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**Cognitive Styles, Strategic Role Enactment, and
Attention Performance of Middle Managers:
A Role Conflict Mediation Model**

By

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Abstract

Middle managers (MMs) operate in ambiguous positions that require balancing competing strategic and operational demands. Although they play a central role in translating strategy into organisational action, the cognitive foundations that shape how they perceive, prioritise, and enact their strategic responsibilities remain underexplored. Prior research has examined cognitive style, role conflict, strategic role enactment, and attentional performance as separate topics, yet little is known about how these factors interact within an integrated framework linking cognitive orientation to managerial behaviour and attentional performance. This thesis addresses this gap by examining how cognitive style (analytic versus holistic) influences the MMs' experience of role conflict, enactment of the strategic role, and attention performance. Drawing on organisational role theory, the attention-based view, and cognitive psychology, the thesis proposes three pathways: the behavioural pathway, the cognitive pathway, and the behaviour-to-attention pathway. The research comprises a systematic literature review of 71 empirical studies and two empirical investigations.

Phase 1 examined the behavioural pathway through which MMs with analytic and holistic cognitive styles influence the four strategic roles (Championing, Facilitating, Synthesising, and Implementing) and whether role conflict explains these relationships. Holistic-style managers report greater enactment of the Championing role and higher role conflict. Role conflict predicts the enactment of the Championing and Facilitating roles, and further mediation analyses indicated that role conflict influences the relationship between cognitive style and the Championing and Facilitating roles. A small indirect effect for the Implementing roles was

identified but received weak support. Therefore, role conflict functions as a selective mediator through which cognitive style is translated into role enactment.

Phase 2 extends this analysis to attentional performance using a visual search task to assess the processing speed and attentional efficiency under easy and difficult task conditions. In the cognitive pathway, analytic and holistic managers reported comparable attentional efficiency as task demands increased, but differed in the speed under difficult tasks, with the analytic type responding faster. Role conflict did not predict attentional outcome; however, under difficult task conditions, a compensatory mediator was found, and higher role conflict was associated with a marginal improvement in response speed among holistic managers. In the behaviour-to-attention pathway, the enactment of strategic roles predicted attention: the Synthesising role showed more efficient performance on a difficult attention task, whereas the Facilitating role predicted reduced efficiency on an easy task, and the Implementing role predicted reduced efficiency on a complex task. However, these relationships were not mediated by role conflict.

These findings show that cognitive style, role conflict, strategic role enactment, and attention performance form a partially interconnected system in middle management. Role conflict functions as a selective cognitive-behavioural bridge, explaining the influence of cognitive style on strategic behaviour in roles that involve influence and coordination-oriented behaviour, while playing a limited role in explaining attentional performance. Attentional performance shows both stable cognitive orientation and role-linked attentional routines, where the repeated enactment of particular strategic roles influences efficiency. This thesis bridges psychology and strategy work, reframing role conflict from a stressor into a contingent mechanism and positioning attention as a role-linked capability relevant to managerial development and role design.

Keywords: cognitive style, role conflict, strategic role, attention performance, middle manager, visual search, analytic-holistic

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List of Abbreviations

ABV	Attention-Based View
ANOVA	Analysis of Variance
CEO	Chief Executive Officer
CS	Cognitive Style
EFA	Exploratory Factor Analysis
FLT	Framed-Line Task
MANOVA	Multivariate Analysis of Variance
MMs	Middle Managers
ORT	Organisation Role Theory
RC	Role Conflict
SLR	Systematic Literature Review
SR	Strategic Roles

1 CHAPTER 1: INTRODUCTION

1.1 Research Background

In contemporary organisations, the effectiveness of strategy depends on how managers think, interpret, and act in complex, uncertain environments. Middle managers (MMs), in particular, play a crucial yet understated role in this process, as their day-to-day cognition and behaviour shape how strategy is enacted, adapted, and communicated across organisational levels. Despite growing recognition of their strategic importance, the cognitive foundations of MMs' roles remain underexplored. Research has focused on what MMs *do*, their responsibilities, tasks, and influence (Christie & Tippmann, 2024; Floyd & Wooldridge, 1992; Tarakci et al., 2023); yet it has paid less attention to *how* their cognitive styles, attentional performance, and experience of role conflict influence strategic outcomes as an interconnected system in middle management. This thesis is the first to integrate cognitive style, role conflict, strategic role enactment, and attentional performance within a single cognitive-behavioural framework to explain how MMs translate cognitive aspects into strategic action. This gap is important because cognitive style has been linked to differences in attentional processing (Bendall et al., 2016; Chang et al., 2019), and attention represents the gateway through which information enters cognition (Huestegge & Koch, 2012; Huynh Cong & Kerzel, 2021; Ocasio, 2011). Before information can be evaluated, learned, or acted upon, it must first be attended to. As such, examining attention provides a foundation for understanding how cognitive styles translate into managerial behaviour under competing demands on middle managers' roles. Starting with attention, therefore, allows this thesis to ground managerial cognition in a core of cognitive processes that introduce higher-order functions such as judgement, sensemaking, and strategic decision-making (Cai & Canales, 2023; Ocasio et al., 2020). These oversights

limit understanding of why some managers are more effective at navigating competing expectations, sustaining attention, and enacting strategic change than others. Addressing this gap is critical because the ability to process information, manage behavioural tension, and maintain attentional efficiency affects managerial effectiveness and organisational adaptability.

Middle managers occupy positions within an organisational structure, bridging the gap between upper and lower management. They are defined as managers positioned between top-level management and first-line supervisors (Dutton & Ashford, 1993; Harding et al., 2014), playing a vital role in integrating vertical related groups and controlling workflow across different functional areas (Abdullah & Sofyan, 2022; Balogun, 2003; Buick et al., 2018; Dutton & Ashford, 1993; Floyd & Wooldridge, 1992; Huy et al., 2002). Moreover, MMs facilitate communication between upper and lower management while managing horizontal information exchange across departments (Nonaka, 1994; Rydland, 2020; Wooldridge et al., 2008). In this dual role, MMs contribute to organisational adaptability by proposing new initiatives and reinterpreting senior managers' strategic direction to align with operational goals (Burgelman, 1994; Kieran et al., 2020; Salas & Cannon-Bowers, 2000). Thus, MMs play an essential strategic role in implementing senior-level policies while aligning departmental actions with broader strategic objectives (Shaed et al., 2018). However, this intermediary position exposes MMs to conflicting expectations from above and below, resulting in heightened cognitive demands and behavioural tension (Bossmann et al., 2016; Wang et al., 2024).

As strategists, MMs must navigate complex strategic roles that extend beyond administrative coordination and involve shaping, supporting, interpreting, and executing organisational strategy (Splitter et al., 2023). Their strategic contribution is recognised in their ability to

translate intent into operational action amid complexity and uncertainty (Jansen Van Rensburg et al., 2014). How these strategic responsibilities are conceptualised depends on the theory adopted to describe managerial roles. One of the most influential frameworks for understanding managerial roles is Mintzberg's (1973) typology, which classifies managerial work into three roles: interpersonal, informational, and decisional. This framework explains managers as continuously switching between communication, information processing, and decision-making; therefore, managerial effectiveness depends on interaction, information flow, and judgment, and it applies across organisational levels (Mintzberg, 2019). However, this classification offers a broad overview to managers at any level; it does not distinguish the unique strategic contributions associated with the structural ambiguity of middle-management positions, which must simultaneously interpret top-down strategic directives and respond to bottom-up operational demands. As a result, while Mintzberg's typology provides insight into the nature of managerial work, it is less suited for analysing how MMs enact strategy under competing expectations and role-based tensions.

In contrast, Floyd and Wooldridge (1992) developed a framework that explicitly theorises the strategic role of middle managers by distinguishing four interrelated roles: Championing alternatives, Synthesising information, Facilitating adaptability, and Implementing deliberate strategy. This framework explains how MMs contribute to both strategy formation and strategy implementation through upward and downward influence. Importantly, these roles are conceptualised as enacted patterns of behaviour that vary across organisational contexts, strategic priorities, and individual differences. Empirical research has shown that these roles involve different cognitive and behavioural demands (Chen et al., 2017; Christie & Tippmann, 2024; Jaser, 2025; Li & Zhang, 2024) and are interconnected in ways that require MMs to shift between them in response to the priorities and organisational rhythms (Floyd & Wooldridge,

1992; L. Glaser et al., 2015). Therefore, this framework aligns with the aims of the present research, which seeks to understand how MMs' cognitive differences influence the enactment of these strategic roles under conditions of complexity and role tension. Thus, it will provide a more precise examination of the relationships among cognitive style, role conflict, and strategic and cognitive performance.

The Championing role involves influencing upward, advocating new ideas, securing top management support, and framing emerging initiatives. It demands visionary thinking and political sensitivity to navigate hierarchical resistance (Li & Zhang, 2024). For example, a marketing manager who recognises shifts in consumer behaviour champions a digital strategy initiative by linking it to senior leaders' strategic goals. Meanwhile, the Synthesising role requires integrating information across departments, reconciling operational and external organisation insights with strategic intent, translating complexity into actionable knowledge (Dimes & De Villiers, 2023; Feng et al., 2017). This role draws on analytical reasoning; for instance, a middle manager in R&D synthesises technical feedback from engineers and commercial insights from sales teams to develop product roadmaps aligned with corporate strategy.

Facilitating roles demand downward attention, focusing on coordinating teams, fostering adaptability, and ensuring employees understand and internalise strategic changes (Floyd & Wooldridge, 1992; Huy, 2011; Rouleau & Balogun, 2011). It relies on interpersonal and emotional intelligence, as MMs act as sense-givers who reduce ambiguity and maintain morale during transitions (Kroon & Reif, 2023; Reynders et al., 2022). A manufacturing manager implementing process innovation, for example, must facilitate dialogue between production teams and leaders to align new procedures with strategic goals. Lastly, the Implementing role

involves translating deliberate strategies into operational routines, maintaining procedural accuracy and goal consistency (Engle et al., 2017; Salih & Doll, 2013). It demands attentional stability and discipline; for instance, a financial manager enforcing new budget controls by ensuring the daily operations conform to the strategic direction set by senior management.

The enactment of the four strategic roles places MMs under pressure, as they find themselves pulled in divergent directions by competing demands from upwards and downwards. This challenge arises from the distinct cognitive and behavioural demands embedded in each role, which require them to balance conflicting expectations, adjust their actions, and allocate attention within constrained decision-making timeframes (Sukoco et al., 2022; Tarakci et al., 2023). For example, MMs may be expected to drive innovation while motivating staff and simultaneously implementing changes (Rydland, 2020). Thus, these pressures challenge MMs' adaptability, emotional regulation, and decision-making consistency (Boroş & Gorbatai, 2024; Clarke et al., 2007). This tension, rooted in the structural and strategic roles themselves, if not managed well, can diminish strategic clarity and the effectiveness of strategic role enactment and increase stress, anxiety, and inefficiency (Wang et al., 2024). In this context, role conflict is a common challenge for MMs (Flores, 2016).

Role conflict refers to the psychological experience of difficulty in complying with multiple demands and incompatible expectations (Abraham, 1997; Pandey & Kumar, 1997). Within the context of middle management, role conflict can arise when managers are required to perform competing directives from upper and lower levels of the organisation (Flores, 2016). The challenges become most visible when MMs enact the Implementing role, such as translating strategy into operational practice, which exposes them to conflicting priorities, resource constraints, and ambiguous accountability (Kras et al., 2017). Persistent exposure to such

contradictions can diminish decision quality, increase conflict, and undermine strategic consistency, thereby affecting their performance and organisational outcomes. Traditionally, role conflict has been viewed as a stressor associated with negative outcomes such as burnout, disengagement, and decision paralysis (Tunc & Kutanis, 2009).

