Entrepreneurial Leadership

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and International Affairs

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Approved on the application of

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St. Gallen, May 22, 2018

The President:

Prof. Dr. Thomas Bieger
To

my PARENTS and FAMILY
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Arik Röschke
Monaco / Perth / Schaan / St. Gallen – 2017/18
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<th>Description</th>
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<tbody>
<tr>
<td>ABDC</td>
<td>Australian Business Deans Council</td>
</tr>
<tr>
<td>β</td>
<td>beta (standardized regression coefficient)</td>
</tr>
<tr>
<td>χ²</td>
<td>chi-square value observed</td>
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<tr>
<td>CEO</td>
<td>chief executive officer</td>
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<tr>
<td>CFI</td>
<td>comparative fit index</td>
</tr>
<tr>
<td>CI</td>
<td>confidence interval</td>
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<tr>
<td>df</td>
<td>degrees of freedom</td>
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<tr>
<td>ed.</td>
<td>editor / edition</td>
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<tr>
<td>eds.</td>
<td>editors</td>
</tr>
<tr>
<td>EL</td>
<td>entrepreneurial leadership</td>
</tr>
<tr>
<td>e.g.</td>
<td>exempli gratia (for example)</td>
</tr>
<tr>
<td>et al.</td>
<td>et alii/aliae/alia (and others)</td>
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<tr>
<td>H</td>
<td>hypothesis</td>
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<tr>
<td>HR</td>
<td>human resource</td>
</tr>
<tr>
<td>HRM</td>
<td>human resource management</td>
</tr>
<tr>
<td>ICT</td>
<td>information and communication technology</td>
</tr>
<tr>
<td>ibid.</td>
<td>ibidem</td>
</tr>
<tr>
<td>i.e.</td>
<td>id est (in other words; that is)</td>
</tr>
<tr>
<td>KMU-HSG</td>
<td>Schweizerisches Institut für Klein- und Mittelunternehmen</td>
</tr>
<tr>
<td>M</td>
<td>mean value</td>
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<tr>
<td>MLR</td>
<td>maximum-likelihood</td>
</tr>
<tr>
<td>MLQ</td>
<td>Multifactor Leadership Questionnaire</td>
</tr>
<tr>
<td>N</td>
<td>number of observations (sample size)</td>
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<tr>
<td>n.a.</td>
<td>not applicable/available</td>
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<tr>
<td>p</td>
<td>probability (significance level)</td>
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<td>p.</td>
<td>page</td>
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<td>pp.</td>
<td>pages</td>
</tr>
<tr>
<td>r</td>
<td>Pearson’s correlation</td>
</tr>
<tr>
<td>R²</td>
<td>coefficient of determination</td>
</tr>
<tr>
<td>RMSEA</td>
<td>root mean square error of approximation</td>
</tr>
<tr>
<td>SLR</td>
<td>systematic literature review</td>
</tr>
<tr>
<td>SME</td>
<td>small and/or medium-sized enterprise</td>
</tr>
<tr>
<td>TMT</td>
<td>top management team</td>
</tr>
<tr>
<td>VHB</td>
<td>Verband der Hochschullehrer für Betriebswirtschaft (German Academic Association for Business Research)</td>
</tr>
<tr>
<td>VHB-JOURQUAL</td>
<td>journal ranking of the VHB based on quality assessments of their members</td>
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<tr>
<td>vs.</td>
<td>versus</td>
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<tr>
<td>WLSMV</td>
<td>weighted-least squares means and variance adjusted</td>
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<td>amount of</td>
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Executive Summary (English)

As a result of parallels in the entrepreneurship and leadership literature, and as a response to the fast-paced and changing business context, the concept of ‘entrepreneurial leadership’ (EL) arose, placing particular emphasis on the exploration and exploitation of entrepreneurial opportunities. However, as a field, EL is still evolving, and lacks definitional clarity, and only few appropriate tools to assess its characteristics have been developed and tested. This is where this paper series takes up. After demonstrating the challenges in the research field of EL, the first paper shows the results of a systematic literature review and develops a research agenda based on 58 publications. As a whole, the review highlights the heterogeneous nature of EL. Furthermore, the results show that leadership is particularly valuable in firms, where the individual is important and where the context is characterised by constant change and competition. In this context, not only the leader but also followers need to be involved in the exploration and exploitation of entrepreneurial opportunities. Additionally, promising research opportunities pertaining to the context, multilevel effect, and method are identified. New topics, both at the team level, including team cohesion and distributed leadership, and at the individual level, including leader’s cognitive ability, attitudes, values, and affect, offer a rich perspective with regard to the development of this particular field.

Building on the theoretical ideas and research agenda of the first paper, a bibliometric analysis with a sample of 21 publications to clarify the state of knowledge in the field is carried out in the second paper. The goal is to reveal the evolution of EL in small and medium-sized enterprises (SMEs) in order to illustrate conceptual convergence. This paper makes theoretical contributions by presenting the main themes and areas of debate. Overall, the analysis suggests an increased cross-fertilization and convergence between the fields of entrepreneurship and leadership.

The third paper is based on survey responses provided by 300 team members across 94 entrepreneurial SMEs in Switzerland and draws on theoretical perspectives from the entrepreneurial vision and social learning literatures. The paper emphasises that although CEO EL is not directly related to TMT performance and TMT innovation, team cohesion fully mediates the relationship between CEO EL style and TMT performance and TMT innovation.

In summary, the paper series provides a systematic overview of the EL field, providing a state-of-the art perspective and highlighting unanswered questions and opportunities for further research.
Executive Summary (Deutsch)


Chapter A

Introduction to the Paper Series
1 Relevance and Structure of the Paper Series

Entrepreneurship is one of the strongest forces shaping the societies of the 21st century, characterised by ongoing globalisation and growing complexity (van Praag & Versloot, 2007). Curious individuals are taking the initiative to explore and exploit opportunities for various reasons—be they self-fulfilment, profit seeking, support of their families, fulfilment of customers’ needs, or even for world abundance. This can be in the context of startups, small to medium-sized enterprises (SMEs) or large corporations. (Renko, 2018) Within these types of organisations, individuals interact with various stakeholders, in particular employees, and questions arise about how to lead them, and how leaders can involve them in the exploration and exploitation of opportunities to achieve organisational goals.

The importance of leadership for a successful endeavour and prosperous organisational development appears to be undisputed in scholarly literature, as effective leadership is perceived as a pivotal factor in ongoing technological and social changes caused by innovations (e.g., Jensen & Luthans, 2006; Ensley, Pearson, & Pearce, 2003; Hmieleski & Ensley, 2007; Pierce & Newstrom, 2011). In addition, several researchers have observed and remarked upon the dearth of research examining leadership in entrepreneurial ventures (Renko, El Tarabishy, Carsrud, & Brännback, 2015; Antonakis & Autio, 2007; Cogliser & Brigham, 2004; Vecchio, 2003). Therefore, given the importance of entrepreneurship as an agent of economic growth and development, it is pertinent to understand leadership in entrepreneurial contexts (Leitch & Harrison, 2018b).

In both the entrepreneurship and leadership fields, a vast body of literature has been published; there have been considerable overlaps and parallels between these two domains, both historically and conceptually (Cogliser & Brigham, 2004). Some salient early papers focused specifically on the importance of the entrepreneur being a (visionary) leader (Cunningham & Lischeron, 1991) or on the parallels between leadership and entrepreneurship as fields of research and practice (Harrison & Leitch, 1994). As a result of parallels in both research domains, and as an answer to the fast-paced and changing business context, the concept of ‘entrepreneurial leadership’ (EL) arose, because this context requires leaders to be transformative, as well as innovative and proactive, while managing risk (Fernald, Solomon, & Tarabishy, 2005), and explore and exploit opportunities (Renko, 2018). This concept is the foundation of this paper series. However, as a field, EL is still evolving, and lacks definitional clarity (Leitch & Volery, 2017; Renko et al., 2015). In other words, it is still seeking its identity (Leitch & Harrison, 2018a; Leitch, McMullan, & Harrison, 2013). In particular, the following
main features have been identified that manifest the need for research in this field (Leitch & Harrison, 2018a, p. 17):

- There is a lack of agreement on its boundaries; to what extent has the construct of EL drawn from either the entrepreneurship or leadership field or both?
- EL is atheoretical, and even though models and concepts from the entrepreneurship and leadership literature have been drawn on, they are not used to present a theory of EL.
- EL lacks a formally agreed upon definition; the diversity of work has resulted in a plethora from which to choose, as different researchers seek to establish the focus of their work.
- Few appropriate tools to assess its characteristics have been developed.
- As a result of the diversity in understandings of EL, there is a scarcity of knowledge about how it might be developed.

Given this call in previous work, this is where this paper series ties in, to answer the following overall research questions:

1. What are the underlying constituents of the research field of EL? (Papers 1 and 2)
2. How has the research field of EL evolved? (Paper 2)
3. How is EL related to performance and innovation outcomes of entrepreneurial SMEs? (Paper 3)
4. What directions can be derived for the future research on EL to contribute to the development of the field? (Papers 1 and 2)

To accomplish this and to extend research in this field, the respective literature on EL will be analysed and an empirical study conducted to contribute to the development of the field. This is done via a demonstration of these challenges (Chapter A), a structured literature review (SLR) and research agenda (Chapter B), a bibliometric analysis (Chapter C), and a multi-level mediation analysis in entrepreneurial SMEs in Switzerland (Chapter D). Chapter E revisits and answers the overall research questions, discusses the overall theoretical and practical contributions, limitations, and related avenues for future research, and draws the final conclusion. Table 1 depicts the structure of the paper series.
Table 1: Structure of the Paper Series

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<tr>
<td>Chapter E</td>
<td>Concluding Chapter</td>
<td>Summary of Findings, Theoretical and Practical Contributions</td>
<td>Limitations and Future Research</td>
<td>Conclusion</td>
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2 Theoretical Foundations of Entrepreneurial Leadership

The subsequent section provides a short definition of the terms ‘entrepreneurship’ and ‘leadership’, as they form the roots of EL, followed by an overview of the EL concept. In particular, three different perspectives that are evident in the literature are described, following Leitch and Harrison (2018a): deriving mainly from the entrepreneurship literature, the first perspective focuses on the entrepreneur as a leader and the second on leaders having an entrepreneurial mindset. The third perspective reflects the view that the concept sits at the intersection of both domains and draws on the similarities evident in debates and discussions about entrepreneurs and leaders.

2.1 Defining Entrepreneurship

Entrepreneurship is understood as “the process, brought about by individuals, of identifying new opportunities and converting them into marketable products or services” (Schaper, Volery, Weber, & Gibson, 2013, p. 4). This versatile phenomenon spans many disciplinary boundaries (Busenitz et al., 2003), such as traits, social networks, new venture, product, or service offering creation, and even country-specific framework conditions (Schildt, Zahra, & Sillanpää, 2006), which made the definition of entrepreneurship subject to much academic controversy (Shane & Venkataraman, 2000).
The term ‘entrepreneurship’ originates from the French word ‘entreprendre’, which means ‘to undertake’ or ‘to take in one’s own hands’. The entrepreneur as someone “who had formulated a venture idea, developed it, assembled resources and created a new business idea” (Schaper et al., 2013, p. 4), has thus emerged as a pivotal figure operating within a market.

Entrepreneurship first gained scholarly attention in an ‘Essai sur la nature de commerce en général’ by Richard Cantillon (1680–1734). Cantillon defined the entrepreneur as someone who assumes the economic risk of buying at certain prices and selling at uncertain prices in return for profit (Cantillon, 2017). Later, Joseph Alois Schumpeter (1883–1950) characterised the entrepreneur as a change-maker, an individual disrupting existing equilibria by introducing new technologies or products, discovering new markets, or developing new organisational forms (Schumpeter, 1934). With a different lens, Kirzner (1973) suggested that entrepreneurial opportunities exist when the market is not in equilibrium and entrepreneurs discover and act on them, bringing the market back in balance.

![Figure 1: Key Elements of Entrepreneurship](image)

Source: Schaper et al. (2013)

In the subsequent years, researchers focused on the personality, traits, and skills of entrepreneurs. The results were not convincing, however, and by the late 1980s, several scholars refuted the idea that there was a consistent relationship between
entrepreneurship and certain personality types (Brockhaus & Horwitz, 1986; Gartner, 1989). More recently, the role of personality in entrepreneurship has seen a revival as several meta-analyses provided evidence that a link between personality and entrepreneurial behaviour exists (e.g., Collins, Hanges, & Locke, 2004; Zhao & Seibert, 2006) and the questions ‘who is an entrepreneur?’ and ‘what is entrepreneurial?’ persist in order to find the prototypical entrepreneur.

For the purpose of this paper series, we follow Wickham (2006) and Schaper et al. (2013) who suggested that a motivated individual (the entrepreneur), a market opportunity (a situation in which a new product or service can be introduced and sold at greater than its cost of production), adequate resources (e.g., financial, physical, human, technological, social, organisational), a business organisation (e.g., startups, corporate venture, franchises, joint ventures), and a favourable environment (e.g., information asymmetry, market inefficiencies, demographic changes) must be present in order for entrepreneurship to take place, and the entrepreneur brings together these contingencies to create new value (see figure 1).

2.2 Defining Leadership

Leadership has gained the attention of researchers globally. While there may be no agreement as to what ‘leadership’ is, there is a widespread consensus that it is important and that it is situational (Leitch & Harrison, 2018b), and as a single domain, there is no other area in the behavioural sciences that has more models and theories than leadership (Hunt & Dodge, 2000). In a review of research on leadership, Stogdill (1974, p. 7) affirmed that “there are almost as many different definitions of leadership as there are persons who have attempted to define the concept.”

Research in the field of leadership can be traced back to the ancient civilisations (Peterson & Hunt, 1997). Leaders served as symbols in both the Old and New Testaments, the Upanishads, the Greek and Roman classics, and the Icelandic sagas (Bass, 1997). Leadership has enjoyed consistent and systematic attention from scholars since the 20th century. Research started by identifying personal characteristics and traits of leaders, not unlike the approach taken in the early study of entrepreneurship (Carsrud & Brännback, 2011). The trait theory of leadership “conceptualizes leadership as a property or set of properties possessed in varying degrees by different people. This suggests that it resides in select people and restricts leadership to those who are believed to have special, usually inborn, talents” (Northouse, 2016, p. 8).
As a review of the literature in the 1940s found no general personality characteristics or traits that could be associated with leadership, the focus of research changed towards a more behavioural approach (Carsrud, Renko-Dolan, & Brännback, 2018).

Figure 2: Trait vs. Process Theory of Leadership
Source: Northouse (2016)

Increasingly, researchers have shifted their focus away from only the individual leader to followers, peers, supervisors, context and culture, including a broader domain of individuals, and the field of leadership is therefore perceived “as dyadic, shared, relational, strategic, global, and a complex social dynamic” (Avolio, Walumbwa, & Weber, 2009, p. 423). The trend has been towards a focus on empowering followers and creativity-enhancing leadership styles with a view to establishing how leadership can contribute to organisational success (Carsrud et al., 2018). Hence, the process theory of leadership (see figure 2) “suggests that leadership is a phenomenon that resides in the context of the interactions between leaders and followers […]. As a process, leadership can be observed in leader behaviours, and can be learned” (Northouse, 2016, p. 8).

Despite the various attempts to conceptualise leadership—e.g., leadership as the focus of group processes; leadership from a personality perspective; leadership as an act / behaviour; leadership as power relationship; leadership as a transformational process; and leadership as skills—the following components can be identified as core to the phenomenon: leadership as a process that involves influence, occurs in groups and
involves the achievement of common goals (Northouse, 2016). Hence, leadership is a complex and continuously evolving phenomenon that should be analysed within specific contexts (Yukl, 2012). This is the aim of this paper series, which contributes to the existing leadership literature in entrepreneurial contexts.

2.3 Defining Entrepreneurial Leadership

The focus to examine EL is characterised by opposing positions and understandings, on whether the entrepreneurship or leadership perspective is in the foreground. In particular, figure 3 illustrates three different perspectives that are evident in the literature (Leitch & Harrison, 2018a): the first perspective focuses on the entrepreneur as a leader (primacy of leadership) and the second on leaders having an entrepreneurial mindset (primacy of entrepreneurship). The third perspective anchors EL at the intersection of both domains.

![Figure 3: Three Perspectives on Entrepreneurial Leadership](image)

*Source: adapted from Leitch and Harrison (2018b, p. 5)*

**Perspective 1: Entrepreneurial leadership as a style of leadership.** This perspective centres the individual, following Schumpeter (1934), who considered the entrepreneur as a natural-born leader when, and Baumol (1968), who considered the entrepreneur as an individual exercising leadership.
Vecchio (2003), along with other scholars, finds nothing distinctive about EL. He considers entrepreneurship to be a form of leadership that occurs in settings with certain conditions, such as those of small, yet rapidly growing businesses. Admittedly, this perspective implies the unidirectional transference of concepts from the leadership field to entrepreneurship (Leitch & Harrison, 2018a). Cunningham and Lischeron (1991, p. 47) echo this view, and believe that the central purpose of the entrepreneur is to lead and “to adapt their style to the needs of the people”.

Further, work in this area has tended to conflate the terms ‘entrepreneur’ and ‘leader’. The numerous issues in EL can, according to this view, be understood and examined using the already available theory in the leadership and interpersonal influence field (Leitch & Volery, 2017). Looking at EL as a contextualised and situated form of leadership, entrepreneurship scholars suggest that, given the absence or underdevelopment of standard operating procedures and management practices, founders initially have to lead (Hmieleski & Ensley, 2007). However, with growth of the venture and increasing delegation of primary business functions, the role of the entrepreneur may more formally evolve to that of a leader (Jensen & Luthans, 2006), in keeping with the increasing formality of, and emphasis on, management and leadership practices associated with increasing organisational size (Leitch & Harrison, 2018a).

Examining the leadership research more closely reveals that behaviours traditionally associated with entrepreneurship have been incorporated into leadership theory. Yukl (2012), for example, identified change-oriented behaviour consisting of advocating change, envisioning change, encouraging innovation and enabling collective learning, as one of the four distinct of leadership behaviour meta-categories. In addition, Leitch and Harrison (2018a, p. 19) point out that “in practice almost everything written on ‘entrepreneurial leadership’ comes from entrepreneurship: leadership scholars implicitly appear to accept Vecchio’s argument and see the entrepreneurial domain as just another (not particularly interesting) context for the application of mainstream leadership theory”.

**Perspective 2: Entrepreneurial leadership as an entrepreneurial mindset.** Contrarily, Kuratko (2007) and Gupta, MacMillan, and Surie (2004) argued that leadership should be perceived as a constituent of entrepreneurship, in the sense that “an entrepreneurial mind-set and behaviours are essential for effective leadership: entrepreneurship becomes the essence of leadership” (Harrison, Leitch, & McAdam, 2015, p. 694). In this understanding, entrepreneurial leaders are neither entrepreneurs nor delimitied to operating in entrepreneurial ventures, or SMEs and thus this position resonates with intrapreneurship and corporate entrepreneurship, as such individuals possess an EL style...
and are able to work in any organisation, on any task and to lead teams and individuals entrepreneurially (Leitch & Harrison, 2018a; Leitch & Harrison, 2018b). In addition, there is an emphasis on the exploration and exploitation of opportunities, in keeping with recent trends in entrepreneurship that have highlighted the importance of entrepreneurial orientation (Gupta et al., 2004; Surie & Ashley, 2008) and opportunity recognition (Chen, 2007; Renko et al., 2015).

In this perspective, no assumption is made regarding whether EL style is a superior or inferior style. Instead, entrepreneurship scholars view entrepreneurs and leaders as different, and have appropriated leadership models and concepts to advance thinking in their field (Leitch & Harrison, 2018b).

**Perspective 3: Entrepreneurial leadership at the interface of two domains.** Greenberg, McKone-Sweet, and Wilson (2011) highlight that researchers in the entrepreneurship and leadership domain are convinced that the two previously described perspectives, while similar, are not the same. They stress that entrepreneurial leaders are different from entrepreneurs. According to this perspective, EL sits at the interface of the entrepreneurship and leadership domain and is characterised by scholars identifying common themes (Leitch & Harrison, 2018a). For example, Cogliser and Brigham (2004) argue that EL emerged from the theoretical overlap between the fields of entrepreneurship and leadership due to historical and conceptual parallels, highlighting vision, influence, leading innovative and creative individuals, and planning. In addition, Fernald et al. (2005) demonstrate the importance of problem solving, decision-making, risk-taking, and strategic initiatives in the entrepreneurship and leadership domains. When this approach is followed, EL can be perceived as existing at the intersection of leadership and entrepreneurship (Harrison et al., 2015; Renko et al., 2015), and a cross-fertilisation of both fields can be of benefit (Antonakis & Autio, 2007). This paper series follows the argumentation that the concept of EL exists at the interface of the two disciplines and that research into it can draw usefully on both.

### 2.4 Entrepreneurial Leadership and Transformational Leadership

It is evident that EL shares characteristics with transformational leadership (Renko et al., 2015; Leitch & Volery, 2017). Transformational leadership, for instance, traditionally casts leaders as visionary or charismatic individuals who energise and inspire employees into following them. These leaders typically place shaping the organisation ahead of their own self-interest, and are constantly searching for new ways of working and identifying possibilities to overturn the status quo. Transformational leaders ‘transform’ followers by getting them to recognise the importance and value of
their work, to focus on team and organizational goals that go beyond their own self-interest, and to seek to satisfy ‘higher order needs’ (Maslow, 1943), such as belonging to the team and achieving their own potential. This is achieved by the use of personal charisma to arouse and focus followers’ motivation to attain organisational goals, which will then lead to superior task performance of subordinates. (Carsrud et al., 2018)

The advantages of transformational leadership are considerably studied and cover topics such as the military (Dvir, Eden, Avolio, & Shamir, 2002), brand strengthening behaviour of employees (Morhart, Tomczak, & Jenewein, 2016), and creativity (Gumusluòlu & Ilsev, 2009). Positive results of transformational leadership were shown in regard to being more productive and successful than organisations whose top leaders are less transformational (Judge & Piccolo, 2004). Advantages in startups have also been studied (Baum, Locke, & Kirkpatrick, 1998; Zaech & Baldegger, 2017). Research has also shown that a CEO’s transformational leadership shapes the characteristics of the TMT, which in turn impacts the firm’s engagement in corporate entrepreneurship (Ling, Simsek, Lubatkin, & Veiga, 2008). While transformational leadership can have such beneficial outcomes in terms of corporate-level entrepreneurship, EL differs in that it directly contributes to enhanced opportunity recognition and exploitation by an organisation through both leaders’ and employees’ very engagement in opportunity-focused behaviours (Carsrud et al., 2018).

Therefore, the concept of EL focuses entirely on specific entrepreneurial aspects in leadership, compared to transformational leadership, which takes a wider lens. The requirements of transformational leadership, such as “a leader with vision, self-confidence, and inner strength to argue successfully for what he sees is right or good, not for what is popular or is acceptable according to established wisdom of the time” (Bass, 1985, p. 17), describe overall exceptional leadership. Hence, that makes transformational leadership a generalised concept, because what is “right or good” can encompass any variety of domains (e.g., HRM, product-market strategies, new product development decisions, stakeholder management). (Carsrud et al., 2018) Recent evaluations of transformational leadership have focused on its lack of a clear conceptual definition and causal model to clarify the relationship of influences on mediating processes and outcomes. It has been suggested that these failings are due to the multidimensionality of transformational leadership (van Knippenberg & Sitkin, 2013). According to Leitch and Harrison (2018a, p. 26), transformational leadership “is universalist in that its attributes are considered to be relevant in all situations: in essence, context is not considered.”
The advantage of the EL concept is the focus on what truly matters in entrepreneurial ventures: exploration and exploitation of opportunities, both by leaders and followers. While transformational leadership does contain elements of such behaviours, these are not prevalent. In addition, despite entrepreneurial leaders leading with clear goals and sense of purpose, they are more likely to be described by others as transformational leaders than charismatic or inspirational (Renko et al., 2015). Furthermore, followers are considered by the entrepreneurial leader primarily by their entrepreneurial passion (Cardon, Wincent, Singh, & Drnovsek, 2009) and self-efficacy (Bandura, 1986): the entrepreneurial leader ignites followers’ passion for creativity and innovation and enhances their belief in their own entrepreneurial abilities and skills. However, only combined empirical studies of EL and transformational leadership will help to clarify to what extent these constructs converge and differ.

2.5 Entrepreneurial Leadership and other Leadership Styles

In addition to transformational leadership, EL typically is also characterised as both charismatic and authentic (Leitch & Volery, 2017). Authentic leadership requires that one is self-aware and acts in accordance with one’s true self. This is achieved by honestly expressing what one thinks and believes (Gardner, Cogliser, Davis, & Dickens, 2011). The entrepreneur plays a central role in new business ventures, meaning thoughts, emotions, personal experiences, beliefs and desires are likely to have a significant impact on the way members of the group are influenced and directed (Leitch & Volery, 2017). Often, entrepreneurs are authentic leaders as they are true to themselves, and their behaviour leads to their followers gaining self-awareness and psychological strength (Jensen & Luthans, 2006).

In addition, Carsrud et al. (2018, p. 202) identified paternalistic leadership (emotionality) as being relevant to understanding EL:

“emotionality is a strong psychological force behind any affective reaction, such as commitment to a new business. Entrepreneurs themselves and those involved in entrepreneurial businesses are inspired, excited, passionate and devoted. At times they are almost obsessive, and protective of their new venture. The prevalence of paternalistic leadership practices in both new ventures and family businesses may be closely related to the strong emotional connections prevalent in such firms, and the need to behave entrepreneurially.”
They also found important elements of participative leadership relevant to understanding EL:

“participative leadership is characterized by the leader involving organizational members in decision-making. Such participation can provide an important mechanism for interpersonal processes for adaptation and change in the business. Other benefits of participative leadership include conflict resolution, increased decision acceptance, increased job satisfaction and work enrichment.” (ibid., p. 202).

As creativity is an important part of opportunity recognition and exploitation, leadership approaches that put emphasis on creativity are considered as being entrepreneurial in nature. For instance, it is suggested that subordinates will be at their most creative when they feel their immediate supervisors are supportive of both them and their work. While, creativity is a key component of the entrepreneurial process, however it is not a synonym for entrepreneurship. Creativity is required for the generation of ideas, but certainly not every useful or novel idea qualifies as an entrepreneurial opportunity. Leadership for creativity is often concentrated on internal operations, while the creative emphasis of EL is placed on inventing and, more importantly, the commercialisation of processes, products, or services. (Renko et al., 2015)

However, according to a review article by Anderson and Sun (2017), most researchers appear to concur with Fiol, Harris, and House (1999, p. 451), who state that the similarities among charismatic and transformational leadership are “far greater than their differences” and findings from studies of charismatic, transformational, and visionary leadership generally converge. In addition, when an empirical comparisons of the dominant measures of charismatic and transformational leadership was completed, it was revealed that transformational leadership as measured by the Multifactor Leadership Questionnaire (MLQ) and charismatic leadership as measured by the Conger-Kanungo Scale (CKS) were significantly correlated (Rowold & Heinitz, 2007). These findings are of importance, given the relevance of transformational leadership for the understanding of EL. It would therefore be of interest and probably necessary to conduct a large-sample and large-scale empirical study in order to measures all the overlapping styles. The aim would be to identify which leadership dimensions are empirically distinct and to clarify to what extent these constructs converge.
3 Overview of the Paper Series
Following the logic of a cumulative dissertation, the above-stated overall research questions (see Chapter A) are answered in three self-standing papers, using distinct methodologies.

3.1 Content, Method, and Purpose
With regard to research questions one and four of this paper series, the first paper conducts a SLR of 58 publications on EL, adopting a definition of EL, which encompasses the three above mentioned perspectives on EL in order to derive a research agenda. A SLR (e.g., David & Han, 2004; Newbert, 2007) is unlike a traditional narrative review in that it is more explicit in both its selection and evaluation of studies. In addition, the SLR is transparent and replicable. In conducting the SLR, the paper searches the database EBSCO metasearch (Web of Science, Scopus, and JSTOR) by means of a Boolean keyword search (e.g., Henry, Foss, & Ahl, 2016; Pittaway & Cope, 2007). To review the searched publications on EL, the first paper uses a thematic reading guide with an appropriate coding system (Henry et al., 2016). The following information was collected: type of publication (theoretical, empirical), author attributes (names, disciplines, institutional affiliation, country), represented journals, and understanding of EL, as research shows considerable discrepancy in the definition. In addition, for empirical publications, we analysed research methods, antecedents, moderators, mediators, and outcomes of EL, as well as the key findings for each paper. To ensure all articles were properly categorised, we used a two-step procedure following Furrer, Thomas, and Goussevskaia (2008): first, both authors separately analysed the publications; and second, disagreements were solved through discussion and a joint examination. Further and detailed information about the SLR is contained in section 3 of chapter B.

To further investigate the evolution and constituents of research in the field of EL (overall research questions one and two), and to identify possibilities for future research (overall research question four), the second paper conducts a bibliometric analysis (e.g., Smith & Humphreys, 2006; Volery & Mazzarol, 2015) with a sample of 21 publications to clarify the state of knowledge in the field. If systematic reviews often include more publications, this is because they usually focus on more mature fields of research, whereas this paper focuses on an emerging (but growing) field (Baldacchino, Ucbasaran, Cabantous, & Lockett, 2015). It also aims to reveal the evolution of EL in SMEs in order to illustrate conceptual convergence in this field of research. Therefore, the analytical tool ‘Leximancer’ is applied, which performs an automatic analysis of the content. This
delivers two findings: the most commonly used concepts within a section of text and the relationships between these concepts. This approach gives unbiased results, performing the associational analysis of textual data in a language-independent manner. According to Angus, Rintel, and Wiles (2013, p. 262), “The advantage of generating the concept list automatically is that the list is statistically reliable and reproducible, being generated from the input text itself, whereas manual lists require checks for coding reliability and validity.” Therefore, the use of Leximancer increases the objectivity, hence decreasing the preconceptions of manual content analysis (Smith & Humphreys, 2006). Additionally, subtle or unusual relationships may be more likely to emerge using automated concept list creation. For further details about the methodological and analytical approach, it is referred to chapter C, section 2.

