individual behaviours influence organisational actions (see, for example: Staw 1991; House et al., 1995). Hence, this study has tested the indirect relationship between different learning processes of absorptive capacity and innovation; the relationship was mediated by the transformational and transactional leadership styles. The results support that transformational leadership mediates the effect of exploratory and transformative learning processes of absorptive capacity on innovation. As noted earlier, in the traditional tribal based society of the UAE, the leaders are role models which reflects the importance of idealised influence of transformational leadership in the UAE. Moreover, individuals in such a context rely on the guidance and support of their leaders. However, our results show that transactional leadership does not mediate the effect of exploitative learning process of absorptive capacity on innovation.

This study adds to the growing body of research examining the relationship between absorptive capacity and innovation, and makes a unique contribution to the existing literature in three important ways. First, the central contribution of this work connects a theoretical link between different learning processes of absorptive capacity, leadership and innovation. Whilst there is an underlying assumption concerning the role of different leadership styles in absorptive capacity, in this paper, we offer insights into how specific leadership styles, such as transformational and

transactional leaders, facilitate and promote the development of stocks and flows of different learning processes of absorptive capacity on innovation. The findings suggest that the transformational leadership primarily enhances exploratory and transformative learning, and subsequently leads to better innovation outcomes. This finding is valuable for several reasons: for instance, although several studies have examined the relationship between leadership and firm-level outcomes, to the best of our knowledge, this is the first study to examine the mediating role of leadership style—albeit using the traditional measures of transformational and transactional leadership in the relationship between different learning processes of absorptive capacity and innovation. In addition, it is held by scholars that there is a need to develop a better theoretical understanding of the mechanisms explaining the interplay between absorptive capacity and innovation (see, for example, Cockburn et al., 2000; Zollo and Winter, 2002; Martinkenaite and Breunig, 2016); hence, this work fills this gap and provides a mechanism for understanding how the pattern of relationships within an organisation affects individual and organisational outcomes by supporting the indirect and positive effect of transformational leadership and how these primarily enhance exploratory and transformative learning, subsequently leading to better innovation performance. This is in line with research advocating that transformational leadership is significant in shaping firms' potential to generate innovation by nurturing the organisational environment encouraging innovative behaviour (Bass, 1998; Lenox and King, 2004; Arbussa and Coenders, 2007). Further, this insight is particularly useful in light of an increasing interest in enablers and barriers fundamental to the successful acquisition of external knowledge, and keeps the knowledge institutionalised over time. Thus, our research underscores the desirability of placing the empirical analysis of transformational leadership in its organisational context in an effort to understand how they affect organisations' culture and structure, ultimately affecting the

different learning processes of absorptive capacity, rather than analysing absorptive capacity and innovation in isolation.

Secondly, contrary to our expectations, the results show that the last hypothesis postulating transactional leadership to mediate the effects of internal exploitative learning process of absorptive capacity on innovation is rejected. This result contributes to scholars' understanding as to why certain firms are able to explore and transform new external knowledge, but are unable to exploit it successfully. In fact, having transactional leaders who accentuate the importance of efficiency, consistency, getting tasks done and convergent thinking may be counterproductive for exploitative learning, which leads to unsatisfactory innovation outcome. This is inconsistent with the previous research, which highlights the importance of such task-focused leadership style as being positively linked with the execution and application part of the exploitative learning process (for example: Jansen et al., 2005; Jansen et al., 2009; Deichmann and Stam, 2015). This finding is rather surprising given that our sample companies are from the UAE, where cultural values within such contexts are significantly high in power distance (Hofstede, 1983; Darwish and Singh, 2013). Within this culture, it is generally believed that employees tend to prefer having managers take a more transactional leadership management approach, such as control, and leading by example (Shrivastava, 1983; Bass, 1985). One explanation potentially helping to explain this finding in the context of our study is that the ratio of nationals to expatriates in the UAE is amongst the most disproportionate in the world (see, for example: Harry, 2007; Forstenlechner & Mellahi, 2011; Haak-Saheem and Darwish, 2014). As mentioned earlier, almost 99% of the jobs in the private sector are staffed by expatriates (Al Waqfi & Forstenlechner, 2014). Hence, it could be argued that the characteristics of the existing workforce in the UAE context contributed in adapting a more Western-oriented approach to people management and leadership style, which, as a result,

minimises the potential impacts of institutions and local culture. Like many other countries of a similar status, the country is a fast-growing micro- and petro-state, characterised by a relatively strong presence of foreign multinationals and a large expatriate workforce, both encompassing skilled professionals who may experience difficulties in adjusting to local cultural norms, but bringing with them new skills, capabilities and insights. Another explanation could be that the level of autonomy and discretion are necessary in order for innovation behaviours to emerge (Graen and Scandura, 1987; Scott and Bruce, 1994). Therefore, transactional leaders focusing on control and rules could be negatively associated with the exploitative learning process of absorptive capacity, thus leading to unsatisfactory innovation outcome.

