

# **Antecedents of Ambidextrous Leadership in Entrepreneurship: The Role of Emotional Intelligence and Entrepreneurial Leadership Styles**

## **Abstract**

Ambidextrous leadership (AL) is a game-changer for entrepreneurial success, empowering leaders to balance exploration and exploitation expertly—two powerful forces that drive innovation and business growth. Yet, despite its evident importance, research into the factors that shape AL in entrepreneurial settings remains surprisingly sparse. This study fills this gap by exploring how emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership influence AL behaviours among entrepreneurial leaders. Drawing on data collected via structured questionnaires from entrepreneurs who lead high-tech businesses in the UK, this research reveals how each leadership dimension contributes to AL. The results, based on multiple linear regression analysis, indicate that while all four leadership styles influence AL, they do so in distinct ways. Transformational and transactional leadership help shape a leader's opening and closing behaviours, while adaptive or flexible leadership determines the strategic timing for their deployment. Additionally, emotional intelligence fosters the emotional climate that helps leaders navigate the tensions inherent in leading innovation. The study demonstrates that emotional intelligence and adaptive/flexible leadership are individual capabilities that empower leaders to act ambidextrously. In contrast, transformational and transactional leadership are behavioural modes that enable leaders to lead ambidextrously. This study not only enriches entrepreneurial leadership theory but also provides actionable insights for cultivating the leadership skills necessary to build ambidextrous capacity at the individual level, thereby fuelling innovation and driving scalable success in entrepreneurial ventures.

**Keywords:** Ambidextrous leadership, Emotional intelligence, Adaptive leadership, Transformational leadership, Transactional leadership.

## **Summary**

This study examines the distinct contributions of emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership to the development of ambidextrous leadership among UK high-tech entrepreneurs, ultimately enhancing innovation and business growth.

- Ambidextrous leadership is crucial for striking a balance between innovation (exploration) and efficiency (exploitation) in entrepreneurial ventures.
- Emotional intelligence fosters the emotional climate necessary for navigating the tensions inherent in ambidextrous leadership.
- Adaptive or flexible leadership enables strategic timing in switching between opening and closing behaviours.
- Transformational and transactional leadership shape how leaders engage in ambidextrous behaviours.

## 1. Introduction

Entrepreneurial success in today's dynamic business environment depends heavily on the ability to innovate and adapt (Adegile et al., 2024; Ibidunni et al., 2024; Udeozor et al., 2025). Ambidextrous leadership (AL) has emerged as a pivotal concept that enables leaders to balance two critical forces: exploration, which drives innovation and opportunity-seeking, and exploitation, which focuses on refining existing processes for efficiency and performance (Mu et al., 2022; Klonek et al., 2023; Oluwafemi et al., 2020). Research has highlighted the importance of this dual capability in fostering long-term sustainability and growth for entrepreneurial ventures (Klonek et al., 2023; Rahman et al., 2024), yet limited empirical research exists that explores AL in entrepreneurial settings. Existing literature has focused on examining the influence of AL within large, established organizations such as multinational R&D organizations, thus creating contextual blind spots (Junni et al., 2013). The conflation of individual-level ambidexterity (i.e., leadership) with organizational-level ambidexterity (i.e., structural or contextual ambidexterity) complicates the theoretical clarity of AL (O'Reilly & Tushman, 2013). Similarly, AL research often overlooks how leaders' individual capabilities, decision-making processes, and cognitive flexibility contribute to managing both exploration and exploitation.

Furthermore, the antecedents enabling AL are underexplored, particularly in the context of entrepreneurial leadership (Bagheri, 2017; Katou et al., 2020; Li et al., 2024; Mu et al., 2022; Oluwafemi et al., 2020). There are some speculations that antecedents such as emotional intelligence, adaptive leadership, cognitive complexity, and learning orientation are related to AL; however, these antecedents remain underexplored empirically, particularly in entrepreneurial settings (Gong et al., 2021; Kassotaki, 2019; Li et al., 2024). However, we recognize that entrepreneurial ventures encounter unique resource constraints and uncertainty, and entrepreneurial leaders frequently face innovation leadership challenges implementing ambidextrous leadership is essential in the entrepreneurial context (Lubatkin et al., 2006).

Empirical studies in SMEs and startups (e.g., Chang & Hughes, 2012) suggest that founders often engage in ambidextrous behaviour intuitively. However, the mechanisms through which they develop and sustain this ability remain poorly understood, which presents a gap in knowledge and an opportunity to seek a nuanced understanding of developmental pathways to AL. Understanding how ambidextrous leadership skills develop over time is valuable, especially among nascent entrepreneurs who may have limited leadership experience, yet whose leadership behaviours have immense influence on innovation outcomes in entrepreneurial contexts (Thys et al., 2024; Walsh & Martin, 2023).

The overlapping interactions between existing leadership styles and AL present both unique benefits and challenges for leaders (Yukl & Mahsud, 2010). For example, studies have not adequately explored how AL interacts with or differs from transformational leadership (which promotes exploration, like OLB), transactional leadership (which supports exploitation, like CLB), or adaptive leadership (which aligns with dynamic situational responses). The requirement for leaders to balance the contradictory demands inherent in innovation, as highlighted in the AL theory, presents paradoxes and tensions in how leaders manage these temporal and dynamic dimensions over time. The integration of opposing leadership behaviours to manage such tensions could create new tensions at the individual leadership level, and we know very little about how leaders manage such tensions and paradoxes in real-time. Although Rosing et al. (2011) introduced a temporal flexibility model, this model is deficient in capturing the true dynamism of the innovation process (Oluwafemi et al., 2020). Although some studies have suggested that emotional intelligence may help resolve the tension between short-term exploitation and long-term exploration by regulating anxiety, facilitating trust, and enabling perspective-taking (Goleman et al., 2013), few studies explicitly explore the cognitive and emotional mechanisms leaders use to manage ambidextrous tensions at the individual leadership level.

From the foregoing, emotional intelligence, adaptive and flexible leadership, and transformational and transactional leadership appear relevant to AL; however, their impact, particularly in the entrepreneurial context, remains insufficiently addressed. This study aims to fill this gap by exploring, at the individual leader level, how the aforementioned leadership skills and styles influence ambidextrous leadership behaviours among entrepreneurs in high-tech firms. Addressing this research question is crucial for enhancing our understanding of ambidextrous leadership as a learnable, developmental ability that can be utilized to foster innovative leadership dynamics in entrepreneurial ventures. In particular, the study enriches entrepreneurial leadership by demonstrating how the integration of emotional intelligence, adaptive and flexible leadership, and transformational and transactional leadership forms the foundation of "leadership ambidexterity" as a learnable, developmental capability, rather than an innate trait. This theoretical expansion further enhances the conceptualization of AL by demonstrating how distinct leadership attributes contribute to building the ambidextrous capacity necessary for making strategic leadership decisions in dynamic business environments.