Regarding the overall research question three of this paper series, the third paper draws on theoretical perspectives from the entrepreneurial vision (Gupta et al., 2004; Ruvio, Rosenblatt, & Hertz-Lazarowitz, 2010) and social learning (Bandura, 1977) literatures to propose that the exhibition of CEO EL behaviours will foster higher levels of TMT performance and TMT innovative behaviour in entrepreneurial SMEs. It is also argued that TMT cohesion may act as a key mediating mechanism that explains the relationship between CEO entrepreneurial leadership and both TMT performance and TMT innovative behaviours in SMEs. According to Leitch and Harrison (2018b), the majority of research on leadership “has been situated in corporate contexts and there has been much less attention given to issues of leadership and leadership development in the context of entrepreneurial and small and medium-sized enterprises” (p. 3). They further state that “understanding leadership in the entrepreneurial context is particularly pertinent, given the importance attached to entrepreneurship as an agent of economic development and restructuring” (ibid., p. 4). Therefore, the recently developed ENTRELEAD scale (Renko et al., 2015) is applied, which considers in particular the entrepreneurial context.

The paper relies on survey responses provided by 206 TMT members and 94 CEOs of entrepreneurial SMEs in Switzerland. Data collection took place from late 2016 until early 2017. In order to test the main effects, the paper calculates multi-level regressions and applies mediation analysis. For more details about data collection and data analysis, it is referred to chapter D, section 3.
3.2 Key Characteristics

The paper series addresses specific research gaps, focuses on selected theoretical constructs, adopts different methodological and analytical approaches, and offers contributions to theory and practice. Table 2 presents the key characteristics of the papers and thereby also informs about authorship and publication status.
Table 2: Key Characteristics of the Paper Series

<table>
<thead>
<tr>
<th>Authorship</th>
<th>Research Gap</th>
<th>Main Theoretical Constructs</th>
<th>Methodology, Sample, and Analysis</th>
<th>Contributions</th>
<th>Publication Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paper 1: Entrepreneurial Leadership: A Structured Review of the Literature and Research Agenda (Chapter B)</strong></td>
<td>Arik Röschke, Thierry Volery Assessment of the development and current status and underlying constituents of EL; offer promising topics and research agenda on EL</td>
<td>Entrepreneurship, leadership, entrepreneurial leadership</td>
<td>Research agenda through structured literature review of EL derived from 58 publications</td>
<td>EL research is heterogeneous, highly fragmented literature; Leadership is important in firms where the individual is important and the context is characterised by constant change and competition; future research: e.g., team cohesion, leader’s cognitive ability, attitudes, values, and affect</td>
<td>To be submitted to International Journal of Management Review (ABDC ranking: A, VHB ranking: B)</td>
</tr>
<tr>
<td><strong>Paper 2: The Concept and Evolution of Entrepreneurial Leadership: A Bibliometric Analysis (Chapter C)</strong></td>
<td>Arik Röschke Clarify the state of knowledge in the EL research field; reveal the evolution of EL in SMEs; apply a novel analytical tool (Leximancer)</td>
<td>Entrepreneurship, leadership, entrepreneurial leadership</td>
<td>Bibliometric analysis, based on 21 publications on EL in SMEs</td>
<td>Reveals changes in the evolution of research on EL, and suggests an increased cross-fertilization and convergence between the fields of entrepreneurship and leadership.</td>
<td>Published in Harrison, R. T. and C. M. Leitch (2018). Research Handbook on Entrepreneurship and Leadership. Cheltenham, UK: Edward Elgar Publishing. Accepted and presented at Rencontres de St.-Gall, St.Gallen 2014; European Academy of Management, Warsaw 2015; and Academy of Management Meeting, Vancouver 2015</td>
</tr>
<tr>
<td><strong>Paper 3: Entrepreneurial Leadership and TMT Performance and Innovation and in Entrepreneurial SMEs: The Mediating Role of TMT Cohesion (Chapter D)</strong></td>
<td>Arik Röschke, Thierry Volery, Nathan Eva, Alexander Newman Measurement of EL: mediating mechanism of the link between CEO EL and TMT performance and innovation</td>
<td>Entrepreneurial leadership, team cohesion, vision, social learning</td>
<td>Empirical article; 94 CEOs and 206 TMT members; regression analysis; indirect effects models (mediation analysis)</td>
<td>CEO EL is not directly related to TMT performance and innovation outcomes; through fostering cohesion, CEOs who engage in EL, enhance the innovative behaviour and performance of their TMTs</td>
<td>To be submitted to Journal of Management Studies, Special Issue: Leading Entrepreneurial Ventures: Individual and Team-Based Perspectives (ABDC ranking: A*, VHB ranking: A)</td>
</tr>
</tbody>
</table>
Entrepreneurial Leadership: A Structured Review of the Literature and Research Agenda

Arik Röschke and Thierry Volery

Abstract
Reflecting on an increasing interest in entrepreneurial leadership (EL), this article systematically reviews the literature to assess the current status of EL research, highlights knowledge gaps and offers promising directions for future research. In total, 58 publications are considered in this structured literature review (SLR). We explored different types of publications (theoretical, empirical), author attributes (names, disciplines, institutional affiliation, country), represented journals, and understanding of EL, as research shows considerable discrepancy in the definition. In addition, for empirical publications, we analysed research methods, antecedents, moderators, mediators, and outcomes of EL, as well as the key findings for each publication. Taken together, our review highlights the heterogeneous nature of EL. The literature is highly fragmented, and there are substantial knowledge gaps in content, theory, and methodology. Our results show that EL is particularly valuable in firms, where the individual is important and the context is characterised by constant change and competition. In this context, not only the leader but also subordinates need to be involved in the exploration and exploitation of entrepreneurial opportunities. We identify promising research opportunities pertaining to the context, multilevel effect, and method. New topics, both at the team level, including team cohesion and distributed leadership, and at the individual level, including leader’s cognitive ability, attitudes, values, and affect offer a rich perspective for the development of EL.
1 Introduction

Existing research suggests that entrepreneurs’ leadership behaviour is a key component in the success, or otherwise failure, of entrepreneurial ventures (Ensley et al., 2003; Hmieleski & Ensley, 2007; Leitch et al., 2013), and that organisations increasingly embrace entrepreneurial behaviours and attitudes that foster innovation and adaptation (Renko et al., 2015). Given the importance of entrepreneurship as an agent of economic growth and development, it is pertinent to understand leadership in entrepreneurial contexts. In addition, effective leadership is a pivotal factor in ongoing technological and social changes caused by innovations (e.g., Jensen & Luthans, 2006; Ensley, Pearson, & Pearce, 2003; Hmieleski & Ensley, 2007; Pierce & Newstrom, 2011).

Despite the growing interest in EL, scholarship is limited and at an “infancy” stage (Cogliser & Brigham, 2004; Leitch & Volery, 2017), and development of the field has been hampered by theoretical challenges. Chief among these has been whether to anchor EL in entrepreneurship or leadership theory (Vecchio, 2003) and to solve the conundrum of whether the entrepreneurial leader is an entrepreneur demonstrating leadership behaviours or a leader who leads in an entrepreneurial manner. The various perspectives and definitions in circulation have led to some scholars claiming EL is atheoretical and lacking in definitional clarity (Harrison et al., 2015; Leitch et al., 2013).

The boundaries of both, the entrepreneurship and leadership fields, are permeable and often overlap. Further, they are in continuous dialogue with other disciplines, including psychology (e.g., Baum & Locke, 2004; Baum et al., 1998), management (e.g., Engelen, Gupta, Strenger, & Brettel, 2015), innovation (e.g., Gumusluölu & Ilsev, 2009) and gender studies (e.g., Galloway, Kapasi, & Sang, 2015; Henry, Foss, Fayolle, Walker, & Duffy, 2015), which have each adopted different lenses and units of analysis. However, the proliferation of existing concepts and the ambiguity in the way in which the concepts are operationalized has led to some confusion in directly comparing empirical work, requiring researchers to articulate the terminologies used. Scholars and business leaders often have difficulty understanding the nature of EL, its antecedents and consequences.

At the same time, the recent and rapid evolution of EL research raises concerns about its theoretical consolidation. (Leitch & Harrison, 2018a)

To address the problems and gaps indicated above, we conducted a SLR of 58 articles on EL. Instead of developing a new typology, we aim to synthetize existing concepts and provide a parsimonious framework of the overarching factors at the core and periphery of EL. The primary objectives of our review are to (1) systematically review and assess the current status of EL research and (2) highlight knowledge gaps that offer promising directions for future research.
To the best of our knowledge, our review is the first to provide a systematic inventory of the heterogeneous EL literature. We explore the type of publication (theoretical, empirical), author attributes (names, disciplines, institutional affiliation, country), represented journals, and understanding of EL, as research shows considerable discrepancy in the definition. In addition, for empirical publications, we analysed research methods, antecedents, moderators, mediators and outcomes of EL, as well as the key findings for each paper. Based on this general framework, we critically analyse extant research and provide an overview of promising future research directions with respect to content, theory, and methodology.

2 Definitional Foundation

In this section, we review the evolution of the fields of entrepreneurship and leadership concepts leading to the emergence of EL. According to Leitch and Harrison (2018a, p. 17), “Even though both fields have followed similar evolutionary paths, debates in the more mature field of leadership, chronologically precede those in entrepreneurship, prompting entrepreneurship scholars, in particular, to recognize the mutual benefits to be gained from merging the two streams of literature”. Therefore, according to Antonakis and Autio (2007, p. 203) “entrepreneurship could stand to gain from closer integration with leadership research”.

2.1 Entrepreneurship

There exist various schools of thought that view the notion of entrepreneurship from fundamentally varied perspectives and a consensus on the phenomenon has not been reached yet. According to a systematic review by van Praag and Versloot (2007), entrepreneurship is the principal driver of innovation and employment creation and, therefore, plays an important role in the economic and societal advancement of nations. Busenitz et al. (2003) posited that entrepreneurship can be considered as a phenomenon found at the intersection of—and relationship between—individuals and teams, environments, opportunities, and organisation mode. Insofar, it is not only connected to the creation and growth of organisations, but can also occur within existing organisations. However, the entrepreneurship research field is rather unsettled and its focus varies greatly. For instance, it has been characterised as a diverse and fragmented field of inquiry that is in ferment (e.g., Aldrich, 2012; Gartner, 2001) and challenging to define, as a result of its multifaceted nature and tendency to span a number of disciplinary boundaries (Busenitz et al., 2003). For example, similar to research on
leadership, studies have focused on entrepreneurial persons, traits or social networks; new ventures, SMEs, large organisations, product or service offering creation; and even country-specific framework conditions (Schildt et al., 2006).

2.2 Leadership

The field of leadership shows the same theory evolution as entrepreneurship, and many of the constructs used in entrepreneurship can also be found in mainstream leadership theory (Vecchio, 2003). The quintessence of leadership is about “influencing and facilitating individual and collective efforts to accomplish shared objectives” (Yukl, 2012, p. 66). The primary focus at the outset of the research field of leadership was predicated upon studying an individual leader, “who was most likely a male working in some large private-sector organization in the United States” (Avolio et al., 2009, p. 422). Nevertheless, thousands of studies on leader behaviour and its effects have been conducted over the past half century. This flourishing research has yielded many different behaviour taxonomies but findings concerning what constitutes effective behaviours are difficult to compare and integrate (Yukl, 2012).

Over the past decade, a widespread consensus has emerged to recognize that leadership is situational (Leitch & Harrison, 2018b). In particular, researchers have suggested that leadership is a source of competitive advantage in a complex, ambiguous and dynamic business environment (Küpers & Weibler, 2008; Yukl, 2008). Additionally, it has been assumed that leaders will make a difference, that their behaviours are important, and that they produce positive group and organisational effects (Pierce & Newstrom, 2011). Today, the attempt is to take a more holistic view: the focus is broader and comprises followers, peers, supervisors, work setting and culture, in various settings such as public, private, and not-for-profit organisations and nations around the globe. Therefore, “leadership is no longer simply described as an individual characteristic or difference, but rather is depicted in various models as dyadic, shared, relational, strategic, global, and a complex social dynamic” (Avolio et al., 2009, p. 423.).

2.3 Entrepreneurial Leadership

Three different perspectives on EL are evident in the literature. The first perspective derives mainly from the entrepreneurship literature, focusing on the entrepreneur as a leader. For authors like (Vecchio, 2003), various constructs applied in entrepreneurship are also applied in leadership theory and therefore recognizes nothing distinctive about EL: “it is more cogent and parsimonious to view entrepreneurship as simply a type of leadership that occurs in a specific context […] a type of leadership that is not beyond
the reach or understanding of available theory in the areas of leadership and interpersonal influence” (ibid., p. 322). For him, entrepreneurs are leaders by virtue of their position, a view echoed by Cunningham and Lischeron (1991, p. 47), who believe that the central purpose of the entrepreneur is to lead and “to adapt their style to the needs of the people”.

The second perspective revolves around leaders having an entrepreneurial mindset. According to Kuratko (2007) and Gupta et al. (2004), entrepreneurship is the essence of leadership. An entrepreneurial mindset is essential for effective leadership. Thus, entrepreneurial leaders are not confined to entrepreneurial business ventures or SMEs. For example, Kuratko (2007, p. 2) noted that “entrepreneurship is an integrated concept that permeates our society and individuals in an innovative manner”. According to this view, EL is the key driver of the “entrepreneurial revolution”, which has been shaping the economy since the 1990s. The entrepreneurial leader can be every individual who pursues opportunities beyond the resources they own, takes risks, and has the tenacity to push an idea through. (Leitch & Harrison, 2018b)

The third perspective argues that EL exists at the nexus of entrepreneurship and leadership and draws on the similarities evident in debates and discussions about entrepreneurs and leaders (Cogliser & Brigham, 2004; Renko et al., 2015; Leitch & Volery, 2017). The concept of EL is recognised as distinct, which takes into consideration the specific qualities of the exercise of leadership in both SMEs as well as in innovative corporations evolving in a global, hypercompetitive environment. Along these lines, the concept of EL captures leadership behaviours that involve influencing and directing group members towards goals that include the recognition and exploitation of entrepreneurial opportunities (Renko et al., 2015).

In this review, we adopt a broad definition of EL which encompasses the three above mentioned perspectives on EL and include organisations of any age, size and focus.

3 Methodology

Given the previous diversity around the descriptions of EL and measurement of the concept, we follow a SLR process to identify key scientific contributions in this field. The difference of a SLR to the traditional narrative review is that the former uses a rigorous, replicable, scientific and transparent process (Cook, Mulrow, & Haynes, 1997). A SLR is also different from a meta-analysis in the sense that it does not use statistical and econometric procedures for synthesizing findings and analysing data (Tranfield, Denyer, & Smart, 2003). The benefits of such a method allow us to capture
the diversity around EL and to remove the subjectivity involved within the data collection process. Our SLR follows five steps (see figure 4).

**Step 1: Setting Research Questions**
- What is the current status of EL research? (type of publication, geographies of authors and data, characteristics, antecedents, and outcomes, methods used, key findings)
- What are the knowledge gaps in EL research?
- What are promising directions for future research? (content, theory, methodology)

**Step 2: Defining Conceptual Boundaries**
- EL as a style of leadership
- EL as an entrepreneurial mindset
- EL at the interface of entrepreneurship and leadership

**Step 3: Data Collection**

**Journal Listing**
- Ranking A+, A, A/B, B
- VHB Jourqual list 3 and ABDC Journal Quality list 2016

**Publication Type**
- Academic journal articles written in English; no time period limitation

**Search Process**
- Search in EBSCO metasearch (Web of Science, Scopus, JSTOR); Keywords (entrepreneur* AND lead*) in (abstract) and (journal ISSN)

**Step 4: Abstract Analysis**
- 292 articles in 66 journals downloaded for analysis
- Both authors read abstracts and accepted/rejected each article based on inclusion/exclusion criteria listed hereafter
- Discussion of differences until consensus on final classification was reached

**Inclusion Criteria**
- Discuss EL on an empirical or conceptual level
- EL understood as a style of leadership, an entrepreneurial mindset, or at the interface of entrepreneurship and leadership
- Organisations of any age, size and focus

**Exclusion Criteria**
- A variety of articles matched the search term, however the application did not concur the context of EL (e.g. entrepreneurial ambitions and market leader/follower positions; entrepreneurial culture and technology leaders in OECD countries; corporate entrepreneurship and cost leadership strategy)

**Step 5: Coding of Publications**

**Step A**
- Final sample: 58 publications (cut-off date: January 2017)
- Development of thematic codes adopted from Gardner et al. (2011)
- Separate analysis and coding of 58 publications

**Step B**
- Discussion of differences and joint examination of the full text at hand until consensus on final classification was reached

**Figure 4: Structure of the SLR**

This SLR focuses on peer-reviewed journals published in English in the Australian Business Deans Council (ABDC) Journal Quality list 2016 and in the German VHB Jourqual List 3 (ranking A to C). Conference papers, dissertations, working papers,
editorials, comments, book reviews, and book chapters are, therefore, not considered in this review. To identify publications for inclusion in this review, we searched for the term ‘leader*’ AND ‘entrepreneur*’ in ‘Abstract’ AND ‘journal ISSN’ in the EBSCO metasearch engine. This search engine offers a single access point, so searching a vast range of sources, including all EBSCO databases, Web of Science, Scopus, and JSTOR becomes possible. Our search includes papers published until January 2017. This yielded a database of 292 articles published in 66 journals.

The authors then read all abstracts separately and, adopting a broad definition of EL, selected those where EL was understood according to the three aforementioned perspectives. Following this first screening, the majority of articles had to be excluded (e.g., entrepreneurial ambitions and market leader/follower positions; entrepreneurial culture and technology leaders; corporate entrepreneurship and cost leadership strategy) because they did not match the definition of EL adopted above.

We computed an interrater reliability for this first round of coding and obtained a Cohen’s Kappa coefficient of 0.797, which indicates a very high agreement between the two authors (Landis & Koch, 1977). The $p < 0.001$ value in the current analysis indicates that the probability of the agreement between raters being due to chance is less than 0.1%. This suggests that both authors classified the majority of the publications in the exact same way. The small number of differences was discussed with a detailed joint examination of the full text at hand until a consensus on the final classification was reached.

In addition, backward tracking of references identified nine additional articles for inclusion in the review. The final sample consists of 58 publications. While many systematic reviews include more publications, this is often because they focus on more developed fields of research. This paper concentrates instead on an emerging and growing field (Baldacchino et al., 2015). Therefore, the smaller body of literature is not perceived as problematic. Following Baldacchino et al. (2015, p. 215) “what matters most is whether the topic is likely to be of interest to the field, the rigor of the search criteria in ensuring that the work is relevant and focused, and the scientific quality of the outputs identified.” Hence, this paper uses tightly defined inclusion and exclusion criteria. In addition in the field of management, Briner and Denyer (2012) provide a number of examples of SLRs performed on studies that were 16 and less.

To analyse the data, we adopted the methods used in similar SLRs (Gardner et al. 2011; Henry et al., 2016). Specifically, we constructed a thematic reading guide with a coding system in order to review the searched articles. The following information was collected: type of publication (theoretical, empirical), author attributes (names, disciplines,
institutional affiliation, country), represented journals, and understanding of EL, as research shows considerable discrepancy in the definition. In addition, for empirical publications, we analysed research methods, antecedents, moderators, mediators, and outcomes of EL, as well as the key findings for each paper. To ensure all articles were properly categorized, we used a two-step procedure following Furrer, Thomas, and Goussevskaia (2008): first, both authors separately analysed the publications; and second, disagreements were solved through discussion and a joint examination.

We provide an overview of the papers, authors and journals included in our review in table 3

In total, 31 journals are represented in this analysis. The Journal of Small Business Management is most frequently represented (ten times), supporting its aim “to publish scholarly research articles in the fields of small business management and entrepreneurship” (ibid., 2017). The heightened frequency is due in part to a special issue on women's entrepreneurial leadership published in 2015.

Five articles in this analysis are published in the Journal of Management Studies that “publishes both conceptual and empirical papers in the field of management. Specific areas of focus include, organisational theory and behaviour, strategic management, human resource management, and cross-cultural comparisons of organizational effectiveness” (ibid., 2017). Also, the The International Small Business Journal is represented with five articles. This journal focuses on “theoretical, empirical, policy and practitioner issues within the fields of small business and entrepreneurship” (ibid., 2017). Three articles each are published in the Journal of Managerial Psychology, the Journal of Management, and the International Entrepreneurship and Management Journal.

A few authors are represented more frequently than others. The most prolific researcher in EL is Claire Leitch with a total of four articles (two as first author, two as second author). Her research interest concentrates “on the development, enhancement and growth of individuals and organisations in an entrepreneurial context, with a particular focus on leadership, leadership development and learning” (Harrison & Leitch, 2018, p. x). Three authors are represented together in three articles: Keith Hmieleski (two as first author, one as second author), Richard Harrison (two as first author, one as second author), and Michael Ensley (two as first author, one as second author). Seven scholars co-authored two articles: Robert Baum, Catherine Daily, Dan Dalton, Edwin Locke, Craig Pearce, George Solomon and Wencang Zhou.
Table 3: Represented Authors and Journals in the SLR

<table>
<thead>
<tr>
<th>Journal name</th>
<th>Authors and Year of Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Journal of Management</td>
<td>Leitch, McMullan and Harrison (2013)</td>
</tr>
<tr>
<td>Creativity and Innovation Management</td>
<td>Chen (2007)</td>
</tr>
<tr>
<td>Entrepreneurship &amp; Regional Development Journal</td>
<td>Harrison and Leitch (1994)</td>
</tr>
<tr>
<td>International Entrepreneurship and Management Journal</td>
<td>Yan, Chiang and Chien (2014); Zhou, Vredenburgh, and Rogoff (2013); Zhou (2016)</td>
</tr>
<tr>
<td>International Review of Entrepreneurship</td>
<td>Roomi &amp; Harrison (2011)</td>
</tr>
<tr>
<td>International Small Business Journal</td>
<td>Koryak, Mole, Lockett, Hayton, Ucbasaran, and Hodgkinson (2015); Dean and Ford (2017); Leitch and Volery (2017); Zaech and Baldegger (2017); Sklaveniti (2017)</td>
</tr>
<tr>
<td>Journal of Management</td>
<td>Daily, McDougall, Covin, and Dalton (2002); Hmieleski, Cole, and Baron (2012); Engelen, Gupta, Strenger, and Brettel (2015)</td>
</tr>
<tr>
<td>Journal of Small Business Management</td>
<td>Charan, Hofer, and Mahon (1980); Cunningham and Lischeron (1991); Daily and Dalton (1992); Harrison, Leitch, and McAdam (2015); Lewis (2015); Henry, Foss, Fayolle, Walker, and Duffy (2015); Galloway, Kapasi, and Sang (2015); McGowan, Cooper, Durkin, and O’Kane (2015); Bamiati, Jones, Mitchellmore, and Nikolopoulos (2015); Renko, El Tarabishy, Carsrud, and Brännback (2015)</td>
</tr>
<tr>
<td>Leadership Quarterly</td>
<td>Cogliser and Brigham (2004); Ruvio, Rosenblatt, and Hertz-Lazarowitz (2010)</td>
</tr>
<tr>
<td>Management Decision</td>
<td>Soriano and Martinez (2007)</td>
</tr>
<tr>
<td>Research in Organizational Behavior</td>
<td>Bowles (2012)</td>
</tr>
<tr>
<td>Strategic Entrepreneurship Journal</td>
<td>Mihalache, Jansen, van den Bosch, and Volberda (2014)</td>
</tr>
<tr>
<td>Lawrence Erlbaum Associates</td>
<td>Antonakis and Autio (2007)</td>
</tr>
</tbody>
</table>

31 journals / publishers  58 articles / 154 authors
4 Results

4.1 Type of Publications over Time

We coded the type of publications into two primary types: theoretical and empirical. A graphical depiction on a yearly basis of the classified publications is presented in figure 5. The first paper on EL captured in this SLR was written by Charan, Hofer, and Mahon (1980). The authors provide an analysis on the dynamics of the transition from entrepreneurial venture to professionally managed business, drawing from observations of real-life situations in SMEs. As shown in figure 5, there was little interest in EL throughout the 1990s when only one or two papers per year were published on this topic, on an irregular basis. The interest seems to increase in the early 2000s to drop again in 2009 when only one paper appeared.

Figure 5: Publications by Year and Type

Figure 5 reveals that the majority (35) publications are of empirical nature. Most of the empirical papers (9) were published in 2015. The same year denotes also the highest number of theoretical publications (9). This spike of 15 articles can be explained by a special issue of the Journal of Small Business Management on “Entrepreneurial Leadership and Gender”, mentioned earlier. After the 2015 spike, the number of articles drops to 3–4 per year.

It is also noteworthy that in 1998 the number of empirical articles exceeded the number of theoretical articles for the first time. This suggests that scholars in the field are shifting
the primary emphasis on theory testing. This assumption is strengthened by increase of empirical publications from 2004 onwards.

4.2 Author Attributes

In order to learn more about the authors who published on leadership in entrepreneurial settings, we examined their country of affiliation and biographical sketches (see table 4). As some authors have published more than one article, they were included in the count for each of the papers attributed to them.

Table 4: Number of Authors, Country by Publication Period, and Research Interest

<table>
<thead>
<tr>
<th>Research interest</th>
<th>1980s</th>
<th>1990s</th>
<th>2000s</th>
<th>2010s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of authors</td>
<td>3</td>
<td>17</td>
<td>40</td>
<td>94</td>
<td>154</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>3</td>
<td>12</td>
<td>33</td>
<td>30</td>
<td>78</td>
</tr>
<tr>
<td>UK</td>
<td>1</td>
<td></td>
<td>23</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Europe</td>
<td>4</td>
<td>4</td>
<td>29</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Research interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>6</td>
<td>16</td>
<td>45</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>2</td>
<td>4</td>
<td>15</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>Management</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Org. Behaviour</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Strategy</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>HRM</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
<td>13</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Author type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>3</td>
<td>16</td>
<td>39</td>
<td>91</td>
<td>149</td>
</tr>
<tr>
<td>Practitioner</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

In total, 154 authors participated in the 58 publications. Out of these, 10 have been compiled by a single author (17.24%), 15 by two authors (25.86%), 22 by three authors (37.93%), 9 by four authors (15.51%) and 2 by five authors (3.44%). The research interest of the represented authors was collected through consultation of their affiliated websites. When more than one research interest was listed, only the first named was considered. In this respect, table 4 reveals that most authors have academic affiliations (N=149; 96.75%), predominantly in the field of entrepreneurship (N=67; 43.50%), leadership (N=33; 21.42%), management in general (N=14; 9.09%), organisational behaviour (N=11; 7.14%) and strategy (N=9; 5.84%). It is worthy to note that most of the authors are affiliated with a US institution (N=76; 49.35%). Consequently, research
by academics with more diverse cultural and disciplinary backgrounds might enable the application of various other perspectives in order to understand how EL is evident within and across different cultures.

4.3 Theoretical Publications

We identified a total of 23 theoretical articles (see table 5). Not surprisingly, we can observe a clear dichotomy in theoretical articles, depending whether the authors’ interests anchor in the leadership or entrepreneurship disciplines. Authors such as Vecchio (2003), find nothing unique about the entrepreneurial firm context and believe it appropriate to apply existing leadership concept into entrepreneurship. Accordingly, entrepreneurship is a subdomain of leadership. Conversely, other scholars like Kuratko (2007) assert that leadership should be looked at as a part of entrepreneurship, as the entrepreneurial mind-set and its associated behaviours are vital for effective leadership. Moreover, in between these opposed views, various understandings have been introduced over the last years. Cunningham and Lischeron (1991) were the first to introduce a definition of EL comprising the setting of clear aims, empowering people, creating new opportunities, maintaining organisational intimacy, and developing an efficient human resource system, with the aim of putting emphasis on the importance of the entrepreneur being a (visionary) leader. Daily and Dalton (1992) focused on the changing roles of a founder during the growth of a company, where challenges of leadership evolve. They found that indeed founders and leaders of entrepreneurial firms do find it challenging to develop new skills and adapting their strategies to match the opportunities and pressures they might run into as they move on to the next stage.