However, insights from cognitive and organisational psychology suggest a complex dynamic. Under certain cognitive conditions, role conflict can stimulate adaptive responses, such as behavioural flexibility and enhance strategic enactment (Braem et al., 2014; Desender et al., 2014; Maden-Eyiusta, 2021), because confronting competing expectations requires managers to engage a top-down attentional mechanism, reappraise priorities, reinterpret goals, and allocate attention more selectively. Such processes affect attention performance because they require integrating multiple features and sustained executive function. The difficult visual search condition provides an appropriate experimental approach for examining the phenomenon. In this perspective, role conflict can function as a catalyst for cognitive reorganisation, influencing how MMs shift between strategic roles and regulate attention to maintain effectiveness. Yet, these adaptive responses vary across individuals. Differences in cognitive style shape how MMs interpret and react to conflicting demands (Qi & Armstrong, 2019); some perceive conflict as disorienting, while others view it as an opportunity to integrate divergent perspectives. This variability positions role conflict as a mediator between cognitive style and its outcome. It links a stable processing preference (cognitive style) to workplace behaviour and attentional performance (an outcome of cognitive control). Therefore, role conflict serves not only as a psychological burden but also as the mechanism through which cognitive tendencies translate into strategic role enactment (behavioural pathway), influence attentional resources (*cognitive pathway*), and shape the relationship between enacted roles and attentional performance (*behaviour-to-attention pathway*).

Studies have found that individual characteristics, such as gender, personality, cognitive style, and attention processes, influence managers' performance (Helfat & Peteraf, 2015; Kryeziu et al., 2024; Luring et al., 2019; Ocasio, 1997; Zaccaro et al., 2018). Among these, cognitive style represents a stable individual difference in how they perceive, process, and act on information (Riding & Cheema, 1991). Because information processing depends on the ability to direct and sustain attention, differences in cognitive style are linked to attentional performance, as the ability to prioritise relevant cues while filtering distractions (Rueda et al., 2023). In cognitive psychology, because the brain can only process a finite amount of information at any given moment, external stimuli and internal thoughts compete for access to this limited resource; therefore, attention functions as a regulatory mechanism that helps the brain manage its limited processing capacity (Buschman & Kastner, 2015). Attention, resolving this competition by prioritising task-relevant information and suppressing irrelevant inputs leads to efficiency, speed, and accuracy in information processing (Petersen & Posner, 2012). In this sense, attention functions as a gateway to cognition; only information that is selected by attention can be further encoded, retained in memory, learned from, and used to guide judgment and decision-making (Desimone & Duncan, 1995; Huynh Cong & Kerzel, 2021; Roberts et al., 2022). In managerial contexts, this selective mechanism becomes consequential under role conflict, as competing demands put pressure on limited cognitive resources. Consequently, differences in managers' performance arise from how effectively the cognitive processes filter information and allocate attention to the most relevant cues on strategic and operational decisions.

Cognitive style refers to an individual's characteristic way of thinking, processing, and managing information (attention), solving problems, and relating to others (Bendall et al.,

2016; Chang et al., 2019; Kozhevnikov, 2007; Zhou et al., 2015). It reflects how individuals understand the world (mental models) and serves as a subjective point of view to guide their behaviour in certain situations (Allinson & Hayes, 2012; Cools & Broeck, 2007; Hayes & Allinson, 1994). While distinct from intelligence, cognitive style represents a stable trait (Kozhevnikov, 2007; Miller, 1987; Nosal, 2010; Riding & Cheema, 1991) that influences intellectual and personality aspects of human behaviour (Volkova & Rusalov, 2016). Among the various dimensions of cognitive styles studied in organisational research, the analytic-holistic dimension is a classic cognitive dimension (Miller, 1987). Analytic style tends to favour logic, linear reasoning and problem-solving; as a result, they often seek to reduce ambiguity by isolating variables (Lacko et al., 2023). Meanwhile, the holistic type is more attuned to patterns, contextual information, and integrative thinking; therefore, it is more likely to embrace complexity (Chen et al., 2022). These differences influence how MMs interpret and respond to competing role expectations. For instance, the ambiguity of strategic direction might feel disorienting to an MM with an analytic cognitive style, but stimulating to a holistic-type manager, who perceives it as an opportunity for innovation (Gallén, 2006; Lacko et al., 2023).

Beyond shaping information processing, cognitive styles also influence attentional performance, a core mechanism of managerial cognition in strategic role enactment. Attention defines how the brain controls, processes, and selects information in perception by excluding irrelevant aspects and focusing on specific goals (Carrasco, 2011; Knudsen, 2007; Lamberts & Goldstone, 2005; Tsotsos et al., 2018). Visual attention, in particular, indicates a cognitive process that investigates how we attend to relevant information while suppressing irrelevant ones due to the brain's limited capacity to process all inputs simultaneously (Carrasco, 2011; Evans et al., 2011; Wolfe, 1994, 2000). Far from being passive, attention functions as an active control mechanism that governs which information gains access to higher-order cognitive

processes. By selecting and prioritising goal-relevant inputs and suppressing competing stimuli, attention operates as a gatekeeper to cognition, determining which information can be further processed (Chun & Wolfe, 2001; Ocasio et al., 2020; Petersen & Posner, 2012). In managerial contexts, this selective function is critical, as enacting complex strategic roles requires MMs to continuously shift, sustain, and regulate attention across competing cues, goals, and demands.

However, attention is not uniform across individuals; it reflects cognitive styles that guide interpretation, information selection, and filtering of competing stimuli (Bendall et al., 2016; Mavritsaki et al., 2025). Attention operates as a gatekeeper, regulating the flow of information and ensuring that only relevant information occupies the limited capacity of the brain (Huynh Cong & Kerzel, 2021; Roberts et al., 2022). Because of this limitation, individuals differ in how they distribute their attention resources; some focus on focal cues, while others attend to contextual relationships, differences that also reflect at the cultural level (Mavritsaki et al., 2025). These tendencies arise from cognitive preferences that determine how information is encoded and prioritised. In managerial contexts, attention orientation shapes how MMs scan their environment, identify relevant information, and sustain focus while navigating competing demands. MMs with an analytic cognitive style approach their task by paying attention to the main object, isolating elements to solve the problems, whereas those with a holistic style tend to focus on the broad picture, integrating multiple cues and contextual information (Bian et al., 2020; Boduroglu et al., 2009; Jia et al., 2014; Stokes, 2018). These attentional tendencies influence how MMs interpret organisational priorities, allocate resources, and engage with team dynamics. These differences can enhance or strain attention performance in demanding environments, affecting daily management (Cools & Broeck, 2008; Ocasio, 1993). For example, the analytic style may be better at filtering distractions, while the holistic style may

struggle to narrow its focus and manage multiple demands (Bian et al., 2020; Miller, 1987). Thus, cognitive style influences MMs' attentional performance, their interpretation of role expectations, and the experience of role conflict (Mantere, 2008a; Priola et al., 2004; Wooldridge et al., 2008).

Strategic management research extends this concept from the individual to the organisational level. Ocasio (1997) conceptualises attention as a selective, limited-capacity process that involves noticing, encoding, and interpreting information, thereby determining which strategic issues gain managerial focus and action. In this view, attention acts as the bridge between cognition and behaviour, meaning that what managers attend to defines what the organisation does (Ocasio et al., 2020). Role conflict serves as the situational trigger that channels this selective focus (Anicich & Hirsh, 2017), thereby constraining managerial cognition through how information is processed (cognitive style) and how attentional resources are directed, maintained, and prioritised in complex organisational environments. Building on this perspective, this thesis foregrounds cognitive style and attention performance as individual mechanisms through which MMs perceive, process, and respond to their strategic roles and the experience of role conflict.

Because role conflict challenges MMs to reconcile simultaneously upward and downward demands, this thesis positions role conflict as a mediating process linking MMs' cognitive styles to two managerial outcomes: strategic role enactment and attention performance. By integrating role theory (Biddle, 1986) with cognitive psychology, this thesis challenges traditional views of role conflict as a stressor arising from incompatible expectations (Rizzo et al., 1970) and instead frames it as a process through which cognitive preferences as individual tendencies in how they perceive, interpret, and prioritise information (Kozhevnikov,

2007; Nisbett et al., 2001), influence strategic behaviour and cognition. Specifically, MMs' cognitive style influences how they interpret and internalise role expectations, thereby influencing their subjective experience of role conflict (Qi & Armstrong, 2019; Van den Broeck & Parker, 2017), which in turn affects both their strategic role enactment and attentional performance (Floyd & Wooldridge, 1992; Huy et al., 2002). While the previous research has examined the implications of role conflict, its cognitive influence, particularly on attention performance, remains underexamined (Karkkola et al., 2019; Maran et al., 2021). Similarly, although cognitive style has been linked to attentional processing (Chang et al., 2019; Choi et al., 2007), and strategic role enactment has been studied in middle management research (Christie & Tippmann, 2024; Floyd & Wooldridge, 1992; Tarakci et al., 2023), these constructs have rarely been examined together as part of an integrated framework. Most existing studies have examined these constructs in isolation or outside the context of MMs, overlooking the psychological factors that underlie their performance. By addressing these gaps, this thesis proposes a novel integrated framework (*behavioural, cognitive, and behaviour-to-attention pathways*) that offers a unified understanding of how MMs (cognitive and behavioural) adapt to strategic role complexity. The following section outlines the research problem and rationale that underpin this contribution.

1.2 Research Problem and Rationale

Despite their importance, the interaction between strategic roles, cognitive style and attention performance in middle management remains underexplored in the existing research. Studies on MMs' strategic role enactment have focused on typology and functions (Arıciöğlü et al., 2020; Floyd & Wooldridge, 1992; Tarakci et al., 2023) with limited attention to cognitive factors that underpin role enactment. Meanwhile, although widely used in organisational studies, cognitive styles (Armstrong, Cools, et al., 2012; Hayes & Allinson, 1994) have seldom

been applied to the context of complex demands on MMs' strategic roles. Similarly, although attention performance has received extensive discussion in cognitive neuroscience and decision science (Moerel et al., 2024; Rueda, 2024), its application within middle management remains limited. This fragmentation has limited our understanding of the integrated nature of managerial cognition and behaviour in real-world organisational complexity.

Role conflict has been discussed as a stressor with negative outcomes, such as impaired decision-making and reduced performance, which serve as the psychological cost of competing demands. However, a few studies suggest that role conflict, under certain conditions, such as when cognitive flexibility is present and conflict is perceived constructively, leads to adaptive regulation, increases creative engagement, enhances control mechanisms and sharpens focus (Braem et al., 2014; Desender et al., 2014; Laureiro-Martínez & Brusoni, 2018; Maden-Eyiusta, 2021; Ou et al., 2018). This thesis explores the potential for role conflict as a cognitive-behavioural mediator in middle management, examining how they manage the competing demands of strategic roles and how they allocate attention in complex managerial settings.