By examining how emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership influence opening and closing leadership behaviours, this research contributes to a more comprehensive framework for fostering ambidextrous leadership at the individual level, which is crucial for innovation and scalability in entrepreneurial contexts. This focus on entrepreneurial leadership emphasizes the importance of leadership development as a tool for cultivating the competencies required to develop leadership ambidexterity, ultimately balancing exploration and exploitation activities (Mu et al., 2022; Klonek et al., 2023). This study advances theoretical discourse by extending ambidextrous leadership theory to entrepreneurial settings. Integrating insights from emotional intelligence, adaptive leadership, and transformational and transactional leadership

frameworks offers a richer understanding of the skills that shape AL behaviours and innovation outcomes in entrepreneurial settings.

Beyond its theoretical contributions, this research also enriches the existing literature by providing empirical insights into the unique leadership challenges faced by individual leaders. By examining the relationship between leadership styles and ambidextrous leadership behaviours, this study refines the understanding of how leaders can successfully balance competing demands in fast-paced industries. The findings provide actionable insights for both academic discourse and managerial practice, supporting the development of targeted leadership training programs designed to cultivate AL capabilities among entrepreneurial leaders.

Lastly, this research has broader implications for future studies and practical applications. Hitherto, there is a lack of actionable models and training interventions to foster ambidextrous leadership. Our study offers insights into the focal leadership skills and competencies required for AL practical development and training. The antecedents provide a valuable framework for designing leadership development programs and identifying potential ambidextrous leaders, especially in entrepreneurial and innovation-driven contexts.

The insights gained can inform future research on leadership development frameworks, emphasizing the integration of emotional intelligence, adaptive leadership, and principles of transformational and transactional leadership. Additionally, these insights hold value for entrepreneurial support organizations, investors, and policymakers who seek to foster innovation-driven business growth. By shedding light on the competencies required for successful ambidextrous leadership, this study provides a robust foundation for enhancing leadership practices in entrepreneurial settings.

## **2. Theory and Hypotheses**

### **2.1 Ambidextrous Leadership Theory and Entrepreneurial Performance**

Ambidextrous leadership offers a dynamic framework for managing the dual demands of innovation and operational efficiency—demands that are particularly heightened in entrepreneurial contexts (Felicio et al., 2019; Klonek et al., 2023; New, 2025). Unlike established firms with formalized structures and stable routines, entrepreneurial ventures operate in environments characterized by uncertainty, resource constraints, and rapid fluctuations. In such settings, the ability to simultaneously explore new opportunities and exploit existing capabilities is not just advantageous—it is essential for survival and growth (Mu et al., 2022; Walsh & Martin, 2023). At the heart of ambidextrous leadership is the capacity to alternate between opening behaviours—such as encouraging creativity, risk-taking, and ideation—and closing behaviours, which focus on structure, discipline, and goal orientation (Mavroudi et al., 2020; Ogundana et al., 2023a; Rosing et al., 2011). Entrepreneurial leaders, unlike their counterparts in more mature organizations, often confront these contradictory demands concurrently. For instance, a founder must generate novel ideas to gain market entry while ensuring sufficient structure to scale operations and attract investment (Klonek et al., 2023; Oluwafemi et al., 2020). This simultaneous demand amplifies the relevance of ambidextrous leadership in entrepreneurial settings.

Existing leadership theories make a unique contribution to understanding this duality. Transformational leadership supports opening behaviours by fostering vision, creativity, and motivation, essential for driving innovation in new ventures (Van Assen, 2020). In contrast, transactional leadership complements closing behaviours by emphasizing performance monitoring and task execution, which are crucial for operationalizing strategy and conserving scarce resources (Li et al., 2024). These leadership orientations are not mutually exclusive; rather, their integration enhances the efficacy of ambidextrous leadership. Empirical studies

support this synergy. Zacher and Rosing (2014) show that ambidextrous leadership outperforms transformational leadership alone in promoting team innovation, while Zacher et al. (2015) demonstrate positive links with individual-level innovative performance. In high-velocity industries—such as tech startups—Klonek et al. (2023) find that leaders who balance exploration and exploitation outperform those who overemphasize one dimension. Moreover, ambidextrous leadership enables organizational agility, helping entrepreneurial firms navigate shifting markets, regulatory challenges, and technological disruption (Katou et al., 2020; Li et al., 2024; Ogundana et al., 2023b).

However, ambidextrous leadership is cognitively and emotionally demanding. Shifting between contradictory leadership styles requires advanced decision-making skills, situational awareness, and emotional regulation—traits that may be unevenly distributed among entrepreneurial leaders (Oluwafemi et al., 2020; Rosing et al., 2011). Contextual factors such as team composition, venture stage, and industry turbulence further influence whether ambidexterity is feasible or effective (Klonek et al., 2023). Misalignment can result in innovation inertia or execution failure. In summary, the entrepreneurial context amplifies the salience of ambidextrous leadership, rendering it more than a theoretical ideal—it becomes a practical imperative. By integrating insights from transformational and transactional leadership within a unified framework, ambidextrous leadership enables entrepreneurs to manage the tension between vision and execution, as well as creativity and control (Ogundana et al., 2023a). It allows them to lead adaptively, make strategic trade-offs, and ultimately sustain competitive advantage in volatile, fast-moving markets.

## **2.2 Hypotheses Development**

### **2.2.1 Emotional Intelligence and Ambidextrous Leadership**

Emotional intelligence (EI) is a critical determinant of leadership effectiveness, particularly in dynamic environments where leaders must manage tensions, such as the tension between

exploration and exploitation activities (Pirsoul et al., 2023; Schmodde & Wehner, 2024; Williamson et al., 2024). EI reflects an individual's ability to perceive, understand, and regulate emotions, both in themselves and in others, to guide thinking and behaviour (Pathak & Muralidharan, 2024; Williamson et al., 2024). Unlike general cognitive intelligence, which emphasizes problem-solving and abstract reasoning, EI emphasizes emotional alertness, empathy, and social competence, all of which play a significant role in leadership performance (Pirhadi et al., 2023; Schmodde & Wehner, 2024; Zhang et al., 2023).

In leadership contexts, EI enhances decision-making by improving a leader's ability to recognize emotional cues, manage interpersonal relationships, and respond appropriately to emerging challenges (Pirsoul et al., 2023; Schmodde & Wehner, 2024). Leaders with high EI are often better equipped to create psychologically safe environments that encourage creative thinking and experimentation—core elements of opening leadership behaviours (Pirhadi et al., 2023; Williamson et al., 2024; Zhang et al., 2023). The ability to foster emotional stability and communicate effectively enables these leaders to inspire teams, promote risk-taking, and support novel ideas, all of which are essential for driving exploration (Rosing et al., 2011).

Equally important, EI supports closing leadership behaviours by enabling leaders to manage stress, maintain composure, and respond rationally to challenges (Oluwafemi et al., 2020; Zhang et al., 2023). Leaders with strong emotional regulation skills can remain calm under pressure, ensuring that strategic decisions are grounded in logic rather than impulsive reactions (Vuori & Huy, 2022). This emotional control is critical in environments where efficient execution, adherence to processes, and stability are paramount. For example, Williamson et al. (2024) highlight that leaders who exhibit strong emotional regulation are better positioned to maintain team cohesion and ensure task completion, reinforcing the structured elements required for closing leadership behaviours.