Our third theoretical contribution captured absorptive capacity's multi-dimensional nature (Jansen et al., 2005) by examining the relationship between different learning processes of absorptive and innovation. The data supported the distinction of three learning processes within absorptive capacity (Lane et al., 2006). Thus, different levels of learning process may help to explain which innovation activities reside within or beyond firms' boundaries. Therefore, our research emphasises the need for specific measures to understand the boundary conditions on the implications of empirical absorptive capacity research. Notably, our results revealed that leadership style differentially drive firm's absorptive capacity. The present study contributes to our understanding as to why some firms are able to acquire and assimilate new external knowledge, but are not able to transform and exploit it successfully. Our results revealed that leaders differ in their abilities to manage different learning processes of absorptive capacity and differ in their ability to create vale from their absorptive capacity, therefore they have different impact on firm's innovation performance.

Implications for Practice

Taken together, these findings have two important implications that not only enhance and refine conceptualisations of the link between leadership, absorptive capacity and innovation, but also offer useful and specific guideline for management practices. First, our findings show that transformational leadership is one important enabler of such an outcome. Whilst several aspects of leadership can be learnt or adjusted (Kirkbride, 2006), our results suggest that, in order to actively develop the exploratory and transformational learning processes, firms need to foster the presence of transformational leaders and leadership styles, providing a contextual support to inspiring followers to pursue a shared vision and coaching them to take greater responsibility for their development (Bass, 1999). This includes encouraging a more modern organisational structure and culture that stimulates knowledge-transfer and disseminates the learning process at all levels of the firm (Argote et al., 2003; Camison and Forbes, 2010). Organisations that neglect such leadership styles are unlikely to realise the potential of their employees to enhance organisational innovation capabilities. Thus, an organisation's own efforts to hire, train and develop managers that have demonstrated a set of transformational leadership qualities is vital to driving their innovative performance. The latter is to some extent evidenced in the context under investigation. As noted earlier in the paper, the government of the UAE emphasises the role of both, the public and private sector, for the overarching strategy of building leadership skills as a national priority, and a pragmatic approach of the availability of skilled jobs in a working environment suitable to the nationals of the country. Hence, transformational leadership turns out to be very important in the context of the UAE, and perhaps in other comparable settings. The latter has significantly helped to further push the developmental agenda of the private and public sectors, and the entire country by initiating and encouraging change. The latter can already be seen from the current

growth and development prominence of the country. Also, as suggested by Boehm et al., (2015), this type of leadership is vital in such a vibrant and highly cultural diverse workforce which requires the leadership style that facilitates the intra-organisational integration, and the level of cohesiveness between organisational members and the organisational unit. In addition, current results could explain the unrecognized role of transformational leadership in the process of Emiratization; the latter is considered as a top national policy to further develop knowledgeable and skilled nationals. Second, transactional leaders appear to be the hindrance to exploitative learning, thus leading to negative innovation results. Given that exploitative learning is the key to converting the acquired knowledge with the refinement and extensions of existing product or service (Tsai, 2001), organisations need to avoid transactional leadership behaviours that focus on control, standardisation, formalisation and efficiency (Bass, 1985), all of which are negatively associated with exploitative learning.

Limitation and Avenues for Future Research

This study was motivated by the desire to develop a finer-grained understanding of the mediating role of transformational and transactional leadership in the relationship between the different learning processes of absorptive capacity and innovation. Several features of this study further bolster confidence in our results, including the rich data, which were collected from a large and heterogeneous sample. We have also employed advanced and rigour statistical techniques to attest to the unidimensionality of our measures and further test our stated hypotheses. However, in order to delve more deeply into specific findings of this study, there is room for expanding the scope of inquiry. Evidence represented here suggests that transactional leadership makes no contribution in terms of mediating the relationship between the exploitative learning processes of absorptive capacity and innovation; hence, it will be fruitful for future studies to test whether the alternative

leadership styles, such as servant leadership or creative leadership, have different mediating effect in this particular relationship. Again, this would help in providing theoretical explanations of the underlying mechanism of relationship between absorptive capacity and innovation within different organisations. In addition, although significant, the meditation effect of transformational leadership was small; this could be explained by the fact that there may be a number of predictors and control variables that might account for the difference such as organisational culture, resource allocation, organisational strategy and structure. Further, methods besides cross-sectional surveys, such as interviews and field observations, permit further study of the processes, means and mechanisms by which different leadership styles can be transformed into the key mechanisms driving absorptive capacity.

As innovation can occur in the processes through how people work, tapping into these aspects of organisation mechanism can further increase the completeness and richness of our understanding. Another direction for further research is ascertaining the generalisability of our findings in a different country. The descriptive findings reflect the current situation is in the country context of the UAE. Thus, it would be worthwhile to conduct a similar study in a different institutional context. Whilst the relationships in our model were tested and partially supported, in a different cultural context, the same hypotheses could yield different results. Moreover, researchers have lamented the lack of theoretical integration of the plethora of leadership theories that exist in the literature (Lord, Brown, Harvey and Hall, 2001; Avolio, 2007). Future research can address this issue by conducting an integration work in the area of transformational and trait-based approaches in order to gain further understanding of which traits are able to enhance firms' absorptive capacity, thus leading to better innovation outcomes. Although our results are partially consistent with the theoretical predictions, further longitudinal research should aim at empirically establishing the

casual claim of our model. Finally, innovation has been measured based on self-reported measures and single respondents. It would be more rewarding to use multiple respondents or employ objectives measures in future work; the latter could reduce the probability of common method variance (Wall and Wood, 2005) and thereby avoid misleading normative and descriptive theory-building (Lumpkin and Dess, 1996; Darwish et al., 2015).

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