In the complex organisational environment, MMs are regularly required to shift between upward and downward influence, placing them at the centre of competing demands and expectations from stakeholders (Balogun, 2003; Floyd & Wooldridge, 1992). This dual pressure requires the ability to process conflicting cues and to regulate and focus attention. These abilities vary among MMs, and they are shaped by their cognitive styles, which influence how they perceive, prioritise, and integrate information. Consequently, how MMs approach complexity determines whether tension is framed as disorienting or manageable, influencing how they enact roles and focus attention in demanding situations. Thus, role conflict arises when MMs' cognitive style clashes with their responsibilities, explaining why some MMs

perform better than others. Understanding how MMs manage these pressures requires a framework that integrates cognitive style, role conflict and attention as interdependent mechanisms.

A further limitation in current literature is the limited consideration of practical consequences for organisations. A lack of understanding of how cognitive styles influence attention and how role conflict can mediate this relationship risks organisations misdiagnosing the sources of performance differences within their middle management team. MMs will be placed in roles that do not align with their cognitive strengths, leading to inconsistent strategy execution, slower decision-making, and weakened cross-level coordination (Leonard et al., 2005; Mele & Cappellaro, 2018; Yi et al., 2022). Unmanaged and misunderstood, role conflict can escalate into cognitive overload, burnout, or disengagement, further undermining managerial well-being and team functioning (Dijkstra et al., 2005). This lack of insight can also limit the effectiveness of managerial development, performance assessment, and talent management initiatives. Thus, understanding this cognitive-behavioural link is essential for practical consequences in improving decision quality, sustaining attention under pressure, and supporting strategic implementation.

This thesis addresses the gap by proposing role conflict as a bridge between cognitive style and two outcomes of middle management: strategic role enactment and attention performance. In this model, role conflict is a psychological process in which individual preferences influence observable behaviour and cognitive effort beyond structural tension. Thus, this concept explores *what* MMs do, *how* they make sense of competing priorities, and *why* they succeed or struggle to navigate the complexity of their roles. This research integrates organisational behaviour, cognitive psychology, and management theory to explain how MMs think and act,

situating role conflict as a mediator. This integration offers theoretical and practical contributions, whereas existing studies rarely connect cognition, psychological processes, and managerial outcomes to a unified model. In summary, the rationale for this thesis lies in a dual focus: to investigate how cognitive styles influence managerial behaviour and cognitive performance and to position role conflict as a psychological bridge between them. This reconceptualisation demonstrates the real-world complexity of MMs' responsibilities and acknowledges the interdependence among variables that shape their effectiveness.

1.3 Research Aims, Objectives, and Questions

1.3.1 Research Aims

This thesis examines how MMs' cognitive styles (analytic-holistic) influence their strategic role enactment and attention performance, with role conflict as a mediator. The study addresses the main research question: How do MMs' cognitive styles influence strategic role enactment and attention performance in the context of *role conflict*? Existing literature has treated cognitive style, strategic behaviour, and attention as separate domains. This thesis integrates them with role conflict as a psychological process that links cognitive style, behaviour, and cognition. It proposes that MMs process, internalise and adapt to role demands according to their cognitive style. Within this framework, role conflict is reconceptualised as a cognitive-behavioural phenomenon arising from how managers' cognitive style shapes their strategic actions and their attentional performance.

The present thesis begins with a systematic literature review (SLR) that consolidates existing evidence on cognitive style and managerial roles, followed by an empirical study addressing behavioural, cognitive, and behaviour-to-attention pathways to test this proposition. Phase 1 explores the behavioural pathway, examining the relationship between cognitive style and

strategic role enactment, with role conflict as a behavioural mediator. It asks whether MMs with analytic or holistic cognitive styles experience role conflict differently and whether these experiences shape the extent of strategic role enactment. In doing so, it examines how cognitive styles are translated into action when mediated by role conflict. Phase 2 examines the cognitive pathway by which cognitive style affects attention performance, via the mediating influence of role conflict. Specifically, it investigates whether cognitive styles are associated with differences in attention performance among MMs and whether their differential experience of role conflict explains this relationship. The third pathway, behaviour-to-attention, examines the direct predictive relationship between strategic role enactment and attention performance. This pathway extends the model by exploring whether the type of strategic role influences MMs' attentional capacity, contributing to a more complete understanding of the cognitive and behavioural demands of middle management. Together, the three pathways offer an integrated framework connecting cognitive style, role conflict, strategic behaviour, and attentional performance within the complex demands of middle management.

1.3.2 Research Objectives

The objectives of the research are as follows:

Phase 1 – Behavioural Pathways

1. To examine the relationship between MMs' cognitive styles and the enactment of strategic roles
2. To assess how cognitive style differences relate to the experience of role conflict
3. To determine whether role conflict predicts the strategic role enactment
4. To test whether role conflict mediates the relationship between cognitive styles and strategic role enactment

Phase 2 – Cognitive and Behaviour-to-Attention Pathways

1. To investigate how cognitive styles are associated with attention performance in middle managers
2. To evaluate the influence of role conflict on attention performance
3. To examine whether role conflict mediates the relationship between cognitive styles and attention performance
4. To analyse the relationship between strategic role enactment and attention performance

These objectives form the foundation of a conceptual model in which role conflict bridges cognition and performance across three pathways:

- (1) Cognitive styles → role conflict → strategic role enactment (behavioural pathways)
- (2) Cognitive styles → role conflict → attention performance (cognitive pathways)
- (3) Strategic role enactment → attention performance (behaviour-to-attention pathway)

By integrating these variables, the thesis explains how MMs' cognitive tendencies influence MMs' observable behaviour and attention performance in demanding situations. The research employs a cross-sectional design that combines survey and experimental methods to investigate the interrelationship between cognitive styles, attention performance, role conflict, and strategic role enactment.

1.3.3 Research Questions

This thesis seeks to answer the following questions:

Phase 1

1. What is the role of cognitive style in shaping MMs' strategic role enactment and their experience of role conflict?
2. How does role conflict contribute to the way MMs enact strategic roles?
3. To what extent does role conflict mediate the relationship between cognitive styles and strategic role enactment?

Phase 2

1. What is the relationship between cognitive styles and attention performance among MMs?
2. What role does role conflict play in shaping the link between cognitive styles, strategic roles, and attention performance?
3. How do strategic roles relate to attention performance in MMs?

These research questions represent the empirical and theoretical orientation that role conflict is a behavioural and cognitive bridge linking MMs' information process to performance outcomes. They are designed to test how MMs think, determine how they interpret their roles, and assess how effectively they perform in complex and demanding situations.

1.4 Scope and Delimitations

This thesis is scoped to investigate middle managers as organisational actors who have unique cognitive and behavioural requirements. They occupy a combination of strategic and operational positions, leading them to enact multiple roles with competing demands. Hence,

they are an ideal population for studying how cognitive styles interact with roles and how these interactions affect behaviour and attention. Thus, to maintain clarity, this research excludes senior executives and frontline supervisors whose role configurations differ from those of MMs. Cognitive style is classified as either analytic or holistic based on the results of the experiment. Although cognitive style can be treated as a continuum or multidimensional construct, a categorical approach was adopted to clarify group comparisons and interpret how different styles map onto behavioural and cognitive outcomes in the context of role conflict. In attention performance, this research focuses on selective attention, assessing how MMs filter, prioritise, and focus on the challenges they face. Role conflict questions are used to capture experiences of tension and conflicting demands.

Further, this research focuses on MMs working in medium-to-large organisations of diverse industries. Participants come from various countries and represent similar managerial structures. Cultural and institutional differences may influence how role conflict and cognitive style manifest; the generalisation of the result from this study needs to be considered. This study does not incorporate potential moderating variables, such as age, experience, and educational background, into the primary analysis. While these variables are recorded and considered descriptively, the theoretical and statistical analysis prioritises the mediation pathway involving cognitive styles, role conflict, and performance as the central research aim. In summary, the scope of this research is intentionally delimited to ensure conceptual and methodological coherence. It targets MMs as a population, employs a categorical approach to cognitive style, focuses on selective attention, and treats role conflict as a mediator of these effects. These delimitations ensure the thesis's internal validity while also providing future research opportunities to build upon and extend its findings.

1.5 Research Significant

This thesis presents four original contributions to the literature on managerial cognition and organisational behaviour:

- a. First, it reconceptualises role conflict from an organisational stressor into a cognitive-behavioural bridge, demonstrating how role conflict translates cognitive style into strategic role enactment. This reframing advances organisational role theory by identifying when and how role conflict becomes enabling or constraining for MMs.
- b. Second, the thesis introduces the first integrated cognitive-behavioural framework that simultaneously connects cognitive style, role conflict, strategic role enactment, and attentional performance within middle management. By modelling behavioural, cognitive, and behaviour-to-attention pathways together, the research moves beyond fragmented construct explanations of managerial effectiveness.
- c. Third, it establishes attention performance as a strategic cognitive capability shaped by cognitive style and by sustained strategic role enactment. Therefore, extends the Attention-Based View theory by examining how attention is behaviourally trained through repeated enactment in specific roles.
- d. Fourth, the thesis pioneers an interdisciplinary approach that integrates experimental cognitive psychology tools (the Framed-Lined Task and a visual search experiment) with organisational constructs. This approach enables objective measurement of managerial cognition patterns and attention, going beyond self-report designs.

The following section elaborates on these core contributions in detail, providing their theoretical significance, practical implications, and methodological contributions.

Theoretical Contributions. Building on the core contribution above, this thesis advances theoretical development by demonstrating how role conflict operates as a dynamic cognitive-behavioural bridge rather than a static organisational stressor. The existing literature predominantly frames role conflict as having negative implications for its perception, including job dissatisfaction, stress, and turnover. In contrast, this thesis demonstrates that role conflict can also serve as a sense-making process shaped by MMs' cognitive preferences. By positioning role conflict as a mediator that links how MMs think (cognitive style) with how they behave (strategic roles) and how they manage attentional demands under role complexity (attention performance), this thesis seeks to understand the conditions under which role conflict can be either constraining or enabling for middle management.

The second contribution addresses a gap in the organisational behaviour and managerial cognition literature, where these two areas are often treated in isolation: cognitive style, strategic role enactment, and attention performance. Although each has been examined separately, no existing framework has combined them within a unified cognitive-behavioural model. This thesis introduces the first integrated framework that explains managerial behaviour through three interconnected pathways (behavioural, cognitive, and behaviour-to-attention), and places role conflict as the bridge through which cognitive style translates into strategic action and attentional performance, while also examining the relationship between strategic role enactment and attention. In doing so, it extends managerial cognition theory by moving beyond trait-based or structural explanations toward a process-based account of how cognitive style, behaviour, and attention influence managerial effectiveness. Building on this integration, the thesis embeds the analytic-holistic cognitive style construct into the middle management context. Although analytic and holistic cognitive styles have been examined in psychological research on decision-making, problem-solving, and perception, their integration into

management research remains limited. This research extends to how cognitive styles affect managerial influence on strategic behaviours and how they regulate attention under competing role demands. In conceptualising cognitive style as a driver of behavioural patterns and attentional processes, the thesis contributes to further understanding of how individual differences influence role enactment in organisational settings.

This integration is strengthened by incorporating attention performance as a theoretical construct in study MMs. Commonly examined in cognitive neuroscience and experimental psychology, attention has seldom been theorised in management research, despite its centrality to executive functioning in role-complex environments. By introducing attention performance into the managerial domain, the thesis establishes a neurocognitive foundation for understanding how MMs prioritise information, manage competing demands, and sustain focus under strategic role pressures; contributes to the growing use of neurocognitive approaches to organisational behaviour and provides an alternative approach for explaining differences in managerial performance under complexity.