Cunningham and Leitch (1994) also examined themes in leadership research, which are relevant to understanding of entrepreneurship and the parallels between leadership and entrepreneurship. They concluded that due to the importance of team-based approaches in both fields and changes in the nature and understanding of the business organisation itself, a close relationship between both fields of studies can be justified. This approach has further been developed, in the sense that EL exists at the core of leadership and entrepreneurship and there is still considerable diversity in approach within this interface (Harrison et al., 2015; Leitch & Volery, 2017). Although there is a trend to position EL at the intersection of leadership and entrepreneurship, the field remains emergent and there is considerable scope for theoretical consolidation (Harrison et al. 2015).
### Table 5: Theoretical Publications Integrated in the SLR

<table>
<thead>
<tr>
<th>Reference</th>
<th>Understanding of EL</th>
<th>Setting</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cunningham and Lischeron (1991)</td>
<td>EL involves setting clear goals, creating opportunities, empowering people, preserving organisational intimacy, and developing a human resource system (p. 53).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>This paper presents six different schools of thought important in describing entrepreneurial activity: “great person”, psychological characteristics, classical, management, leadership, and intrapreneurship. Each school provides different insights into the many facets of entrepreneurship. (p. 57).</td>
</tr>
<tr>
<td>Daily and Dalton (1992)</td>
<td>Leadership is the capacity of the founder to gain the commitment of followers and to steer the business venture into sustained growth.</td>
<td>SMEs</td>
<td>There is no evidence that the founder need to transfer the management and control of the firm to professional managers once the firm reaches, or even move beyond, a critical threshold (p. 26).</td>
</tr>
<tr>
<td>Harrison and Leitch (1994)</td>
<td>Leadership research has something to offer to the study of entrepreneurship. Both application of ideas from the transactional and transformational approach need to be considered (p. 123).</td>
<td>Start-ups, high growth ventures and large corporations</td>
<td>A closer relationship between entrepreneurship research and leadership studies can be justified because of the increased importance being placed on team-based approaches in both fields and changes in the nature and understanding of the business organisation itself (p. 111).</td>
</tr>
<tr>
<td>Chakravarthy and Gargiulo (1998)</td>
<td>Leadership efforts lead to an “entrepreneurial network” to capture both entrepreneurship and its orchestration within a shared vision, common competence and integrated information network (p. 438).</td>
<td>Large corporations</td>
<td>The legitimacy of corporate leadership during the restructuring of a traditional bureaucratic organisation is crucial to its eventual transformation to one of the new organisational forms. The current wisdom of a two-stage transformation process, where an authoritarian restructuring proceeds a more participative revitalization, is challenged (p. 437).</td>
</tr>
<tr>
<td>Neck et al. (1999)</td>
<td>Thought self-leadership involves individual self-influence through cognitive strategies that focus on self-dialogue, mental imagery, beliefs and assumptions, and thought patterns (p. 477).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>There is consistent support for the relationship between constructive self-leadership of cognitive strategies such self-dialogue, mental imagery, beliefs and assumptions, and thought patterns on the one hand and enhanced performance on the other hand (p. 477).</td>
</tr>
<tr>
<td>Daily et al. (2002)</td>
<td>Strategic leadership is the capacity of the CEO and TMT to provide a direction for the firm and motivate followers in order to achieve higher long-term performance.</td>
<td>High-growth ventures, large corporations</td>
<td>There exist several promising areas for furthering research addressing the relationship between strategic leaders and entrepreneurial firm performance, including a focus on transitional stages of entrepreneurial firms and how strategic leaders may facilitate effective transition (p. 405).</td>
</tr>
<tr>
<td>Ensley et al. (2003)</td>
<td>Shared leadership is a mutual influence process between members of the TMT and promotes cohesion and collective vision as the primary determinants of new venture performance (p. 331-332).</td>
<td>Start-ups, high-growth ventures</td>
<td>Shared leadership is conceptualized as an important antecedent of process variables – cohesion and collective vision – which in turn are conceptualized as being reciprocally related and important antecedents of new venture performance (p. 329).</td>
</tr>
<tr>
<td>Vecchio (2003)</td>
<td>There is nothing distinctive about EL. It is simply a type of leadership that occurs in a specific setting, such as emerging organisations or small, fast growing businesses (p. 322).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>Reviews of related research on personality, demographics, fit, and cognitive framing reveal a lack of sufficient evidence to consider entrepreneurship as distinct field from entrepreneurship. Instead, a recognition of common trends and common threads of thought is encouraged (p. 303).</td>
</tr>
<tr>
<td>Cogliser and Brigham (2004)</td>
<td>EL involves vision, influence (on both followers and a wider constituency) leadership of innovative and creative planning (p. 773).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>There are numerous potential areas where entrepreneurship researchers might benefit from observing the challenges, continuing struggles, and successes of leadership researchers (p. 789).</td>
</tr>
<tr>
<td>Reference</td>
<td>Understanding of EL</td>
<td>Setting</td>
<td>Findings</td>
</tr>
<tr>
<td>----------------------</td>
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</tr>
<tr>
<td>Fernald et al. (2005)</td>
<td>Both leaders and entrepreneurs are successful to the extent that they provide strategic leadership (vision and long-term goals), problem-solving skills, timely decision-making, willingness to accept risks and good negotiation skills (pp. 3-5).</td>
<td>Start-ups, high growth ventures and large corporations</td>
<td>The common characteristics shared by both entrepreneurs and leaders represent an attempt to both reveal the commonality of these two populations. Successful entrepreneurs have provided the risk-taking, achievement orientation and creativity that lead to the birth and growth of numerous major firms in the U.S. and globally (p. 8).</td>
</tr>
<tr>
<td>Antonakis and Autio (2007)</td>
<td>EL can be viewed as a process whereby the personality of the entrepreneur influences leadership behaviours, which in turn, influence organisational outcomes.</td>
<td>Start-ups, high growth ventures and large corporations</td>
<td>The field of entrepreneurship could benefit significantly from a closer integration of ideas from leadership theories and empirical research. Entrepreneurship research could draw on more explicit adoption of multilevel theories, consideration of moderating and mediating influences on outcomes, and the adoption of taxonomic trait structures (p. 203).</td>
</tr>
<tr>
<td>Kuratko (2007)</td>
<td>EL is a unique concept combining the identification of opportunities, risk-taking beyond security and being resolute enough to follow through (as cited in Harrison et al., 2015, p. 695).</td>
<td>Start-ups, high growth ventures and large corporations</td>
<td>The world is in the midst of an entrepreneurial revolution and entrepreneurship is an integrated concept that permeates our society and individuals in an innovative manner (p. 2).</td>
</tr>
<tr>
<td>Becherer et al. (2008)</td>
<td>Entrepreneurship and leadership are not overlapping constructs, but are separate manifestations of a deeper phenomenon (p. 13); EL is the propensity to engage one’s environment, to create something new, and to change craft within it (p. 20).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>Entrepreneurship and leadership flow from the same genealogical source and the appearance of separation of the two constructs may be due to differences in the contexts through which the root phenomenon flows (p. 22).</td>
</tr>
<tr>
<td>Cope et al. (2011)</td>
<td>Effective leadership depends upon multiple leaders for decision-making and action-taking; it is learnt through social interaction in which idiosyncratic experience produces variation in leadership conception (as cited in Parry &amp; Bryman, 2006).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>This article problematizes the nature of the form of leadership relevant for the small business as it matures. In this way, it explores the temporal dimension to the appropriateness of distributed leadership in the context of the entrepreneurial business (p. 271).</td>
</tr>
<tr>
<td>Felicio et al. (2013)</td>
<td>Transformational leadership refers to the ability to increase motivation and organisational performance through incentives that comprise idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation (p. 2140).</td>
<td>SMEs, non-profit organisations</td>
<td>By evaluating the role of socioeconomic context as the moderating variable, the results confirm the strong influence of social entrepreneurship on social value and the effects of social entrepreneurship and transformational leadership on organisational performance (p. 2139).</td>
</tr>
<tr>
<td>Galloway et al. (2015)</td>
<td>EL is a type of leadership capable of sustaining innovation and adaptation in high velocity and uncertain environments, and it is key to continuously creating and appropriating value in a firm (as cited in Gupta et al., 2004, p. 243).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>A repositioning of EL can be achieved through reference to feminist literature. The most successful entrepreneurial leaders, rather than embodying the shrewd, ruthless businessman stereotype, may well be more “in touch with their feminine side” than they care to admit (p. 689).</td>
</tr>
<tr>
<td>Harrison et al. (2015)</td>
<td>EL exists at the nexus of entrepreneurship and leadership; within this interface there remains considerable diversity in approach (p. 694).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>EL is emerging as something distinctive, whether because of the contextual specificities of the exercise of leadership in new and small rather than large corporation. The adoption of a gendered lens allows EL scholars to address wider issues concerning the generalizability of their findings (p. 705).</td>
</tr>
<tr>
<td>Reference</td>
<td>Understanding of EL</td>
<td>Setting</td>
<td>Findings</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Haynes et al. (2015)</td>
<td>There are two faces of EL: on the ‘bright’ side, leaders manage the venture’s resources effectively and navigate the venture’s external competitive environment, and on the ‘dark’ side, they engage in dysfunctional behaviour when they follow their desire for power, material wealth and celebrity (p. 482).</td>
<td>Start-ups, family firms, large corporations</td>
<td>This paper provides a theoretical model of moderated mediation, focused on the effects of greedy and hubristic behaviour by entrepreneurial leaders on the firm’s human and social capital, and, consequently, venture success (p. 479).</td>
</tr>
<tr>
<td>Henry et al. (2015)</td>
<td>EL is the dynamic process of presenting vision, making commitment among followers and risk acceptance when facing opportunities (p. 582).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>This contribution illustrates both the diversity and complexity of women’s EL, demonstrating that it is not just economically, but contextually embedded. The traditional view of women entrepreneurs possibly being less capable or lacking in comparison to their male counterparts is both outdated and inaccurate (p. 584).</td>
</tr>
<tr>
<td>Koryak et al. (2015)</td>
<td>EL is about influencing and directing the performance of group members toward achieving organisational goals that involve recognizing and exploiting entrepreneurial opportunities (as cited in Gupta et al., 2004, p. 242).</td>
<td>SMEs</td>
<td>This article provides a synthesis of extant research on EL, capabilities and their influence on the growth of SMEs. The authors explore the interrelationships between substantial capabilities, leadership and dynamic capabilities (p. 89).</td>
</tr>
<tr>
<td>Simsek et al. (2015)</td>
<td>Strategic leadership is concerned with leadership of organisations, such as CEOs, teams, top executives, or other governance bodies (p. 466).</td>
<td>Start-ups, SMEs, family firms</td>
<td>The notion of strategic leadership and leaders as a theoretical and empirical lens for explaining diverse organisational phenomena are well known. Extant research largely ignores that entrepreneurial firms and contexts significantly differ from larger firms in administrative routines, resources, and structural architectures (p. 473-474).</td>
</tr>
<tr>
<td>Leitch and Volery (2017)</td>
<td>EL exists at the intersection of entrepreneurship and leadership and can benefit from a cross-pollination of both fields (p. 150).</td>
<td>Start-ups, high-growth ventures, SMEs</td>
<td>EL is a phenomenon at the nexus of the leadership and entrepreneurship fields, and both fields can benefit from mutual cross-fertilization while studying EL (p. 151).</td>
</tr>
<tr>
<td>Sklaveniti (2017)</td>
<td>EL emerges from the co-action of a venture’s participants. Co-action is the intersection between the field of entrepreneurship and leadership (p. 198).</td>
<td>Start-ups, SMEs</td>
<td>Co-action and inclusivity are central for EL in the context of new venture creation. EL is conceptualised through a model comprising four processes – creativity genesis, creativity enactment, direction genesis and direction enactment – with different relational connections evident at different stages (p. 202).</td>
</tr>
</tbody>
</table>

### 4.4 Qualitative Articles

In order to provide an assessment of the methods adopted in the 35 empirical articles, we distinguished between qualitative and quantitative research strategies employed. Ten studies adopted qualitative methods, 24 quantitative methods, and one study followed a mixed method approach (Roomi & Harrison, 2011).

Therefore, for the qualitative studies, we coded the method of data collection (interview, narrative, focus group, case study, and observation), the country where the research was conducted, sample size, and data analysis techniques (meaning condensation, meaning categories, and ad hoc methods). The results summarized in table 6 indicate that the interview was the favoured method of data collection; it was employed six times (McCarthy et al., 2010; Roomi & Harrison, 2011; Bowles, 2012; Leitch et al., 2013;
McGowan et al., 2015; Dean & Ford, 2017). Case studies were employed three times (Lindell, 1991; Thornberry, 2006; Yan et al., 2014), observation two times (Charan et al., 1980; Lindell, 1991), narrative (Lewis, 2015) and focus groups (Leitch et al., 2013) once each. One of the studies applied a longitudinal study design (Lewis, 2015). Qualitative research in EL was conducted in a relatively wide range of countries, spanning the USA, Asia, Latin America, New Zealand, Russia and the UK. Regrettably, some studies provided a patchy method section with no (Charan et al., 1980) or limited (Leitch et al., 2013; McGowan et al., 2015) information regarding the sample. For those studies that gave full information regarding the sample, the size varied significantly, ranging from one single case (Lewis, 2015) to 130 (McCarthy et al., 2010).

Regarding data analytic techniques (Lee, 1999), three studies (Bowles, 2012; Leitch et al., 2013; McGowan et al., 2015) drew on meaning condensation, two studies (McCarthy et al., 2010; Roomi & Harrison, 2011) used meaning categorization methods to group the data into quantifiable categories, and another two studies (Lewis, 2015; Dean & Ford, 2017) adopted a narrative structuring to identify and reconstruct the interview text into longer stories. Several authors (Charan et al., 1980; Lindell, 1991; Thornberry, 2006; Yan et al., 2014) employed ad hoc methods to analyse data.

While, however, we credit those scholars who have utilised qualitative techniques to explore EL for the wide variety of methods applied, as recommended by Lee (1999), we would urge researchers to focus on assessing the credibility, validity, and transferability of their findings.
The entrepreneur must recognize the company's managerial deficiencies to handle sudden explosive growth and then transform it into a professionally managed organisation, characterised by decentralized decision-making, a broad-based management team, and a carefully designed transitional plan (p. 9-10).

Top managers need to change their style in small entrepreneurial firms during a business life cycle. Managers find it hard to move from an innovative style when the company is young to task-oriented behaviour in the firm’s mature stage (p. 271).

Entrepreneurial leaders create economic value for the organisation because their drive and energy are focused on identifying, developing, and capturing new business opportunities. They think and act in ways that are similar to start-up entrepreneurs, but have the added talent of “corporate radar”. Rather than going it alone, they prefer to push and prod their current organisation into action.

The Russian entrepreneurs studied overwhelmingly exhibited an open or transformational leadership style generally attributed to U.S. entrepreneurial leaders, thereby suggesting that a convergence of entrepreneurial leadership may well be occurring in other emerging and transition economies (p. 49).

Entrepreneurial education should be about developing appropriate abilities with which to combine, exploit, and maintain the particular capabilities of entrepreneurial teams, especially balancing creativity, influence, a particular attitude to risk, and an ability to access scarce resources strategically (p. 29).

Top leadership positions are about developing appropriate abilities to negotiate the claims of the powerful influential gatekeepers of the social hierarchy. In pioneering accounts, they articulate a strategic vision and culture a community of support and followership around their strategic ideas and leadership (p. 89).
| Reference           | Understanding of EL                                                                                                                                                                                                 | Data collection / sample                                                                 | Data analysis technique                                         | Findings                                                                                                                                                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------|                                                                                                                                                                                                                          |
| Leitch et al. (2013) | Enhancement of leaders’ human capital only occur through their development of social capital. There is no clear separation between leader development and leadership development. The social capital of leadership is limited in the context of the small firm and should be expanded to incorporate institutional capital. | Interviews and 2 focus groups with 8 business leaders; UK                               | Meaning condensation                                               |                                                                                                                                                                                                                          |
| Yan et al. (2014)   | Only entrepreneurs with strategic leadership competence, which serves to manage a delicate balance between stability and change in a firm, are capable to facilitate firm transformation from OEM to a global enterprise practicing OBM. | 8 case studies in large corporations; Taiwan                                           | Ad hoc                                                             |                                                                                                                                                                                                                          |
| Lewis (2015)        | The identity as an entrepreneurial leader was not crafted elsewhere and then transplanted; rather, it was “built” in tandem with the firm. This suggests a form of identity reinforcement that authenticates identity development as the firm passes through its life cycle. | 1 unstructured narrative interview with a female entrepreneur; longitudinal case study; New Zealand | Narrative structuring (interpretative phenomenological analysis)   |                                                                                                                                                                                                                          |
| McGowan et al. (2015)| Young women demonstrated a growing resolve to fulfill their entrepreneurial leadership ambitions by demonstrating a flexibility and capability to adapt to developing circumstances. They acknowledged that they faced significant opposition to their ambitions and that they faced deficits in the quality of both their social and human capital. | Interviews with 18 female business owners; longitudinal; UK                             | Meaning condensation                                               |                                                                                                                                                                                                                          |
| Dean and Ford (2017)| The findings challenge the normative accounts of entrepreneurial practices that continue to privilege a hegemonic masculine discourse while marginalising or silencing the voice of women and men who do not fit within the narrow constraints of that dominant discourse. | Interview with 12 female entrepreneurs; UK                                           | Narrative structuring                                              |                                                                                                                                                                                                                          |
4.5 Quantitative Articles

We coded the quantitative studies with respect to the data collection method (survey, interview, data base), sample context (private, for-profit, non-profit, public), country where the study was conducted, time frame (cross-sectional versus longitudinal), independent variable, dependent variable, moderator, mediator and outcome. All 24 quantitative studies used a field study methodology, with 23 studies drawing on primary data and one study (Gupta et al., 2004) drawing on secondary data. Surprisingly, 23 studies used survey methods, and only one (Renko et al., 2015) used a combination of survey and interviews (interviews were part of a first study in order to develop the initial version of their measurement scale). Soriano and Martínez (2007) state that they conducted face-to-face interviews; however, they used a questionnaire with closed-ended questions only. These results show that scholars use the same standard survey methods to conduct studies in EL like in other research fields.

With respect to the sample type, the majority are private, and for-profit. One study (Roomi & Harrison, 2011) employed a sample from a higher education institution, and two studies (Renko et al., 2015; Ruvio et al., 2010) examined both for profit and social business ventures. While many areas of social science disciplines have been criticized for relying too heavily on student samples, a strength of the research on EL is that the field samples are predominantly comprised of working adults. While most of the quantitative studies were conducted in the US (8), three used a sample from the UK, two from Israel, another two from China, and one each from Spain, Austria, Netherlands, Canada, Turkey, and Taiwan. In addition, four studies represent multiple country samples (Austria, Canada, Finland, Germany, Liechtenstein, Singapore, and Thailand).

The vast majority of quantitative studies (20) employed a cross-sectional design. Only three studies used longitudinal designs (Baum et al., 1998; Baum & Locke, 2004; Ozcelik et al., 2008). In order to develop their measurement scale, Renko et al. (2015) employed a cross-sectional design, and Gupta et al. (2004) based their construct on a sample from GLOBE. The heavy reliance on cross-sectional designs and survey measures raises concerns about the risk of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). For instance, independent and dependent variable should be collected at different points in time, and the sequence of questions should be unselected.
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<tr>
<td>Baum et al. (1998)</td>
<td>A process through which leaders link followers' self-concepts to the leader's vision, or align followers' needs and values with a collective vision (p. 44).</td>
<td>Longitudinal</td>
<td>31 structured interviews with entrepreneur-CEOs; survey of 127 pairs (CEO and subordinate); USA</td>
<td>Questionnaire on vision, vision content, vision communication; self-developed</td>
<td></td>
<td>Vision communication: self-developed</td>
<td>Venture growth (sales, average annual employment, and annual profit growth)</td>
<td>Vision attributes and vision content affect subsequent venture growth directly and through verbal and written communication (p. 43).</td>
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<td>Nicholson (1998)</td>
<td>Entrepreneurial leaders can differ from other leaders and non-leaders in specific respects including traits such as high risk-taking behaviour, openness, need for achievement and low deliberation.</td>
<td>Cross-sectional</td>
<td>Survey of 43 CEOs of UK’s top performing companies, analysis of NEO norms, and author’s archive on managers and professionals; private; UK</td>
<td>n.a. (descriptive data analysis)</td>
<td>n.a.</td>
<td>n.a. (descriptive data analysis)</td>
<td>n.a. (descriptive data analysis)</td>
<td>Assertiveness is one of the strongest requirements for leaders. Unlike managers, entrepreneurial leaders are stress-resistant, unselfconscious, assertive, nonexperimental in their actions, conscientious, conformist and competitive (p. 538).</td>
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<tr>
<td>Gupta et al. (2004)</td>
<td>EL creates visionary scenarios that are used to assemble and mobilize a supporting cast of participants who become committed to the discovery and exploitation of strategic value creation (p. 242).</td>
<td>Scale development</td>
<td>62-society cross-cultural sample of over 15,000 middle managers in 900 firms from various GLOBE countries</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>EL involves two interlinked enactment challenges: cast enactment, which involves assembling a cast of individuals with the competence to accomplish required changes through the roles of commitment building, and scenario enactment, which involves reorienting the business model through the roles of absorbing uncertainty, framing the challenge, and path clearing (p. 256).</td>
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Table 7: Quantitative Empirical Publications Integrated in the SLR
### Findings

The employees’ perception of authentic leadership serves as the strongest single predictor of employee job satisfaction, organizational commitment, and work happiness (p. 646).

Environmental dynamism has a significant positive moderating effect on the relationship between transformational leadership and new venture performance, and a significant negative moderating effect on the relationship between transactional leadership and new venture performance (p. 243).

In dynamic industry environments, startups with heterogeneous TMTs were found to perform best when led by empowering leaders. Conversely in stable industry environments, startups with heterogeneous TMTs were found to perform best when led by empowering leaders (p. 865).

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<tr>
<td>Jensen and Luthans (2006)</td>
<td>A leader deemed authentic by employees is one who is perceived as striving to create a transparent, future-oriented, and associate-building organisation (p. 649).</td>
<td>Cross-sectional</td>
<td>Survey of 62 business owners and 179 employees; private; USA</td>
<td>Authentic leadership behaviours (Bass &amp; Avolio, 1993); future orientation (Knight, 1997); ethical climate (Victor &amp; Cullen, 1988)</td>
<td>–</td>
<td>–</td>
<td>Employee commitment (Allen &amp; Meyer, 1990) adapted from (Hom, Griffeth, &amp; Sellaro, 1984); job satisfaction (Hackman &amp; Oldham, 1980); work happiness (Fordyce, 1988)</td>
<td>The employees’ perception of authentic leadership serves as the strongest single predictor of employee job satisfaction, organisational commitment, and work happiness (p. 646).</td>
</tr>
<tr>
<td>Ensley, Pearce, et al. (2006)</td>
<td>Entrepreneurs as leaders define the mission of their organisations, set specific goals, and organize and motivate the efforts of their employees (p. 244).</td>
<td>Cross-sectional</td>
<td>Survey of 168 TMTs from 66 new ventures, private; USA</td>
<td>Transformational / transactional leadership behaviour (Pearce et al., 2003)</td>
<td>Environmental dynamism ((Dess &amp; Beard, 1984); (Sharfman &amp; Dean, 1991); (Keats &amp; Hitt, 1988); (Castrogiovanni, 2002)</td>
<td>–</td>
<td>Venture performance: sales growth rate and absolute sales volume (secondary data analysis)</td>
<td>Environmental dynamism has a significant positive moderating effect on the relationship between transformational leadership and new venture performance, and a significant negative moderating effect on the relationship between transactional leadership and new venture performance (p. 243).</td>
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<tr>
<td>Hmieleski and Ensley (2007)</td>
<td>Entrepreneur leadership behaviour is considered in terms of empowering and directive leader behaviours.</td>
<td>Cross-sectional</td>
<td>Survey of 168 TMT members of 66 startups and 417 responses from 154 firms; private, USA</td>
<td>Leadership behaviour (Craig L. Pearce &amp; Sims, 2002); TMT heterogeneity: functional, and educational specialty, educational level (Blau, 1977); managerial skill (Herron, 1990), based on (Katz, 1974); (Szlajgyi &amp; Schweiger, 1984)</td>
<td>Environmental dynamism (Dess &amp; Beard, 1984) (Keats &amp; Hitt, 1988); (Sharfman &amp; Dean, 1991); (Castrogiovanni, 2002)</td>
<td>–</td>
<td>Venture performance: revenue and employment growth (secondary data analysis)</td>
<td>In dynamic industry environments, startups with heterogeneous TMTs were found to perform best when led by directive leaders and those with homogenous TMTs performed best when led by empowering leaders. Conversely in stable industry environments, startups with heterogeneous TMTs were found to perform best when led by empowering leaders (p. 865).</td>
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<td>Chen (2007)</td>
<td>EL is conceptualized as the combined construct of risk-taking, proactiveness and innovativeness.</td>
<td>Cross-sectional</td>
<td>Survey of 112 teams of high-tech new ventures; private; Taiwan</td>
<td>EL: scale on risk-taking, proactiveness and innovativeness (Lumpkin &amp; Dess, 1996); (V. Gupta et al., 2004)</td>
<td>Team creativity: tolerance for ambiguity, creativity in opportunity recognition, imagination in using parsimonious resources, market opportunities.</td>
<td>–</td>
<td>–</td>
<td>Innovative capability: patent creation</td>
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<td>Soriano and Martínez (2007)</td>
<td>Leadership is the collective behaviour of work team leaders, which affects the attitudes and behaviours of other team members (p. 1104).</td>
<td>Cross-sectional</td>
<td>Survey, 114 face-to-face interviews; private; Spain</td>
<td>Leadership type: relationship-oriented, task-oriented, and participative leadership (Ribeiro, 2003); (Ribeiro, 2004)</td>
<td>–</td>
<td>–</td>
<td>Collective entrepreneurship</td>
<td>A leadership based on relationships shows a positive impact, with an intensity of more than double that of participative leadership. A task-oriented leadership style reduces the chances of transmitting the entrepreneurial spirit to the work team (p. 1102).</td>
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<td>Ozcelik et al. (2008)</td>
<td>Positive Emotional Climate (PEC) practices reflect an organisational leader’s deliberate attempts to establish and maintain a functional relational system in his or her organisation (p. 188).</td>
<td>Longitudinal / panel study</td>
<td>Survey of 229 entrepreneurs and small business owners (more than 4 employees), private, Canada</td>
<td>PEC (based on (Kahn, 1993)</td>
<td>–</td>
<td>–</td>
<td>company performance, strategic growth, outcome growth</td>
<td>PEC practices were positively related to company performance, revenue growth, and outcome growth. The study suggests that leadership practices that facilitate a positive emotional climate in an organisation make a difference in organisational-level outcomes (p. 186).</td>
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### Findings

There is a positive influence of transformational leadership on organisational innovation. In addition, external support for innovation was found to significantly moderate this effect. The relationship between transformational leadership and organisational innovation was stronger when external support was at high levels (p. 264).

Vision was associated with a wide-range strategy as well as the ventures' performance and growth. In addition, wide-range strategy partially mediated the relationship between the ventures' vision and its performance and growth. In business enterprises, vision directly predicted only a differentiation strategy, which also mediated the relationship between vision and the ventures' performance and growth (p. 144).

EL education should teach students how to cultivate their entrepreneurial capability in leadership roles and their leadership capability in entrepreneurial contexts. It should be about developing appropriate abilities to balance creativity, influence, a particular attitude to risk, and an ability to access scarce resources strategically.