The adaptive nature of EI also allows leaders to switch flexibly between opening and closing behaviours depending on situational demands. Pathak & Muralidharan (2024) emphasize that leaders with high EI are particularly adept at balancing both positive and negative emotional cues, allowing them to transition seamlessly between fostering innovation and maintaining operational discipline. This adaptability is essential in entrepreneurial contexts where firms must simultaneously pursue new opportunities while optimizing existing processes (Oluwafemi et al., 2020; Pirsoul et al., 2023; Zhang et al., 2023). Likewise, recent findings reinforce that EI predicts leadership success more effectively than traditional personality traits, highlighting its practical relevance in high-stakes environments (Pirhadi et al., 2023; Schmodde & Wehner, 2024; Williamson et al., 2024). Emotional intelligence (Goleman, 1995) enables leaders to effectively manage the emotional and relational aspects of navigating competing priorities. Leaders with high EI can respond empathetically to team dynamics, regulate their emotional states, and manage conflict effectively—all of which are critical when switching between innovation and efficiency. Ambidextrous leadership requires constant switching between contradictory demands, which can trigger emotional and interpersonal conflict; hence, the need for EI for leaders to stay emotionally balanced and relationally agile as they navigate between visionary and execution-oriented behaviours. From the foregoing, we propose the following hypothesis:

*H1: A leader's emotional intelligence is positively related to opening leadership behaviours (OLB), closing leadership behaviours (CLB), and ambidextrous leadership at the individual leader level.*

### **2.2.2 Adaptive/Flexible Leadership and Ambidextrous Leadership**

Adaptive and flexible leadership is integral to navigating the competing demands of exploration and exploitation. Defined as a leader's ability to adjust behaviours in response to changing conditions, adaptive leadership emphasizes versatility in decision-making and

strategic responses (Hai et al., 2024; Hensellek et al., 2023). Leaders who adopt adaptive approaches are better equipped to manage uncertainty, enabling them to switch fluidly between creativity-driven exploration and process-driven exploitation (Oluwafemi et al. 2020).

The cognitive flexibility inherent in adaptive leadership aligns closely with the dynamic demands of ambidextrous leadership. By continually assessing organizational needs and adjusting their leadership style accordingly, adaptive leaders maintain control in stable conditions while fostering creativity during periods of uncertainty (Jia et al., 2022; Rosing et al., 2011). This flexibility enables leaders to implement opening behaviours when driving innovation and closing behaviours when ensuring operational efficiency (Oluwafemi et al., 2020). For example, some research indicates that adaptive leaders actively scan their environments, recognizing when innovative thinking is necessary and when greater structure is required (Groves & Feyerherm, 2022; Razak et al., 2025). This proactive approach enables leaders to foster creativity while maintaining performance stability.

In entrepreneurial contexts, where firms frequently face unpredictable shifts in market conditions, adaptive leadership is particularly valuable. Leaders in these settings must make rapid adjustments to address emerging challenges, ensuring that exploration and exploitation strategies are appropriately balanced (Hai et al., 2024; Hensellek et al., 2023; Jia et al., 2022). By integrating flexible leadership behaviours, adaptive leaders create an organizational climate where creative risk-taking is encouraged without compromising strategic focus or resource control (Oluwafemi et al., 2020). Furthermore, adaptive leadership might be critical to managing innovation cycles, as leaders must consistently alternate between encouraging ideation and refining established processes (Groves & Feyerherm, 2022; Oluwafemi et al., 2020; Razak et al., 2025). Leaders with adaptive capabilities are more adept at identifying inflexion points where a shift between exploration and exploitation is required (Jia et al., 2022; Wallo et al., 2024). This ability to recognize and respond to shifting demands ensures that their

leadership style remains aligned with organizational priorities (Oluwafemi et al., 2020; Razak et al., 2025).

Given the alignment between adaptive leadership and ambidextrous leadership, we propose the following hypothesis:

*H2: Adaptive/flexible leadership is positively related to OLB, CLB, and ambidextrous leadership at the individual leader level.*

### **2.2.3 Transformational Leadership and Ambidextrous Leadership**

Transformational leadership emphasizes vision, inspiration, and the encouragement of innovative thinking, making it a strong predictor of exploratory leadership behaviours (Deng et al., 2023; Greimel et al., 2023; Kensbock & Stöckmann, 2024). By motivating employees to pursue novel solutions and challenge established norms, transformational leaders foster conditions conducive to creativity and experimentation (Oluwafemi et al., 2020). Through intellectual stimulation, transformational leaders encourage employees to think critically, explore new ideas, and adopt unconventional approaches to problem-solving (Bass et al., 2003; Bakker et al., 2023; Loyless, 2023). In addition to promoting creative thinking, transformational leaders foster psychological safety, which encourages employees to express novel ideas without fear of failure. By establishing an open environment, transformational leaders enhance team engagement and create conditions for exploration (Bakker et al., 2023; Kensbock & Stöckmann, 2024; Oluwafemi et al., 2020). This emphasis on ideation aligns closely with opening leadership behaviours. However, transformational leadership's strong focus on inspiring change may conflict with the structured discipline required for closing leadership behaviours (Deng et al., 2023; Greimel et al., 2023). As transformational leaders encourage innovation and flexibility, they may shift their focus away from goal clarity, operational efficiency, and task execution (Oluwafemi et al., 2020; Rosing et al., 2011). While this focus on exploration can accelerate innovation, it may weaken the mechanisms necessary

to ensure stability and predictability (Bakker et al., 2023; Loyless, 2023; Oluwafemi et al., 2020).

Given the dual influence of transformational leadership, we propose the following hypothesis:

*H3: Transformational leadership is positively related to OLB and ambidextrous leadership, but will have a negative relationship with CLB at the individual leader level.*

#### **2.2.4 Transactional Leadership and Ambidextrous Leadership**

Transactional leadership is characterized by structure, performance monitoring, and accountability, making it a strong predictor of closing leadership behaviours (Abbas & Ali, 2023; Bass, 1999). By reinforcing order and minimizing variance in behaviour, transactional leaders ensure process control, task completion, and efficiency (Jacobsen et al., 2022; Nguyen et al., 2022). These structured approaches are particularly valuable in exploitative contexts, where stability and consistency are required to achieve reliable outcomes.

Transactional leaders emphasize contingent reward systems, reinforcing desired behaviours through clear expectations and incentives (Rockstuhl et al., 2023; Oluwafemi et al., 2020). This results-driven approach aligns closely with closing behaviours, ensuring that teams adhere to predefined standards and meet performance benchmarks (Abbas & Ali, 2023; Rockstuhl et al., 2023). However, this focus on control may restrict creative thinking and experimentation, which are essential for exploration (Kim et al., 2023; Sani & Adisa, 2024). By prioritizing structure over flexibility, transactional leaders risk stifling innovation, limiting their ability to encourage exploratory behaviours (Oluwafemi et al., 2020).