Practical Contributions. This thesis also offers practical relevance for organisations by aligning cognitive-managerial understanding with the development and support of middle management teams. Examining the conceptual framework explained above enables organisations to align managerial roles with MMs' cognitive preferences. For example, MMs with a holistic style may be more effective in people-oriented, outward-facing roles (e.g., championing and facilitating), while those with an analytic style may thrive in roles demanding structure and operational clarity (e.g., synthesising and implementing). Thus, this alignment could improve strategic coherence, reduce friction in role execution, and enhance the quality of strategic communication across organisational levels.

Another practical contribution is reframing role conflict from a negative stressor to a manageable one, under certain conditions, potentially enabling managerial performance. Understanding role conflict as a cognitive-behavioural process rather than a fixed organisational burden empowers practitioners to design interventions that help MMs reframe competing demands constructively. Training programmes can incorporate cognitive aspects, attentional management strategies, reflective practice, and boundary-management skills to help MMs prioritise effectively, sustain focus, and regulate cognitive load under pressure. These interventions can prevent cognitive overload, develop resilience, and reduce burnout. Moreover, the attention-performance perspective introduced in this thesis offers organisations a new diagnostic approach to understanding managerial effectiveness. By recognising that attention is a measurable component of executive function, leaders or HR practitioners can better identify points of attentional strain, design roles that minimise unnecessary cognitive conflict, and support managers in maintaining sustained focus during strategic tasks. These insights are valuable for organisations operating in volatile, information-rich settings where attentional precision and strategic adaptability are essential. In conclusion, the practical contribution of this thesis is in the capacity to inform evidence-based role design, targeted capability development, and cognitive alignment in management practices to improve the effectiveness and sustainability of middle-management contributions.

Methodological Contributions. This thesis makes a substantial contribution by introducing a novel, interdisciplinary research design that has not previously been applied to the study of middle managers. It is the first research in this area to combine methods from cognitive psychology with established approaches in organisational behaviour, integrating experimental measures of attention with behavioural assessments of strategic role enactment and role

conflict. By using the Framed-Line Task (FL) to classify analytic and holistic cognitive styles, alongside a laboratory visual search experiment that captures attention performance (reaction times, accuracy, slopes, and efficiency indices), this thesis implements a methodological approach that enables direct measurement of cognitive processing, rather than relying on self-report. This approach has rarely been applied in management research, particularly in studies of middle managers.

Furthermore, the thesis advances methodological innovation through an empirical study design that brings together behavioural data from organisational contexts (Phase 1) and cognitive-experimental data from visual search (Phase 2). This approach offers a multi-layered understanding of managerial cognition, enabling the empirical testing of behavioural and cognitive processes within a single conceptual model. The application of response-time-based measures, efficiency scores, and an attention index represents a methodological leap for middle-management research and provides precision and explanatory power that existing frameworks lack. Moreover, by integrating cognitive style assessment, role conflict measurement, strategic role behaviour, and experimental attention metrics, this thesis paves the way for a new research direction at the intersection of managerial cognition and cognitive psychology. The core constructs, such as attentional performance, cognitive load, and style, can be operationalised within management studies, opening a methodological pathway for future researchers to incorporate cognitive and experimental tools into organisational research.

1.6 Thesis Structure Overview

This thesis comprises seven chapters.

Chapter 1: Introduction outlines the background and context of the study, framing the cognitive and behavioural challenges faced by MMs in terms of their strategic roles. It states the research problem, rationale, and theory and introduces the aims, objectives and research questions.

Chapter 2: Literature review provides a comprehensive overview of key domains relevant to this research, including the systematic literature review (SLR). The chapter concludes by integrating this literature into a conceptual framework, identifying the research gaps, and justifying the thesis focus.

Chapter 3: Hypotheses Development provides the conceptual framework to introduce the three pathways: behavioural (Cognitive styles → role conflict (strategic role enactment), cognitive (Cognitive styles → role conflict → attention performance), and behaviour-to-attention (Strategic role enactment → attention performance). This chapter then elaborates on hypotheses for Phases 1 and 2.

Chapter 4: Research Methodology and Method details the research design and methodological procedures. It outlines the rationale for the empirical study and describes the structure and instruments, sampling strategy, data collection processes, and statistical analyses.

Chapter 5: Findings reports the findings from Phase 1 of descriptive, MANOVA, t-test, regression, and mediation analyses to assess whether role conflict mediates the relationship between cognitive style and strategic role enactment. Followed by the results of Phase 2, which

investigates the cognitive and behaviour-to-attention pathways, exploring how role conflict mediates the relationships among cognitive style, strategic role enactment, and attention performance through Mixed-ANOVA, t-test, regression, and mediation.

Chapter 6: Discussion integrates the findings from SLR, Phase 1, and Phase 2 to interpret and evaluate the conceptual model proposed in this thesis. It interprets the mediating role of role conflict, the three pathways and theories of its function as a cognitive-behavioural bridge. Further, the chapter provides an overview of the research's theoretical, methodological, and practical contributions.

Chapter 7: Conclusion and Future Directions concludes by summarising the main findings, revisiting the thesis's central argument, and offering final reflections. It re-evaluates the role of role conflict in managerial cognition and outlines how the insights can inform cognitive-role alignment, managerial development, and organisational design. The chapter concludes by addressing the limitations and directions for future research.

2 CHAPTER 2: LITERATURE REVIEW

Middle managers occupy a central position as connectors, translating strategic intentions into actionable outcomes while navigating the complex demands from upper and lower management levels. This chapter reviews the literature to establish a foundation for the thesis, examining the relationship between middle managers' strategic role enactment, cognitive styles, attention performance, and role conflict. The review brings together these constructs to develop an integrated perspective on managerial cognition. This chapter focuses on the cognitive demands embedded in middle managers' strategic roles and on how misalignment between role expectations and cognitive preferences can lead to role conflict. Attention performance is examined as a cognitive mechanism, and in the context of a managerial role, it is linked to how cognitive style influences attentional performance. Finally, the chapter integrates these perspectives into a framework that positions role conflict as a cognitive-behavioural mediator, identifies gaps in the literature, and sets the stage for the empirical studies that follow.

2.1 Middle Managers and Strategic Role Enactment

2.1.1 Defining Middle Manager

Middle managers (MMs) play a pivotal role in organisational functioning by bridging strategic decision-making and operational execution. Some scholars define MMs functionally, focusing on the coordination and control tasks that connect strategic and operational activities (Floyd & Wooldridge, 1992; Huy et al., 2002). Others adopt a hierarchical perspective, positioning themselves as managers at levels below senior executives and above first-line supervisors (Dutton & Ashford, 1993). A relational view emphasises their role across vertical and horizontal levels, linking diverse stakeholders within and outside organisations (Nonaka, 1994). More recent work also portrays MMs as strategists, depicting them as contributors to

sensemaking, innovation, and strategic change (Balogun, 2003; Kroon & Reif, 2023; Wooldridge et al., 2008). Drawing on this conceptualisation, this thesis adopts the definition of middle management as situated below top management and above one-level supervision within the organisational hierarchy (Koponen et al., 2025; Wooldridge et al., 2008). This definition indicates the structural positioning and functional complexity of MMs, making it appropriate for examining how cognitive styles and attention performance interact with competing demands and expectations from above and below.

MMs are also known for several notions, such as boundary spanners (Pappas & Wooldridge, 2007), linking pins (Balogun, 2003), and change agents (Mantere, 2008a). MMs who hold boundary-spanner positions mediate between an organisation's internal and external worlds, influencing organisational strategy (S. W. Floyd & Wooldridge, 1997). They tie the various sources of knowledge to help the organisation stay relevant (Glaser et al., 2015) and enact higher-divergence activities (Pappas & Wooldridge, 2007). This position also enables them to learn through trial and error from their peers (Glaser et al., 2015). Even MMs who are not formally boundary spanners can contribute to divergent activities by sharing new information, influencing upper management's attention, and connecting actions and ideas (Dutton & Ashford, 1993).

The notion of linking pins explains the role of MMs in strategy formation by influencing upward (upper management) and downward (subordinates) positions (Floyd & Wooldridge, 1992). They translate the objectives of the upper manager into operational execution (Yang et al., 2012) and leverage the organisation's vertical and horizontal social networks (Ahearne et al., 2014). In other words, because they manage the flow of information across the entire organisation, this confirms their role as strategic actors (Jansen Van Rensburg et al., 2014;

Sayyadi & Provitera, 2022). Thus, they influence the initiation of new ideas and enhance or weaken the quality of implementation (Raes et al., 2011). Furthermore, as they regularly engage with the external environment, they are recognised as change agents by supporting subordinates in learning and adapting to change, ensuring that operational actions are consistent with the deliberate strategy, and promoting divergent thinking and change-oriented behaviour (Floyd & Wooldridge, 1997). MMs establish the rationale behind the changes by reducing uncertainty and communicating the benefits to their subordinates (Buick et al., 2018). However, this valuable position can be constrained by a role conflict (Gatenby et al., 2015).

Although they have limited authority in strategic functions, middle managers (MMs) contribute to organisational strategic outcomes (Barasa et al., 2016). They are tasked with executing senior management decisions, developing and implementing strategic initiatives, and interpreting and implementing plans that lead to unique innovations and enhance the success of organisational strategy (Austin et al., 2020; Luo et al., 2020). Although senior management controls strategic decision-making (Rouleau & Balogun, 2011), middle managers' (MMs') understanding of day-to-day operations is essential for achieving important goals (Abusafrita, 2015; Greenberg et al., 2021). Additionally, MMs serve as a link for communication and coordination between upper management and lower-level employees, aligning them with organisational goals and promoting the organisation's identity and values among employees (Brexendorf & Kernstock, 2007; de Jong et al., 2021). Thus, organisational success is facilitated through MMs who have an in-depth understanding of operations, are involved in strategy development and implementation, and can adapt senior management strategies (Ahearne et al., 2014; Engle et al., 2017; Floyd & Wooldridge, 1997). This duality of influence and constraint positions MMs as a centre of strategic responsiveness and organisational

resilience, which demands a high level of behavioural flexibility, attention control, and cognitive adaptability.

2.1.2 MM's Strategic Roles and Cognitive Demands

A *role* is defined as the expected and patterned actions of a function within a particular situation (Biddle, 1986; Floyd & Lane, 2000). In the context of strategy, MMs fulfil a role in the strategy process by elevating ideas to the top management level after synthesising comprehensive input from both internal and external organisations, and these ideas serve as the seeds of organisational decision-making at the executive level (Dasgupta, 2015). For instance, MMs may identify opportunities and market trends and present them to top management, potentially winning the competition and developing a sustainable competitive advantage (Stathakopoulos et al., 2019). These roles demand access to information and the ability to interpret, filter, and reframe it under uncertainty, emphasising the cognitive load embedded in strategic contributions. The cognitive influence of MMs in strategic decision-making, which involves formulating options based on real-time operational complexity, contributes to organisational performance (Floyd & Wooldridge, 1992).

However, there are disparities between traditional and contemporary theories in how they define middle managers in the strategy context. A traditional perspective portrays MMs as implementers of strategy, responsible for translating top management's directives into operational routines (Westley, 1990). In this view, their role requires compliance and coordination rather than independent cognitive contribution. Contemporary perspectives, however, recognise MMs as agents in the strategy process, who have access to day-to-day operations and moderate and align the internal and external; thus, enabling them to interpret signals, synthesise diverse inputs, and shape strategy (Floyd & Wooldridge, 1992, 1994, 1997).