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<td>Gumuslu and Ilsev (2009)</td>
<td>Transformational leadership has 4 components: charismatic role modelling, individualized consideration, inspirational motivation, and intellectual stimulation (p. 265-266).</td>
<td>Cross-sectional</td>
<td>Survey of 163 R&amp;D employees and managers of 43 micro- and small firms, private, Turkey</td>
<td>Transformational leadership: Turkish MLQ (Bass &amp; Avolio, 1995)</td>
<td>Internal support for innovation (Scott &amp; Bruce, 1994); external support for innovation: external resource-based and knowledge-based support received</td>
<td>–</td>
<td>Organisational innovation: ratio of sales generated by product innovations to total sales, and sales generated by product innovations over expenditures</td>
<td>There is a positive influence of transformational leadership on organisational innovation. In addition, external support for innovation was found to significantly moderate this effect. The relationship between transformational leadership and organisational innovation was stronger when external support was at high levels (p. 264).</td>
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<td>Ruvio et al. (2010)</td>
<td>Entrepreneurial vision is a future-oriented image of the new venture, intended to motivate both the entrepreneurs and their followers (investors, future employees) toward this desirable future (p. 145).</td>
<td>Cross-sectional</td>
<td>Survey of 78 entrepreneurs from higher education institutions and 78 entrepreneurs from service sector businesses; public and private, Israel</td>
<td>Entrepreneurial vision (Larwood, Kriger, &amp; Falbe, 1993) (Larwood, Falbe, Kriger, &amp; Miesing, 1995)</td>
<td>–</td>
<td>Differentiation vs. wide range strategy</td>
<td>Entrepreneurial strategy (Carter, Stearns, Reynolds, &amp; Miller, 1994) (McDougall &amp; Robinson, 1990) (Mullins &amp; Cardozo, 1993) and in in-depth interviews); venture performance (Chandler &amp; Hanks, 1994); growth (Baum et al., 1998)</td>
<td>Vision was associated with a wide-range strategy as well as the ventures’ performance and growth. In addition, wide-range strategy partially mediated the relationship between the ventures' vision and its performance and growth. In business enterprises, vision directly predicted only a differentiation strategy, which also mediated the relationship between vision and the ventures' performance and growth (p. 144).</td>
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<tr>
<td>Roomi and Harrison (2011)</td>
<td>EL is a fusion of general entrepreneurship and general leadership: having and communicating the vision to engage teams to identify, develop and take advantage of opportunity.</td>
<td>Cross-sectional</td>
<td>Mixed Methods: qualitative interviews with 9 educators at higher education institutions; survey at 51 higher education institutions (Eggers &amp; Leahy, 1992); public and private, UK</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>EL education should teach students how to cultivate their entrepreneurial capability in leadership roles and their leadership capability in entrepreneurial contexts. It should be about developing appropriate abilities to balance creativity, influence, a particular attitude to risk, and an ability to access scarce resources strategically.</td>
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<td>Hmieleski et al. (2012)</td>
<td>Central to authentic leadership behaviour is an alignment or consistency between values and actions; such behaviours likewise occur within leadership teams but manifest as collective behaviour (p. 1476).</td>
<td>Cross-sectional</td>
<td>Survey of 179 new venture CEOs and 35 TMTs; private; USA</td>
<td>Shared authentic leadership (Avolio &amp; Luthans, 2006)</td>
<td>–</td>
<td>Positive team affect tone (van Katwyk, Fox, Spector, &amp; Kelloway, 2000)</td>
<td>firm performance: revenue and employment growth (secondary data analysis)</td>
<td>Shared authentic leadership has a positive indirect relationship with firm performance – an influence transmitted through TMTs’ positive affective tone (p. 1476).</td>
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<td>Zhou et al. (2013)</td>
<td>Shared team leadership as a dynamic, interactive influence process among individuals in work groups in which the objective is to lead one another to achieve group goals (as cited in Craig Lewis Pearce &amp; Conger, 2003).</td>
<td>Cross-sectional</td>
<td>Survey of 200 entrepreneurial teams in startups; China</td>
<td>Informational diversity; functional specialty (Bunderson &amp; Sutcliffe, 2002), educational specialty (UNESCO, 1997), educational level, managerial skills (Herron, 1990)</td>
<td>Shared leadership (Carson, Tesluk, &amp; Marrone, 2007)</td>
<td>–</td>
<td>Entrepreneurial team performance (Pearce &amp; Sims, 2002)</td>
<td>Functional specialty diversity can improve entrepreneurial team performance. Managerial skill diversity can improve entrepreneurial team performance when leadership is shared among team members (p. 153).</td>
</tr>
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<td>Mihalache et al. (2014)</td>
<td>Shared leadership at TMT level is a practice in which the CEO and other team members share the responsibility for, and fully participate in the tasks of leadership (p. 129).</td>
<td>Cross-sectional</td>
<td>Survey of 202 CEOs of firms with more than 25 employees; private; Netherlands</td>
<td>TMT shared leadership (Manz &amp; Sims, 1987)</td>
<td>Centralization of decision making (Breaugh, 1985); connectedness (Jaworski &amp; Kohli, 1993)</td>
<td>TMT cooperative conflict management style (Rahim, 1983); TMT decision-making comprehensiveness (Atuahene-Gima &amp; Li, 2004); (Miller, Burke, &amp; Glick, 1998)</td>
<td>Organisational ambidexterity (Jansen, Van den Bosch, &amp; Volberda, 2006)</td>
<td>TMT shared leadership enables ambidexterity by promoting a TMT cooperative conflict management style and by enhancing TMT comprehensive decision making. TMT shared leadership is more likely to induce the adoption of a cooperative conflict management style and to enhance decision making comprehensiveness (p. 141).</td>
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<td>Engelen et al. (2015)</td>
<td>Transformational leadership encompasses six behavioral facets: articulating a vision, providing an appropriate role model, developing and accepting employees, supporting intellectual stimulation (as cited in Podsakoff, MacKenzie, &amp; Bommer, 1996). Transformational leadership revolves around influencing followers by broadening and elevating their goals and providing them with confidence to perform beyond the expectations, whereas transactional leadership is associated with the notion that leaders who hold power and control, provide contingent rewards (p. 532).</td>
<td>Survey of 790 CEOs and their TMT; private; Austria, Germany, Singapore, Switzerland, Thailand, USA</td>
<td>Cross-sectional</td>
<td>Entrepreneurial Orientation (Dess &amp; Lumpkin, 2005); T-S. Lee &amp; Sako, 2007</td>
<td>Innovative climate (Patterson et al., 2005)</td>
<td>Transformational leadership behaviour (Scott &amp; Bruce, 1994)</td>
<td>Firm performance: customer satisfaction, market effectiveness, and financial performance (Vorhies &amp; Morgan, 2005)</td>
<td>Both transformational and transactional leadership behavior on the part of the CEO relate positively to managers' innovative behavior. The innovative climate mediates the relationship between transformational leadership and innovative behavior (p. 531).</td>
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<tr>
<td>Kang et al. (2015)</td>
<td>EL is having and communicating the vision to engage teams to identify, develop and take advantage of opportunities to gain competitive advantage (p. 629).</td>
<td>Survey of 39 CEOs and 105 managers of small and medium enterprises; private; USA</td>
<td>Cross-sectional</td>
<td>Transformational leadership (Rafferty &amp; Griffin, 2004)</td>
<td>Transformational leadership (L. T.-S. Lee &amp; Sukoco, 2007)</td>
<td>Innovative climate (Scott &amp; Bruce, 1994)</td>
<td>Firm performance: customer satisfaction, market effectiveness, and financial performance (Vorhies &amp; Morgan, 2005)</td>
<td>Both transformational and transactional leadership styles are adopted and perceived as well as personal competencies as evidenced by lower levels of engagement (Engelen et al., 2015), and it is linked to perceived human and personal competencies as well as personal development (Bamiatzi et al., 2015).</td>
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<td>Bamiatzi et al. (2015)</td>
<td>ENGELBRECHT'S (ENG) leadership model focuses on developing a culture of trust, faith, and respect; it is also linked to employee development and personal growth (Engelen et al., 2015).</td>
<td>Survey of 58 micro and small female business leaders; private; UK</td>
<td>Cross-sectional</td>
<td>Personal competencies (Mitchelmore &amp; Rowley, 2010; Mitchellmore &amp; Rowley, 2013)</td>
<td>Transformational leadership style (Bass &amp; Stogdill, 1970)</td>
<td>Innovative climate (Scott &amp; Bruce, 1994)</td>
<td>Firm performance: customer satisfaction, market effectiveness, and financial performance (Vorhies &amp; Morgan, 2005)</td>
<td>Transformational leadership style is the most dominant style adopted, and it is linked to perceived human and personal competencies as well as employee development (p. 629).</td>
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</table>

**Findings**

Four transformational behaviors—articulating a vision, providing an appropriate model, having high performance expectations, and showing supportive leader behavior—positively affect the relationship between EO and firm performance (p. 1069).
Findings
A strong and significant relationship between self-esteem and transformational leadership was found. Furthermore, data analyses revealed that transformational leadership has a positive impact on innovation success (p. 815).

Development and test of the EL construct (ENTRELEAD scale). The authors find that EL is more prevalent among founder leaders than non-founder leaders, which indicates construct validity (p. 54).

Shared leadership improves entrepreneurial team performance; the strength of the relationship, however, depends on the level of team personality diversity. When relationship-oriented personality diversity is high, the shared leadership–team performance relationship is stronger (p. 153).

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<tr>
<td>Matzler et al. (2015)</td>
<td>Leaders espousing transformational leadership behaviors are able to motivate people to do their best and to motivate followers to overcome self-interest, strive for a higher purpose or vision, and thus perform beyond expectations (p. 816).</td>
<td>Cross-sectional</td>
<td>Survey of 411 entrepreneurs and managing directors of SMEs; private; Austria</td>
<td>Self-esteem (Rosenberg, 1965)</td>
<td>–</td>
<td>Transformational leadership (Podsakoff et al., 1990) (Podsakoff et al., 1996)</td>
<td>Innovation success: self-reported degree of innovation in comparison to competitors</td>
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<tr>
<td>Renko et al. (2015)</td>
<td>EL involves influencing and directing the performance of group members toward achieving those organisational goals that involve recognizing and exploiting entrepreneurial opportunities (p. 54).</td>
<td>Cross-sectional</td>
<td>Scale development; survey 1: 381 working students and university employees; survey 2: working adults; public, private; USA, Finland</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Development and test of the EL construct (ENTRELEAD scale). The authors find that EL is more prevalent among founder leaders than non-founder leaders, which indicates construct validity (p. 54).</td>
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<tr>
<td>Zhou (2016)</td>
<td>Shared leadership as a collection of roles and behaviours that can be split, shared, and rotated, with multiple leaders existing within a team at any given time (p. 155).</td>
<td>Cross-sectional</td>
<td>Survey of 144 teams in a technology incubator; private; China</td>
<td>Shared leadership (Carson et al. (2007))</td>
<td>Team personality diversity (Costa &amp; McCrae, 1992)</td>
<td>Entrepreneurial team performance: employment growth rate</td>
<td>Shared leadership improves entrepreneurial team performance; the strength of the relationship, however, depends on the level of team personality diversity. When relationship-oriented personality diversity is high, the shared leadership–team performance relationship is stronger (p. 153).</td>
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### Findings

Leadership style, negotiation style and organisational efficacy each affect new product innovation. Small business leaders who are inspirational, who negotiate competitively, and who lead efficacious organisations establish environments that are more likely to yield new product innovations (p. 4876).

Transformational leadership facilitates behavioural integration and comprehensiveness in the decision process among members of the TMT, which in turn enhances organisational capacity to adapt to environmental changes (p. 996).

Transformational leadership has a significant and positive effect on start-up performance. No significant, direct effects on start-up performance were found for transactional leadership or laissez-faire leadership. Furthermore, the size of the start-up has a significant, positive, moderating effect on the relationship between laissez-faire leadership and start-up performance (p. 157).

### Table: Reference, Understanding of EL, Time frame, Data collection / sample, Independent variable, Moderator, Mediator, Dependent variable, Findings

<table>
<thead>
<tr>
<th>Reference</th>
<th>Understanding of EL</th>
<th>Time frame</th>
<th>Data collection / sample</th>
<th>Independent variable</th>
<th>Moderator</th>
<th>Mediator</th>
<th>Dependent variable</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Dunne et al. (2016)</td>
<td>Leadership encompasses inspirational leadership – the extent to which a leader can tap into the feeling of others and inspire them – and communicating meaning – how effective a leader is at getting their meaning across to others.</td>
<td>Cross-sectional</td>
<td>Survey of 76 business owners and their employees; private; USA</td>
<td>Leadership style: inspirational leadership and communicating meaning (Sashkin &amp; Morris, 1987); organisational efficacy (Riggs &amp; Knight, 1994); negotiation style: competitive, collaborative (Thomas &amp; Kilmann, 1978)</td>
<td>–</td>
<td>–</td>
<td>New product and service innovation</td>
<td>Leadership style, negotiation style and organisational efficacy each affect new product innovation. Small business leaders who are inspirational, who negotiate competitively, and who lead efficacious organisations establish environments that are more likely to yield new product innovations (p. 4876).</td>
</tr>
<tr>
<td>Friedman et al. (2016)</td>
<td>Transformational leaders are perceived by followers as exhibiting a style of leadership that marks idealized influence, motivational inspiration, intellectual stimulation, and individual consideration (as cited in Bass, 1985).</td>
<td>Cross-sectional</td>
<td>Survey of 149 CEOs and 216 TMT members; private; Israel</td>
<td>CEO transformational leadership (Rafferty &amp; Griffin, 2004)</td>
<td>–</td>
<td>TMT behavioural integration (Simsek, Veiga, Lubatkin, &amp; Druck, 2005); TMT strategic decision comprehensiveness (Miller, 2008)</td>
<td>Organisational capacity to adapt (Carmeli &amp; Sheaffer, 2008)</td>
<td>Transformational leadership facilitates behavioural integration and comprehensiveness in the decision process among members of the TMT, which in turn enhances organisational capacity to adapt to environmental changes (p. 996).</td>
</tr>
<tr>
<td>Zaech and Baldegger (2017)</td>
<td>Leadership is an interaction between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions and expectations of members, applied to a specific context (p. 158).</td>
<td>Cross-sectional</td>
<td>Survey of 102 founder-CEOs and feedback from 372 employees; private; East Austria, southern Germany, Liechtenstein, Switzerland</td>
<td>Transformational, transactional, laissez-faire leadership (Bass &amp; Avolio, 1995)</td>
<td>startup size</td>
<td>number of employees</td>
<td>Performance sales growth in comparison with the leader in the respective field of business</td>
<td>Transformational leadership has a significant and positive effect on start-up performance. No significant, direct effects on start-up performance were found for transactional leadership or laissez-faire leadership. Furthermore, the size of the start-up has a significant, positive, moderating effect on the relationship between laissez-faire leadership and start-up performance (p. 157).</td>
</tr>
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</table>
4.5.1 Independent Variables
Various measures have been used as independent variables either to capture EL or the antecedent of EL. The most widely used measure of leadership is transformational leadership. In total, eight studies draw on the transformational leadership construct, of which five (Ensley, Pearce, et al., 2006; Gumusluoklu & Ilsev, 2009; Kang et al., 2015; Friedman et al., 2016; Zaech & Baldegger, 2017) used it as an independent variable. Transformational leadership typically consists of four components: charismatic role modelling, individualized consideration, inspirational motivation and intellectual stimulation (Bass & Avolio, 1995). The construct has been further developed and adopted by various authors. For example, Gumusluoklu and Ilsev (2009) used 20 items from the Turkish version of the MLQ (Form 5X) from Bass and Avolio (1995) to examine the contextual conditions under which transformational leadership influences organisational innovation.

For their part, Zaech and Baldegger (2017) used the German version of the MLQ (Form 5X) from Bass and Avolio (1995) and tested it with 102 founder-CEOs and feedback from 372 employees, and found a significant and positive effect on startup performance of transformational leadership. Rafferty and Griffin (2004) developed a measure based on Podsakoff et al. (1990), which was also used by Kang et al. (2015) who found a positive correlation between transformational leadership and innovative behaviour. Friedman et al. (2016) used the measure and found that transformational leadership facilitates behavioural integration in the decision process among TMT members, which in turn enhances organisational capacity to adapt to environmental changes. A different measurement scale was used by Ensley, Pearce, et al. (2006) who based their measure of transformational leadership on a construct developed by Pearce et al. (2003).

In addition to the transformational leadership construct, the shared leadership construct was used in two studies (Mihalache et al., 2014; Zhou, 2016) as an independent variable. Despite most research on leadership in teams has focusing on leadership behaviours of the individual leader of a team, some studies found teams were more effective when most, or all, team members displayed leadership behaviours (Carson et al., 2007). In this context, shared leadership stems from individuals who have a series of interactions and influence on other team members. These individuals direct, motivate, and support team members via negotiation and the sharing of leadership responsibilities. Mihalache et al. (2014) for instance propose shared leadership as an important enabler of organisational ambidexterity by promoting a TMT cooperative conflict management style and by enhancing TMT comprehensive decision making. Zhou (2016) examined the
moderating effects of diversity of personality on the relationship between shared leadership and entrepreneurial team performance.

Authentic leadership was used in two studies as independent variable. In a study by Jensen and Luthans (2006), authentic leadership is described as the confluence of positive organisational behaviour, transformational leadership, and ethical development. The authors examine the linkage between the perception of the employees of the company founder as an authentic leader and the employees’ happiness and attitudes. They conclude that the employees’ perception of authentic leadership is the strongest single predictor of employee organisational commitment, job satisfaction, and work happiness. Similarly, Hmieleski et al. (2012) indicate that authentic leadership may be beneficial in particular when shared among team members, since they found a positive direct effect between shared authentic TMT leadership and the performance of their ventures.

Several scholars suggest that other types of measurements overlap with the traditional transactional vs. transformational view of leadership. This is the case for Hmieleski and Ensley (2007) empowering and directive leadership and Soriano and Martínez (2007) relationship-oriented vs. task-oriented leadership style. More recently Renko et al. (2015, p. 55) developed a specific measure of EL which entails “influencing and directing the performance of group members toward achieving those organisational goals that involve recognizing and exploiting entrepreneurial opportunities”. They tested the reliability and validity of an empirical measure for this construct which will have to be applied and tested in future studies.

Traits have also been used as independent variables. Although research demonstrates that possessing certain traits alone does not guarantee and individual will be a successful leader, evidence does reveal that effective leaders do differ from other people in certain key respects. In this vein, Nicholson (1998) re-examines the question of whether there is an EL personality profile. He found assertiveness to be one of the strongest requirements for leaders, since leaders on the t-tests scored significantly higher than managers. In her study on 112 entrepreneurial teams in Taiwan’s high-tech new ventures, the findings of Chen (2007) suggests that lead entrepreneurs who have higher risk-taking, proactiveness and innovativeness can stimulate their entrepreneurial team members’ creativity during the patent creation process. The trait approach has been used by other scholars, for example, Becherer et al. (2008) who note that risk-taking has long been observed as being important to the emergence of entrepreneurs, and entrepreneurs were found to possess lower levels of uncertainty avoidance compared to non-entrepreneurs.
A third category of independent variables encompass various competencies and skills. Along these lines, Bamiatzi et al. (2015) study linkages between personal competencies and leadership style. In a similar study, Dunne et al. (2016) examine the impact of the individual entrepreneurs on fostering new product innovation within firms and propose that SME leaders who negotiate competitively, are inspirational, and lead efficaciously, are more likely to be innovative and yield new products. They identify negotiation as the competency to “[aggressively] obtain the most favourable outcomes for oneself and [collaboratively] aim to work together to achieve mutually beneficial outcomes” (ibid., p. 4878).

The fourth category of independent variables relate to vision. Baum et al. (1998, p. 52) found “that vision significantly affects organisational-level performance, and vision affects performance directly as well as indirectly through vision communication”, thereby identifying vision as a core dimension of effective leadership behaviour for entrepreneurs. These findings also support theorists who argue that vision is a key element of charismatic leadership (House & Shamir, 1993; Cogliser & Brigham, 2004).

Vision has also been used as a measure by Ruvio et al. (2010) who conducted two empirical studies in Israel, in order to explore the role that EL vision plays in the non-profit and for-profit ventures.

4.5.2 Moderators

Moderating effects have been examined at three different levels: business environment, organisation and team. At the broader level, environmental dynamism was used by Ensley, Pearce, et al. (2006, p. 243) to investigate “when, why, and how the influence of entrepreneur leadership behaviour on new venture performance is likely to be moderated”. The authors found that environmental dynamism moderates the leadership performance relationship, and these results were confirmed in a subsequent study (Hmieleski & Ensley, 2007). Particularly, “in stable industry environments, startups with heterogeneous TMTs were found to perform best when led by empowering leaders and those with homogenous TMTs performed best when led by directive leaders” (ibid., p. 865).

Aside from the broader analysis, several studies have also considered a range of variables as moderators at the organisational level. These include transformational leadership (Engelen et al., 2015), external support for innovation (Gumusluoku & Ilsev, 2009), company size (Zaech & Baldegger, 2017), centralization of decision making (Mihalache et al., 2014) and organisational connectedness—the extent to which team members are connected to different hierarchical levels or various parts of the
organisation (Mihalache et al., 2014). All these organisational variables—except for company size (measured as number of employees)—were found to positively moderate the relationship between leadership and a variety of outcomes such as organisational innovation (Gumusluoğlu & Ilsev, 2009), TMT ambidexterity (Mihalache et al., 2014) or overall firm performance (Engelen et al., 2015).

Lastly, a number of moderators have been tested at the team level, including team creativity (Chen, 2007), which positively moderates the relationship between EL (measured as risk-taking, proactiveness and innovativeness) and a new venture’s innovative capability; relationship oriented personality diversity (Zhou, 2016), which makes the interpersonal interactions required to work as part of a team, including emotional stability, extraversion, and agreeableness; and shared leadership (Zhou et al., 2013), which enhances the performances of entrepreneurial teams and moderates the relationship between managerial skill diversity and entrepreneurial team performance.

4.5.3 Mediators
The impact of mediators has been investigated at two levels: at the individual level and at the organisational level. Besides being an important antecedent, vision and goals have also been found to be important mediator variables by Baum and Locke (2004), who found that entrepreneurs with a strong sense of vision are often viewed by others as being charismatic in their behaviour. In addition, self-efficacy—the task-specific self-confidence of how well one can execute courses of action required to deal with prospective situations (Bandura, 1997)—was found by Baum and Locke (2004) to mediate the effects of passion, tenacity and new resource skill on subsequent growth.

At the organisational level, Ruvio et al. (2010) found that vision was related to a wide-range strategy, along with firm growth and performance. In addition, wide-range strategy partly mediated the relationship between the vision of the firm and its growth and performance. In their study on CEOs’ leadership styles and managers’ innovative behaviour, Kang et al. (2015) demonstrated that a ventures’ innovative climate mediates the relationship between transformational leadership and innovative behaviour. They could not, however, identify a mediating effect of innovative climate between transactional leadership and innovative behaviour.

Similarly, team attributes were also found to mediate the influence of EL on performance. Hmieleski et al. (2012) highlighted that shared authentic leadership and venture performance have a positive indirect relationship; this influence is mediated through TMTs’ positive affective tone. The authors’ findings suggest that the shared enactment of authentic leadership encourages positive emotional states among TMTs,
which, in turn, is positively related to venture performance. Along these lines, Mihalache et al. (2014) found that TMT cooperative conflict management style (characterised by the team members’ willingness to collaborate during conflict resolution and to achieve commonly beneficial goals) and TMT decision-making comprehensiveness (the extent to which TMT members participate in an extensive decision-making process) mediate the relationship between shared leadership and its ability to stimulate organisational ambidexterity.
Figure 6: Antecedents, Moderators, Mediators, and Outcomes in the SLR

### 4.5.4 Dependent Variables

As seen from the literature that we analysed, a wide range of dependent variables have been examined. It is nevertheless possible to cluster the outcomes of EL in four categories: venture performance, innovation, HR outcomes and organisational
outcomes. The vast majority of studies have drawn on various aspects of venture performance as an independent variable. Examples of venture performance include sales growth, employment growth, and profit growth (Baum et al., 1998; Ensley, Pearce, et al., 2006; Hmieleski & Ensley, 2007; Hmieleski et al., 2012; Ruvio et al., 2010). Sometimes, venture performance was measured in relative terms as perceived performance in comparison to competitors (Baum & Locke, 2004) or sales growth in comparison to the leader in the field (Zaech & Baldegger, 2017). As a variation of annual sales growth, Gümüşlüoğlu and Ilsev (2009) focused on the ratio of sales generated by product innovations to total sales and sales generated by product innovations over expenditures; thereby combining sales and innovation as a performance measure.

A few authors used composite measures capturing strategic growth (changes in products, geographic markets, or target customer). Engelen et al. (2015) who measured firm performance as a combination of customer satisfaction (4 items), market effectiveness (4 items), and financial performance (profitability, ROI, return on sales, reaching financial goals). Nevertheless, Baum et al. (1998) and Baum and Locke (2004) named this outcome ‘venture growth’ instead of venture performance, although they mostly measured the same criteria.

Innovation is another widely used dependent variable. This concept was measured objectively, in terms of patents by Chen (2007). The average number of patents granted to a firm annually is assessed, with patents being used as substitute to measure the firms’ innovation capabilities. Most of the time, however, subjective measures of innovation have been applied. For example, Matzler et al. (2015) measured innovation success with three items where respondents were asked to indicate their degree of innovation based on three items, compared to their competitors. Other articles consider the CEO or the team in the focus as a performance measure. Kang et al. (2015) assessed managers’ innovative behaviour. To minimize bias, they also asked the CEOs to evaluate individual managers’ innovative behaviour. Similarly, Dunne et al. (2016) used a self-report measure to determine the respondents’ level of satisfaction with their firms’ successful innovation of products and services. Innovation can overlap with strategic growth as an outcome, like in study by Ozcelik et al. (2008), which focused on changes in products, geographic markets or target customer.

A third set of dependent variables relate to HR outcome. For example, Jensen and Luthans (2006) focused on the employees’ attitudes, measured as the organisational commitment of employees and employees’ intentions to leave the organisation, job satisfaction, and work happiness. In the same vein, Zhou et al. (2013) used
entrepreneurial team performance as outcome, drawing on a 16-item scale developed by Pearce and Sims (2002) to evaluate team effectiveness. Baum and Locke (2004) analysed passion for work as outcome variable, which has been identified as a core characteristic of wealth creators. Employment growth has been another widely used measure for performance (Baum et al., 1998; Hmieleski & Ensley, 2007; Hmieleski et al., 2012; Zhou, 2016; Baum & Locke, 2004).

The fourth type of dependent variable captures organisational attributes. In this respect, Mihalache et al. (2014) measured organisational ambidexterity, which refers to the simultaneous pursuit of exploratory and exploitative innovation. Friedman et al. (2016) examined dynamics and turbulence in the sector in which the organisation is active and examines the organisation’s willingness to make material changes in response to its changing environment, or organisational capacity to adapt. For their part, Soriano and Martínez (2007) considered ‘collective entrepreneurship’—the capacity to make the whole organisation entrepreneurial—as an outcome in their study. Only one study considered leadership as a dependent variable: Bamiatzi et al. (2015) investigated linkages between personal competencies and leadership style among women entrepreneurs. They found that transformational leadership style is the most dominantly adopted style. In addition, female entrepreneurs who are confident they possess effective entrepreneurial skills seem to prioritise providing the right stimulus to their employees for success and the necessary supportive environment as expected by entrepreneurial leaders.

5 Discussion

We complete this SLR with a discussion on the progression of research in EL by adopting Reichers and Schneider's (1990) three-stage model, “which explores the evolution of research and thinking about scientific constructs and argues that such constructs have a predictable evolution” (Hunt 1999, p. 130). This framework has previously been applied to leadership (Hunt 1999; Gardner, Lowe, Moss, Mahoney, & Cogliser, 2010; Gardner et al. 2011) and entrepreneurship research (Cogliser & Brigham, 2004). We draw upon this framework and make an attempt to classify EL research in the following three stages:

The first stage, concept introduction and elaboration, endeavours to legitimize the construct and disseminate information through publications about the new—or newly borrowed—constructs. At this first stage, the research in the field primarily focuses on the domain's definition and its importance and utility for explaining organisational
phenomena with the aim of furthering the readership's knowledge on these issues (Reichers & Schneider, 1990).

Since the 1990s, progress has been made to consolidate the knowledge base and to develop a more comprehensive and stringent approach to EL. There has been substantial progress made to inform others about the EL construct, introducing various definitions such as a focus on goal setting, empowering followers to pursue entrepreneurial behaviours (Cunningham & Lischeron, 1991) and capturing, recognizing and exploring entrepreneurial opportunities (Renko et al., 2015). More generally, EL has been used to explain organisational phenomena, such as innovation (Dunne et al., 2016; Ozcelik et al., 2008) or performance (Baum, Locke & Kirkpatrick, 1998; Engelen et al. 2015).

However, fragmentation around the concept remains, depending on whether scholars consider EL as a style of leadership, as an entrepreneurial mindset, or as a distinctive concept at the intersection of entrepreneurship and leadership (Leitch & Harrison, 2018b).

The second stage, concept evaluation and augmentation, comprises critical reviews that identify potential issues with the definition and variable operationalisation of the construct. At this stage, moderators and mediators are suggested as empirical results come to be regarded as equivocal, in order to clarify the processes underlying the phenomenon (Reichers & Schneider 1990).

We identified several critical reviews that identify problems relating to the definition of EL. For instance, Roomi and Harrison (2011) conduct a literature review and note that there are diverse understandings of the concept and little exploration of how best to learn and teach it. They offer their own definition (EL is “a fusion of entrepreneurship and leadership; having and communicating the vision to engage teams to identify, develop and take advantage of opportunity in order to gain competitive advantage (ibid., p. 2)), make recommendations for the design of teaching materials, and develop a typology of the EL literature (psychological, disciplinary, holistic, contextual). Renko et al. (2015) go one step further and criticize the existing ways of operationalising as being inadequate: besides providing their own definition (where EL “entails influencing and directing the performance of group members toward the achievement of organisational goals that involve recognizing and exploring entrepreneurial opportunities” (ibid., p. 55)), they develop the first distinct empirical measure for EL (the ENTRELEAD scale) and test its reliability and validity. They outline an agenda for future research to explore individual-level antecedents (e.g., demographics, cognitive ability, personality, attitudes and values, and emotional intelligence), leaders’ positional and organisational context, or the role of the entrepreneurial leader as an individual who enables followers to
demonstrate their own self-efficacy and entrepreneurial passion. These could also act as moderators. Therefore, there is still a lot to discover and the research interest in the field is increasing.

In order to expand the scope of EL and consider empirical studies that are rooted in the established leadership literature, we considered various empirical publications in this SLR, focusing on constructs such as transformational leadership (Engelen et al., 2015), shared leadership (Mihalache, Jansen, van den Bosch & Volberda, 2014; Zhou 2016), or authentic leadership (Jensen & Luthans, 2006). Several moderating and mediating variables have been found to affect the relationship between EL and a range of outcome variables. Amongst others, team creativity (Chen, 2007), personality diversity (Zhou, 2016) and the number of employees (Zaech & Baldegger, 2017) have been identified as moderators; while TMT cooperative conflict management style and decision-making comprehensiveness (Mihalache et al., 2014) and self-efficacy (Baum & Locke, 2004) emerged as mediators in the EL phenomenon.

The third stage of the research evolution model, concept consolidation and accommodation, is characterised by the emergence of a several generally agreed upon definitions. Meta-analytic studies have taken place, and the construct appears as a mediator or moderator in other, more general, models within the field. Since there is less to discover, research interest declines (Reichers & Schneider, 1990).

While various definitions have been posited, a generally agreed upon definition of EL remains elusive. Moreover, EL is perceived as an emerging field, that “remains atheoretical, lacks definitional clarity and appropriate tools to assess its characteristics and behaviours”, although “20 years have passed since commentators first advocated integrating the two domains entrepreneurship and leadership” (Harrison et al., 2015, p. 694). Within the narrow understanding of EL being a novel construct at the intersection of entrepreneurship and leadership, meta-analytic studies are missing, and the construct developed by Renko et al. (2015) does not appear as a moderator or mediator in more general models within the field. Hence, we conclude that taking a narrow perspective on EL, this concept has not reached the consolidation stage yet.

However, when looking at the leadership and entrepreneurship constructs that have been applied in studies found in this SLR (e.g., transformational leadership and passion), we identified numerous narrative and meta-analytic reviews. Several scholars discussed the emergence, trends, and future directions for research in EL (Cogliser & Brigham, 2004). Further, well-established constructs from the leadership literature are applied as moderators, including shared leadership (Zhou et al., 2013), transformational leadership (Engelen et al., 2015) and environmental dynamism (Ensley, Pearce, et al., 2006;
Hmieleski & Ensley, 2007). Therefore, when considering EL as a broader field, there is evidence that it has reached the consolidation stage. In summary, EL can be considered as an emerging field to have reached the concept evaluation and augmentation stage, and the early stage of concept consolidation. The focus is primarily on the domain's definition and its importance; a generally agreed upon definition is emerging. Only recently has a framework for testing the construct been developed.

6 Research Agenda
Our review suggests that empirical research on EL has been very diverse in scope, and offers few consistent findings. In addition, EL is still an emerging field which is slowly gaining definitional clarity and is still seeking its identity. Thus, EL presents considerable opportunities for future empirical research. In this section, we address some issues in the current literature and outline a number of fruitful directions for future research. Specifically, we identify promising research opportunities pertaining to the context, multilevel effect, method and new topics.