Despite these limitations, transactional leadership plays an essential role in maintaining stability and ensuring operational efficiency (Abbas & Ali, 2023; Nguyen et al., 2022; Oluwafemi et al., 2020). In entrepreneurial contexts, transactional behaviours may be essential for reinforcing execution once creative ideas have transitioned into actionable strategies (Abdelwahed et al., 2023; Oluwafemi et al., 2020).

Based on this reasoning, we propose the following hypothesis:

*H4: Transactional leadership is positively related to CLB and ambidextrous leadership, but will negatively affect OLB at the individual leader level.*

### **2.2.5 Theoretical Distinctiveness and Justification for Inclusion**

Figure 1 illustrates the influence of Emotional Intelligence and various Entrepreneurial Leadership Styles on opening and closing behaviours, and how these, in turn, shape Ambidextrous Leadership within entrepreneurial contexts. Although emotional intelligence, adaptive leadership, transformational leadership, and transactional leadership likely share substantial conceptual overlap, they are theoretically distinct in their core mechanisms and focus. For instance, emotional intelligence is a *meta-competency* rooted in emotional awareness and regulation, enabling leaders to manage interpersonal dynamics and navigate emotionally charged situations (Schmodde & Wehner, 2024; Williamson et al., 2024). In contrast, adaptive leadership is grounded in *cognitive flexibility*, emphasizing situational awareness and behavioural agility to respond to changing demands (Jia et al., 2022; Rosing et al., 2011). Transformational leadership differs in its focus on *visionary influence* and intrinsic motivation (Oluwafemi et al., 2020). It drives innovation through intellectual stimulation and inspiration, encouraging followers to transcend routine thinking. Conversely, transactional leadership is anchored in *control, structure, and extrinsic motivation*, promoting compliance, task clarity, and performance consistency—attributes vital for efficient execution (Rockstuhl et al., 2023; Oluwafemi et al., 2020).

These constructs also align differently with ambidextrous leadership. EI and adaptive leadership underpin the ability to switch between opening and closing behaviours flexibly. Transformational leadership predominantly fosters exploration, while transactional leadership supports exploitation (Oluwafemi et al., 2020). Examining all four constructs provides a

multidimensional understanding of how leaders navigate the paradoxical demands of exploration and exploitation. Their inclusion is necessary because no single construct captures the full spectrum of competencies required for ambidextrous leadership. Each addresses a unique capability—emotional, behavioural, motivational, and structural—thus offering complementary pathways to balancing innovation with operational efficiency. Analyzing these antecedents together enhances explanatory power and provides richer insights into the individual-level mechanisms that drive ambidexterity in dynamic and entrepreneurial contexts.

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*Insert Figure 1 Here*

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### **3. Methodology**

#### **3.1 Data Collection and Procedure**

The data analyzed in this study were collected from leaders of 98 high-tech small and medium-sized firms in the United Kingdom, spanning various industries, including information technology, energy, telecommunications, media (entertainment and gaming), manufacturing, software and computer services, engineering and machinery, and pharmaceuticals and biotechnology. Six key variables were examined: emotional intelligence, adaptive and flexible leadership, transformational leadership, transactional leadership, opening leadership behaviours, and closing leadership behaviours. Data collection was conducted using a questionnaire-based survey. High-tech firms were identified using the United Kingdom Companies House database, and a purposive sampling method was applied to focus specifically on firms engaged in innovative activities. A total of 200 questionnaires were mailed to potential respondents, and 112 completed surveys were returned, resulting in 98 usable responses, yielding a response rate of 49%. The respondents' ages ranged from 17 to 25 years to 55 years and above, with the largest group (36.7%) falling in the 46-54 age category. Regarding

education, 19.4% of the leaders had a GCSE/vocational qualification, 52.0% held at least a first degree, and 28.6% had obtained a postgraduate degree. Of the respondents, 70 were men and 28 were women. Most of the firms in the sample (68.4%) had been in operation for at least 10 years.

### **3.2 Measures**

Emotional intelligence was measured using the scale developed by Wong and Law (2002), which comprises four dimensions: (1) perception of one's own emotions, (2) perception of the emotions of others, (3) use of emotions, and (4) regulation or control of emotions. Respondents rated items on a five-point Likert scale, with a Cronbach's alpha of 0.80 indicating good internal consistency. The leader's flexible and adaptive work behaviours were assessed using Charbonnier-Voirin and Roussel's (2012) 19-item scale, which evaluates five dimensions of adaptive behaviour: handling emergencies or unpredictable work situations, creative problem-solving, managing work stress, effort toward training and learning, and demonstrating interpersonal adaptability. The Cronbach's alpha for this scale was 0.81.

Transformational and transactional leadership behaviours were measured with the Multifactor Leadership Questionnaire (MLQ Form 5X short; Avolio & Bass, 2004), a widely used and validated instrument in leadership research. The MLQ items were rated on a five-point Likert scale. Transformational leadership was assessed through four sub-dimensions: idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation, with a Cronbach's alpha of 0.82. Transactional leadership was measured using the sub-dimensions of contingent reward, active management by exception, and passive management by exception, with a Cronbach's alpha of 0.84. Ambidextrous leadership behaviours were measured using two scales derived from the examples of opening and closing leadership behaviours outlined by Rosing et al. (2011). Respondents rated themselves on a five-point Likert scale. The Cronbach's alpha for opening leadership behaviours (OLB) was 0.80,

and for closing leadership behaviours (CLB), it was 0.71. Ambidextrous leadership was conceptualized as the multiplicative interaction between OLB and CLB, consistent with prior studies (Rosing et al., 2011; Rosing & Zacher, 2016; Zacher et al., 2014). This approach reflects the theoretical stance that effective ambidextrous leadership arises not from the mere presence of either behaviour, but from the simultaneous and synergistic enactment of both. That is, high levels of one without the other may be insufficient to meet the competing demands of exploration and exploitation. The multiplicative term thus captures the non-substitutable and complementary nature of these behaviours in complex leadership contexts.

We acknowledge that some scholars suggest OLB and CLB may function independently or sequentially depending on situational cues (Rosing et al., 2011). However, in entrepreneurial environments where leaders often face concurrent pressures to innovate while maintaining operational control, the co-activation of OLB and CLB becomes critical. Hence, the interaction term serves to model this simultaneous engagement. To mitigate concerns about multicollinearity, all variables were mean-centred before interaction. Additionally, we included firm age and years of leadership experience as control variables, as these may influence both the tendency and ability to enact ambidextrous behaviours (Cavazotte et al., 2012). Nonetheless, we recognize the evolving debate surrounding the operationalization of ambidextrous leadership and encourage future research to compare interaction, additive, and latent profile approaches for further theoretical refinement.

## **4. Data Analysis and Results**

### **4.1 Measurement Validation**

We validated the scales using factor analysis. The exploratory factor analysis revealed no general factor, and items exhibited the highest factor loadings on their theoretically relevant factor, with all loadings exceeding 0.5. Using the criterion of Fornell and Larcker (1981), we

examined convergence validity through average variance extracted (AVE) and composite reliability (CR). AVE measures the level of variance captured by a construct versus the level due to measurement error. AVE should be equal to or greater than 0.5, and composite reliability is satisfactory when the value is above 0.7. The average variance extracted for each construct exceeded the squared correlation with the other constructs. This indicates discriminant validity (Fornell & Larcker, 1981). All values surpassed the threshold to justify validity and reliability. The results of the composite reliability and average variance extracted are shown in Table 1 below.