This shift reframes strategy as an emergent, distributed phenomenon rather than a top-down process driven by senior executives. Through continuous decision streams, MMs contribute to organisational adaptation and survival, prevent inertia, and respond to external changes (Floyd & Wooldridge, 1997).

From this standpoint, MMs' strategic influence derives from their structural position and from their cognitive capacity to integrate top-down intent with bottom-up realities (Balogun, 2003; Huy et al., 2002). To fulfil these expectations, place demands on MMs' attentional resources, as they must continuously prioritise, filter, and integrate information across competing strategic and operational cues. To achieve maximum performance in such cognitively demanding roles, MMs require organisational conditions that support efficient information flow and reduce unnecessary cognitive strain. Structurally, flatter hierarchies facilitate faster upward communication and reduce delays in the transmission of strategic issues (Carney, 2004). Positionally, occupying central network roles enhances their access to critical information flows and increases exposure to diverse but relevant signals (Floyd & Wooldridge, 2017). Relationally, trust and cooperation within teams support clearer communication and coordination, reducing ambiguity in role expectations and the attentional burden, thereby strengthening their execution of strategic goals (Marginson, 2002). These enabling conditions empowered MMs to sustain focused attention and manage strategic complexity while enacting multiple strategic roles.

Combining cognition and behaviour, MMs enact four strategic roles in both upward and downward influences (Floyd & Wooldridge, 1992; Rydland, 2020), as shown in Figure 1 below. In the context of upward influence, MMs fulfil the roles of synthesising information and championing initiatives. This influence is achieved by capturing top management's

attention. However, the intensity of this role varies among MMs due to differences in their ability to synthesise in-depth, comprehensive information, as well as unequal knowledge quality across functions and divisions. Meanwhile, in the context of downward influence, two roles can be identified: facilitating adaptability and implementing deliberate strategy. The purpose of this influence is to ensure internal alignment within the company, aligning with the predetermined strategy. While upward influence requires creativity and variety, downward influence emphasises consistency, uniformity, and efficiency (Floyd & Wooldridge, 1997; Rydland, 2020). Consequently, middle managers enact these four roles by engaging in divergent and integrative thinking, paying attention to change, and converting this into a strategy-making process (Floyd & Wooldridge, 1997; Rydland, 2020). Each role is situated within a matrix of cognition and influence, combining upward and downward action with divergent and integrative thinking.

Figure 1 *A Typology of Middle Management Involvement in Strategy*

		Behavioral	
		Upward	Downward
Cognitive	Divergent	Championing Alternatives	Facilitating Adaptability
	Integrative	Synthesizing Information	Implementing Deliberate Strategy

Note. Adapted from “Middle Management Involvement in Strategy and Its Association with Strategic Type: A Research Note”, Floyd, S. W., & Wooldridge, B. (1992), *Strategic Management Journal*, 13(S1), p. 154. Copyright 1992 by John Wiley & Sons.

Furthermore, empirical findings indicate an intercorrelation among the four roles, particularly between Championing, Synthesising, and Implementing, suggesting that these roles reinforce one another (Floyd & Wooldridge, 1992). This interplay implies sustained demands on managers' attentional allocation, as MMs must shift between divergent thinking, analytical integration, emotional regulation and procedural discipline (Dimes & De Villiers, 2023; Huy, 2011; Marzi et al., 2023; Sniashko, 2019). Thus, each role entails distinct cognitive demands, suggesting that a manager's cognitive style influences role preference, challenges, and vulnerability to role conflict (an issue explored further in subchapter 2.2).

2.1.2.1 Synthesising Information

The first role of MMs in gaining attention from top management through upward influence is the *synthesising* role. They incorporate information as the main element in forming knowledge within the organisation (Birken & Currie, 2021). MMs gather information, inform the organisation about competitors' and suppliers' activities, evaluate changes in the external environment, and report the challenges and opportunities faced by the organisation (Floyd & Lane, 2000; Floyd & Wooldridge, 1994, 1997). The opportunity to be located between strategic and operational levels, enabling them to act as boundary spanners, can merge diverse perspectives into coherent outcomes, underlining the importance of integrative thinking (Beck & Plowman, 2009). They interpret and evaluate ambiguous data and information as contextual input (Floyd & Wooldridge, 1992). This role requires strong cognitive filtering and structured information processing, the kind associated with an analytic cognitive style (Hodgkinson & Sadler-Smith, 2018).

This role is also known as 'convergent strategic roles', supporting the firm in strategic entrepreneurship through the 'advantage-seeking pathway', where MMs identify and assess the

external threats and opportunities alongside internal strengths and weaknesses of the organisation (Wang et al., 2021). Synthesising becomes critical in turbulent environments, where fragmented inputs and dynamic conditions must be integrated to support coherent strategic direction. In such contexts, MMs act as knowledge brokers, linking operational insight with strategic vision (Boutcher et al., 2022), using systems thinking and cognitive adaptability to interpret emerging trends and translate them into actionable knowledge.

By mediating between strategic objectives and operations, MMs influence strategic decision-making and formulation, such as shaping subordinates' expectations (Kroon & Reif, 2023) and reconsidering alternative strategies that reflect the realities of the business environment (Boyer et al., 2022). Solid, meaningful information from MMs helps maintain a balance between the rationality of strategic planning and the emergence of new initiatives (Lavarada et al., 2010). Furthermore, the diverse yet coherent information from operations, employees, and the market allows MMs to advise the upper management on strategic direction and anticipate potential challenges (Salih & Doll, 2013). Such integrative work demands analytical problem-solving, as MMs must continuously evaluate competing inputs and refine strategy execution in response to real-time operational constraints.

In an uncertain and changing world, information must be delivered promptly and appropriately managed to present knowledge. It is essential for improving operational efficiency and effectiveness, elevating decision quality, and addressing uncertainty (Nonaka, 1990). MMs are actors who can gather this information rapidly, build a comprehensive picture, and refine their intuition and judgment (Mangaliso, 1995). As 'uncertainty absorbers', MMs interpret complex issues and rely on their reputation to provide robust insight to upper management (Mantere, 2008a). However, their information-processing role is vulnerable to emotional and structural

pressures; fear of negative evaluation or punishment can distort upward communication, leading MMs to avoid sharing bad news, frame information overly positively, or selectively attend to cues that seem safe to report (Vuori & Huy, 2016). Such fear-based attention bias compromises decision quality and creates organisational blind spots, especially when MMs feel pressured to communicate only good news. To overcome this, MMs rely on a facilitating role by fostering psychological safety, trust, and open dialogue within teams to communicate complex information (Ashton-Sayers & Brunetto, 2024). The interplay between the synthesising and facilitating roles demonstrates the interconnectedness among the four strategic roles in mitigating barriers within the organisations.

The role of synthesising information is a key element in the formation of knowledge within an organisation; in this respect, MMs are often regarded as true knowledge engineers, excelling in synthesising tacit into explicit knowledge forms and disseminating this insight in various formats throughout the entire organisation (Nonaka, 1990). This role aligns with the world outside the organisation, which constantly provides information and dictates changes (Floyd & Wooldridge, 1997; Nonaka, 1990); thus, internal knowledge has become irrelevant in solving new challenges. Subsequently, to gain essential knowledge, middle managers must become learning-oriented to develop the organisation's core capabilities (Floyd & Wooldridge, 1994; Psychogios et al., 2008). However, the significance of this role potentially diminishes due to some factors such as the flatter organisational structure that communication can be directly between hierarchical levels, the advancements of technology that replace the need to translate the strategic goals, and the changing needs of the middle managers themselves who require to have work-life balance and seeking alternative way of working and career could influence the dynamic of this role (Tarakci et al., 2023).

2.1.2.2 Championing Alternatives

The second role in upward influence is *championing new alternatives*. This role involves presenting various strategic options (Wooldridge & Floyd, 1990), justifying and determining new programmes, evaluating new proposals, identifying new opportunities, and presenting the outcomes to top management (Floyd & Wooldridge, 1997). Through persistent and persuasive communication (Jansen Van Rensburg et al., 2014), MMs influence and secure the attention of top management by highlighting important issues, presenting a form of divergent thinking, and making a political process to some extent (Morikuni et al., 2019), such as by exploring new strategies that could redefine the content of strategy and shape the top managers' strategic thinking (Floyd & Wooldridge, 1997). This role requires a forward-looking orientation, persuasive communication, and the ability to align frontline insights with broader strategic objectives. Because championing introduces innovation and emergent initiatives into formal conversations, it requires divergent thinking, the ability to navigate politically sensitive issues within hierarchies, and the capacity for external scanning and contextual sense-making, capacities associated with holistic cognitive styles, which emphasise long-term implications and broader system interactions (Hodgkinson & Sadler-Smith, 2018).

Champion initiatives are part of the entrepreneurial process, leveraging attention-based structures and policy windows (receiving input from internal and external organisations) after identifying and evaluating opportunities. MMs then sell the initiatives to upper management (Ren & Guo, 2011). The involvement of middle managers in presenting initiatives benefits the company (Heyden et al., 2017; Mustafa et al., 2023). These initiatives lead to the development of new business models or innovations (Sukoco et al., 2022). When initiatives emerge from the operational level, influenced by middle managers (Floyd & Wooldridge, 1997; Wooldridge et al., 2008), the organisation benefits from a more supportive workforce (Heyden et al., 2017).

Thus, this role involves cognitively demanding tasks, such as environmental scanning, persuasive framing, and aligning bottom-up ideas with top-down priorities.

Because the Championing role relies on divergent thinking, it requires social connectivity, both internally and externally, to generate new ideas for long-term organisational success (Elliott et al., 2020). Interactions with diverse actors generate novel insights, strategic issues, and opportunities (Pappas & Wooldridge, 2007). Interaction with upper managers also reduces barriers to testing ideas, promoting innovation through feedback and iteration (Chen et al., 2017). Moreover, MMs have a more comprehensive picture of the internal and external environments (Rydland, 2020) and disseminate strategic agendas across teams (Dutton & Ashford, 1993), ensuring that initiatives are understood and acted upon. Therefore, they need to be involved and allowed to play a leading role in certain parts, especially in strategic conversations (Westley, 1990).

Despite the importance of this role, several challenges exist. MMs need to balance new and old strategies (Morikuni et al., 2019) while avoiding cognitive overload by moderating all information, especially from excessive external sources that can be an obstacle to the creative process within an organisation (Chen et al., 2017). Resistance of top management to disruptive innovations, such as adopting new technologies, further complicates this role (Paavola, 2017). These pressures can heighten role conflict as MMs navigate conflicting demands from above and below. However, MMs can eliminate this tension through ‘liminal framing’ by linking divergent ideas into a convergent project and synergising them to avoid divergent ideas from top management's framing (Putra et al., 2023). By framing novel proposals within existing strategic discourse, MMs increase their likelihood of acceptance while mitigating political and reputational risks.

2.1.2.3 Facilitating Adaptability

On downward influence, MMs' *facilitating* role is to help with adaptability by temper regulations, investing in time and creating a conducive environment for experiments, locating and providing resources for trial projects, and encouraging informal discussion and sharing with the subordinates and colleagues (Floyd & Lane, 2000; S. W. Floyd & Wooldridge, 1997), while maintaining alignment with current strategy (Elliott et al., 2020). Most of these activities were a shade away from the upper management, allowing MMs to act autonomously in preparing teams for change (Floyd & Wooldridge, 1992). Positioned as intermediary actors, MMs enable readiness for change by managing and influencing team members to maintain internal stability in transition (Austin et al., 2020). However, although this role is among the most challenging, MMs are often perceived as a source of resistance to change due to role overload and competing demands (Wang et al., 2024). However, from the opposite perspective, the optimistic view holds that middle managers play an essential role (Balogun, 2003) and are important actors in difficult situations (Psychogios et al., 2008).