6.1 Context
Research on EL is congenitally not to be separated from the context within which it is demonstrated. However, most research focus on the individual and fails to take into account the context. As has been demonstrated by the research, optimal leadership behaviour various depending on the specific lifecycle of the venture (Ensley, Hmieleski, & Pearce, 2006). It would, therefore, be interesting to research EL in various kinds of firms (startups, SMEs, large corporations) and industries. Also, longitudinal studies across various stages in the organisational life cycle would provide an in-depth impact of EL behaviours. Following this approach, it is necessary to adopt appropriate performance measures (patents, employment growth, sales, etc.) more relevant to the specific venture and its development stage. In addition to venture performance, it might be enlightening to include team and individual outcomes including cohesion, self-efficacy, passion and commitment. Thus, research in this SLR underscores the benefits of diversity among TMT members. The importance of TMT is even more prevalent in the context of SMEs where TMTs have wider managerial discretion and their behaviour have more significant and lasting imprinting effects on the formation and growth trajectory of the organisation (Klotz, Hmieleski, Bradley, & Busenitz, 2014).
Moreover, the importance of gender in EL has been raised by various researchers (e.g., Harrison et al., 2015). Special attention could be given to differences in male and female entrepreneurial leaders, offering deeper insight into the richness and diversity of the domain. Utilising a gendered lens would enable scholars of EL to examine the wider issues concerning diversity, the inclusivity of their theories and the generalizability of their findings. Introducing the gender perspective can facilitate a shift to new, and more complex ways of thinking, and lead to more inclusive and multi-perspective views of the world. Similarly, with respect to the cultural context, further research is needed to complement Anglo-American models and frameworks in order to shed light on how EL is understood and varies within and across countries and regions. (Harrison et al., 2015)

6.2 Multilevel Effects
Past research in EL has typically examined leadership effects at a single level such as CEOs, TMTs, or organisations. Nevertheless, a considerable amount of studies in the systematic review interrelate these effects as multilevel phenomena, studying for example CEO-TMT relationships. We would like to reiterate the importance of the context and encourage researchers to investigate the underlying mechanisms through which leadership behaviour influences group processes; to collect data from multiple raters on the measured variables to increase congruence; and to consider the effect of TMT as a catalyst for EL.

Exploring EL from a multilevel perspective offers the opportunity to explore the complex origins of the entrepreneurial venture’s performance. This can be seen when middle managers endorse, refine and shepherd entrepreneurial initiatives, while also identifying, obtaining, and deploying entrepreneurial resources. Very little attention has been given to the intermediary role of middle managers in the relationship between entrepreneurial leaders and the organisational behaviour and outcomes of organisations, despite the potential rewards. On a similar note, due to their powerful role, founders, are likely to exert on firm performance both upward—through board of directors—and downward—through TMTs. As a result, there is scope for further research into all units of analysis (individual entrepreneurial leader, team, and the linkage between the entrepreneurial leader and the team) that encourages more holistic understandings.

6.3 Method
Another promising area for future research is the inclusion of a wider variety of research designs. Indeed, most studies adopt a cross-sectional design and this limits causal inferences. As such, future research should attempt to collect data at several points in
time to infer causality. This would enable researchers to assess the development of EL and its impact throughout the business venture lifecycle. Also, longitudinal designs would make it possible to utilise sophisticated analytical techniques, including multi-period structural equations analysis. This would allow the relationships of interest to be examined from a longitudinal perspective, and would also inform the discussion of causality. The result would be a far more comprehensive understanding of EL behaviour.

In addition, separating data collection and making use of multiple respondents could help to minimize common method and single respondent bias. For example, the use of multiple respondents could render a more comprehensive picture of EL, as the position occupied by individual leaders within the organisation may influence the EL style they adopt. Some scholars have suggested that leaders in higher-level management positions, or in decentralized, organic organisations, might have more discretion (Shamir & Howell, 1999), enabling them to engage in EL.

There is a need to strengthen measurement scales applied in EL research, given that sound measurement is essential to the development of a research agenda (Hinkin, 1995). This goal could be achieved by comparing the different measures to determine the degree to which they correlate with one another and the degree to which some measures tap aspects of EL that others do not. For instance, the similarities among charismatic and transformational leadership are “far greater than their differences” (Anderson & Sun, 2017, p. 451), and findings from studies of charismatic, transformational and visionary leadership generally converge. Empirical comparisons of the prevailing measures of charismatic and transformational leadership revealed that charismatic leadership—as measured by the Conger-Kanungo Scale (CKS)—and transformational leadership—as measured by the MLQ—were significantly correlated (Rowold & Heinitz, 2007). Therefore, exploring leadership styles outside of the traditional Full Range Leadership Model is recommended. One such scale that can be employed for this purpose is the before-mentioned ENTRELEAD (Renko et al., 2015), which places emphasis on directing and influencing the performance of group members in regard to achieving organisational goals that entail recognizing and exploiting entrepreneurial opportunities. Instead of approaching a leadership style with an “either/or” perspective, understanding how various leadership styles might complement one another could enhance leadership development and training for a wide variety of entrepreneurs, business owners and organisational executives.
6.4 Promising Topics

There are a number of promising topics to be tackled for future research in EL. These may include questions including what are the fundamental elements of entrepreneurial leaders in entrepreneurial ventures? What are the similarities and differences in defining entrepreneurial leaders and relevant entrepreneurial behaviours across different organisational structures (profit, non-profit; SMEs, large corporations, family vs. non-family businesses)? What is the influence of these behaviours on firm’s behaviour and outcomes?

To advance these promising topics, research on processes—including homogeneity, cohesiveness, or group composition—and individual characteristics would be of value to the EL domain. This value is revealed in research on teams, which has shown that homogeneous groups perform more efficiently as a result of the similar character traits of team members. This, in turn leads to stronger team cohesion (Horwitz & Horwitz, 2007). Further, emphasis should be put on the development of EL, which is perceived to differ from other, less entrepreneurial contexts, because it is characterised by highly organic, non-formalized structures, where leaders' impact is likely to be more noticeable. However, the more likely impact of leadership in this setting is matched by greater difficulty in developing that leadership. For this reason, there may often be a conflict between leadership development and the entrepreneurial situational context. Additionally, individual-level antecedents—including cognitive ability, emotional intelligence, affect, leader demographics, personality, attitudes and values—could be studied, which may produce significant findings to aid the continuing the development of EL.

It was seen from the SLR that little attention is given to ventures that experience great success in comparison to failed firms, although a high failure rate prevails in entrepreneurship. Along this line, connections between the influence of the CEO and TMT behavioural integration and organisational resilience in times of change could be of interest. Therefore, it is our hope that this study will stimulate the research stream of EL.

7 Concluding Remarks

7.1 Limitations

Similarly to all academic works, this study has its limitations. Most works included were academic journal articles, meaning both books and grey literature (e.g., Henry et al., 2016; Pittaway & Cope, 2007) were excluded. This focus somewhat limited the scope
of the results, because the articles chosen for analysis represent only a fraction of the available work examining EL. This is generally considered acceptable, however, because the peer review process ensures a minimum quality threshold (David & Han, 2004; Pittaway & Cope, 2007). In addition, the metasearch engine may not deliver all relevant articles and, as a result, we are unable to rule out the possibility that further relevant studies have been omitted. However, we did supplement our metasearch with a manual search of the retrieved articles’ references. Finally, comparable to traditional narrative reviews, the keyword searches we used for our article selection required several choices, allowing us to compile a representative sample of the currently available empirical articles on EL.

### 7.2 Practical Implications

Having considered the limitations of the study, it is similarly important to address the practical implications of the research. Our results show that leadership is particularly valuable in entrepreneurial ventures, where the individual is important and the context is characterised by constant change and competition. In this context, not only the leader but also subordinates need to be involved in the exploration and exploitation of entrepreneurial opportunities. This insight is particularly relevant for two types of real-life situations. First, entrepreneurial leaders are advised to pay particular attention to developing their leadership behaviours and deploy them in the context of their business venture. However, this is a long process. Therefore, a heightened awareness of the disadvantages associated with a lack of EL behaviour could help to critically assess resource allocation and decision-making. In addition, in line with findings in research on minority dissent (De Dreu & West, 2001), leaders might include individuals who can compensate for that in their management or advisor teams.

### 7.3 Conclusion

In summary, EL is of essential relevance in environments characterised by constant change, high competition and high uncertainty. We, therefore, systematically reviewed the existing body of literature, and developed a research agenda. In order to contribute to research on EL, we encourage future researchers to take into account the context in which the ventures are operating in and to conduct a large-scale study that measures all the identified overlapping styles to clarify which leadership dimensions are empirically distinct and matter most in entrepreneurial ventures. It is our hope that this study will stimulate the research stream investigating EL.
Chapter C

The Concept and Evolution of Entrepreneurial Leadership: A Bibliometric Analysis

Arik Röschke

Abstract
The past decade has seen an increase in scholarly interest in the topic of entrepreneurial leadership (EL). This paper reviews the research published in this field from 2003 until 2014 with the goal of clarifying the state of knowledge in the field. It also aims to reveal the evolution of EL research in the context of small and medium enterprises (SMEs) in order to illustrate conceptual convergence in this field of research. First, the terms leadership, entrepreneurship and EL will be clarified. Second, a content analysis of the existing body of literature in 21 peer-reviewed journal articles that focus on EL in SMEs is conducted, using the analytical tool Leximancer. This analytical tool uses automatic content analyses to determine two factors: firstly, the concepts used most frequently within a body of text, and secondly, the relationships between these various concepts. This approach ensures unbiased results by undertaking associational analysis of textual data in a language-independent manner.

This analysis reveals important changes in the evolution of research on EL. In the early years, the articles often separated the terms ‘entrepreneurship’ and ‘leadership’ while describing the construct of EL. The more recent articles merged the terms into EL. Overall, our analysis suggests an increased cross-fertilisation and convergence between the fields of entrepreneurship and leadership.
1 Introduction

For almost a century, leadership has been at the forefront of psychology and management research. The subject has spawned countless conceptual and empirical studies (Cogliser & Brigham, 2004). However, only a few parts of this literature have permeated the field of entrepreneurship and small business (e.g., Ensley, Hmieleski, et al., 2006; Soriano & Martínez, 2007). The intersection of these two fields under the label ‘entrepreneurial leadership’ is of great importance because entrepreneurs must rely on people to exploit opportunities and reach their objectives. In addition, entrepreneurs need to motivate, direct and lead employees, all of which suggests that leadership capabilities are necessary in entrepreneurship (Renko, El Tarabishy, Carsrud, & Brännback, 2012). As such, the entrepreneur as someone who starts a venture can be considered a leader par excellence. Hence, the same person may not fulfil the necessary functions of leadership, such as making decisions that impact employees and their behaviour, as the firm grows and becomes established, assuming the firm does not fail in the early stages (Carsrud et al., 2018).

However, within the emerging domain of EL there exists no agreed-upon definition and conceptualisation of the term. According to Harrison et al. (2015, p. 694), “entrepreneurial leadership as an emerging field remains atheoretical, lacks definitional clarity and appropriate tools to assess its characteristics and behaviours”, although “20 years have passed since commentators first advocated integrating the two domains entrepreneurship and leadership”.

Once a discipline matures, its scholars commonly review the literature to assess the discipline’s general state (Ramos-Rodríguez & Ruíz-Navarro, 2004). Although there has been a continuing emergence of EL in both research and practice (e.g., Gupta et al., 2004; Kuratko, 2007; Renko et al., 2012); Leitch et al., 2013; Harrison et al., 2015), studies have presented little evidence of a theoretical and conceptual convergence in this area of inquiry. Thus, this paper includes a thematic analysis under the broad field of bibliometrics (White & McCain, 1989) to quantitatively analyse the academic literature in EL and the evolution of the field through a bibliometric examination of articles published 2003 to 2014. Leximancer, the text-analytic software, uses associational analysis of textual data in a language-independent manner (e.g., Smith & Humphreys, 2006; Liesch, Håkanson, McGaughey, Middleton, & Cretchley, 2011).

The first key motivation to carry out this study was to reveal the evolution of research in the field of EL. According to Culnan, O’Reilly III, and Chatman (1990, p. 453), “understanding the intellectual roots of a field identifies the basic intellectual commitments that serve as the field’s foundation as it matures.” Because research on EL
is a maturing field of investigation, understanding its roots is vitally important. This study aimed to illustrate the evolution in this field of research, and was best conducted by using data that offered a comprehensive overview of activities within the scientific process.

The second motivation was to map the literature on EL comprehensibly and at different stages. Thereafter, the emerging paradigms can be observed empirically as the field matures and advances theories.

The third motivation was the high relevancy of EL for both new ventures and established businesses, because entrepreneurs are unable to successfully build new ventures if they do not display effective leadership behaviours (Baumol, 1968; Cogliser & Brigham, 2004; Leitch et al., 2013). New ventures have no standard management practices, operating procedures or organisational structures to fall back on, so it is left to the founders to lead (Hmieleski & Ensley, 2007).

Finally, comprehensive insight into the development of EL offers great promise for research, particularly given the increase in the volume of articles published in this area—especially since 2012. This was a very timely opportunity to present a thorough and detailed analysis that sheds new light on the field.

This paper contributes to the discussion on EL and investigates the evolution of the field by considering the work of numerous researchers over an extended period. More specifically, the paper addresses the following questions:

- How has the research field of EL evolved?
- Which concepts in EL occur with the greatest frequency?
- What is the epistemological orientation of the articles?
- Which words occur with the greatest frequency?
- Which journals are represented in this domain?
- Which authors publish in this domain?
- What possibilities are there for scholars to investigate in the future?

### 1.1 Different views on Entrepreneurial Leadership

The field of EL is in an early stage of conceptual and theoretical development. Its exposure to sometimes contradictory views has led to definitional challenges (Renko et al., 2012). Therefore, this section first describes the research fields ‘entrepreneurship’ and ‘leadership’, followed by an overview of approaches to defining ‘entrepreneurial leadership’.
1.1.1 Entrepreneurship

The research field ‘entrepreneurship’ is rather unsettled and its focus varies greatly. It has been characterised as a diverse field of inquiry that is fragmented, in ferment (Gartner, 2001; Aldrich, 2012) and difficult to define because it is a multifaceted phenomenon that spans many disciplinary boundaries (Busenitz et al., 2003). For instance, studies have focused on entrepreneurial persons, traits or social networks; new venture, product or service offering creation; and even country-specific framework conditions (Schildt et al., 2006).

According to Frese and Gielnik (2014, p. 414):

The most important drivers of entrepreneurship research came from economics, psychology, and sociology. The scholars credited to be the fathers of the field of entrepreneurship research, Schumpeter (1934) and later McClelland (1967), took a psychological perspective, with individuals being the major objects of entrepreneurship research. This changed in mainstream entrepreneurship research around the years 1980-2005. The approach during this time period was to explain entrepreneurship by using economic and strategy theories (Kirchhoff, 1991). More recently, scholars have once again acknowledged the importance of a psychological perspective because entrepreneurship is fundamentally personal (Baum, Frese, & Baron, 2007).

The non-existence of a generic, universally accepted definition of entrepreneurship is partly the result of researchers defining it solely in terms of who the entrepreneurs were and what they did, at least until the late 1990s (Bruyat & Julien, 2001). However, defining the field only in terms of the individual generated incomplete definitions of entrepreneurship that did not withstand scrutiny (Venkatamaran, 1997). Additionally, that approach disregarded two entrepreneurship conditions: the presence of viable opportunities, and enterprising individuals, which Shane (2003) described as the ‘individual—opportunity nexus’. Along these lines, Wickham (2006) suggested that the combination of an individual, a market opportunity, a business organisation, adequate resources, and a favourable environment is required for entrepreneurship to take place, it is the entrepreneur’s responsibility to bring these elements together to create new value.

1.1.2 Leadership

Reviewing publications on leadership showed the same theory evolution highlighted in the entrepreneurship section, and many constructs used in entrepreneurship were found in mainstream leadership theory (Vecchio, 2003). Scholarly interest in leadership has
spawned various fields, such as traits, situational interaction, function, behaviour, power, vision and charisma, and produced various definitions; researchers have suggested that leadership is a source of competitive advantage in a complex, ambiguous and dynamic business environment (Yukl, 2008; Küpers & Weibler, 2008). They have assumed that leaders will make a difference, that their behaviours are important, and that they produce positive group and organisational effects (Pierce & Newstrom, 2011). On a general level, the quintessence of leadership revolves around “influencing and facilitating individual and collective efforts to accomplish shared objectives” (Yukl, 2012, p. 66). Increasingly, researchers have shifted their focus away from only the individual leader to followers, peers, supervisors, context and culture; including a broader domain of individuals and the field of leadership is therefore perceived “as dyadic, shared, relational, strategic, global, and a complex social dynamic” (Avolio et al., 2009, p. 423).

1.1.3 Entrepreneurial Leadership

The term ‘entrepreneurial leadership’ is characterised by opposing positions and understandings. According to Vecchio (2003), research on leadership can extend to entrepreneurship, in the sense that entrepreneurship is a form of leadership. Contrarily, Kuratko (2007) has argued that leadership should be perceived as a constituent of entrepreneurship, in the sense that “an entrepreneurial mind-set and behaviours are essential for effective leadership: entrepreneurship becomes the essence of leadership” (zit. in Harrison et al., 2015, p. 7). Cogliser and Brigham (2004) adopt an approach in the middle and argue that this field of study emerged from the theoretical overlap between the fields of entrepreneurship and leadership due to historical and conceptual parallels in the two domains. Following this approach, Roomi and Harrison (2011, p. 2) have suggested that EL is “a fusion of these two constructs: having and communicating the vision to engage teams to identify, develop and take advantage of opportunity in order to gain competitive advantage”. According to Harrison et al. (2015, p. 964), “A common thread running through these definitions is their focus on the traits, characteristics, and behaviours of entrepreneurial leaders and leadership in terms that are very clearly rooted in the entrepreneurial literature”. This is also reflected in the cluster generated by Renko et al. (2012), who divided the research on EL into studies of entrepreneurial behaviours and attitudes of high-level corporate executive leaders (e.g., McGrath & MacMillan, 2000; Covin & Slevin, 2002; Ireland, Hitt, & Sirmon, 2003; Gupta et al., 2004; Thornberry, 2006), engagement with new business owners who had to adopt leadership roles in order for their companies to grow (e.g., Baum et al. 1998;
Swiercz & Lydon, 2002; Ensley, Pearce, et al., 2006; Ensley, Hmieleski, et al., 2006; Jensen & Luthans, 2006; Ribeiro Soriano & Comeche Martínez, 2007; Peterson, Walumbwa, Byron, & Myrowitz, 2008), and distinctions and similarities between leaders and entrepreneurs (Baumol, 1968; Vecchio, 2003; Ensley, Pearce, et al., 2006). Only a few studies take an integrated disciplinary basis for research on EL. However, according to Harrison et al. (2015), this is beginning to change, so that holistic approaches emerge.

2 Methodology

This section thoroughly documents the data search and collection process to establish the database. In addition, it methodically presents the analytical process used and introduces the analytical software Leximancer, with which the data was analysed.

2.1 Data Collection Strategy

The objective of the data collection phase was to compile and sort journal articles published from 2003 to 2014 in the research field of EL in SMEs. As such, a database comprising all relevant articles in the research field had to be constructed, applying a systematic collection strategy. The separation from large enterprises and focus on SMEs arises from the importance of context, given that “in the study of EL and concepts, frameworks, and modes of analysis that are appropriate and effective in one domain may not be so in another” (Harrison et al., 2015. p. 697).

In the first step, all meta-information of articles in the journals implied in the Google Scholar categories ‘Entrepreneurship and Innovation’ and ‘Human Resources and Organisations’, plus seven additional journals highly ranked in the domain and published by Elsevier, were downloaded in April 2014 via a proxy. This search led to an Excel file with 45,876 articles. The sorting included the author(s), publication title, year, journal name, issue, volume and abstract.

In the second step, journals that could not be downloaded via the proxy were browsed through an EBSCO metasearch using the search terms ‘leader*’ OR ‘manage*’ AND ‘entrepreneur’ in ‘Abstract’, which led to another 1,372 articles (without limitation for publication year). The search term was tested and developed with a second researcher, leading to the most satisfactory and constructive results. The search results were then exported into Excel via Endnote.

In the third step, to ensure all relevant publications were included, another EBSCO metasearch was conducted using the search terms ‘leader*’ OR ‘manage*’ AND
‘entrepreneur’ in ‘Abstract’, but limited to peer-reviewed journal articles published in English. This resulted in 2,484 additional publications (without limitation for publication year). Again, the results were exported into Excel via Endnote.

In Excel, the FIND() function was used to search for the keywords ‘small-firm manager’, ‘small business manager’, ‘SME manager’, ‘leader’ and ‘entrepreneur’. Since FIND() is sensitive to capital letters, all possibilities of spelling were included. Whenever a keyword was included, the value ‘1’ was assigned. This led to an Excel file with 2,042 potential articles for analysis. Because only articles published in the selected journals were used for further analysis, the number of articles significantly decreased to 170. Those results were then limited to the period 2003–2014, resulting in 78 articles.

In addition to the systematic article search in the first three steps, an unsystematic article search was conducted in step four. Specifically, backward tracking of references identified an additional ten articles for inclusion in the review (for a total of 88 articles). This approach made it necessary to establish guidelines for relevancy and accuracy. For a publication to be included in this study, it had to discuss EL in SMEs or deal with EL on a conceptual level. As such, EL in large companies or multinational corporations, as well as corporate entrepreneurship, were excluded. Furthermore, following previous state-of-the-art and bibliometric analyses (e.g., Gardner et al., 2011; Volery & Mazzarol, 2015), this study focused solely on scholarly publications published in English. All conference papers, dissertations, working papers, book reviews, editorials and comments were removed from the collection in order to retain a focus on peer-reviewed publications. The reason for limiting this study to scholarly publications arose from the belief that these publications were peer-reviewed, fully developed and based on sound theory and empirical methods. Including any theories or findings generated from excluded works in this analysis could potentially undermine the study results and development of the field. Thus, to limit the data set to publications that dealt only with EL in SMEs, two coders (the author and a master’s student) read all abstracts of the 88 articles and assigned the value ‘1’ to those that met the previously determined guidelines.

In the abstracts, some authors used the term ‘entrepreneur’ and ‘small firm manager’ interchangeably. For instance, some studies interviewed small firm managers who did not show evident innovation or growth attributes. Similarly, the term ‘entrepreneurial’ was used at times to fashionably position an article without actually delving into entrepreneurship. Consequently, few articles met the predetermined guidelines and were assigned the value ‘1’.
After this first reading of the abstracts, the Kappa statistic was used to performed an interrater reliability analysis to explore consistency between the two raters. This led to a value of 0.833 (p < 0.000), 95% CI [0.695, 0.945]. According to Landis and Koch (1977), values above 0.810 show almost perfect strength of agreement. The two coders then discussed differences until they reached an agreement on the final data classification.

This final screening reduced the number of articles considered for analysis to 21. While many systematic reviews include more publications, this is often because they focus on more developed fields of research. This paper instead concentrates on an emerging but growing field, and the smaller number of articles is therefore not considered problematic. According to Baldacchino et al. (2015, p. 215), “what matters most is whether the topic is likely to be of interest to the field, the rigor of the search criteria in ensuring that the work is relevant and focused, and the scientific quality of the outputs identified.” Additionally, Briner and Denyer (2012) provide a number of examples of reviews performed on studies of 16 or fewer articles in the management field. After ‘cleaning’ the papers by removing headings, footnotes, page numbers, reference lists, tables and figures, the entire article content was included in the analysis via Leximancer.

2.2 Data Analysis

The following section thoroughly describes the data analysis process, in particular how the analytical tool Leximancer analyses text and how the keyword analysis and the epistemological orientation of the articles was executed. Reasoning that “a word can be defined by its context in usage” (Smith & Humphreys, 2006, p. 262), the information for a narrative inquiry on a subject can be uncovered by analysing the co-occurrence of words used in texts. Co-occurring words replicate concepts in the investigated articles that address the application of EL in SMEs. To detect these concepts, Leximancer—a software text analytic tool that can be used to represent the main concepts within a text and how those concepts relate—was deployed (Leximancer, 2011). Leximancer weights terms within a text according to how frequently they occur in sentences containing the concept, compared with how often they occur in other parts of the text. It tags sentences as containing a concept if enough accumulated evidence is present. This approach identifies which concepts exist in a set of texts and allows the concepts to be coded automatically in a grounded fashion. This method therefore differs from standard content analysing that particular word strings are not required (Cretchley, Rooney, & Gallois, 2010). According to Angus et al. (2013, p. 262), “The advantage of generating
the concept list automatically is that the list is statistically reliable and reproducible, being generated from the input text itself, whereas manual lists require checks for coding reliability and validity.” Therefore, the use of Leximancer increases the objectivity, hence decreasing the preconceptions of manual content analysis (Smith & Humphreys, 2006). Additionally, subtle or unusual relationships may be more likely to emerge using automated concept list creation.

Smith and Humphreys (2006) also demonstrated the software’s validity, stability and reproducibility; however, they used in-progress research for testing functional validity and outlined minor issues in the area of correlative validity. Nevertheless, the software is only a tool; the researcher must explore other avenues of analysis and bring intellectual rigor to the task of interpretation.

Another advantage of Leximancer is the highly consistent way in which it classifies text and identifies relationships among concepts; the same result is produced. However, the analysis is stochastic, and initially the concepts are strewn randomly in multidimensional space. Thus, a map must be developed several times in reduced dimensions to check for a stable concept configuration (Cretchley et al., 2010).

Leximancer has previously been used to analyse the content of selected articles (Thomas, 2014), and even entire scientific journals, such as Long Range Planning (Cummings & Daellenbach, 2009), the Journal of International Business Studies (Liesch et al., 2011), and the International Small Business Journal (Volery & Mazzarol, 2015). More examples of research using Leximancer are available on its corporate website (Leximancer, 2014).

For the content analysis, the appropriate selected articles were uploaded into Leximancer. Common function words (for example, ‘and’, ‘not’ and ‘of’) that comprised a standard set of excluded words in Leximancer were also excluded from the analysis. In addition, the total number of concepts was set at 90 because Leximancer (2011) recommended using fewer than 100, and general terms (for example, ‘common’, ‘example’, ‘others’, ‘table’, ‘used’ and ‘using’) that did not add meaning to the concept map were deleted. For the 2003–2009 and 2010–2014 maps, the percentage of theme size was set to 50 per cent in order to decrease the numbers of themes on the map.

The keyword analysis was confusing, going in multiple directions. The EBSCO metasearch provided 78 keywords (subject terms); most appeared only once. Specifically, except for leadership (ten times), entrepreneurship (eight times) shared leadership and industrial management (three times each), SMEs, innovations in business, organisational behaviour and employees’ attitudes (two times each), all other 70 keywords appeared only once. Additionally, author-provided keywords were too
widespread among the articles for analysis. Therefore, to enable a meaningful analysis, consolidation was necessary. This consolidation was best achieved by aggregating and generating self-developed keywords. To do so, two researchers who separately developed keywords undertook the initial classification by examining the article’s title and reviewing its abstract and, to some extent, the article itself. Subsequently, the researchers’ separate keyword lists were compared and discrepancies discussed until reaching consensus on final classification by reviewing the articles again. This process resulted in six meta-keywords, with each article represented by a maximum of three keywords. The two researchers then coded each article according to the self-developed keywords. Again, discrepancies were discussed until consensus was reached, so that the remaining articles could be classified unequivocally.

In order to determine the epistemological orientation of the articles, each article was coded using the classification scheme of De Bakker, Groenewegen and Den Hond (2005), a systematic and parsimonious examination of the epistemological evolution of the academic field of EL. Table 8 represents the classification scheme.

**Table 8: Classification Scheme for Epistemological Orientation**

<table>
<thead>
<tr>
<th>Theoretical</th>
<th>Conceptual</th>
<th>Major focus is on developing propositions, hypotheses or (cor)relations between theoretical constructs, based on a discussion of state-of-the-art literature; no new empirical material has been collected for this work.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploratory</td>
<td>Major focus is on developing propositions, hypotheses and (cor)relations among theoretical constructs, based on examination of extensive, new empirical data.</td>
<td></td>
</tr>
<tr>
<td>Predictive</td>
<td>Major focus is on testing (refutation, confirmation) of propositions, hypotheses or (cor)relations among theoretical constructs, based on examination of extensive, new empirical data.</td>
<td></td>
</tr>
<tr>
<td>Instrumental</td>
<td>Major focus is on providing prescription (means, ideas, recipes for action) to practitioners and professionals, which are instrumental in the realization of some desired end, such as improved performance along some dimension.</td>
<td></td>
</tr>
<tr>
<td>Normative</td>
<td>Major focus is on providing prescription (means, ideas, recipes for action) to practitioners and professionals, which are valuable in themselves when considered from some ethical, moral or religious point of view.</td>
<td></td>
</tr>
<tr>
<td>Descriptive</td>
<td>Major focus is on reporting fact or opinion; no intention of a theoretical or prescriptive contribution.</td>
<td></td>
</tr>
</tbody>
</table>

Source: De Bakker et al. (2005, p. 294)
This classification system suggests that articles generally can have a theoretical, prescriptive or descriptive orientation. According to De Bakker et al. (2005, p. 294), “Papers make a theoretical contribution if they enhance the systematic understanding of some phenomenon at an abstract level”. It is notable that a theoretical contribution may or may not involve collection of new empirical data. Further, the theoretical orientation may be subdivided into three categories: first, conceptual articles that aim to advance theory—or the theory development process—and do not rely on empirical data; second, theoretical articles that can be categorized as predictive if they use data to confirm or refute hypotheses; and third, exploratory articles that tend to develop expectations about the relationships between constructs. Articles that provide action, ideas, means and recipes on how practitioners could realise specific desired ends make a prescriptive contribution. Descriptive articles are those which report opinion or data as interesting in themselves, with no discernible effort from the author contribute to either theory or practice. (De Bakker et al., 2005)

In order to ensure consistency, the two researchers separately coded the same articles with the classification scheme. An interrater reliability analysis using the Kappa statistic was performed to determine consistency between the raters. The Kappa was found to be 0.756 (p < 0.001) 95% CI [0.397, 1.000]. Kappas from 0.61 to 0.80 were interpreted as substantial agreement (Landis & Koch, 1977). The only disagreement was the classification of abstracts as descriptive as opposed to exploratory. The disagreement can be ascribed to differences in the length and clarity of the provided abstracts. Afterward, the two researchers compared notes and discussed discrepancies until reaching consensus about the final classification.