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*Insert Table 1 Here.*

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Cronbach's alpha for all scales is above the threshold of 0.7. From the foregoing, our measures are valid and reliable. To mitigate common method bias, a pilot test was conducted with five business owners, revealing no significant issues with the survey instrument. Furthermore, a cover letter was added to the questionnaire to explain the survey's intent, and the researcher promised absolute confidentiality to respondents. Additionally, a Harman One-factor test (Podsakoff et al., 2003) was conducted. The highest variance explained by a single factor was 17.0%. Therefore, common method variance (CMV) is not a serious threat in this study.

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*Insert Table 2 Here*

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## **4.2 Correlation Results**

The correlation results are presented in Table 2, and it show a pattern that is consistent with our hypotheses. Adaptive, flexible leadership, emotional intelligence, and transformational leadership showed significant correlations with OLB. Similarly, emotional intelligence,

adaptive and flexible leadership, and transactional leadership showed positive associations with CLB.

Furthermore, emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership showed positive and significant associations with AL. As hypothesized, transactional leadership was negatively related to OLB, while transformational leadership showed no significant association with CLB. Firm age did not appear to have any significant relationship with OLB, CLB, or ambidextrous leadership; however, leadership experience showed a significant correlation with CLB. It is pertinent to mention that in the correlation results, adaptive/flexible leadership and emotional intelligence showed a consistent and significant positive association with all of OLB, CLB, and AL.

### **4.3Hypotheses Testing**

Hypotheses were tested using multiple linear regression analysis in SPSS. Control variables—firm age and leadership experience—were entered first, followed by the independent variables: emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership. In line with Cohen et al. (2003), all predictors were mean-centred to mitigate concerns about multicollinearity (Aiken & West, 1991). Tolerance and variance inflation factors (VIFs) were examined and found to be within acceptable thresholds (tolerance  $> 0.2$ ; VIF  $< 10$ ), indicating that multicollinearity was not a concern (Belsey et al., 1980; Kutner et al., 2004). The results provide partial support for H1, as emotional intelligence was positively and significantly associated with ambidextrous leadership (AL) ( $\beta = 0.22$ ,  $p = 0.03$ ). However, its associations with opening leadership behaviours (OLB) ( $\beta = 0.19$ ,  $p = 0.07$ ) and closing leadership behaviours (CLB) ( $\beta = 0.13$ ,  $p = 0.19$ ) were non-significant, suggesting a more limited influence of EI than hypothesized (See Table 3). For H2, adaptive/flexible leadership had a strong, positive effect on both OLB ( $\beta = 0.42$ ,  $p < 0.001$ ) and AL ( $\beta = 0.41$ ,  $p < 0.001$ ). Its relationship with CLB was marginal and non-significant ( $\beta = 0.19$ ,  $p = 0.062$ ), indicating

that its role in promoting exploitative behaviours may be context-dependent. H3 received stronger empirical support, as transformational leadership was significantly associated with both OLB ( $\beta = 0.41, p < 0.001$ ) and AL ( $\beta = 0.41, p < 0.001$ ). However, its non-significant relationship with CLB ( $\beta = .19, p = .062$ ) suggests that its capacity to influence structured, exploitative behaviour is limited. Regarding H4, the hypothesized negative relationship between transactional leadership and OLB was not supported ( $\beta = 0.06, p = 0.556$ ). However, consistent with expectations, transactional leadership was positively associated with CLB ( $\beta = 0.31, p = 0.003$ ) and AL ( $\beta = 0.25, p = 0.020$ ). This partial support indicates that while transactional behaviours strengthen exploitative and overall ambidextrous leadership, they may not inhibit exploratory tendencies as proposed.

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*Insert Table 3 Here*

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## **5. Discussion**

Innovation is universally recognized as a cornerstone of firm survival, especially in today's rapid, discontinuous change era. The ability to innovate is no longer a luxury; it is necessary for entrepreneurs seeking to remain competitive and thrive in dynamic markets. Leadership plays a critical role in facilitating this innovation process (Abbas & Ali, 2023; Cai et al., 2019; Rockstuhl et al., 2023), and a growing body of research has increasingly pointed to ambidextrous leadership as a strong predictor of innovation outcomes (Jia et al., 2022; Jiang et al., 2023). The ability of leaders to balance exploration—searching for new opportunities—with exploitation—optimizing existing capabilities—is key to fostering an environment conducive to innovation (Katou et al., 2020; Klonek et al., 2023; Lucoschek et al., 2018). This dual capability of ambidextrous leadership requires leaders with a comprehensive set of

competencies and the agility to navigate the multifaceted and often competing demands of innovation.

In this study, we sought to explore the individual-level antecedents that shape ambidextrous leadership behaviours, aiming to provide insight into how these can be developed and nurtured by leaders and entrepreneurs. Our findings reveal that emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership are antecedents to ambidextrous leadership at the individual leader level. This discovery aligns with prior research that highlights the need for a wide range of leadership competencies to effectively manage the complexity of innovation processes and drive innovative behaviours (Gerlach et al., 2020; Rosing et al., 2011; Walsh & Martin, 2023; Williamson et al., 2024). Specifically, the study demonstrates that transformational and transactional leadership help shape a leader's opening and closing behaviours, adaptive or flexible leadership plays a crucial role in determining when to deploy these behaviours, and emotional intelligence creates the emotional climate necessary to navigate the tension between contrasting leadership behaviours.

Further examination revealed that at the individual leader level, emotional intelligence, adaptive/flexible leadership, and transformational leadership are key antecedents of opening leadership behaviour (OLB), while emotional intelligence, adaptive/flexible leadership, and transactional leadership are linked to closing leadership behaviour (CLB). This alignment is not surprising given the inherent similarities between the leadership concepts of transformational and transactional styles. Transformational leadership has long been recognized for its ability to create an environment that fosters employee motivation and innovation. It achieves this through mechanisms such as intrinsic task motivation (Kim et al., 2023), relational identification (Qu et al., 2015), and the cultivation of creative self-efficacy (Gong et al., 2021). Transformational leaders energize their teams around innovative ideas, encouraging risk-taking and challenging the status quo without fear of punishment (Loyless,

2023; Vera & Crossan, 2004). By stimulating intellectual engagement and inspiring vision, transformational leadership promotes an "employee voice" that enhances the quality and quantity of creative ideas, thereby driving innovation (Della et al., 2021).

Conversely, transactional leadership emphasizes an exchange-based relationship that clarifies goals and rewards achievement (Kim et al., 2023). This approach can limit behavioural variance, aligning more with closing leadership behaviours, which aim to maintain consistency, efficiency, and stability. While transactional leadership may not foster the creativity and exploration required for radical innovation, it is essential in driving incremental innovation and ensuring the efficient execution of existing strategies (Nguyen et al., 2022; Vera & Crossan, 2004).