Facilitating adaptability is key to the transition between strategising and implementing (Vaz et al., 2022). Subordinates rely on MMs to promote adaptability, divergent thinking, communication of rationale, objectives, and the process of change (Austin et al., 2020). Divergent thinking becomes a key to strategic behaviour during change by accommodating strategies that suit the changing market and context, which may be overlooked during the planning stage (Vaz et al., 2022). This role is also essential in maintaining continuous adaptation, as modern organisations are under pressure from radical change, which causes anxiety and instability and obstructs the learning process in problem-solving and overcoming challenges (Huy et al., 2002). These tasks align with a holistic cognitive style, which values

contextual interpretation, navigating the dynamic environment, and enablers of adaptability within the broader strategic frame (Hodgkinson & Sadler-Smith, 2018; Wei et al., 2024)

Organisational change often leads to fear among team members, and the reengineering process faces resistance or even fails without the support of middle managers in adopting a new way of working (Floyd & Wooldridge, 1994). In this situation, middle managers are the key actors and a central locus for emotional management and building trust (Huy et al., 2002; Zhang & Zhu, 2008). Since sharing emotions can facilitate adaptation (Huy, 2011), MMs foster emotional balance at the subordinate level by offering more opportunities and time for employees to engage with them than senior leaders do (Huy et al., 2002). To support this transition, MMs must employ strategies to reconcile competing expectations and sustain attention under pressure. These strategies include reinterpreting change as an opportunity rather than a threat and considering multiple stakeholder viewpoints (Birken et al., 2012). Such mechanisms help them to regulate their own response and guide their team through uncertainty. In other words, as change agents, they help employees respond positively to change by encouraging adaptation and maintaining consistency. This flexibility allows them to communicate purpose, demonstrate the need for change and offer practical guidance (Herzig & Jimmieson, 2006). Thus, rather than being resistant to change, MMs contribute to shaping adaptive and emotionally stable work environments.

Despite its strategic importance, the facilitating role presents challenges. MMs often face friction when upper management's expectations diverge from the realities of operational implementation (Vaz et al., 2022). These tensions require them to navigate vertical misalignment while simultaneously managing subordinates' resistance to change (Morikuni et al., 2019). Such resistance may stem from fear or a lack of clarity, demanding that MMs foster

a psychologically safe space for experimentation and organisational learning efforts (Pappas & Wooldridge, 2007). Moreover, the pressure to accommodate divergent expectations while maintaining strategic alignment positions MMs in a position of negotiation (Gatenby et al., 2015). These negotiations are further strained when MMs are excluded from formal strategic conversations, leading to frustration and a reduced sense of agency (Vaz et al., 2022). This dynamic produces latent role conflict and heightens cognitive loads, as MMs are required to juggle upward and downward demands while regulating emotions, sustaining attention, and reconfiguring interpersonal strategies (Rydland, 2020). Thus, facilitating adaptability is critical to resilience while exposing MMs to attentional fragmentation and stress-related decision fatigue, showing the complex behavioural and cognitive burdens of this role.

2.1.2.4 Implementing Deliberate Strategy

The second role of downward influence is to implement a deliberate strategy. MMs enact *implementing* roles known as classical administrative duties (Psychogios et al., 2008), such as conducting surveillance activities, translating interpretative goals into action plans and daily individual objectives, and selling top management initiatives to team members (Boyet & Currie, 2004; Hermkens et al., 2020). Such actions ensure that all the operational activities align with the deliberate strategy in maintaining the organisation's performance (Floyd & Wooldridge, 1992, 1997). The way MMs interpret organisational programmes influences their strategic thinking and behavioural responses (Vaz et al., 2022; Weiser et al., 2020). In this capacity, they play a critical role in converging multiple perspectives and knowledge into unified, coordinated actions (Dimes & De Villiers, 2023). The implementation role is a cognitive-procedural role that requires precision, monitoring, and self-discipline. Yet, the challenge lies in balancing strategic accuracy with frontline flexibility, especially when plans

collide with practical obstacles or evolving team conditions. This role thus requires an analytical cognitive orientation focused on stability and structure.

Furthermore, MMs are known as 'implementers', the actors with the most influence on organisational performance, as they anticipate potential barriers and manage different strategic programmes (Dasgupta, 2015). However, in becoming a successful implementer, MM's involvement began in the early stages of strategic formation through championing and aligning ideas with upper management's intentions and the business environment (Boyett & Currie, 2004). To enact this role, MMs must exercise intellectual attention and a comprehensive understanding of the organisation's direction (Psychogios et al., 2008). Strategy implementation is also defined as the "communication, interpretation, adoption, and enactment of strategic plans" (Noble, 1999, p. 120). Thus, this stage involves the unique role of interpersonal sensitivity and cognitive factors in determining actions. As a result, communication is a critical enabler that supports interpretation, alignment and action across organisational levels.

Implementing the strategy depends on executing predefined plans and also on how the strategy is formed and internalised by MMs. There are three conditions are essential for successful implementation (Vilà & Canales, 2008): firstly, clear articulation of strategic priorities and consensus on critical issues; second, the flexibility of implementation for middle managers when changes are required rather than sticking to a rigid plan; third, the personal meaning attributed to the strategy by those enacting it than what is written in the documents. When strategy is perceived as formal documentation, it risks disconnection from day-to-day operations. When strategy is treated merely as a formal plan, its risks are disconnected from day-to-day operations. Instead, the planning process should foster internal ownership and

cognitive alignment to enable MMs to manoeuvre within the strategic framework rather than rigidly adhere to plans (Vilà & Canales, 2008). This capacity to integrate strategic clarity with situational responsiveness reflects a strong cognitive fit, particularly for MMs with an analytic style who excel in goal segmentation, procedural monitoring, and consistency under constraints (Salih & Doll, 2013; Sukoco et al., 2022)

Despite these conditions, implementation remains challenging because continuous improvement (Hermkens et al., 2020), effective communication, ownership, and commitment are key challenges to ensuring that the strategic objectives are executed across the entire organisation (Atkinson, 2006). Alignment between upper and middle management is therefore essential to promote positive dynamics for strategy implementation (Vaz et al., 2022); however, unclear sense-giving from the upper level can be a hindrance and lead to resistance (Weiser et al., 2020). In other words, misunderstandings and miscommunications make strategy implementation difficult between middle managers (MMs) and top management. Beyond clear communication, establishing consensus among organisational members can reduce uncertainty and maintain a coherent strategic direction. When managers fail to develop a shared perception, it leads to a lack of consensus (Floyd & Lane, 2000; Noble, 1999; Vilà & Canales, 2008). Consequently, the subordinate actions will not align with the organisation's objectives (Noble, 1999), undermining performance. Conversely, when communication channels are open and an integrated perspective is achieved, it brings stability and improves strategy execution and organisational performance (Dasgupta, 2015).

The enactment of four strategic roles requires MMs to continuously shift between divergent and integrative thinking, as well as between upward strategic communication and downward operational execution. They are particularly vulnerable to role conflict stemming from their

multifunctional responsibilities. Such conflict is not a peripheral dysfunction but an inherent feature of their structural positioning and behavioural expectations. The tensions stem from psychological and structural frictions as they attempt to align strategic intent with practical realities. Consequently, role conflict emerges as a salient feature of MMs, necessitating an exploration of its sources, manifestations, and implications for managerial cognition and performance.

2.2 Role Conflict in Managerial Roles

2.2.1 Managers and Role Conflict

Role conflict at management levels arises from the intersection of individual perceptions, organisational expectations, and the cognitive demands of strategic roles (S. W. Floyd & Lane, 2000). The foundations of role theory provide a lens for understanding this dynamic. Role theory explains how individuals behave in predictable and differentiated ways depending on their positions and expectations attached to them (Biddle, 1986). Organisational role theory (ORT), in particular, extends these principles to formal, task-oriented, and hierarchical systems, where roles are deliberately structured to achieve organisational goals (Biddle, 1986; Wickham & Parker, 2007). ORT assumes that organisations function as social entities composed of interdependent role sets, in which employees accept roles that embody organisational norms, responsibilities, and expectations. However, while this theoretical assumption emphasises structural clarity, empirical evidence shows that managerial responsibilities are complex and ambiguous, influenced by emergent expectations rather than stable role instructions (Greven et al., 2023; Z. Li et al., 2024; Tarakci et al., 2023). When organisational expectations become incompatible, people experience role conflict (Rizzo et al., 1970). Such incompatibility arises within single or multiple stakeholders, or across different roles (Karkkola et al., 2019). Further, as they occupy multiple roles and face conflicting

expectations, when these expectations clash, they experience psychological strain and adopt coping strategies to manage competing demands (Biddle, 1986; Pandey & Kumar, 1997).

For MMs, these conflicting pressures stem from the dual loyalty to upper management and responsiveness to subordinates. MMs are required to enact multiple, sometimes incompatible roles, leading to situations where expectations within or across roles diverge (Anglin et al., 2022). This creates cognitive and behavioural challenges in performing each role effectively (Abraham, 1997; Anicich & Hirsh, 2017; Pandey & Kumar, 1997). Role conflict, as the concurrent appearance of incompatible expectations, disrupts individual well-being and organisational effectiveness if unresolved (Hecht, 2001). However, the experience of role conflict is not merely structural; it is also cognitive in nature. Cognitive styles influence how MMs process, prioritise and reconcile conflicting expectations (Liu et al., 2008). For example, a manager with an analytic style may emphasise consistency and logic and struggle with strategic ambiguity or ambiguity in stakeholder demands. If unresolved, these tensions can undermine managerial effectiveness and disrupt organisational performance (Flores, 2016), suggesting a need to integrate an explicit cognitive perspective into role conflict theory to explain why managers facing the same pressures react differently.

A practical manifestation of this can be seen in the implementing role, where MMs must navigate conflicting expectations between strategic directives and operational realities, thereby bridging ambiguity while maintaining operational alignment (Kras et al., 2017). As a result, MMs must reconsider divergent demands from upper management, cross-functional peers, and frontline management, all of whom may have different expectations, timelines, and definitions of success (Floyd & Lane, 2000; Wooldridge et al., 2008). This pressure to ‘chunk down’ strategy while maintaining a commitment to top-level demands requires a high level of

attention control, task prioritisation, and emotional regulation. If a manager's cognitive style does not support these demands, such as when a divergent thinker is required to impose rigid routines, the likelihood of experiencing role conflict intensifies (D. Leonard & Straus, 1997; Sukoco et al., 2022; Torrence & Connelly, 2019; Wadlinger & Isaacowitz, 2011). These empirical insights challenge the assumption that role conflict arises solely from organisational design and instead show that individual differences may be a driver.