3 Results

This section provides a descriptive overview of the field of EL to produce insights into and observations on the current state in this field. To do so, all 21 articles that remained for analysis were extracted and placed into MS Word documents before undertaking the three-stage data Leximancer analysis. First, all 21 articles across the 2003–2014 period were examined together to provide an overall picture of the field. Next, the years 2003–2009 (14 articles) were examined separately, followed by an examination of the years 2012–2014 (seven articles). These two latter examinations were chosen in order to show the evolution of the field with bundles of publications at the beginning and at the end of the examined timeframe.
3.1 Overall Concept Map: 2003–2014

Figure 7 depicts the themes (circles) within the data set. These themes contain clusters of concepts; those that appear together often in the data set are represented close to one another on the map. The themes summarise the main ideas in particular clusters, and the cluster size denotes the number of concepts found within each cluster. The most prominent concept in each theme is represented by the largest dot in the scheme and named after it (Leximancer, 2011). Additionally, the themes are heat-mapped to indicate frequency, which means that the ‘hottest’ or most strongly evident theme appears in red, the next hottest in orange, and so on. Conversely, cool colours such as blue and green denote the least relevant concepts (Leximancer, 2011).
Referring to figure 7, the overall concept map shows that across the analysed period, the articles contained a core set of concepts, namely ‘performance’, ‘leadership’ and ‘entrepreneurial’. However, it is obvious that the last two mentioned concepts appear prominent because they were used as search terms during the data collection phase and naturally would be heavily represented in the data. Therefore, their presence confirms the prevalence of entrepreneurship and leadership as a focal point of the articles studied, especially ‘leadership’, where its central location on the map indicates its prominence throughout all articles.

Going deeper into the Leximancer analysis, ‘leadership’ came first in a ranked list based on the number of times the concepts occurred in the set of articles. The rankings were then converted into a relevance score, computed as the frequency percentage of text segments coded with that concept and relative to the most frequent concept in the list (Thomas, 2014). The most frequent concepts encountered in this study were ‘leadership’, ‘entrepreneurial’, ‘performance’, ‘team’, ‘research’, ‘study’, ‘employees’, ‘management’ and ‘top’, with ‘leadership’ co-occuring in the text. ‘Leadership’ co-occurred particularly in the context of leadership styles, such as authentic (e.g., Jensen & Luthans, 2006; Hmieleski et al., 2012), transformational (e.g., Gumusluo̱lu & Ilsev, 2009), and shared (e.g., Mihalache et al., 2014; Zhou et al., 2013), indicating the relevance of these styles in the context of EL.

The overlap of ‘leadership’ and ‘performance’ and the analysis of corresponding text segments uncovered the positive influence of leadership on venture performance (e.g., (Ensley, Hmieleski, et al., 2006); (Ensley, Pearce, et al., 2006); (Zhou et al., 2013). Interestingly, the knowledge pathway within Leximancer also revealed a linkage between ‘entrepreneurial’ and ‘performance’. Analysing corresponding text segments uncovered that individual entrepreneurs have a strong leadership role, as their passion and behaviour influence the employees and team members and therefore enhance venture performance (e.g., Breugst, Domurath, Patzelt, & Klaukien, 2012; Engelen, Gupta, Strenger, & Brettel, 2012).

The theme ‘leadership’ also overlaps with the themes ‘entrepreneurial’ and ‘process’. This reflects the dynamics in leadership development—in particular the enhancement of human capital, such as knowledge, skills and capabilities, in a setting where any kind of change is needed—by individuals who must lead people and therefore also must change their role as the company further develops (e.g., Cogliser & Brigham, 2004; Chen, 2007; Leitch et al., 2013).

Interestingly, the theme ‘entrepreneurial’ consists of concepts strongly associated, on one hand, with the characteristics and traits of the entrepreneur, and on the other hand,
with leading followers and inspiring creativity. This intersection emphasises the importance of the entrepreneur as a person who must identify and fill a need. This identification and need are important to the entrepreneur’s characteristics and traits. Without the individual, there would be nobody to follow or to inspire and encourage creative action that advances the business (e.g., Chen, 2007; Wu, McMullen, Neubert, & Yi, 2008; Renko et al., 2012).

In relation to methodology, the most common across all time periods were theoretical articles (e.g., Vecchio, 2003; Cogliser & Brigham, 2004; Fernald et al., 2005; Kuratko, 2007; Becherer et al., 2008). Empirical articles often applied large-scale samples to measure a specific leadership style in the context of EL (e.g., Jensen & Luthans, 2006; Zhou et al., 2013) or its influence on performance (e.g., Ensley, Pearce, et al., 2006; Hmieleski & Ensley, 2007). The latter outcome is also represented in lesser themes found in the overall concept map that focused on methods, such as ‘research’, ‘data’, ‘sample’, ‘factor’, ‘scale’, ‘model’, ‘measure’, ‘approach’, ‘variable’ and ‘effect’, and referred to the research methods that were applied in the empirical articles.

3.2 Concept Map: 2003–2009
The analysis incorporated 14 articles for the 2003–2009 period. The cluster map for this period (figure 8) has the first-order theme ‘leadership’ as its most prominent, and ‘characteristics’ as its least prominent (ranked seventh). The most frequent concepts within ‘leadership’ were ‘authentic’, ‘transformational’ and ‘behaviour’, which refer to leadership styles. The articles reflected the prominence of leadership styles, discussed the various styles that best described entrepreneurial leaders, and used studies of these styles to define EL (e.g., Ensley, Hmieleski, et al., 2006; Jensen & Luthans, 2006; Gümüşluoğlu & Ilsev, 2009). ‘Entrepreneur’ was also an important theme within leadership concepts but was not a solid theme in the whole 2003–2009 data set. However, ‘entrepreneurial’ was the fourth most frequent theme on the map, intersecting with the themes ‘leaders’, ‘leadership’ and ‘characteristics’. On the surface, that primarily confirmed the strong alignment of entrepreneurship and leadership within the articles investigated.

Looking deeper into the articles, the data indicated that entrepreneurial skills, resources, opportunities and success were heavily studied in articles discussing ‘entrepreneurial’. This was because venture performance was of great interest in the various articles that strongly associated the entrepreneur person with the entrepreneur’s skills and resources, as well as the context (e.g., Ensley, Pearce, et al., 2006; Hmieleski & Ensley, 2007).
Regarding leaders, the articles focused on leaders’ creativity (Chen, 2007) and leadership approach, as well as their possibility to influence the work team (e.g., Jensen & Luthans, 2006; Ribeiro Soriano & Comeche Martinez, 2007). Due to the fact that ‘entrepreneur’ was one of the search terms in the data collection process, it also appeared in the leadership theme.

Figure 8: Leximancer Concept Map, 2003-2009
3.3 Concept Map: 2012-2014

The analysis of the 2012–2014 period was based on seven articles (Figure 9). As mentioned earlier, the themes were heat-mapped to indicate frequency, with the ‘hottest’, or most strongly evident theme, appearing in red. In this period, ‘leadership’ was the hottest theme (636 hits). Its prominence had stood out when looking at the titles of the papers: 85 per cent included ‘leadership’ in the title, with an emphasis on shared leadership (e.g., Hmieleski et al., 2012; Zhou et al., 2013; Mihalache et al., 2014).

Figure 9: Leximancer Concept Map, 2012-2014
Within the leadership theme, the most frequent concepts were ‘shared’, ‘TMT’ (top management team), ‘performance’, ‘team’, ‘management’, ‘members’, ‘effect’, ‘study’, ‘organizational’, ‘role’, ‘ambidexterity’, ‘levels’, ‘style’, ‘authentic’, ‘organization’, ‘diversity’, ‘processes’, ‘information’ and ‘innovation’. Besides ‘shared leadership’, the prominence of ‘teams’ and ‘TMT’ in relation to leadership is striking. An article by Mihalache et al. (2014) proposed ‘top management team shared leadership’ as an important enabler of organisational ambidexterity. A closer look into the Leximancer analysis showed the overlap of ‘leadership’ with the theme ‘development’, which indicated that leadership skills must be developed within the leading teams and roles need to be newly defined (Leitch et al., 2013).

‘Authentic leadership’ is also relevant in the analysed articles, again showing the importance of a specific leadership style. For example, the results of a study by Hmieleski et al. (2012) demonstrated a positive indirect effect of shared authentic leadership behaviour on firm performance.

The large overlap of the two most prominent themes, ‘leadership’ and ‘entrepreneurial’, is particularly striking but not surprising, as those two terms were used as search terms and built the centrepiece of this study. Additionally, ‘transformational leadership style’ is a concept within ‘leadership’, reinforcing the intersection of entrepreneurship and leadership (e.g., Engelen et al., 2012; Renko et al., 2012). Within ‘entrepreneurial’, the construct of entrepreneurial orientation appeared in reference to firms’ entrepreneurial behaviour such as risk-taking, innovativeness and proactiveness. Various authors addressed these behaviours when discussing entrepreneurship as a construct (e.g., Mihalache et al., 2014; Zhou et al., 2013).

The important role of ‘employees’ also appears in this concept map, overlapping with the ‘entrepreneurial’ theme because perceived entrepreneurial passion influences the employees of entrepreneurial ventures, according to Renko et al. (2012). The two themes ‘scale’ and ‘significant’ highlighted empirical methods that the articles applied to EL, with concepts such as ‘items’, ‘data’, ‘sample’, ‘results’ and ‘significant’ (e.g., Breugst et al., 2012; Engelen et al., 2012; Leitch et al., 2013).

3.4 Keyword Frequencies

Keyword analysis drew upon the assumption that an article’s keywords constitute an adequate description of its content or the links the articles established between problems. Therefore, in this section, the self-developed keywords are presented (see figure 10). Keywords such as ‘entrepreneurship’, ‘entrepreneurial’ and ‘leadership’ were not incorporated in figure 10 because they were already represented in the applied search
terms. As such, they had already built the principal items for all articles used in this analysis and would not have added meaning. However, their overall relevance should be kept in mind.

That a majority of the articles examined the topic of ‘leadership style’ can be explained by the fact that providing direction, implementing plans and motivating people are important in an entrepreneurial setting, especially in association with the growth of a company. Ensley, Hmieleski, et al. (2006), for example, discovered both vertical and shared leadership were important predictors of new venture performance. Therefore, ‘growth’ and ‘performance’ could be retrieved as the second most frequent keywords (e.g., Ensley, Hmieleski, et al., 2006; Ensley, Pearce, et al., 2006; Zhou et al., 2013). These keywords also covered articles regarding employee satisfaction because performance is not limited to monetary fields, but can also come from high employee satisfaction rates (Breugst et al., 2012).

Figure 10: Keyword Frequencies

In addition, the importance of ‘teams’ in EL settings was represented in the keywords, which implies that entrepreneurial opportunities might be detected within a team, or that entrepreneurial leaders need to influence employees in order to stay in the market (e.g., Ensley, Hmieleski, et al., 2006; Soriano & Martínez, 2007; Zhou et al., 2013). In addition to considering a group of people, various articles focused on the individual entrepreneur’s ‘characteristics’ and ‘traits’ (e.g., Vecchio, 2003; Cogliser & Brigham, 2004; Gupta et al., 2004; Fernald et al., 2005; Becherer et al., 2008; Renko et al., 2012).
A few articles also covered ‘innovation’ and ‘creativity’ when discussing EL (e.g., Chen, 2007; Soriano & Martínez, 2007; Wu et al., 2008; Gumusluoğlu & Ilsev, 2009).

### 3.5 Represented Journals and Authors

Of 53 journals considered in the data collection process (38 represented in the Google Scholar categories ‘Entrepreneurship and Innovation’ and ‘Human Resources and Organizations’, seven highly ranked in the domain, plus eight from backward tracking of references), 17 journals contained the 21 articles remaining for analysis. In most of the journals, only one article was relevant for this study (see table 9).

**Table 9: Represented Journals and Authors**

<table>
<thead>
<tr>
<th>Journal</th>
<th>#Articles</th>
<th>Author(s) and Year(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ensley, Pearce, and Hmieleski (2006)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wu, McMullen Neubert, and Yi (2008)</td>
</tr>
<tr>
<td>The Leadership Quarterly</td>
<td>2</td>
<td>Cogliser and Brigham (2004)</td>
</tr>
<tr>
<td>Journal of Management</td>
<td>2</td>
<td>Hmieleski, Cole, and Baron (2012)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engelen, Gupta, Strenger, and Brettel (2012)</td>
</tr>
<tr>
<td>British Journal of Management</td>
<td>1</td>
<td>Leitch, McMullan, and Harrison (2013)</td>
</tr>
<tr>
<td>Creativity and Innovation Management</td>
<td>1</td>
<td>Chen (2007)</td>
</tr>
<tr>
<td>International Entrepreneurship and Management Journal</td>
<td>1</td>
<td>Zhou, Vredenburgh, and Rogoff (2013)</td>
</tr>
<tr>
<td>Journal of Leadership &amp; Organizational Studies</td>
<td>1</td>
<td>Kuratko (2007)</td>
</tr>
<tr>
<td>Journal of Organizational Behavior</td>
<td>1</td>
<td>Hmieleski and Ensley (2007)</td>
</tr>
<tr>
<td>Journal of Small Business Management</td>
<td>1</td>
<td>Renko, El Tarabishy, Carsrud, and Brännback (2012)</td>
</tr>
<tr>
<td>Management Decision</td>
<td>1</td>
<td>Soriano and Martínez (2007)</td>
</tr>
<tr>
<td>Strategic Entrepreneurship Journal</td>
<td>1</td>
<td>Mihalache, Jansen, van den Bosch, and Volberda (2014)</td>
</tr>
</tbody>
</table>

The *Journal of Business Venturing* was most frequently represented, supporting its aim to cover a multiplicity of disciplines and methodologies in entrepreneurship research. Three empirical articles were represented in this journal (Gupta et al., 2004; Ensley,
Pearce, et al., 2006; Wu et al., 2008). Next most frequently represented were two journals, each with two publications focused on leadership and management. One, the *Leadership Quarterly*, focuses on leadership topics of interest to scholars, consultants, practicing managers, executives, administrators, and university faculty members. Thus, both of its selected articles focused on EL. The first article, by Cogliser and Brigham (2004), was a review article that looked at the intersection of entrepreneurship and leadership. The second article, by Ensley, Hmieleski, et al. (2006), focused on shared leadership within top management teams and its influence on venture performance. The *Journal of Management*, focuses on scholarly empirical and theoretical research articles with strong impact on the management field, which applies to research on EL. Interestingly, both articles within the *Journal of Management* were of an empirical nature and focused on performance (Engelen et al., 2015; Hmieleski et al., 2012).

Most of the other represented journals can be considered as typically suitable for articles on EL. However, two journals stood out. The first, the *Southern Business Review*, a magazine published by Georgia Southern University’s College of Business Administration, did not appear on the VHB-Jourqual or ABDC ranking lists. However, it published the article ‘A new paradigm: entrepreneurial leadership’ by Fernald et al. (2005), which almost every other article on EL used as a reference, although the journal did not have an international reputation. The second stand-out, the *New England Journal of Entrepreneurship*, was published by John F. Welch College of Business (2014) with the objective, “To be an invaluable forum for exchange of scholarly ideas, practices and policies in the field of entrepreneurship and small business management”; this journal also was not listed in the VHB-Jourqual or ABDC ranking lists. Nevertheless, it published the article, ‘Separated at birth: an inquiry on the conceptual independence of the entrepreneurship and the leadership constructs’ by Becherer et al. (2008), which was also used as a reference in almost every other article on EL.

Table 9 also indicates a certain fragmentation. Specifically, in total, 50 authors published in 17 journals that were anchored in different disciplines, such as entrepreneurship, leadership, human resources and organisational behaviour. A few authors were represented more frequently than others. For example, Hmieleski was represented with four articles (twice as first author and once each as second and third author); followed by Ensley, represented with three articles (once as first author, twice as second author); and El Tarabishy and Pearce were both represented twice (each as second and third author). As an aside, there was also an accumulation of Anglo-American authors, and male authors outnumbered female authors.
Figure 11 illustrates the chronological distribution of the publications. The publications were concentrated in the years 2006–2008, with a total of nine articles (three publications in 2006, four in 2007, and two in 2008), and in the years 2012–2014, with a total of seven articles (three publications each in 2012 and 2013). Only one article was published in each of the years 2003, 2005, 2009 and 2014, and no articles were published in 2004, 2010 and 2011.

![Number of Publications](image)

**Figure 11: Number of Publications**

### 3.6 Epistemological Orientation

Figure 12 illustrates that all of the articles were of a theoretical nature. According to De Bakker et al. (2005, p. 294), “Papers make a theoretical contribution if they enhance the systematic understanding of some phenomenon at an abstract level [that] may or may not involve the collection of new empirical data”. Further, figure 12 shows that the majority (13) of the articles were of a predictive nature, which implies testing hypotheses or propositions using extensive empirical data (e.g., Cogliser & Brigham, 2004; Ensley, Hmieleski, et al., 2006; Breugst et al., 2012). Most predictive articles in this study were published in 2006, 2007 and 2012.

Conceptual articles account for the second largest share of publications (five) used in this article (e.g., Vecchio, 2003; Fernald et al., 2005). Conceptual articles focus on developing propositions and hypotheses based on a discussion of state-of-the-art literature. They dominated over predictive and exploratory papers in the beginning time frame of this analysis, before the increase of predictive publications in 2006 and 2007.
The larger amount of conceptual articles during the emergence of EL represents the field’s early stage (2003), when conceptual articles were based upon broadly accepted facts or moved from factual assumptions to developing an evolving research field without the use of new empirical data. Fernald et al. (2005), Leitch et al. (2013) and Renko et al. (2012) wrote the rare exploratory articles that focused on developing propositions and hypotheses based on examination of new empirical data to develop expectations about relationships among constructs.

![Figure 12: Epistemological Orientation](image)

### 4 Discussion and Conclusion

Analysing research on EL is of great importance because the body of literature in this field has increased and, despite certain fragmentation and definitional disagreements, a convergence between entrepreneurship and leadership underpinned the development of the field. To address this issue in this chapter, a systematic bibliometric study of the field of EL, analysing 21 peer-reviewed academic journal articles published from 2003 to 2014, was conducted. This review provided a systematic and comprehensive analysis and helped to visualise the development of the research field to its current state.

This analysis suggested that the dominant themes within the research field were ‘entrepreneurial’ and ‘leadership’, which was to be expected in an analysis focused on EL. However, the analysis revealed important changes in how research has been conducted in this field in the time frame 2003–2014. In the first concept map (2003–
2009), the articles often separated the terms ‘entrepreneurial’ and ‘leadership’ when describing the construct of EL. The later concept map (2009–2014) indicated the merger of these two constructs, resulting in ‘entrepreneurial leadership’. However, the various definitions represented considerable diversity in approach, which is reflected in the absence of an agreed-upon definition (Harrison et al., 2015).

Also interesting is the relevance of leadership styles, traits, characteristics and behaviours in both periods 2003–2009 and 2012–2014, as was displayed in the keyword analysis. The relevance of leadership styles particularly stands out in the keyword analysis. Most authors referred to leadership styles such as ‘authentic’, ‘transformational’ or ‘shared’ to indicate their relevance in this context. The relevance of leadership styles in entrepreneurial settings was generally striking as a key element of leader effectiveness. The variety and extensive discussion of leadership styles in the investigated articles reflected the many leadership styles from which to choose. The prominent presence of leadership styles in the articles can also be explained by the fact that providing direction, implementing plans, and motivating people are important in entrepreneurial settings, particularly with regard to company growth and innovation.

More recently, Renko et al. (2012) vividly described a unique EL style and differentiated it in particular from transformational leadership. That shows a disengagement from studies that are primarily descriptive and separated the fields ‘entrepreneurial’ and ‘leadership’, to emerge into a single field of inquiry where ‘entrepreneurial leadership’ is described as a distinct construct.

During the second studied time frame (2012–2014), the focus of the articles shifted, giving greater attention to ‘scale’, ‘items’, ‘sample’ and ‘data’. This change reflected the increasing trend toward a more exploratory or predictive epistemological orientation of the articles, whereas conceptual articles were more frequent in earlier years. In addition, the role of employees was emphasised in the second timeframe. These articles identified the importance of employees as a source of innovation and entrepreneurial activities, instead of surrendering the field solely to the individual entrepreneur or leader.

This study showed that a number of journals had published articles on the topic of ‘entrepreneurial leadership’. Only three journals (Journal of Business Venturing, Leadership Quarterly and Journal of Management) were represented more than once, and the focal points of the represented journals varied greatly. Again, that variation indicated the diverse topics within EL and their complexity; however, the variation also indicated a lack of convergence.
Variation also applied to the authors who published in this research domain. Fifty authors participated in writing the analysed articles, but only a few authors appeared with high frequency. This suggests that no luminary author or expert exists within this field of research (unlike other disciplines). It likewise underpins the foregoing perception that the field is still evolving, lacks the appropriate tools and definitional clarity to assess its behaviours and characteristics, and is still seeking its identity (Renko et al., 2012; Leitch et al., 2013).

This analysis also reveals increased cross-fertilisation of the fields of entrepreneurship and leadership, and convergence between the fields in the sense that more holistic approaches are pursued. That is also indicated in the merger of these two constructs in the later concept map, resulting in ‘entrepreneurial leadership’. However, the various definitions represented considerable diversity in approach, which is reflected in the absence of an agreed-upon definition. Therefore, this section closes with an attempt at a definition, incorporating the considerations of the analysed articles: EL can be defined as: the entrepreneur’s or group of entrepreneurs’ abilities to influence and direct the performance of an individual or a group with the aim to steer the organisation in its development under uncertainty.

5 Limitations and Future Research

Among the limitations of this analysis, some resulted from the search design and others as a direct consequence of the applied technique. Among the main search design shortcomings was the concentration on peer-reviewed scientific journal articles. This concentration inevitably limited the potential scope of the results, because the analysed articles represent a mere fraction of all research papers and book chapters discussing EL. Therefore, future research samples could be enlarged to a broader journal base in order to gain valuable insights from other authors and geographical areas and to cover international aspects. Conference papers, dissertations, working papers, book chapters, book reviews, editorials, and comments could be incorporated into the analysis to comprise a larger spectrum and further identify knowledge claims.

In addition, the present study primarily followed a descriptive approach and therefore owes a deeper explanation of the detected phenomena. This leaves room for further research, such as a follow-up examination of why the described observations existed and what the findings imply.

This analysis was also subject to limitations inherent in bibliometric techniques in general and text mining in particular. Although Leximancer cannot provide detailed
conceptual insights by shifting the analysis level from the researcher to the actual content, it simplifies (but does not interpret) the concepts. A researcher must still interpret the output, which comes with biases because interpreting the resulting maps is inevitably subjective. Therefore, this study should not be considered to offer definitive results with respect to the examined issues, nor to be the sole potential application of bibliometric analysis on EL. Nevertheless, Leximancer provides a great advantage in disclosing related concepts and themes and in visualising relationships in a meaningful way.

Due to the wide proliferation of authors, journals and competing definitions in this field of inquiry, it would be of utmost interest to further define, measure, and rigorously investigate the construct of EL. This could be done with a study of literature focused on analysing the applied methodologies, research methods, and underlying theoretical foundations. In so doing, alternative research directions and articles that might change the topic and methodological trends could be identified. In addition, conceptual convergence could be furthered by focusing on the patterns and relationships of co-citations (for example, the most frequently cited references) used by EL scholars. Finally, future research could investigate if and how EL can be learned and then focus on developing a reliable measurement instrument. Addressing the study’s limitations and incorporating the foregoing suggestions could provide a more comprehensive analysis of the evolution of the EL discipline over time and further advance the field.
Chapter D

Entrepreneurial Leadership and TMT Performance and TMT Innovation in Entrepreneurial SMEs: The Mediating Role of TMT Cohesion

Arik Röschke, Thierry Volery, Nathan Eva, and Alexander Newman

Abstract
This study draws on theoretical perspectives from the entrepreneurial vision and social learning literatures to propose that the exhibition of CEO EL behaviours will foster higher levels of TMT performance and TMT innovative behaviour in entrepreneurial SMEs. We also argue that TMT cohesion may acts a key mediating mechanism that explains the relationship between CEO EL and both TMT performance and TMT innovative behaviours. Utilizing multi-source, multi-level data from 300 team members across 94 TMTs, we find that there is as distal relationship between CEO EL TMT performance and TMT innovation through TMT cohesion. The findings of this study contribute to the nascent entrepreneurial leadership literature demonstrating the process by which CEOs can increase their TMT performance and innovation.
1 Introduction

As much as the world has a fascination with entrepreneurial firms such as Tesla, Amazon, and Facebook, this fascination is rivalled, if not surpassed, by the interest in their founders, Elon Musk, Jeff Bezos, and Mark Zuckerberg. In order to understand how entrepreneurs successfully motivate their top management teams (TMTs), entrepreneurship scholars have begun to draw more extensively on the literature on leadership behaviours of entrepreneurial CEOs (Jensen & Luthans, 2006) to examine the intersection between entrepreneurship and leadership (e.g., Cogliser & Brigham, 2004; Bagheri & Pihie, 2011; Leitch et al., 2013; Leitch & Volery, 2017).

Whilst scholars and commentators in the past may have characterised CEOs of entrepreneurial firms as transformational or charismatic (e.g., Richard Branson and Virgin), these frameworks do not adequately take into account the dynamic new landscape that entrepreneurs operate within (Renko et al., 2015). In addition, the majority of leadership research has been conducted in corporate settings, with less attention paid to leadership and its development in a SME context (Leitch & Harrison, 2018a). SMEs are distinctive in terms of organisational size, innovation, uncertainty, risk, and ambiguity (Chen, 2007; Surie & Ashley, 2008). Leaders within entrepreneurial firms are the key drivers of success, given that they are required to identify opportunities, develop a vision for the entrepreneurial firm and organise resources from multiple stakeholders in order to exploit these opportunities (Baum et al., 1998). Leadership behaviours are perceived to be a core component of the entrepreneurship process, given that it is not possible to exploit opportunities without the facilitation of individual and collective efforts (Ensley, Pearce, et al., 2006).

However, it is only recently that EL has been recognised as a distinctive approach to leadership which might be useful to understand the process by which CEOs influence TMT and subsequently the entrepreneurial firm. This leadership style typically involves “influencing and directing the performance of group members towards the achievement of organisational goals that involve recognizing and exploiting entrepreneurial opportunities” (Renko et al., 2015, p. 55) and can exist in organisations of any age, size, and focus. It exists anywhere it is possible to pursue entrepreneurial opportunities (Leitch & Harrison, 2018a).

Whilst the work of Renko et al. (2015) is a significant step in understanding the entrepreneurial leader’s role, there have only been a scant number of studies that have built on their work to examine the effects of EL (Miao, Eva, Newman, & Cooper, 2017; Newman, Neesham, Manville, & Tse, 2017). Rather than analyse EL, scholars have overlaid traditional corporate leadership constructs such as transformational leadership...
(Zaech & Baldegger, 2017) or empowering leadership (Hmieleski & Ensley, 2007) within an entrepreneurial context. Along with a greater interest in entrepreneurial leaders, and more entrepreneurial firms forming daily, it is necessary to further explore the role of the entrepreneurial leader, and whether this leadership approach produces higher levels of performance and innovative behaviour amongst their TMT members (Pearson, Ensley, & Amason, 2002).

To that end, in this study we seek to understand how the exhibition of CEP EL behaviours within SMEs will foster higher levels of TMT performance and innovative behaviours, drawing from the theoretical perspectives of entrepreneurial vision (Gupta et al., 2004; Ruvio et al., 2010) and social learning (Bandura, 1977) theories. We also argue that TMT cohesion may act a key mediating mechanism that explains the relationship between CEO EL and both TMT innovative behaviours and TMT performance. We focus on the TMT because the team is increasingly seen as a more appropriate level of analysis in SMEs (Ensley et al., 2003; Ben-Hafaiedh & Cooney, 2017). Only recently, there has been “an increasing awareness of the importance of context, and a move away from the ‘great man’, charismatic individualistic understanding of leader and entrepreneur as a hero” (Leitch & Harrison, 2018a, p. 26), and leadership is perceived as a collective plural activity, which is based on the practices of multiple organisational members. Therefore, the role of the followers and their relation to and impact on leaders has recently been more explicitly acknowledged, which encourages more holistic understandings (Leitch & Harrison, 2018a). Indeed, upper echelon theory proposes the importance impact of the TMT on decisions taken in and outcomes achieved by firms (Hambrick & Mason, 1984). This is even more prevalent in the context of SMEs where TMTs have wider managerial discretion and their behaviour has more significant and lasting imprinting effects on the formation and growth trajectory (Klotz et al., 2014).

The remainder of this article is structured as follows. In the following section of the article, we provide a brief overview of the concept of EL, TMT cohesion, and our outcome variables, and formulate a series of hypotheses. After describing the methods, we present and discuss the results. Finally, we discuss the central implications of our findings and outline avenues for future research.
2 Theoretical Foundation

2.1 Entrepreneurial Leadership

Scholars have traditionally studied EL behaviours by anchoring their research either in the leadership or the entrepreneurship discipline. Some authors, such as Vecchio (2003), believe EL is nothing distinctive. To them, it is simply a type of leadership that occurs in certain settings, such as fast-growing organisations or emerging businesses. Therefore, various EL issues can be understood and studied with the theory already available in the leadership and interpersonal influence fields.

Other scholars (Fernald et al., 2005; Kuratko, 2007), believe the world is currently in the middle of an entrepreneurial revolution and that entrepreneurship is “an integrated concept that permeates our society and individuals in an innovative manner” (Kuratko, 2007, p. 2). Entrepreneurship is an integral part of leadership. The entrepreneurial revolution is being driven by entrepreneurial leaders able to create a vision, recognise opportunities, and mobilise key resource holders to create value in various settings, including start-ups, large corporations, and both for-profit and not-for-profit enterprises (Gupta et al., 2004; Ireland et al., 2003).