Emotional intelligence, however, is a unique driver of ambidextrous leadership. Leaders with high emotional intelligence can recognize and channel their own emotions and those of their followers, particularly in the context of the innovation process. This emotional insight enables leaders to determine the appropriate behaviours needed at any given time, whether promoting creativity and risk-taking (exploration) or optimizing performance and refining processes (exploitation) (Zhang et al., 2023). Emotional intelligence also provides the resilience to balance competing priorities and manage the stress inherent in dynamic innovation environments (Pathak & Muralidharan, 2024).

The role of adaptive and flexible leadership cannot be overstated. Our findings reinforce the importance of leaders being able to flexibly adjust their behaviours in response to the shifting demands of innovation. This adaptability is crucial in entrepreneurial environments, where both exploration and exploitation activities are necessary for sustained growth and a competitive advantage. The ability to seamlessly transition between opening and closing behaviours based on situational requirements is a hallmark of effective leadership in innovation contexts. A crucial observation in our study is that no independent variable is consistently

associated with OLB, CLB, and ambidextrous leadership (AL) across all regression models, despite emotional intelligence and adaptive/flexible leadership showing strong correlations with all three variables in the correlation analysis. This suggests the complexity of the relationships between leadership behaviours and indicates that ambidextrous leadership is influenced by a combination of factors rather than a single, standalone trait. This study does not aim to establish causality, as proving causality requires meeting stringent conditions, including significant correlation coefficients and ruling out confounding variables (Pathak & Muralidharan, 2024). Instead, we aimed to identify the associations between individual-level factors and ambidextrous leadership, which could serve as a foundation for leadership development and training in innovation-driven environments.

Based on our findings, we present a classification framework in Table 4 that maps the antecedents of opening, closing, and ambidextrous leadership behaviours. This framework can serve as a diagnostic tool for leaders and organizations seeking to develop ambidextrous leadership capabilities. By identifying which leadership behaviours need to be cultivated, organizations can design training programs that target specific competencies, ensuring that leaders are equipped to navigate the complexities of innovation. For example, if a leader is predominantly inclined toward opening leadership behaviours, this tool could suggest strategies to balance these with closing behaviours, thereby enhancing their ability to manage exploration and exploitation in different innovation contexts. In summary, the ability to lead innovation in an entrepreneurial context requires a leader to foster creativity while ensuring that operational efficiency is maintained. By embracing a broad array of competencies—emotional intelligence, adaptive and flexible leadership, transformational and transactional leadership—entrepreneurial leaders can effectively drive exploration and exploitation, the twin engines of innovation. The findings from this study offer valuable insights for developing more

nuanced and practical leadership training programs that empower leaders to navigate the complexities of modern innovation successfully.

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*Insert Table 4 Here.*

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### **5.1 Theoretical Implications**

This study advances ambidextrous leadership theory by identifying key individual-level antecedents—emotional intelligence, adaptive and flexible leadership, and transformational and transactional leadership—that shape opening and closing leadership behaviours. Given the dynamic nature of leadership ambidexterity, our findings emphasize the need for entrepreneurial leaders to possess a broad and adaptable skill set, especially as ambidextrous leadership is positioned for managing the contrasting innovation processes of exploration (e.g., creative ideation) and exploitation (e.g., process optimization). In doing so, this research affirms that leadership is not a one-size-fits-all endeavour, and ambidextrous leadership is not an innate trait; instead, it involves sensing and flexibly responding to evolving organizational and market demands. This study's identification of the antecedents of AL breaks new ground in understanding AL as a learnable, developmental capability that individual leaders can grow into a valuable, rare, and unique resource for leading innovation.

Furthermore, the study enriches our understanding of how varied leadership competencies interact to fuel behaviours that can foster innovation, thereby offering a more nuanced view of leadership effectiveness in entrepreneurial settings. In particular, the importance of cultivating ambidextrous leadership competencies is highlighted as pivotal for effectively navigating the complexities of innovation (Ibidunni et al., 2024; Udeozor et al., 2025). This is particularly relevant for nascent entrepreneurs who must lead innovative pursuits but, unlike experienced

leaders, are less likely to have developed the leadership repertoire to manage competing demands or the tensions and paradoxes inherent in the innovation process, which causes many to fail. Another context in which this study's findings will be particularly relevant is during periods of organizational turbulence. Nascent and Experienced entrepreneurs alike must navigate turbulence and develop strategies to lead their organizations through impending change. This study offers an opportunity for entrepreneurs to identify AL antecedents and work towards developing or improving the required leadership competencies, which will help to create innovative solutions to resolve crises or organizational turbulence (Ogundana et al., 2025).

Future work can build on these findings by investigating the temporal aspects of leadership influence, including how leaders recognize and balance the need for exploration versus exploitation over different phases of innovation.

In addition to advancing ambidextrous leadership research, this work also draws upon—and contributes to—the literature on emotional intelligence (Pirsoul et al., 2023; Schmodde & Wehner, 2024; Williamson et al., 2024), adaptive/flexible leadership (Hai et al., 2024; Hensellek et al., 2023), and transformational and transactional leadership (Deng et al., 2023; Greimel et al., 2023). While integrating these constructs into a single model of ambidextrous leadership, we illustrate how emotional intelligence undergirds leaders' ability to sense when to "open" or "close" behaviours, and how adaptive leadership facilitates continuous realignment of those behaviours. Our findings further clarify the complementary roles of transformational and transactional leadership, showing that each style can be effectively harnessed for exploration and exploitation under conditions that require agility.

This integration enriches the broader leadership discourse by suggesting that future studies might examine boundary conditions—such as organizational culture or environmental turbulence—that amplify or mitigate these leadership behaviours. Also, the evidence here

supports the value of studying multiple leadership theories in tandem, rather than examining each style in isolation.

## **5.2 Managerial Implications**

The implications of our research extend across multiple organizational levels, providing a targeted, evidence-based roadmap for enhancing leadership effectiveness in entrepreneurial ventures. While our findings reveal statistically significant relationships, the explanatory power of our models—reflected in  $R^2$  values ranging from modest (.04 to .18) to substantial (.72)—underscores their practical relevance (see Table 3). Notably, the  $R^2$  of 0.72 for ambidextrous leadership indicates that a significant proportion of variance is accounted for by emotional intelligence, adaptive and flexible leadership, and transformational and transactional styles. This suggests that investing in these competencies can yield substantial improvements in leadership effectiveness. For top management, we recommend embedding ambidextrous leadership principles into strategic decision-making processes. Specifically, senior leaders should establish dual-track leadership pipelines that identify and develop talent capable of both innovation leadership (e.g., new product development) and execution leadership (e.g., scaling operations). They should also model ambidextrous behaviours themselves by alternating between visionary and operational roles depending on organizational needs.