Role conflict produces psychological and performance-related consequences. Several studies found that these consequences include stress on goal achievement, threats to personal reputation or job security, and reduced capacity for exploratory and experimental activities, which would hinder organisational innovation (Floyd & Lane, 2000; M. Glaser et al., 2013; Han et al., 2014; Kras et al., 2017; Shin et al., 2020). Role conflict has been associated with diminished psychological well-being, including symptoms of anxiety, burnout, and depressive affect (Glaser & Beehr, 2005). However, most of this literature found the negative effect, overlooking the contextual and cognitive factors that can inform whether conflict becomes destructive or constructive. At the same time, cognitive styles have been identified as a predictor of success and influence an individual to behave in a work environment, such as setting priorities and interests, processing or judging information and data, and problem-solving (Allinson et al., 2001; Armstrong & Priola, 2001; J. Hayes & Allinson, 1994; Kozhevnikov, 2007; Qi & Armstrong, 2019). Although several studies have found that cognitive styles can help manage role conflict within organisations by fostering trust and coherence in expectations (Liu et al., 2008), empirical research on middle management is limited, raising questions about the generalisability of these findings to more complex, multi-level managerial contexts. Furthermore, existing studies often treat cognitive style and role conflict as independent constructs, overlooking the possibility that cognitive preferences can

shape perceptions of conflict. Research shows that understanding cognitive and conflict management styles can enhance self-awareness and facilitate effective change management, particularly when dealing with diverse teams and improving organisational effectiveness (Gillilan, 2016). Examining individual differences is important rather than assuming that role conflict has the same impact across employees. Therefore, the ability to recognise and leverage MMs' cognitive styles is essential in minimising the effects of role conflict and supporting adaptive managerial behaviour (Allinson et al., 2001; D. Leonard & Straus, 1997; Qi & Armstrong, 2019).

MMs often experience inter-role conflict (arising from different expectations across multiple roles) and intra-role conflict (from inconsistent demands within a single role) (Floyd & Lane, 2000; Y. Han et al., 2014; Mohr & Puck, 2007; Pandey & Kumar, 1997). Their position requires them to navigate complex organisational systems, bridging vertical directives and horizontal collaboration across units (Glaser et al., 2015). Compounding these challenges, MMs must deal with complex information and interactions that can lead to contradictions in interpretations and perceptions (Floyd & Lane, 2000; Leonard & Straus, 1997). Such contradictions are often triggered by work overload, juggling priorities, inconsistency, or differences of expectation from stakeholders (Balogun, 2003; Currie & Procter, 2005; Glaser et al., 2015; Han et al., 2014; Herzig & Jimmieson, 2006), particularly in the strategic change context (Balogun & Johnson, 2004; Floyd & Lane, 2000; Huy et al., 2002; Kras et al., 2017; Rydland, 2020; Wooldridge et al., 2008). A lack of a shared mental model, differing perceptions, and different ways of interpreting environmental stimuli further exacerbate role conflict among MMs (Wooldridge et al., 2008), underscoring the need to view conflicts through the lens of cognitive styles rather than personal shortcomings (Leonard & Straus, 1997).

While role conflict is often framed as a performance risk, it can also serve a functional purpose. Under certain conditions, a moderate level of role conflict can promote productive cognitive tension, thereby enhancing alertness, motivation, innovation, and focus (Leonard & Straus, 1997). Tension from conflicting expectations can stimulate reflective processing, prompt clarification-seeking behaviours, and lead to more thoughtful decision-making (Gilboa et al., 2008; M. F. Peterson et al., 1995). Neurocognitive evidence suggests that conflict activates attentional control mechanisms, enabling individuals to enhance attentional performance and leading to improved accuracy and speed (Kanske & Kotz, 2011; Walsh et al., 2011). Therefore, when MMs are cognitively equipped with flexibility or strategic experience, conflicting demands sharpen strategic problem-solving and improve adaptive behaviour (Sukoco et al., 2022). Holistic managers use ambiguity as a creative opportunity, while analytic managers transform competing expectations into procedural clarity (Epstein et al., 1996; Zhang et al., 2022). However, this functional potential depends on the cognitive-role fit and requires support structures that enable autonomy and meaning-making (Allinson et al., 2001; Qi & Armstrong, 2019; Runco & Acar, 2012).

In conclusion, role conflict can arise from structural tension and cognitive misalignment between a manager's strategic roles and their preferred way of thinking. Grounded in organisational role theory, this thesis views role conflict as a dynamic feature of managerial responsibility, situated at the intersection of formal role expectations, informal norms, and individual cognition. While some level of role conflict is inevitable in middle management, its influence may depend on how cognitive style aligns with the demands of strategic enactment. Yet, the relationship between cognitive styles, strategic roles, and attention performance remains underexplored in current literature. This thesis addresses that gap by exploring a cognitive-behavioural model in which role conflict acts as a mediator between cognition and

performance. Rather than viewing role conflict as a passive outcome of managerial challenges, it is positioned as a central mechanism through which MMs' cognitive styles influence the enactment of strategic roles and the capacity to regulate attention. The following section develops this framework by analysing the cognitive nature of the four strategic roles performed by MMs.

2.2.2 Cognitive Nature of the Four Strategic Roles

The four strategic roles of the MMs (synthesising, championing, facilitating, and implementing) differ in behavioural execution and cognitive demands (Floyd & Lane, 2000; Floyd & Wooldridge, 1992; Mantere, 2008). Each role has distinct patterns of information processing, decision strategies, and attentional control. These cognitive demands further complicate the landscape of role conflict, as MMs are often required to shift between roles that draw upon opposing cognitive resources. When a manager's cognitive style aligns with the mental demands of a given role (cognitive-role fit), it improves task efficiency, reduces psychological conflict, and enhances role clarity (Armstrong & Priola, 2001; Priola et al., 2004). Conversely, misalignment between cognitive preferences and role expectations leads to role conflict, hindering performance and increasing cognitive fatigue. Still, organisations allocate roles based on structural rather than cognitive compatibility, showing a mismatch between the theoretical ideal of fit and the reality of managerial role assignment.

MMs with an analytic cognitive style, characterised by integrative thinking, structured reasoning, sequential problem-solving, and focused attention, are compatible with the demands of synthesising and implementing roles (Giancola et al., 2022; Hongdizi et al., 2023). The synthesising role requires systematic filtering and rational integration of information to transform diverse inputs into coherent strategic insights (Dirsmith & Lewis, 1982; M. Wang et

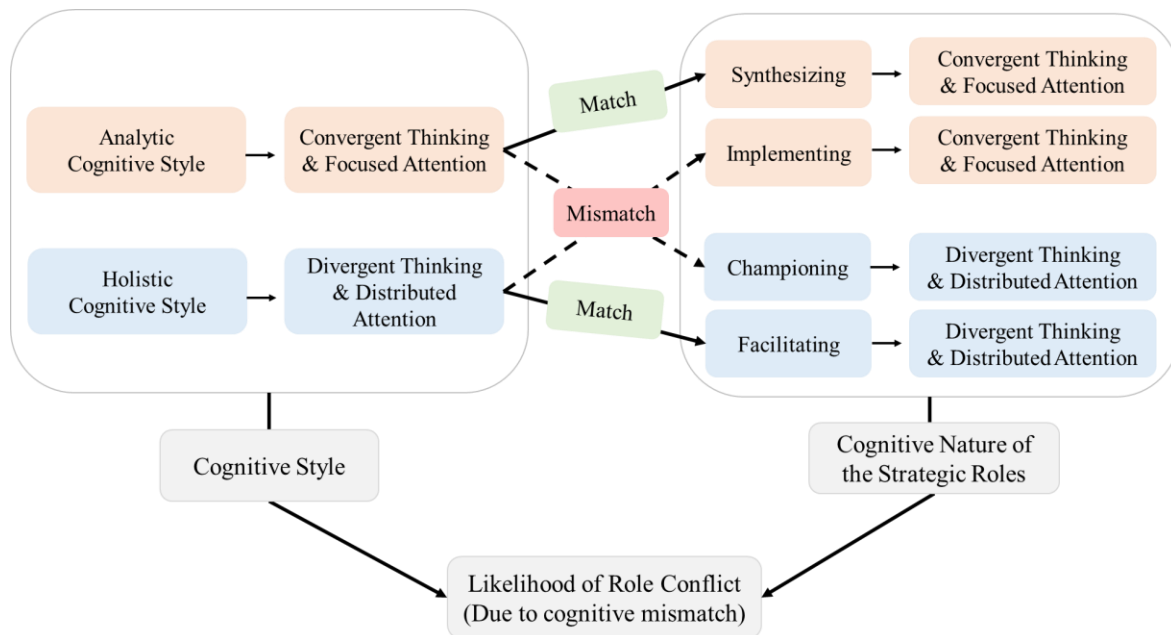
al., 2023). Similarly, the implementation role requires procedural discipline, goal monitoring, and consistent execution, functions that benefit from an analytic orientation toward clarity, precision, and consistency (Dimes & De Villiers, 2023; Gökce & Arıcıoğlu, 2023). In contrast, the holistic cognitive style favours divergent thinking, contextual sensitivity, and distributed attention; these qualities align with the demands of championing and facilitating roles (Maheshwari et al., 2022; Paek et al., 2021; Priola et al., 2004). Championing involves advocating for emergent strategies, framing persuasive narratives, and engaging with various stakeholders; tasks that rely on creative ideation, political awareness, and strategic sense-giving (Armstrong & Priola, 2001; Marzi et al., 2023; Putra et al., 2023; Rouleau & Balogun, 2011). Facilitating adaptability requires emotional awareness, tolerance for ambiguity, and relational coordination, capabilities aligned with holistic, relational, and open-system cognition (Huy et al., 2002; Vaz et al., 2022; Xu et al., 2023).

Cognitive-role misalignment can be understood as a form of cognitive misfit, referring to the incompatibility between an individual's preferred way of processing information and the cognitive demands of the work (Chan, 1996; Englert et al., 2023). In middle management, this alignment is likely because managers are required to shift between multiple strategic roles with different cognitive demands. As previous studies indicate, MMs simultaneously enact interdependent roles and respond to changing organisational priorities (Floyd & Wooldridge, 1992, 1994), which increases the likelihood that their cognitive preferences will not always align with role requirements. From a cognitive fit perspective, misfit occurs when an individual's cognitive style does not match the task or role demands, which has been associated with increased cognitive load, reduced efficiency, and psychological strain (Chan, 1996; Sun & Billsberry, 2025). In organisational settings, misfit has been linked to role tension and stress, as individuals experience difficulty reconciling what is required of them with how they process

and respond to information (Yidana, 2025). Integrating this perspective with organisational role theory, role conflict arises when individuals face incompatible expectations (Rizzo et al., 1970). This thesis argues that cognitive misfit is a mechanism through which those incompatibilities are experienced. Specifically, when role expectations require forms of cognition that are incongruent with a manager's cognitive style, the expectations become more difficult to interpret, prioritise, and enact, therefore increasing the likelihood of experiencing role conflict. Cognitive-role misalignment is conceptualised as emerging from interaction between external role incompatibility and internal cognitive misfit. This reframing traditional understanding of role conflict by positioning it beyond a structural or interpersonal phenomenon, but also as cognitive process shaped by misalignment between cognitive style and role demands.

This thesis proposes that role conflict arises when the cognitive demands of strategic roles align with or misalign with MMs' cognitive styles. Figure 2 illustrates the two sources of cognitive conflict: (1) the MMs' cognitive style (analytic vs holistic) and (2) the cognitive nature of each strategic role (convergent thinking & focused attention vs divergent thinking & distributed attention). When these domains are mismatched, for example, when MMs with an analytic style who enact a role that demands divergent and flexible cognition, cognitive overload is likely to occur, increasing the risk of role conflict. From this perspective, role conflict is understood as a cognitively mediated outcome, shaped by the interplay between cognitive style, attention processes, and the cognitive demands of strategic role enactment.