More recently, a consensus has emerged to position EL at the intersection of entrepreneurship and leadership and, therefore, to benefit from the cross-pollination of both fields (Cogliser & Brigham, 2004; Renko et al., 2015; Leitch & Volery, 2017). The concept of EL is now recognised as distinctive—something which takes the specificities of the exercise of leadership into consideration—in both SMEs and in innovative corporations evolving in a global, hypercompetitive environment. Along these lines, the concept of EL captures leadership behaviours that involve influencing and directing group members towards goals that include the recognition and exploitation of entrepreneurial opportunities (Renko et al., 2015).

EL shares some commonalities with other types of leadership, such as transformational leadership (Avolio & Bass, 1995) which has traditionally portrayed leaders as visionary individuals—those with the ability to inspire followers into helping them shape the organisation, and constantly striving to overturn the status quo (Roomi & Harrison, 2011). However, the focus on opportunity-oriented behaviours clearly distinguishes EL from other types of leadership. Renko et al. (2015) propose that it is a firm-wide phenomenon concerned with the development of entrepreneurial behaviours and attitudes of leaders at any level: the ability to influence and direct the performance of group members toward achieving those organisational goals incorporates the recognition and exploitation of entrepreneurial opportunities.
The field of EL is still relatively new, and literature on the subject reflects this, with many works focusing on the emergence and development of the concept (Leitch et al., 2013; McCarthy et al., 2010). Other literature examines the conceptualisation and measurement of EL (Bagheri & Pihie, 2011; Koryak et al., 2015; Renko et al., 2015). While some studies are now exploring the effects of EL on firm-level outcomes, little research has been carried out into its effects on top level management teams.

2.2 Entrepreneurial Leadership and TMT Outcomes

There is an increasing amount of evidence suggesting that leadership behaviours foster creativity and innovation. For example, leadership has been found to play a decisive role in enhancing the creativity of subordinates (Amabile, Schatzel, Moneta, & Kramer, 2004), launching and driving innovation projects (Stoker, Looise, Fisscher, & De Jong, 2001), and overcoming resistance during the implementation of innovative projects (Gilley, Dixon, & Gilley, 2008). Leadership can have a substantial impact on innovation when leaders exhibit a series of behaviours, such as scanning and analysing the environment, using this analysis to define missions, and setting the parameters for idea generation, giving appropriate feedback and timely evaluation (Byrne, Mumford, Barrett, & Vessey, 2009). In their study of managers working for knowledge-intensive service firms, De Jong and Hartog (2007) identified 13 behaviours promoting innovation, including innovative role-modelling, intellectual stimulation, organising feedback, recognition, rewards, and providing resources. These leadership behaviours foster systems for rapid product prototyping and commercialisation, or systems that encourage innovation champions, allowing them to shape the success of new products and business ventures (Gupta et al., 2004). Similarly, Newman et al. (2017) found evidence that EL is positively related to followers’ innovative behaviour.

All in all, these findings suggest that EL is an integral part of TMT innovative performance via a dual process whereby entrepreneurs offer assistance to both individuals and teams as they transform their creative efforts into innovations (leader as facilitator) and manage those goals and activities of the organisation that are aimed at innovation (leader as manager) (Denti & Hemlin, 2012).

In addition to fostering TMT innovative behaviours, EL has important implications for overall TMT performance. EL scholars highlight two main leadership behaviours which help entrepreneurs to influence follower performance. First, entrepreneurs produce the visionary scenarios necessary for selecting and rallying group members who enact the vision to create value (Baum et al., 1998; Renko et al., 2015). The ambitious foresight which underpins the formulation of a vision is a key driver of the launch of a business
venture as enactment—the creation of a new reality (Gartner & Reynolds, 2010). In articulating their vision, entrepreneurial leaders emphasise building commitment through active engagement with the opportunities presented by the environment, and make a virtue of responding to customer needs, solving problems, and creating value (Gupta et al., 2004). This compelling, opportunity-focused vision of the future guides and challenges team members to achieve the goals set forth (Griffin & O’Leary-Kelly, 2010) and energises them into performing at higher levels (Ruvio et al., 2010). This is coupled with setting high standards of performance for the team (Gupta et al., 2004), absorbing uncertainty from the environment so the team members can focus on achieving the vision (Cogliser & Brigham, 2004), and providing adequate support for followers (Cardon et al., 2009; Thornberry, 2006). As a result, followers become committed to and proud of the vision, and do their best to achieve these performance goals (Ruvio et al., 2010).

Second, entrepreneurial leaders may act as role models for team members. Leading by example, they use their abilities to empower and motivate followers and inspire them to engage in entrepreneurial activities themselves (Renko et al., 2015). They set an example to their followers by identifying entrepreneurial opportunities to introduce new products and services into the marketplace (Gaglio, 2004), and exploiting such opportunities through the appropriate allocation of resources (Koryak et al., 2015). This process of leader role-modelling is understood through the social learning theory (Bandura, 1977). The major premise of social learning theory is that individuals learn from others’ by observing and emulating their attitudes and behaviours (Bandura, 1977). By setting the climate through “personal modelling of these behaviours consistently, predictably, and relentlessly entrepreneurial leaders ensure that others will emulate their behaviour and they will not change what they do on the basis of words alone” (McGrath & MacMillan, 2000, p. 303). Along these lines, entrepreneurs are often described as authentic leaders who are “confident, hopeful, resilient, transparent, ethical, future-oriented and give priority to developing employees to be leaders” (Luthans & Avolio, 2003, p. 243). Not only are they true to themselves, but they behave in such a way that allows their followers to also gain self-awareness and psychological strength (Jensen & Luthans, 2006).

In the SME context, the CEO is an important source of behavioural cues for members of the TMT, and employees more generally, due to his/her status and position within the organisation. Through open and effective communication, the CEO is able to shape the attitudes and behaviours of those working under him/her. Entrepreneurial leaders’ opportunity-oriented behaviours, such as pro-activeness, innovativeness, goal-setting,
and risk-taking (Bagheri & Pihie, 2011; Chen, 2007; Surie & Ashley, 2008), can be targets of emulation by the TMT. By role-modelling these opportunity-focused behaviours, and actively providing encouragement to team members, the CEO influences the team members to engage in similar behaviours. This in turn will lead team members to engage in entrepreneurial activities, and have a positive impact on the team performance and innovative behaviour. Therefore, we hypothesise

**H1a**: CEO entrepreneurial leadership is positively related to TMT innovative behaviours

**H1b**: CEO entrepreneurial leadership is positively related to TMT performance

### 2.3 Entrepreneurial Leadership and Team Cohesion

Team cohesion refers to “the tendency for a group to stick together” (Carron, 1982, p. 124). It is the resultant of both “forces that attract members to the group”, as well as “the incentive to remain within the group” (Man & Lam, 2003, p. 981). Employees in cohesive teams value their membership and strive to maintain positive relationships with other group members (Wendt, Euwema, & van Emmerik, 2009). From a social capital perspective, the ‘bonding perspective’ which underpins team cohesion creates social capital value to the business through strong, repeated social connections that result in a sense of belonging amongst team members and a high commitment to one another and to the purpose of the team. Accordingly, social capital is a collective good that results in increased sharing and cohesion among members in the team that would be otherwise unattainable (Coleman, 1988).

Leadership has often been discussed as an important catalyst for team cohesion. In particular, a supportive leadership style can facilitate an open group climate and cohesive relations among team members (Wendt et al., 2009). In the same vein, we identify two features of EL which are likely to have a positive impact on TMT cohesion.

First, from a processual lens, EL has been characterised as a process of co-action where shifts among team members “indicate the continuous (re)construction of EL towards the orientation of new venture development” (Sklaveniti, 2017, p. 204). Along these lines, Koryak et al. (2015) remark that once an opportunity is discovered, it is necessary to combine new and knowledge stocks, processes, products or strategies in order to exploit it. It is likely this process will involve numerous individuals within the organisation. This suggests that the nature of EL stimulates subordinates to participate in problem-solving and decision-making. This intellectual stimulation is likely to have a positive relationship with task and social cohesion in the team.
Second, whereas other leadership approaches, such as servant leadership, focus on employees for their own unique strengths and weaknesses (Sendjaya, Sarros, & Santora, 2008), EL revolves around the achievement of opportunity-focused goals via the interaction between leaders and their followers who have varying levels of susceptibility to the entrepreneur’s influence. Three factors primarily explain follower susceptibility: the follower’s entrepreneurial self-efficacy, their level of entrepreneurial passion, and their empowerment (Renko et al., 2015, p. 59). These three factors will increase team cohesion, especially when entrepreneurs exhibit high performance expectations and there is transference of expectations from leader to follower who exhibits high-self efficacy, passion, and empowerment. Thus, we hypothesised the following:

**H2**: CEO entrepreneurial leadership is positively related to TMT cohesion.

### 2.4 The Mediating Effect of Team Cohesion

According to Ensley et al. (2003, p. 335), cohesion has been suggested to be “the central mediator of group formation, maintenance and productivity”. Since cohesion promotes psychological attachment to the team and encourages members to achieve desired outcomes, past research has consistently found strong positive correlations between cohesion and team performance (Casey-Campbell & Martens, 2009; Mathieu, Kukenberger, D’Innocenzo, & Reilly, 2015). Beal, Cohen, Burke, and McLendon (2003, p. 989) argued that cohesion created a unique bond between team members and that “the stronger the bond, the greater the productivity.”

To some extent, these correlations vary on the basis of the nature of cohesion (e.g., interpersonal vs. task-oriented), team task environment (e.g., complexity, interdependence), and the measurement scale used in the studies. In general, when team tasks are more complex and interdependent, cohesion—performance correlations are larger (Beal et al., 2003). Furthermore, the effect of cohesion is stronger in smaller groups than in larger groups. The influence of cohesion on team performance has been established in a variety of settings, including sport teams (Callow, Smith, Hardy, Arthur, & Hardy, 2009), the military (Bass, Avolio, Jung, & Berson, 2003), and groups of students (Gupta, Huang, & Niranjan, 2010; Mathieu et al., 2015).

Similarly, a broad body of literature highlights how important team cohesion is in the success of innovative projects. Team cohesion is one of the six facets of teamwork quality identified by Hoegl and Gemuenden (2001)—in addition to communication, coordination, balance of member contributions, mutual support, and effort—which significantly correlated with team innovation. Specifically, cohesion is conducive to TMT innovation because it generates a high levels of personal attraction between
various team members and creates a psychologically safe environment where team members can challenge the status quo and explore new ways of working (Hülsheger, Anderson, & Salgado, 2009).

Overall, considering a wealth of research which has argued that cohesion (see, for a review, Beal et al., 2003 and Renko et al., 2015) are salient for team performance, we posit that leadership behaviours will act as an antecedent to the relationship between cohesion and performance. In other words, cohesion is critical for effective team performance, and as such, is a key area that should be addressed when investigating EL with team performance (Dionne, Yammarino, Atwater, & Spangler, 2004). This leads us to the proposition that EL behaviours will have a positive impact on team TMT performance and innovative behaviours by increasing levels of team cohesion:

**H3a:** TMT cohesion mediates the relationship between CEO entrepreneurial leadership and TMT innovation

**H3b:** TMT cohesion mediates the relationship between CEO entrepreneurial leadership and TMT performance

## 3 Methodology

### 3.1 Data Collection and Sample

The data from this study is drawn from multiple informants obtained from CEOs and TMT members from small to medium enterprises (SMEs) in Switzerland. SMEs are defined as firms with three to 250 employees or a turnover of up to CHF 50 million. Our sampling frame comprises of 270 CEOs who participated in an executive education programme at a leading business school in Switzerland and 1263 CEOs listed in the ORBIS database, all whom are at the helm of SMEs from the information and communication technology (ICT) and high-tech manufacturing sectors. Both sectors have traditionally been dynamic environments affected by ongoing changes arising from digital transformation, mobile technology, collaboration, interoperability, and integrated ecosystems. Arvanitis, Ley, Seliger, Stucki, and Wörter (2013) point out that over 70% of high-tech manufacturing and ICT companies in Switzerland can be considered as innovative in terms of combined inputs (e.g., R&D expenses), output (e.g., patents and trademarks), and market results (e.g., percentage of sales generated by new products). This makes these industries particularly suitable for the analysis of EL behaviour. As shown in table 10, the SMEs in our sample are highly innovative when product innovation (new product/service launched) and market innovation (new customers and markets) are taken into consideration.
CEOs were contacted via email to participate the study. The participants were asked to forward the survey link to their TMT members in order to have at least three participants from each company. A reminder was sent two months after the first email to the enterprises in which one or more TMT members had responded to the survey.

Table 10: Sample Composition

<table>
<thead>
<tr>
<th></th>
<th>Sample in this study</th>
<th>Swiss firm population (Swiss Federal Statistical Office, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO age (years, mean)</strong></td>
<td>49.52</td>
<td>50.2&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Industry Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-tech manufacturing</td>
<td>40.43%</td>
<td>8.2%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>ICT</td>
<td>58.50%</td>
<td>14%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Others</td>
<td>1.06%</td>
<td>77.8%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Level of innovation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product innovation (new products/services)</td>
<td>36.74%</td>
<td>24%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Market innovation (new customers/markets)</td>
<td>23.79%</td>
<td>16%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Number of Employees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-9 employees</td>
<td>4.26%</td>
<td>92.10%</td>
</tr>
<tr>
<td>10-49 employees</td>
<td>52.13%</td>
<td>6.40%</td>
</tr>
<tr>
<td>50-249 employees</td>
<td>41.49%</td>
<td>1.30%</td>
</tr>
<tr>
<td>&gt; 250 employees</td>
<td>2.13%</td>
<td>0.20%</td>
</tr>
<tr>
<td><strong>Number of employees (mean)</strong></td>
<td>66.93</td>
<td>69&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Firm age (mean)</strong></td>
<td>46.69</td>
<td>47&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SME Turnover in Swiss Francs (in 2015)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 million</td>
<td>29.40%</td>
<td>NA</td>
</tr>
<tr>
<td>6 - 10 million</td>
<td>16.50%</td>
<td>NA</td>
</tr>
<tr>
<td>11 - 15 million</td>
<td>11.30%</td>
<td>NA</td>
</tr>
<tr>
<td>16 - 25 million</td>
<td>13.40%</td>
<td>NA</td>
</tr>
<tr>
<td>26 - 50 million</td>
<td>22.20%</td>
<td>NA</td>
</tr>
<tr>
<td>50 - 100 million</td>
<td>7.20%</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Legal form of organization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited liability companies</td>
<td>92.55%</td>
<td>82%&lt;sup&gt;2,4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Others</td>
<td>7.45%</td>
<td>18%&lt;sup&gt;2,4&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> Average age of self-employed individuals in Switzerland.
<sup>2</sup> Firms with more than 10 employees considered (self-employed individuals with no (or only few) employee excluded)
<sup>3</sup> Data as reported by Kammerlander, Burger, Fust, and Fueglistaller (2015) who studied Swiss SMEs that reported an average firm age of 47 (no data on available from the Swiss Federal Statistical Office)
<sup>4</sup> Data from 2013
<sup>5</sup> Arvanitis et al. (2013)

The survey sent to the CEO covered questions pertaining to the respondent demographics and the innovative behaviours of their TMT. In the TMT survey, respondents were asked about their own demographics, the demographics of the make-
up of their TMT, the EL behaviours of their CEO, the level of cohesion in the TMT, and the subjective performance of the TMT. In order to maintain confidentiality and match the responses between the CEO and their TMT members, the surveys were coded with a unique identification number that was only known to the researchers.

Data collection took place from late 2016 until early 2017 and a total of 296 companies responded to the survey, which corresponds to a response rate of 19.3%. In order to be included in the analysis, the companies had to have the CEO and at least two TMT members respond to the survey. This left 94 companies for the analysis. Table 10 provides an overview of the sample demographics. To assess the representativeness of our sample, we compared key characteristics of the CEOs and firms in our sample with data on the entire population of Swiss SMEs. This suggests that the characteristics of our sample are comparable to the overall SME population.

3.2 Measures

All variables were measured using pre-validated multi-item scales. We applied an iterative, two-way translation (e.g., Dickson, Weaver & Hoy, 2006) to transform the original questionnaire from English into German. This approach aimed to maintain accuracy while maximising understandability.

TMT members rated the *entrepreneurial leadership* behaviours of their CEO using (Renko et al., 2015) ENTRELEAD scale. This construct comprises of 8 items using a 7-point Likert scale. Sample items included “My CEO has creative solutions to problems” and “My CEO takes risks”.

*TMT team cohesion* was measured using Jansen, Kostopoulos, Mihalache, and Papalexandris' (2016) 4-item team cohesion scale. Sample items included “We help each other on the job” and “The members in this team really stick together”.

The performance of the TMT was measured by drawing on the Edmondson (1999) *job performance* scale. This scale comprised of four items, which included “This team does superb work” and “This team keeps getting better and better”.

*TMT innovation* was captured with Janssen's (2001) innovative behaviours scale. The CEO was asked how often their team members undertake 9 innovative behaviours on a 5-point Likert scale. Sample items included “Generating original solutions to problems”, “Mobilizing support for innovative ideas”, and “Searching out new working methods, techniques, or instruments”.

We included a series of control variables in the CEO questionnaire to ensure the validity of our results, in line with previous research (Stock, Zacharias, & Schnellbaecher, 2017). These variables captured the CEO age; gender (2 = male, 3 = female); education (1 =
none; 2 = upper secondary; 3 = apprenticeship; 4 = advanced vocational degree; 5 = university of applied sciences; 6 = university; 7 = PhD); tenure working in the SME and tenure as the CEO; ownership; and the characteristics of the SME (number of employees, sales, and year of establishment). We also controlled for TMT conflict (Pearson et al., 2002 based on Jehn, 1995) and TMT trust (Simons & Peterson, 2000), as they have been found to predict performance and innovation in previous studies (Hülsheger et al., 2009; Mach, Dolan, & Tzafrir, 2010).

3.3 Evaluation of Potential Biases

In order to evaluate if there were any potential biases in our model, we first ran a Harmen’s single factor test to determine if a single factor emerged (Podsakoff et al., 2003). Running a principal components un-rotated extraction of Eigenvalues greater than 1, six factors emerged and no single factor accounted for more than 25% of the total variance amongst the modelled variables, which is similar to past literature (e.g., Stock et al., 2017). Secondly, following Lindell and Whitney (2001), we ran a marker variable test for common method bias using the marker variable of “is the SME a family business”. The smallest observed correlation between the marker variable and the constructs used in the study was \( r = -.009, \ p = .902 \). As this correlation is non-significant and weak, this test indicates that there is not a substantial amount of common method variance present in this study (Lindell & Whitney, 2001; Podsakoff et al., 2003). Further, we tested the regression models with and without the marker variable and there was no change in the significance of the effects and only minor changes in the magnitude. Finally, confirmatory factor analysis was conducted at the individual-level of analysis to establish the discriminant validity of the study variables using the weighted-least squares means and variance adjusted (WLSMV) as the item-level data were rated on ordinal response scales (Li, 2016; Muthén & Muthén, 2012). The hypothesised six-factor model (i.e. with items loading onto their corresponding factors of CEO EL, TMT cohesion, TMT innovation, TMT performance, TMT conflict, and TMT intragroup trust) yielded an adequate fit to the data \( \chi^2 (df = 579) = 1331.14 \), RMSEA = .08, TLI = .90, CFI = .89. The factor loadings for the items are located in table 11. In order to demonstrate that our model is better fitting than the alternate models, variations of the CFA were performed on the variables until the number of iterations was exceeded (see table 12). These results suggest that the measures are distinct and that common method bias was unlikely to be a problem in this study.
Table 11: Confirmatory Factor Analysis of the Variables (Individual Level)

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO Entrepreneurial Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>Often comes up with radical improvement ideas for the products/services we are selling</td>
<td>.767</td>
</tr>
<tr>
<td>Often comes up with ideas of completely new products/services we could sell</td>
<td>.846</td>
</tr>
<tr>
<td>Takes risk</td>
<td>.609</td>
</tr>
<tr>
<td>Has creative solutions to problems</td>
<td>.756</td>
</tr>
<tr>
<td>Demonstrates passion for his/her work</td>
<td>.705</td>
</tr>
<tr>
<td>Has a vision of the future of our business</td>
<td>.759</td>
</tr>
<tr>
<td>Challenges and pushes me to act in more innovative ways</td>
<td>.798</td>
</tr>
<tr>
<td>Wants me to challenge the current ways we do business</td>
<td>.447</td>
</tr>
<tr>
<td><strong>TMT Cohesion</strong></td>
<td></td>
</tr>
<tr>
<td>We are ready to defend each other from criticism from outsiders</td>
<td>.538</td>
</tr>
<tr>
<td>We help each other on the job</td>
<td>.835</td>
</tr>
<tr>
<td>We get along well with each other</td>
<td>.904</td>
</tr>
<tr>
<td>The members in this team really stick together</td>
<td>.952</td>
</tr>
<tr>
<td><strong>TMT Conflict</strong></td>
<td></td>
</tr>
<tr>
<td>How much anger is there among the members of the group?</td>
<td>.773</td>
</tr>
<tr>
<td>How much personal friction is there in the group during decisions?</td>
<td>.854</td>
</tr>
<tr>
<td>How much tension is there in the group during decisions?</td>
<td>.793</td>
</tr>
<tr>
<td>How many disagreements over different ideas is there?</td>
<td>.734</td>
</tr>
<tr>
<td>How many differences about the content of decisions has the group to work through?</td>
<td>.740</td>
</tr>
<tr>
<td>How many differences of opinion are there within the group?</td>
<td>.678</td>
</tr>
<tr>
<td><strong>TMT Intragroup Trust</strong></td>
<td></td>
</tr>
<tr>
<td>We absolutely respect each other's competence</td>
<td>.751</td>
</tr>
<tr>
<td>Every member of this team shows absolute integrity</td>
<td>.737</td>
</tr>
<tr>
<td>We expect the complete truth from each other</td>
<td>.761</td>
</tr>
<tr>
<td>We are all certain that we can fully trust each other</td>
<td>.913</td>
</tr>
<tr>
<td>We count on each other to fully live up to our word</td>
<td>.878</td>
</tr>
<tr>
<td><strong>TMT Innovation</strong></td>
<td></td>
</tr>
<tr>
<td>Acquiring approval for innovative ideas</td>
<td>.678</td>
</tr>
<tr>
<td>Searching out new working methods, techniques, or instruments</td>
<td>.628</td>
</tr>
<tr>
<td>Transforming innovative ideas into useful applications</td>
<td>.806</td>
</tr>
<tr>
<td>Introducing innovative ideas in a systematic way</td>
<td>.856</td>
</tr>
<tr>
<td>Making important organizational members enthusiastic for innovative ideas</td>
<td>.745</td>
</tr>
<tr>
<td>Generating original solutions to problems</td>
<td>.779</td>
</tr>
<tr>
<td>Creating new ideas for improvements</td>
<td>.829</td>
</tr>
<tr>
<td>Mobilizing support for innovative ideas</td>
<td>.806</td>
</tr>
<tr>
<td>Thoroughly evaluating the application of innovative ideas</td>
<td>.771</td>
</tr>
<tr>
<td><strong>TMT Performance</strong></td>
<td></td>
</tr>
<tr>
<td>This team meets or exceeds its customer's expectation</td>
<td>.800</td>
</tr>
<tr>
<td>This team does superb work</td>
<td>.862</td>
</tr>
<tr>
<td>Critical quality errors occur frequently in this team's work (reverse)</td>
<td>.468</td>
</tr>
<tr>
<td>This team keeps getting better and better</td>
<td>.627</td>
</tr>
</tbody>
</table>
Table 12: Results of Confirmatory Factor Analysis

<table>
<thead>
<tr>
<th>Models</th>
<th>$x^2$</th>
<th>df</th>
<th>RMSEA</th>
<th>RMSEA 90% CI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six factor model</td>
<td>1331.14</td>
<td>579</td>
<td>.08</td>
<td>.07 - .08</td>
<td>.90</td>
<td>.89</td>
</tr>
<tr>
<td>Five factor model (TMT innovation and TMT performance combined)</td>
<td>1720.80</td>
<td>584</td>
<td>.10</td>
<td>.09 - .10</td>
<td>.85</td>
<td>.84</td>
</tr>
<tr>
<td>Four factor model (TMT cohesion, TMT conflict, TMT intragroup trust combined)</td>
<td>1642.96</td>
<td>588</td>
<td>.09</td>
<td>.09 - .10</td>
<td>.86</td>
<td>.85</td>
</tr>
<tr>
<td>Three factor model (TMT cohesion, TMT conflict, TMT intragroup trust combined; TMT innovation and TMT performance combined)</td>
<td>2006.30</td>
<td>591</td>
<td>.11</td>
<td>.10 - .11</td>
<td>.81</td>
<td>.80</td>
</tr>
<tr>
<td>One factor model</td>
<td>4700.26</td>
<td>594</td>
<td>.18</td>
<td>.18 - .19</td>
<td>.45</td>
<td>.42</td>
</tr>
</tbody>
</table>

Notes: $N = 206$. All alternative models were compared to the six-factor model. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index.

3.4 Method of Analysis

As the TMT members were tested within teams, multi-level modelling (using robust maximum likelihood (MLR) estimation in the statistical package Mplus 7.34) was used. MLR was undertaken as each of the scales are measured using ordinal data (Li, 2016). As the hypotheses and the CEO rated items (TMT innovation) are at the team level, we needed to aggregate the TMT responses (EL, TMT cohesion, and TMT performance) to the team level. The level of within-group agreement was assessed by using the mean and median $r_{WG}$ calculated with a uniform null distribution to ascertain if the variables were satisfactory for team level aggregation. This test demonstrated that there was a high level of within-group agreement (i.e. common perceptions amongst TMT members) of the CEO’s EL (mean $r_{WG} = .99$; median $r_{WG} = 97$), the cohesion amongst TMT members (mean $r_{WG} = .97$; median $r_{WG} = 98$), and TMT performance (mean $r_{WG} = 1.02$; median $r_{WG} = .97$). Secondly, we checked the inter-rater reliabilities values of ICC(1) and ICC(2). For CEO EL the values were .62 and .78 respectively, .53 and .71 for TMT cohesion, and .37 and .56 for TMT performance. Given the strong ICC and $r_{WG}$ values observed in this study, and the theoretical justification for aggregating the variables, CEO EL, TMT cohesion, and TMT performance were aggregated to the team level.
4 Results

The descriptive statistics and the correlations of the study variables are contained in table 14. The correlations were, for the most part, significant; however, CEO EL was not significantly related to TMT performance or TMT innovation. Of the control variables, CEO age was significantly correlated with TMT innovation. This might be explained through older CEOs seeing new technology as more innovative than younger CEOs. In addition, gender was correlated with CEO EL, which may be a product of the significantly skewed sample towards male CEOs.

In order to facilitate the interpretation of the effects, all variables were z-standardised before the analyses began. Z-standardisation is a form of grand-mean centring which is commonly preferred in multi-level modelling (Mathieu & Taylor, 2007). The results of the regression analysis can be found in table 13. To test hypotheses 1, TMT innovation and performance was regressed on CEO EL (without TMT cohesion). With controls included, CEO EL was not significantly related to TMT innovation ($\beta = .03, p = .85$) or TMT performance ($\beta = .11, p = .36$). Therefore, hypothesis 1 was not supported. Hypotheses 2, that CEO EL had a significant influence on TMT cohesion, was, however, significant ($\beta = .20, p < .05$).

Table 13: Results of the multilevel mediation analysis

<table>
<thead>
<tr>
<th></th>
<th>TMT Cohesion</th>
<th>TMT Innovation</th>
<th>TMT Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H2</td>
<td>H1a</td>
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*$R^2$ .11 .13 .28 .15 .34

$p < .05$, **$p < .01$. 
Table 14: Means, Standard Deviations, Reliabilities, and Correlations

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<td>.33**</td>
<td>.20</td>
<td>.45**</td>
<td>.25*</td>
<td>(.70)</td>
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</table>

N = 94 for team level variables.

* p < .05, ** p < .01. Cronbach’s alpha coefficients on the diagonal.

a Gender coded: 2 = male; 3 = female

b Education coded: 1 = none: no school attended or school left without certificate; 2 = graduation: general qualification for university entrance (Swiss Matura); 3 = apprenticeship; 4 = further education: professional development/advanced vocational training; 5 = higher school/University of Applied Sciences (Swiss Fachhochschule); 6 = University; 7 = PhD.

c SME turnover in million Swiss Francs.
Hypothesis 3 proposed that TMT cohesion would mediate the relationship between CEO EL and TMT innovation and performance. As per recommendations by Preacher and Selig (2012), the Monte Carlo method of confidence interval construction for testing the indirect effects of the model was used. The regression analysis showed that the standardised indirect effects of CEO EL on TMT innovation through TMT cohesion was 0.09 (95% CI = .003, .195) and on TMT performance through TMT cohesion was 0.06 (95% CI = .000, .145). As zero was not contained within the 95% confidence interval for the indirect effect, Hypothesis 3 was supported. The full model of the analysis is presented in figure 13.

![Figure 13: Indirect Effects of CEO Entrepreneurial Leadership on TMT Performance and TMT Innovation through Team Cohesion](image)

5 Discussion

The purpose of this study was to examine whether the exhibition of EL by the CEO influenced the TMT innovation and TMT performance through the mediating mechanism of TMT cohesion. In the present study we found that although CEO EL was not directly related to TMT innovation and performance, there was however a distal relationship through TMT cohesion. In other words, through fostering higher levels of team cohesion, CEOs who engaged in EL enhanced the innovative behaviour and performance of their TMTs.