For middle management, targeted training programs should go beyond general leadership skills and focus on situational leadership switching. For example, simulation-based workshops can help managers practice toggling between opening and closing behaviours in response to case-based scenarios. Given the moderate  $R^2$  values for opening and closing behaviours (.18), even modest improvements in behavioural flexibility can have meaningful effects on performance. For human resources, ambidextrous leadership capabilities should be embedded into leadership competency frameworks. We recommend revising recruitment criteria to assess emotional intelligence and adaptability through situational judgement tests

and behavioural interviews. Leadership development programs should include coaching modules on self-regulation, team innovation facilitation, and execution discipline. Performance appraisal systems should also be adapted to reward leaders who demonstrate evidence of managing both innovation and operational efficiency. Even smaller effect sizes ( $R^2 = .04-.07$ ) suggest room for incremental gains through structured interventions. For example, offering microlearning modules on managing paradoxes, decision-making under uncertainty, or feedback loops between innovation and execution could reinforce key behaviours over time. In sum, our findings provide a foundation for building leadership capacity that aligns with the complex demands of entrepreneurial environments.

### **5.3 Limitations and Future Research**

Despite its contributions, this study has several significant limitations that must be acknowledged and addressed in future research. First, the generalizability of our findings is limited by the nature of our sample, which consists of leaders from high-tech firms based solely in the United Kingdom. While this context is relevant given the innovation-driven nature of such firms, it restricts the applicability of the results to other sectors or geographic regions. Leadership styles, innovation practices, and organizational dynamics can vary significantly across cultural, institutional, and industry contexts. Cross-national or multi-sector studies would enhance the external validity of these findings and reveal context-specific nuances. Second, while multiple linear regression provided a structured approach to testing our hypotheses, it comes with methodological limitations that may compromise the robustness of our results. Specifically, multiple regression assumes linearity, homoscedasticity, normal distribution of residuals, and no multicollinearity. Although we conducted diagnostic checks (e.g., mean-centring, VIF analysis), these do not eliminate the possibility of misspecification. More critically, the assumption of linearity may oversimplify relationships that could be curvilinear, threshold-based, or interactive in nature. The use of cross-sectional data further

limits our ability to draw causal inferences. As such, our findings should be interpreted as indicative of associations rather than definitive causal relationships.

Third, the study relies exclusively on self-reported data from leaders, which raises concerns about common method bias (Podsakoff et al., 2003), social desirability, self-serving bias, and limited perspective (Day & Shin, 2011). Leaders may overestimate their ambidextrous behaviours or fail to reflect team dynamics accurately. This can inflate observed relationships or obscure divergent perceptions within the organization. Triangulating data through multi-source methods—including employee, peer, or subordinate assessments—would yield a more objective and multifaceted understanding of leadership effectiveness. Moreover, collecting data across multiple time points can reduce biases associated with single-occasion responses. Fourth, there are limitations in sample composition, particularly regarding gender. The underrepresentation of female leaders limits our ability to assess potential gender-based variations in leadership behaviours and innovation outcomes. Future research should strive for more balanced samples and explore whether gender moderates the relationship between leadership antecedents and ambidextrous outcomes.

Lastly, this study is constrained by its cross-sectional design, which provides a static snapshot of dynamic leadership processes. Ambidextrous leadership likely evolves, influenced by contextual triggers, organizational life cycle stages, and environmental turbulence. Future research would benefit from longitudinal and qualitative designs to trace how ambidextrous capabilities develop and fluctuate. Process-tracing methods or case studies could reveal deeper mechanisms through which emotional intelligence, adaptive leadership, and other traits translate into behavioural ambidexterity. Experimental and longitudinal designs would also enable more rigorous exploration of causal pathways, identifying which leadership behaviours most effectively promote opening, closing, or ambidextrous outcomes in varying contexts.

Taken together, these limitations necessitate a cautious interpretation of our findings, while also highlighting several fruitful directions for future inquiry.

## **6. Conclusion**

This study identified key individual-level antecedents that influence opening, closing, and ambidextrous leadership behaviours, offering valuable insights into the competencies required for effective leadership in innovation-driven environments. The findings highlight that emotional intelligence, adaptive and flexible leadership, transformational leadership, and transactional leadership each play distinct yet interconnected roles in shaping ambidextrous leadership. Emotional intelligence enables leaders to regulate their emotions, maintain resilience, and effectively balance exploratory and exploitative behaviours. Adaptive or flexible leadership equips leaders with the agility to adjust their behaviours in response to shifting innovation demands, ensuring they can alternate between promoting creativity and driving operational efficiency. Transformational leadership encourages creativity and risk-taking, while transactional leadership reinforces structure and stability—both of which are essential for sustaining innovation over time.

The study's findings directly answer the core question of how entrepreneurial leaders can develop the competencies necessary to manage the dynamic tension between exploration and exploitation. Emotional intelligence, adaptability, and strategic leadership styles emerged as crucial elements in this process. Developing these competencies enables leaders to guide their teams through complex innovation environments, ensuring both stability and performance.

The insights gained from this research provide a solid foundation for future studies and offer practical guidance for organizations seeking to enhance their ambidextrous leadership

capabilities. Equipping leaders with the right combination of skills allows firms to sustain innovation, manage uncertainty, and remain competitive in dynamic markets.

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Figure 1. Theoretical framework