The absence of a direct influence (Kenny, Kashy, & Bolger, 1998) of EL on team performance suggest that the leadership—innovation and leadership—performance
relationship is not as straightforward as often claimed in the literature, but it is subject to influence from a variety of factors; chief of those is TMT cohesion. For example, in a recent meta-analysis on shared leadership, Mathieu et al. (2015) found this leadership style relates positively to team cohesion but not directly to performance. Indeed, while much of the leadership literature suggests a direct effect between a variety of leadership and performance (e.g., Ensley, Hmieleski, et al., 2006; McIntyre & Foti, 2013), other work identifies an indirect effect via constructs such as social integration (Pearce, Yoo, & Alavi, 2004), cohesion or collective vision (Ensley et al., 2003). Similarly, our results suggest that EL may result in positive team outcomes indirectly by enhancing team states such as cohesion.

5.1 Empirical and Theoretical Implications
In identifying a key mechanism by which EL drives the innovative behaviour and performance of SMEs, the present study makes important contributions to the field of EL. As well as making an empirical contribution by demonstrating EL drives innovative behaviour and performance (albeit it only indirectly), the present study makes a theoretical contribution by highlighting the importance of EL in fostering team cohesion in the TMT, and ultimately driving it to perform better and engage in more innovative behaviours. Specifically, this study demonstrates the necessity of including group process variables in leadership and entrepreneurship theory and answers the calls of researchers to examine whether EL has a positive impact on performance and innovation, and why this may be the case (Newman et al., 2017; Renko et al., 2015). This suggests that leadership behaviour does not occur in a vacuum. Rather, it takes place in the context of an organization and accordingly, its effects also are mediated by characteristics of this organizational context. By working towards promoting shared beliefs, a sense of belonging and a task focus, entrepreneurs develop team cohesion and can further leverage the impacts of their leadership behaviour. In addition, although prior work has examined the emergence and development of EL, and how EL has been conceptualised and measured (Bagheri & Pihie, 2011; Chen, 2007; Huang et al., 2014; Jones & Crompton, 2009; Koryak et al., 2015; Renko et al., 2015), the present study is among the first in applying the ENTRELEAD scale (Renko et al., 2015), using data from CEOs and TMTs. Although the literature is littered with anecdotal evidence of the benefits of EL (see Renko et al., 2015), empirical work on such benefits is scarce, especially at the level of TMTs.
5.2 Practical Implications

This study has important practical implications for entrepreneurial firms and those advising such enterprises. First, our findings suggest that in order to improve the innovative behaviour and performance of TMTs, CEOs should strive to enhance team cohesion through the display of EL behaviours. In particular, CEOs should consider role modelling entrepreneurial behaviours to other members of the TMT (Renko et al., 2015), encourage and support TMT members in the development and implementation of creative ideas, create an entrepreneurial vision, and act as an entrepreneurial role model to members of the TMT (Gupta et al., 2004). Under this environment, team members will engage in exploration and exploitation of entrepreneurial opportunities, which in turn is likely to have a positive impact on TMT performance and TMT innovative behaviours. Second, our findings have implications for organisations providing support to entrepreneurial firms. These organisations might support entrepreneurial firms by developing leadership development programmes and fostering TMT cohesion, which stresses the importance of displaying the EL behaviours highlighted above. Outside of the entrepreneurial firm context, managers in larger firms might also be exposed to EL development during their managerial training in order to ensure that entrepreneurial behaviours are practiced throughout large organisations and that there is a consistent climate of TMT cohesion.

5.3 Limitations and Future Research

The research on EL is still in its infancy and as such, this research only starts to understand the relationship between EL and outcomes. The following section identifies limitations of the current study and discusses the avenues for future research in the EL field.

First, the present study has some limitations that may be addressed in future research. As the data was collected at a single time point, future research should consider collecting longitudinal panel data where the independent, mediating and dependent variables are measured at multiple time points. This will allow us to determine more conclusively whether EL fosters TMT cohesion and higher levels of performance and innovation of the TMT. Second, given the present study was conducted in Switzerland, its generalisability is limited to other cultural contexts. In order to determine whether the findings are replicable in cultures which are less individualistic and masculine than the Swiss culture, similar research might also be conducted in more collectivistic or feminine cultures, such as Asian or Scandinavian cultures. Third, the present study only
considers one possible mediator that explains the effects of EL on TMT outcomes. Future research might test alternative mediators at the team level, to determine whether they provide stronger explanations of how entrepreneurial leaders foster TMT outcomes. In addition, researchers should also investigate whether other factors accentuate or attenuate the effects of EL on TMT cohesion and TMT performance and TMT performance and TMT innovation outcomes. Organisations could, for instance, aid entrepreneurial leaders by adequately rewarding employees, implementing well-defined structures, and ensuring individuals have the levels of support and autonomy they require. At the environmental level, organizational contexts characterised by high levels of environmental dynamism and volatility, risk, ambiguity, and uncertainty, may be important factors to understand the EL and TMT innovation and TMT performance relationship within, as such contexts require individuals to act in an entrepreneurial manner and take more risks (Harrison et al., 2015). Fourth, our research focused on mature entrepreneurial firms, which brings the generalisability of the findings to younger firms into question. Therefore, in younger firms where the role of the founder of a company may be more prominent, future research should investigate whether EL is effective in enhancing innovation and performance outcomes through the mediating mechanism of cohesion in such settings. Due to higher levels of interaction between CEO and TMT members at the start of a new firm, we might expect the effects to be higher.

Fifth, other leadership styles should be controlled for in future research with the aim of determining the unique predictive effects of EL over existing leadership constructs (Liden, Wayne, Liao, & Meuser, 2014). As Liden et al. (2015) demonstrated in their establishment of servant leadership, researchers must show the predictive power of a leadership theory above and beyond other leadership measures in order for it to develop. We call on researchers to examine the effects of EL in comparison to other established leadership styles, such as transformational and visionary leadership, on outcome variables that are closely aligned to EL, such as creativity, ambidexterity, and innovative behaviours.

5.4 Conclusion

The present study contributes to growing research on EL (Huang et al., 2014; Renko et al., 2015) by examining the influence of the CEO’s EL on the innovative behaviour and performance of the TMT, and the mediating role played by team cohesion on this relationship. Drawing on multi-source, multi-level data from CEOs and TMT members of 94 entrepreneurial firms in Switzerland, we found that although team cohesion
mediated the influence of EL on TMT innovative behaviour and performance, EL was not directly related to TMT outcomes. This suggests that in order for CEOs to elicit more innovative behaviour and performance from TMTs, they should act as an entrepreneurial role model and direct TMT members to engage in entrepreneurial behaviours to create high levels of team cohesion, which in turn should lead to greater innovative behaviours and performance from the TMT.
## 6 Appendix

### 6.1 Questionnaire Items CEO

#### Table 15: TMT Innovation

**English Version:**

How often does this employee perform the following work activities:

- Acquiring approval for innovative ideas
- Searching out new working methods, techniques, or instruments
- Transforming innovative ideas into useful applications
- Introducing innovative ideas in a systematic way
- Making important organizational members enthusiastic for innovative ideas
- Generating original solutions to problems
- Creating new ideas for improvements
- Mobilizing support for innovative ideas
- Thoroughly evaluating the application of innovative ideas

Respondents were asked to rate the employee innovative behaviour using a five-point Likert scale:

1 = never; 2 = rarely; 3 = sometimes; 4 = mostly; 5 = always

**German Version:**

Wie oft führen Ihre Angestellten folgende Tätigkeiten aus:

- Einholung der Zustimmung zu innovativen Ideen
- Suche nach neuen Arbeitsmethoden, Arbeitstechniken und Arbeitsinstrumenten
- Umsetzung innovativer Ideen in nützliche Anwendungen
- Systematische Einführung innovativer Ideen
- Wichtige Entscheidungsträger im Unternehmen für innovative Ideen begeistern
- Ausarbeitung origineller Lösungen für Probleme
- Entwicklung neuer Ideen für Verbesserungen
- Unterstützung für innovative Ideen suchen
- Ausführliche Bewertung der Anwendung innovativer Ideen

1 = nie; 2 = manchmal; 3 = neutral; 4 = meistens; 5 = immer

Reference: Janssen (2001)
Table 16: TMT Performance

**English Version:**
- This team meets or exceeds its customer' expectation
- This team does superb work
- Critical quality errors occur frequently in this team's work (reverse)
- This team keeps getting better and better

Respondents were asked to rate team performance using a seven-point Likert scale:
1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree or disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree

**German Version:**
- Dieses Team trifft oder übertrifft die Kundenerwartungen
- Dieses Team macht ausgezeichnete Arbeit
- Bedenkliche Qualitätsmängel kommen regelmässig in der Arbeit diesen Teams vor (reverse)
- Dieses Team wird immer besser

1 = stimme absolut nicht zu; 2 = stimme nicht zu; 3 = stimme eher nicht zu; 4 = neutral; 5 = stimme eher zu; 6 = stimme zu; 7 = stimme absolut zu

Reference: Edmondson (1999)
Table 17: Company Innovation

**English Version:**
- [Does your new business initiative (BI) mean that you will offer a product or service which is entirely new compared to what your company has offered previously]
- Does your new BI mean that you will offer a product or service which completely lacks equivalence in your community?
- Does your new BI mean that you will offer a product or service which completely lacks equivalence in all of Sweden?
- [Does your new BI mean that you will offer a product or service which completely lacks equivalence in the entire world?]
- Does your new BI mean that you will turn to customers or customer groups which are entirely new compared your company's present customers?
- Does your new BI mean that you will turn to customers or customer groups to which no other company in your community presently sells similar products or services?
- Does your new BI mean that you will turn to customers or customer groups to which no other company in Sweden presently sells similar products or services?
- Does your new BI mean that you will turn to customers or customer groups to which no other company in the entire world presently sells similar products or services?

Respondents were asked to answer the questions using the following classification:
1 = yes; 2 = No; 3 = I don’t know

**German Version:**
Bei den folgenden Fragen geht es darum, ob es die Produkte oder Dienstleistungen, die Sie anbieten wollen, in ähnlicher Form schon auf dem Markt gibt oder nicht.
- Bieten Sie Produkte oder Dienstleistungen an, die in gleicher oder ähnlicher Form bereits in Ihrer Region erhältlich sind?
- Bieten Sie Produkte oder Dienstleistungen an, die in gleicher oder ähnlicher Form bereits in der Schweiz erhältlich sind?
- Bieten Sie Produkte oder Dienstleistungen an, die in gleicher oder ähnlicher Form bereits irgendwo auf der Welt erhältlich sind?
- Wenden Sie sich mit Ihrer Firma an Kunden, die bei Firmen in Ihrer Region keine ähnlichen Produkte oder Dienstleistungen kaufen können?
- Wenden Sie sich mit Ihrer Firma an Kunden, die bei Firmen in der Schweiz keine ähnlichen Produkte oder Dienstleistungen kaufen können?
- Wenden Sie sich mit Ihrer Firma an Kunden, die auf der ganzen Welt keine ähnlichen Produkte oder Dienstleistungen kaufen können?

1 = ja; 2 = nein; 3 = ich weiss nicht

Reference: Dahlqvist and Wiklund (2012)
### Table 18: Control Variables

**English Version:**
- What is your position in the company? CEO; TMT
- How many years do you hold your position?
- How many years do you work for the company?
- What is your gender? male; female
- In which sector are you operating? agriculture and forestry; machinery and automotive; construction and plant engineering; remaining industry; trade, repair; bank, insurance; consultancy; trust, further education; Information technology and telecommunication; media, advertising; administration, health, education
- Would you describe your company as a family business? yes; no
- What is your share of the company? 100%; 51%-99%; 50%; 26%-49%; 11%-25%; 1%-10%; 0%
- What is the legal form of your company? [stock] corporation; private limited company; society; partnership / private limited partnership; cooperative; union; trust; other legal form
- How many fulltime employees does your company have? (full time equivalent)
- What was your turnover in 2015 in million Swiss Francs?
- In which year has your company been established?
- What is your highest level of education achieved? none; graduation; apprenticeship; further education; higher school; university; PhD
- What is your age (in years)?

**German Version:**
- Was ist Ihre aktuelle Position im Unternehmen? CEO; oberstes Führungsgremium (TMT)?
- Wie viele Jahre arbeiten Sie in der aktuellen Position? (z.B. 7)
- Wie viele Jahre arbeiten Sie für das Unternehmen? (z.B. 11)
- Welches Geschlecht haben Sie? männlich; weiblich
- In welcher Branche sind Sie tätig? Agrar- und Forstwirtschaft; Maschinen, Fahrzeuge; Bau, Anlagenbau; übrige Industrie; Handel, Reparatur; Banken, Versicherungen; Beratung, Treuhand, Weiterbildung; Informationstechnologie und Telekommunikation; Medien, Werbung; Behörde, Gesundheit, Bildung
- Bezeichnen Sie Ihr Unternehmen als Familienunternehmen? ja; nein
- Wie hoch ist Ihr Besitz-Anteil am Unternehmen? 100%; 51%-99%; 50%; 26%-49%; 11%-25%; 1%-10%; 0%
- Welche Rechtsform besitzt Ihr Unternehmen? AG; GmbH; Einfache Gesellschaft; Kollektiv-/ Kommandit-gesellschaft; Genossenschaft; Verein; Stiftung; Andere Rechtsform
- Wie viele Beschäftigte hat Ihr Unternehmen (Vollzeitäquivalent, aufgerundet)? (z.B. 15)
- Wie hoch war Ihr Umsatz 2015 in Mio. Fr. (z.B. 16’100’000 = 16.1)?
- Wann wurde Ihr Unternehmen gegründet? (z.B. 1984)
- Was ist Ihr höchster Bildungsabschluss? Kein Schulabschluss; Schulabschluss; Lehre; Aufbauende Weiterbildung; Fachhochschule; Universität; Promotion
- Was ist Ihr Alter in Jahren? (z.B. 45)
### 6.2 Questionnaire Items TMT

**Table 19: CEO Entrepreneurial Leadership Style**

**English Version:**

Think of your immediate supervisor. How well do the following describe him/her?
- Often comes up with radical improvement ideas for the products/services we are selling
- Often comes up with ideas of completely new products/services we could sell
- Takes risk
- Has creative solutions to problems
- Demonstrates passion for his/her work
- Has a vision of the future of our business
- Challenges and pushes me to act in more innovative ways
- Wants me to challenge the current ways we do business

Respondents were asked to their CEOs’ entrepreneurial leadership style using a five-point Likert scale:
1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree

**German Version:**

Denken Sie an Ihre/n direkte/n Vorgesetzte/n. Wie gut beschreiben ihn/sie die folgenden Aussagen?
- Macht häufig radikale Verbesserungsvorschläge für Produkte/Dienstleistungen, die wir verkaufen
- Schlägt häufig völlig neue Produkte/Dienstleistungen vor, die wir anbieten könnten
- Geht Risiken ein
- Hat kreative Lösungen für Probleme
- Zeigt Leidenschaft für seine/ihre Arbeit
- Hat eine Vision für die Zukunft unseres Unternehmens
- Spornt mich an, innovativer zu handeln
- Möchte, dass ich die Art, wie wir Geschäfte betreiben, in Frage stelle

1 = stimme absolut nicht zu; 2 = stimme eher nicht zu; 3 = neutral; 4 = stimme eher zu; 5 = stimme absolut zu

Reference: Renko et al. (2015)
Table 20: TMT Cohesion

**English Version:**
- We are ready to defend each other from criticism from outsiders
- We help each other on the job
- We get along well with each other
- The members in this team really stick together

Respondents were asked to rate team cohesion using a seven-point Likert scale:
1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree or disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree

**German Version:**
- Wir sind als Team bereit uns gegenüber Kritik von Aussenstehenden zu verteidigen
- Wir unterstützen uns im Team gegenseitig bei der Arbeit
- Wir kommen im Team gut miteinander aus
- Die Teammitglieder halten wirklich zusammen

1 = stimme absolut nicht zu; 2 = stimme nicht zu; 3 = stimme eher nicht zu; 4 = neutral; 5 = stimme eher zu; 6 = stimme zu; 7 = stimme absolut zu

Reference: Jansen, Kostopoulos, Mihalache, and Papalexandris (2016)

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Table 21: Scale for TMT Performance

**English Version:**
- This team meets or exceeds its customer' expectation
- This team does superb work
- Critical quality errors occur frequently in this team's work (reverse)
- This team keeps getting better and better

Respondents were asked to rate team performance using a seven-point Likert scale:
1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree or disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree

**German Version:**
- Dieses Team trifft oder übertrifft die Kundenerwartungen
- Dieses Team macht ausgezeichnete Arbeit
- Bedenkliche Qualitätsmängel kommen regelmäßig in der Arbeit diesen Teams vor
- Dieses Team wird immer besser

1 = stimme absolut nicht zu; 2 = stimme nicht zu; 3 = stimme eher nicht zu; 4 = neutral; 5 = stimme eher zu; 6 = stimme zu; 7 = stimme absolut zu

Reference: Edmondson (1999)
Table 22: Team Conflict (Intragroup Conflict)

**English Version:**
- How much anger is there among the members of the group?
- How much personal friction is there in the group during decisions?
- How much tension is there in the group during decisions?
- How many disagreements over different ideas is there?
- How many differences about the content of decisions has the group to work through?
- How many differences of opinion are there within the group?

Respondents were asked to rate team conflict using a five-point Likert scale:
1 = none; 2 = some; 3 = a moderate amount; 4 = quite a bit; 5 = a great deal

**German Version:**
- Wie viel Ärger gibt es zwischen den Teammitgliedern?
- Wie viel persönliche Spannungen bestehen innerhalb des Teams bei der Entscheidungsfindung?
- Wie viel Spannung gibt es innerhalb des Teams während der Entscheidungsfindung?
- Wie viel Unstimmigkeiten über unterschiedliche Ideen bestehen innerhalb des Teams?
- Wie viele Unstimmigkeiten über den Inhalt von Beschlüssen müssen Teammitglieder durcharbeiten?
- Wie viele Meinungsverschiedenheiten gibt es innerhalb der Gruppe?

1 = keine(n); 2 = etwas; 3 = mässig; 4 = ziemlich viel; 5 = erheblich

**Table 23: Intragroup Trust**

**English Version:**
The following statements express various feelings towards and evaluation of your team. Please rate how often these statements are characteristic of your team by circling the response that best reflects your opinion.

- We absolutely respect each other's competence
- Every member of this team shows absolute integrity
- We expect the complete truth from each other
- We are all certain that we can fully trust each other
- We count on each other to fully live up to our word

Respondents were asked to rate intragroup trust using a seven-point Likert scale:
1 = never; 2 = rarely; 3 = sometimes but infrequently; 4 = neutral; 5 = sometimes; 6 = usually; 7 = always

**German Version:**
Die folgenden Aussagen bezeichnen verschiedene Gefühle in Bezug auf Ihr Team. Bitte bewerten Sie wie häufig diese Eigenschaften auf Ihr Team zutreffen.

- Wir respektieren unsere gegenseitigen Fähigkeiten voll und ganz
- Jedes Teammitglied zeigt absolute Integrität
- Wir erwarten die vollständige Wahrheit von einander
- Wir sind uns alle sicher, dass wir uns vollumfänglich vertrauen können
- Wir verlassen uns darauf, dass jeder sein Wort hält.

1 = nie; 2 = selten; 3 = manchmal, aber nicht häufig; 4 = neutral; 5 = manchmal; 6 = meistens; 7 = immer

Table 24: Control Variables

**English Version:**
- What is your position in the company? CEO; TMT
- Of how many people consists the TMT?
- How many years do you hold your position?
- How many years do you work for the company?
- What is your gender? male; female
- What is your share of the company? 100%; 51%-99%; 50%; 26%-49%; 11%-25%; 1%-10%; 0%
- What is your highest level of education achieved? none; graduation; apprenticeship; further education; higher school; university; PhD
- What is your age (in years)?

**German Version:**
- Was ist Ihre aktuelle Position im Unternehmen? CEO; oberstes Führungsgremium (TMT)?
- Wie viele Personen arbeiten im TMT? (z.B. 3)
- Wie viele Jahre arbeiten Sie in der aktuellen Position? (z.B. 7)
- Wie viele Jahre arbeiten Sie für das Unternehmen? (z.B. 11)
- Welches Geschlecht haben Sie? männlich; weiblich
- Wie hoch ist Ihr Besitz-Anteil am Unternehmen? 100%; 51%-99%; 50%; 26%-49%; 11%-25%; 1%-10%; 0%
- Was ist Ihr höchster Bildungsabschluss? Kein Schulabschluss; Schulabschluss; Lehre; Aufbauende Weiterbildung; Fachhochschule; Universität; Promotion
- Was ist Ihr Alter in Jahren? (z.B. 45)
Chapter E

Overall Summary and Conclusion
1 Summary of Findings, Theoretical and Practical Contributions

The three papers contribute to the knowledge of EL by exploring four overall research questions:

1. **What are the underlying constituents of the research field of EL?** (Papers 1 and 2)
2. **How has the research field of EL evolved?** (Paper 2)
3. **How is EL related to performance and innovation outcomes of entrepreneurial ventures?** (Paper 3)
4. **What directions can be derived for the future research on EL to contribute to the development of the field?** (Papers 1 and 2)

The main findings and theoretical as well as practical contributions of the three papers are summarised below.

With regard to research questions one and four of this paper series, the first paper conducted a SLR of 58 publications on EL, adopting a definition of EL that encompasses three perspectives that have been introduced in Chapter A (EL as a style of leadership, EL as an entrepreneurial mindset, and EL at the interface of entrepreneurship and leadership). Taken together, the review highlights the heterogeneous nature of EL. The literature is highly fragmented, and there are substantial knowledge gaps in content, theory, and methodology. The results reveal that leadership is highly valuable to firms that place importance on the individual, and that operate in dynamic environments. In such cases, both leaders and followers are required to be involved in the exploration and exploitation of entrepreneurial opportunities. This finding is especially relevant for two types of situations in particular. Firstly, entrepreneurial leaders are advised to concentrate on developing their leadership behaviours, and utilising them effectively in their business venture. This is a lengthy process, however. A heightened awareness of the shortfalls that accompany a lack of EL behaviour might aid the critical assessment of decision-making and resource allocations. Secondly, in line with the findings from research into minority dissent, leaders might choose to include individuals who can compensate for these shortcomings in their management or advisor teams.

Building on the theoretical ideas and research agenda of the first paper, and to further investigate the evolution and constituents of research in the field of EL (overall research questions one and two), and to identify possibilities for future research (overall research question four), the second paper makes theoretical contributions by presenting a bibliometric analysis of 21 representative, peer-reviewed articles published on EL in
SMEs research from 2003 to 2014. This highlights the evolution of EL and presents the main themes and areas of debate by applying the analytical tool ‘Leximancer’. Early articles separated the terms ‘entrepreneurship’ and ‘leadership’, while more recent articles (from 2009 to 2014) have made more frequent use of the term ‘entrepreneurial leadership’. In addition to the core concepts of ‘entrepreneurship’ and ‘leadership’, ‘performance’ is a dominant term, and the positive influence of leadership on venture performance is highlighted. In particular, the analysis stressed the importance of the leadership role played by entrepreneurs, and the subsequent positive outcomes achieved at both the individual and organisational level. The analysis stressed the dynamic nature of the entrepreneurial leader’s role, chiefly the ways in which their leadership functions and responsibilities mature and crystallise as their firm develops. For most of the authors in this analysis, a crucial element of leadership effectiveness relates to the leader’s style, with ‘authentic’, ‘shared’, and ‘transformational’ leadership dominating. The prominent presence of leadership styles in the articles can also be explained by the fact that providing direction, implementing plans and motivating people are vital in entrepreneurial settings, particularly with regard to company growth and innovation. Finally, the third paper adds depth and nuance to the field of EL (research question three) by applying the ENTRELEAD scale (Renko et al., 2015) in the context of entrepreneurial Swiss SMEs, using data from the CEO and TMT members. The third paper builds on theoretical perspectives from the literature on entrepreneurial vision and social learning to suggest that exhibiting CEO EL behaviours will foster higher levels of TMT performance and TMT innovative behaviour in entrepreneurial SMEs. It is contended that TMT cohesion may act a vital mediating mechanism that explains the relationship between CEO EL and both TMT performance and TMT innovative behaviours. The third paper—in addition to making an empirical contribution by demonstrating that EL drives innovative behaviour and performance (albeit it only indirectly)—makes a theoretical contribution by underlining the importance of EL in promoting team cohesion in the TMT. The third paper proves the necessity of including group process variables in leadership and entrepreneurship theory, while answering the calls of researchers to investigate whether EL has a positive impact on performance and innovation, and why this may be. The paper has significant practical implications for entrepreneurial firms and their advisors. The findings indicate that CEOs should consider role modelling entrepreneurial behaviours to TMT members, and should encourage and support TMT members in the development and implementation of creative ideas. The findings also have implications for organisations supporting or advising entrepreneurial firms. These organisations might support firms by developing
leadership development programmes, for instance. They might also aim to foster TMT cohesion, which stresses the importance of displaying the EL behaviours highlighted previously. Outside of entrepreneurial firms, managers in larger companies might also be exposed to EL development during management training to ensure entrepreneurial behaviours are practiced throughout large organisations and that there is a consistent TMT cohesion climate.

2 Limitations and Future Research

The limitations of each paper are thoroughly explained in the corresponding chapters. However, a few central points are emphasized below. They open up promising paths for future research relating to the manifestation and investigation of EL. The most central of these are also highlighted in the following paragraphs.

The first paper comprises a SLR and developed a research agenda on EL, based on peer-reviewed publications. This concentration inevitably limited the potential scope of the results, because the analysed articles represent a mere fraction of all research papers and book chapters discussing EL. However, the peer review process the articles have been subjected to, ensures a certain level of quality, meaning this is considered acceptable. Additionally, the EBSCO metasearch engine may not produce all possible articles. Used together, however, with a manual search of the references of the retrieved articles, the sample is considered to be representative of all publications on EL. Nonetheless, future research samples could be enlarged to a broader journal base in order to gain valuable insights from other authors and geographical areas. Conference papers, dissertations, working papers, book chapters, book reviews, editorials and comments could be incorporated into the analysis to comprise a larger spectrum and further identify knowledge claims.

Promising research opportunities pertaining to the context, multilevel effect, and method are identified. New topics, both at the team level, including team cohesion and distributed leadership, and at the individual level, including leader’s cognitive ability, attitudes, values, and affect offer a rich perspective for the development of EL. For the research agenda, it is referred to section 6 in Chapter B.

In the second article, there is concern about the concentration on publications on EL in SMEs, solely considering peer-reviewed publication. This concentration unavoidably limited the potential scope of the results; the analysed articles represent a mere fraction of all the papers and book chapters written on EL. However, the articles included represented the main research efforts made in this research domain. Future research
samples could make use of a broader journal base in order to gain useful insights from other authors and geographical areas, and to cover international aspects. Dissertations, book chapters, book reviews, conference papers, working papers, editorials, and comments could be incorporated into the analysis to cover a larger spectrum and further identify knowledge claims.

Additionally, the study primarily took a descriptive approach, and therefore owes a more in-depth explanation of the phenomena revealed. This leaves considerable room for additional research, including a follow-up examination of why the described observations existed, and the implications of the findings.

In the third paper, due to the cross-sectional design of the study, uncertainty in terms of causality may exist. As the data was gathered at a single point in time, future research should look into collecting longitudinal panel data where the independent, mediating and dependent variables are measured at various times. This will demonstrate more clearly whether or not EL fosters TMT cohesion and higher levels of innovative behaviour and performance. Furthermore, the paper is based on a sample of SMEs in the German-speaking part of Switzerland; it might not be fully representative of the whole SME population and therefore its generalisability is limited to other cultural contexts. To determine whether the findings are replicable in other, less individualistic and masculine cultures, similar research should be conducted in more collectivistic or feminine cultures, for example, Asian or Scandinavian cultures. Additionally, the present study considers just one possible mediator that explains the effects of EL on TMT outcomes. Future research might test alternative mediators such, psychological safety, passion, or self-efficacy.

Contexts that are characterised by high levels of environmental dynamism, volatility, risk, ambiguity, and uncertainty may be important factors to understand the EL, TMT innovation and TMT performance relationship within. Such contexts require that individuals act in an entrepreneurial manner and take greater risks (Harrison et al., 2015). In addition, the research focused on mature entrepreneurial firms, casting doubt upon the generalisability of the findings to younger firms. In younger firms, where the founder’s role may be more prominent, future research should explore whether EL is effective in improving performance and innovation outcomes via the mediating mechanism of cohesion in such settings. Future research might also investigate additional outcome variables, such as more objective measures of performance (profitability, sales growth and the number of patent registrations), to provide more robust evidence of the effects.
Future research should also control for other leadership styles to determine the unique predictive benefits of EL. As demonstrated by Liden et al. (2015) researchers must show the predictive power of a leadership theory in order for it to develop. Subsequent research should compare EL to other established leadership styles, such as transformational and visionary leadership, on outcome variables that are closely aligned to EL, including creativity, ambidexterity, and innovative behaviours.

3 Conclusion
Research on EL is still in its infancy; each of the papers in this series attempts to piece together its mysteries. The insights revealed through the SLR (first paper), the application of a novel analytical tool to reveal the evolution of the field (second paper), and a quantitative study (third paper) constitute a valuable contribution to existing knowledge. Though, it is only a starting point. Incorporating the foregoing suggestions for future research could provide a more comprehensive understanding of the EL discipline and further advance the field. Therefore, I invite scholars to join on this exciting journey of discovery.
References


Academic Curriculum Vitae

**Education**

08/2012 – 01/2018  
**University of St.Gallen**, Switzerland  
*Ph.D. programme in Management (Business Innovation)*  
Dissertation thesis: ‘Entrepreneurial Leadership’

07/2013 – 07/2013  
University of Essex, United Kingdom  
*Summer School in Qualitative Data Analysis*

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**Warsaw School of Economics**, Poland  
*CEMS Master in International Management*

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*CEMS Master in International Management*

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**University of St.Gallen**, Switzerland  
*Master of Arts (M.A. HSG) International Affairs and Governance*  
Master's thesis: ‘Initial Public Offerings for SMEs as financing alternative’

04/2007 – 04/2012  
**University of St.Gallen**, Switzerland  
*Teacher in Business Education*

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Lecturer “Introduction to academic writing”  
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