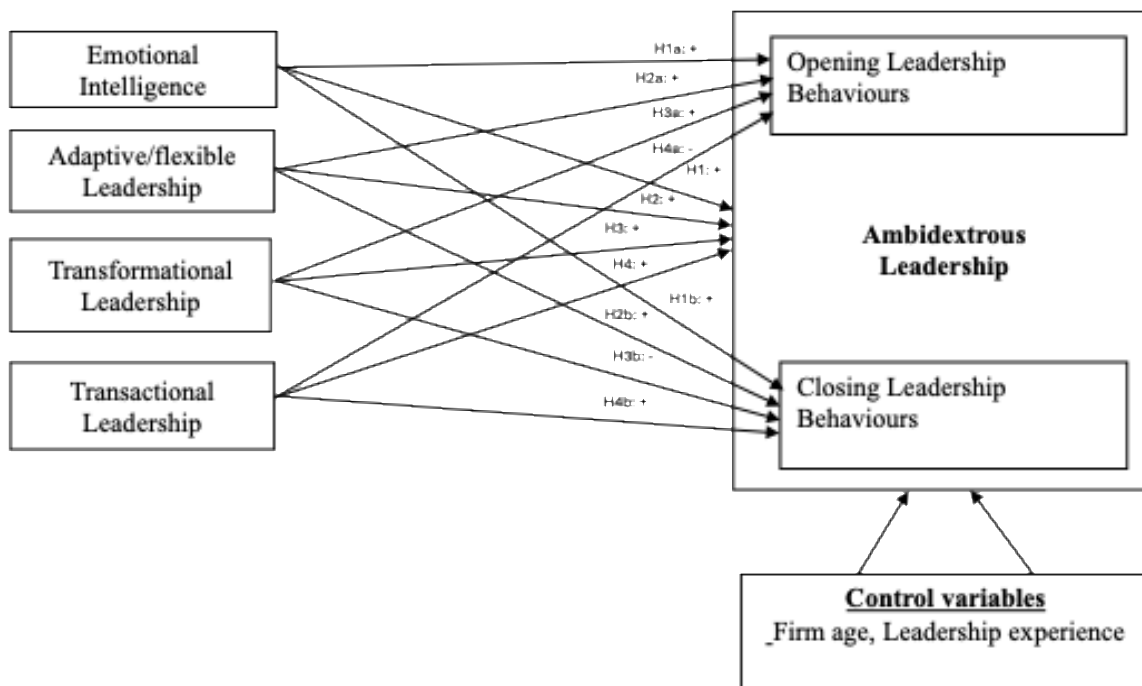


Table 1. Results of Reliability and Validity

| <b>Variables</b>            | <b>Composite Reliability<br/>(CR)</b> | <b>Average Variance Extracted<br/>(AVE)</b> |
|-----------------------------|---------------------------------------|---------------------------------------------|
| OLB                         | 0.893                                 | 0.626                                       |
| CLB                         | 0.872                                 | 0.577                                       |
| AFB                         | 0.814                                 | 0.526                                       |
| Transformational leadership | 0.766                                 | 0.522                                       |
| Transactional leadership    | 0.833                                 | 0.625                                       |
| Emotional intelligence      | 0.835                                 | 0.630                                       |

Table 2. Descriptive Statistics and Correlation Matrix

| Variables                       | Mean  | SD   | 1      | 2       | 3       | 4       | 5       | 6       | 7       | 8       |
|---------------------------------|-------|------|--------|---------|---------|---------|---------|---------|---------|---------|
| 1. Firm Age                     | 3.31  | 1.11 | 1      |         |         |         |         |         |         |         |
| 2. Leadership Experience        | 3.94  | 1.30 | 0.002  | 1       |         |         |         |         |         |         |
| 3. Emotional Intelligence       | 4.11  | 0.43 | 0.098  | 0.089   | 1       |         |         |         |         |         |
| 4. Adaptive/Flexible Leadership | 3.89  | 0.33 | -0.052 | 0.047   | 0.331** | 1       |         |         |         |         |
| 5. Transformational Leadership  | 3.61  | 0.49 | -0.116 | 0.068   | 0.288** | 0.334** | 1       |         |         |         |
| 6. Transactional Leadership     | 3.45  | 0.39 | 0.157  | 0.183   | 0.165   | 0.180   | .361**  | 1       |         |         |
| 7. Opening Leadership Behaviors | 3.82  | 0.57 | -0.074 | -0.064  | 0.108*  | 0.389** | 0.423** | -.027   | 1       |         |
| 8. Closing Leadership Behaviors | 3.56  | 0.50 | 0.036  | 0.334** | 0.200*  | 0.169*  | 0.166   | 0.326** | 0.095   | 1       |
| 9. Ambidextrous Leadership      | 13.84 | 3.25 | -0.20  | 0.073   | 0.206*  | 0.272** | 0.200*  | 0.201*  | 0.764** | 0.705** |
| (OLB × CLB)                     |       |      |        |         |         |         |         |         |         |         |

Table 3. Regression Analysis Results

| Variables                        | MODEL 1          |                  |                  | MODEL 2          |                  |                  | MODEL 3            |                  |                    | MODEL 4            |                  |                    | MODEL 5          |                   |                  |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|--------------------|--------------------|------------------|--------------------|------------------|-------------------|------------------|
|                                  | OLB              | CLB              | AL               | OLB              | CLB              | AL               | OLB                | CLB              | AL                 | OLB                | CLB              | AL                 | OLB              | CLB               | AL               |
| Firm age                         | -0.09<br>(0.444) | -0.04<br>(0.732) | -0.09<br>(0.423) | -0.10<br>(0.371) | -0.05<br>(0.667) | -0.11<br>(0.337) | -0.03<br>(0.745)   | -0.14<br>(0.898) | -0.39<br>(0.711)   | -0.02<br>(0.857)   | -0.01<br>(0.949) | -0.02<br>(0.828)   | -0.09<br>(0.448) | -0.03<br>(0.738)  | -0.08<br>(0.423) |
| Leadership experience            | 0.01<br>(0.936)  | 0.21<br>(0.073)  | 0.13<br>(0.227)  | -0.00<br>(0.990) | 0.19<br>(0.83)   | 0.12<br>(0.264)  | -0.02<br>(0.836)   | 0.18<br>(0.091)  | 0.11<br>(0.305)    | -0.02<br>(0.839)   | 0.19<br>(0.091)  | 0.10<br>(0.305)    | -0.01<br>(0.941) | 0.11<br>(0.301)   | 0.07<br>(0.555)  |
| Emotional Intelligence           |                  |                  |                  | 0.19<br>(0.072)  | 0.13<br>(0.195)  | 0.22*<br>(0.031) |                    |                  |                    |                    |                  |                    |                  |                   |                  |
| Adaptive/<br>Flexible leadership |                  |                  |                  |                  |                  |                  | 0.42***<br>(0.000) | 0.19<br>(0.062)  | 0.41***<br>(0.000) |                    |                  |                    |                  |                   |                  |
| Transformational Leadership      |                  |                  |                  |                  |                  |                  |                    |                  |                    | 0.41***<br>(0.000) | 0.19<br>(0.062)  | 0.41***<br>(0.000) |                  |                   |                  |
| Transactional Leadership         |                  |                  |                  |                  |                  |                  |                    |                  |                    |                    |                  |                    | 0.06<br>(0.556)  | 0.31**<br>(0.003) | 0.25*<br>(0.020) |
| $\Delta R^2$                     | -0.01            | 0.02             | -0.00            | .010             | 0.23             | .034             | .152               | .041             | .154               | .149               | .041             | .157               | -0.02            | 0.10              | 0.04             |
| $R^2$                            | 0.01             | 0.04             | 0.02             | .041             | .053             | .064             | .178               | .071             | .180               | .175               | .071             | .183               | 0.01             | 0.12              | 0.72             |
| F                                | .332             | 1.7              | 0.8              | 1.3              | 1.7              | 2.1              | 6.8***             | 2.4              | 6.9***             | 6.6***             | 2.4              | 7.0                | 0.3              | 4.4               | 2.4              |
| Sig.<br>(P-value)                | .718             | .178             | .46              | .269             | .163             | .101             | .000               | .073             | .000               | .000               | .073             | .000               | .799             | .006              | .070             |
| N                                | 98               | 98               | 98               | 98               | 98               | 98               | 98                 | 98               | 98                 | 98                 | 98               | 98                 | 98               | 98                | 98               |

N = 98. Standardized regression coefficients ( $\beta$ s) are reported. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Actual levels of significance reported in ( )

Table 4. Ambidextrous Leadership Antecedents

| Potential Antecedent Influence | Levels of Association        |                              |                         |
|--------------------------------|------------------------------|------------------------------|-------------------------|
|                                | Opening leadership behaviour | Closing leadership behaviour | Ambidextrous leadership |
| Emotional intelligence         | Low                          | Low                          | High                    |
| Adaptive/flexible leadership   | High                         | Low                          | High                    |
| Transformational Leadership    | High                         | Very low                     | High                    |
| Transactional Leadership       | None                         | High                         | High                    |