Figure 2 *The Cognitive Sources of Role Conflict in Middle Management*



Note. The mismatch between MMs’ cognitive styles and their strategic roles influences the likelihood of experiencing role conflict. Role conflict is expected to emerge when there is a cognitive mismatch between information-processing styles and role-specific attentional demands.

In conclusion, existing research has established that role conflict among MMs arises from structural ambiguity and the competing expectations inherent to their intermediary position. However, literature remains divided on whether role conflict should be understood as a dysfunctional stressor or as a potential adaptive condition that can stimulate strategic behaviour. What remains missing is an account of how role conflict is shaped by the cognitive demands of different strategic roles and by individual differences in how MMs process and prioritise information. By analysing how the four strategic roles require different cognitive approaches, it becomes clear that cognitive-role alignment or misalignment shapes the experience of role conflict; therefore, role conflict might not be explained by structure alone. This insight serves as the foundation for the next section, which explores cognitive styles in detail as they relate to how MMs process information, enact their roles, and navigate the cognitive challenges inherent in strategic management.

2.3 Cognitive Styles

Cognitive styles refer to an individual's preferred way of processing information, encompassing consistent methods of perceiving, thinking, problem-solving, learning, and decision-making (Kozhevnikov, 2007). These preferences are relatively stable over time and across various situations, shaping how individuals approach and respond to their environment (Qi & Armstrong, 2019). Unlike intelligence, cognitive styles do not represent judgments of ability but rather reflect an individual's preferred approach to applying those abilities in practice, indicating how they tend to solve problems rather than how well they solve them (Sternberg & Grigorenko, 1997). Therefore, cognitive styles offer an approach for explaining behavioural differences and understanding why capable people approach tasks in distinct ways.

Cognitive style also differs from personality, which reflects behavioural tendencies and affective dispositions; cognitive style operates specifically at the level of information processing, explaining how people attend to, interpret, and respond to information (Kozhevnikov, 2007). However, cognitive styles are not completely separate from personality or intelligence; they develop through the interaction of individuals' abilities, personal tendencies, and their environment (Kozhevnikov et al., 2014). Therefore, cognitive style functions as a coordinating mechanism, organising how cognitive resources are deployed in response to situational demands and emphasising 'how' tasks are approached rather than 'what' individuals are capable of achieving (Peterson et al., 2005; Volkova & Rusalov, 2016). Although research has identified areas of overlap between cognitive and personality traits, conceptualised as cognitive-personality complexes (Volkova & Rusalov, 2016), cognitive style provides incremental explanatory value by capturing patterns of information processing that might not be fully accounted for by personality or intelligence alone (Peterson et al., 2005).

Furthermore, this distinction makes cognitive style valuable in organisational settings, where success often depends on the alignment between managers' cognitive preferences and their roles rather than on cognitive capacity (Saini et al., 2022). Compared to situational factors and general intelligence, cognitive style better predicts individual success in specific tasks or contexts, particularly those involving complex or ambiguous situations (Kozhevnikov, 2007). For instance, in managerial settings, the way managers scan environments, integrate information, or resolve conflict reflects their dominant cognitive styles (Qi & Armstrong, 2019); thus, it influences how they make decisions, adapt to complexity, and perform their roles within dynamic organisational systems. Recognising cognitive style as a determinant of how MMs process information is therefore essential to understanding the roots of role conflict and differences in attention performance explored in this thesis.

There are three cognitive processes to explain the differences in cognitive style dimensions: perception (acquisition of information), memory (storage of information), and thought (utilisation of information) (Miller, 1987). Various cognitive style dimensions have been proposed to categorise individual approaches to processing information, including field dependence versus independence, reflection versus impulsivity, and holistic versus analytic thinking (Lacko et al., 2023; Riding & Cheema, 1991; Witkin et al., 1977). For example, field-independent people rely more on internal cues and require less social interaction, while field-dependent people rely more on external cues and require more social interaction (Chen & Hwang, 2022). These distinctions exhibit consistent tendencies in how individuals attend to, interpret, and respond to stimuli. Numerous studies have linked cognitive style to academic success, communication styles, job performance, and leadership style (Hayes & Allinson,

1998; L. Zhang & Sternberg, 2005), establishing it as a psychological construct that is stable attribute over time, with behavioural relevance (Evans et al., 2010).

Among the various cognitive style dimensions, the analytic-holistic distinction has emerged for understanding individual differences in information processing. Although known to account for cultural differences (Nisbett et al., 2001), this distinction has also been applied to intra-cultural differences among individuals (Choi et al., 2007) to explain how people perceive complexity, navigate uncertainty, and balance competing role demands (Na et al., 2020; Santos et al., 2021). The differences between these styles are significant (Nisbett et al., 2001) in cognitive domains, such as attention between objects and their fields, causal reasoning, changes in perception, and interpretation of contradictions (Bakhchina et al., 2021). Despite its potential, this dimension remains underexplored in organisational behaviour research, particularly in the strategic roles of middle managers, where attention, information filtering, and context sensitivity are central cognitive tasks (Kitayama et al., 2003; Lanivich et al., 2023).

The prominence of the analytic-holistic distinction is supported by the broader development of cognitive style research, with the ‘unifying trend’ aimed at organising diverse dimensions into coherent frameworks. Early efforts synthesise various dimensions and converge on the analytic-holistic distinction as a central organising principle (C. W. Allinson & Hayes, 1996; Riding & Cheema, 1991), where analytic processing is associated with structured, sequential, and rule-based reasoning, while holistic processing is more global, integrative, and context-sensitive. In the context of this study, the analytic-holistic dimension is suited for three reasons. First, it captures differences in attention allocation, information integration, and contextual sensitivity, which are important to managerial work involving ambiguity and competing demands (Na et al., 2020; Nisbett et al., 2001). Second, this dimension differs from other

constructs, such as intuition or cognitive ability, which might explain decision-making or cognitive capability (Hodgkinson & Sadler-Smith, 2018). This dimension explains how people process information across situations. Therefore, relevant for examining how middle managers enact a strategic role that requires shifting between different cognitive demands. Third, the analytic-holistic distinction operates across and within culture (Choi et al., 2007), supporting its use as a framework for analysing individual difference information processing.

Nevertheless, the structure of this dimension remains subject to debate. While early research conceptualised analytic and holistic styles as opposite ends of a single continuum, more recent studies suggest that they may function as independent yet coexisting modes of information processing (Allinson & Hayes, 1996; Yang et al., 2019). Similarly, dual-process perspectives distinguish between analytical (rational) and experiential (intuitive) systems, suggesting that multiple cognitive processes may operate simultaneously (Epstein et al., 1996; Hodgkinson & Sadler-Smith, 2018). While individuals shift between these styles depending on context or task, one style remains dominant, shaping consistent cognitive preferences over time (Yu et al., 2021). Thus, this thesis adopts the analytic-holistic dimension as a robust, conceptually and practically applicable framework, while recognising that cognitive style is inherently multidimensional. The use of this dimension as a pragmatic methodological to enable clear interpretation of the relationship between cognitive style, strategic role demands, attention, and role conflict.

Further, the analytic cognitive style relies on verbal-symbolic processing and systematic reasoning, storing information in rule-based formats (Miller, 1987). Individuals with this style prefer structured environments and depend on intrinsic reinforcement, working better at structured tasks that require logical ability and routines, impersonal analysis, and excel in

strategic planning and detail-oriented execution (Hayes & Allinson, 1994; Miller, 1987; Riding & Cheema, 1991; Sadler-Smith, 1998). Attentional patterns in an analytic style tend to focus on the main object (Boduroglu et al., 2009; Kuwabara & Smith, 2012; Masuda & Nisbett, 2001; Stokes, 2018) and to compare objects and consider their parts (Beyler & Schmeck, 1992; Wang et al., 2020). Moreover, this type works effectively at the implementation level of an innovation process (Sadler-Smith & Badger, 1998), improving existing procedures and focusing on productivity and efficiency (Hayes & Allinson, 1998). However, they require low-disruption environments with clear and structured methods (Sadler-Smith & Badger, 1998).

The holistic cognitive style, on the other hand, relies on image-based processing, depends on extrinsic reinforcement, and prefers low-structure environments that facilitate collaborative learning and interpersonal relations (Hayes & Allinson, 1994; Miller, 1987; Riding & Cheema, 1991; Sadler-Smith & Badger, 1998). Holistic attention is broader, encompassing the connection between the main object and its environment (Boduroglu et al., 2009; Kuwabara & Smith, 2012; Nisbett et al., 2001; Stokes, 2018), as well as its surrounding context (Beyler & Schmeck, 1992; Wang et al., 2020). The holistic type works effectively at the initiation level of innovation (Sadler-Smith & Badger, 1998); they challenge the existing point of view, see opportunities to do things differently, and present alternatives (Hayes & Allinson, 1998). However, they thrive in a less coercive work environment, less rigid social relations, and the opportunity to try new ideas (Sadler-Smith & Badger, 1998).

As previously mentioned, differences in cognitive style are associated with individual distinctions in visual attention (Alotaibi et al., 2017). Cross-cultural studies consistently show that people from Western individualistic cultures, where analytic thinking predominates, focus more on salient objects; while people from Eastern collectivistic cultures, where holistic

thinking is more prevalent, attend more to contextual information and the relationship between objects (Nisbett et al., 2001; Peng-Li et al., 2020). For example, people from Western backgrounds exhibit slower learning rates in visual search tasks that require integrating global features or contextual cues, whereas those from Eastern backgrounds demonstrate faster learning rates in such tasks (Chua et al., 2022). These findings indicate that attentional distribution and perceptual efficiency are shaped by cognitive styles, with analytic individuals excelling in focused attention and holistic style individuals performing better when tasks demand contextual integration (Alotaibi et al., 2017; Boduroglu et al., 2009; Kitayama et al., 2003).

2.4 Cognitive Styles in Middle Managers' Strategic Roles

Cognitive style influences how MMs manage their tasks and people within the organisation (Cools & Broeck, 2007). While formal role expectations exist, the interpretation and performance of these roles are filtered through MMs' cognitive preferences. Research has shown that cognitive style affects how managers perceive information, prioritise tasks, and navigate ambiguity (Armstrong & Priola, 2001; Cools & Broeck, 2007; Kozhevnikov, 2007). Therefore, MMs shape strategic behaviour through their cognitive processes, not solely due to structural demands. As they operate across vertical and horizontal domains, MMs apply their cognitive lens to interpret roles and determine how they synthesise information, champion ideas, facilitate adaptability, or implement strategy. This section argues that strategic role performance reflects a dynamic interplay between cognitive role fit and cognitive role challenge, which, when misaligned, leads to role conflict.

Several studies have linked cognitive styles to various managerial outcomes such as strategic performance, change capabilities, leadership behaviour, and dynamic capabilities (Armstrong

et al., 2012; Krupskyi & Grynko, 2018; Sukoco et al., 2022). Cognitive styles also relate to job analysis, career preferences, training development, conflict management (Armstrong et al., 2012; J. Hayes & Allinson, 1994; Helfat & Peteraf, 2015; Saha & Sharma, 2020), decision-making (Hough & ogilvie, 2005; Leonard et al., 2005; Netz et al., 2020), owner-manager issue (Brigham et al., 2007; Sadler-Smith, 2004), marketing (Tarka, 2019; White et al., 2003), and manager's job level (Kageyama & Sugiura, 2017). These findings highlight the significance of cognitive style in management contexts and underscore its impact on how managers perform their roles.

However, most existing studies have employed self-report assessments such as MBTI, KAI, and CoSI (Aritzeta et al., 2005; Armstrong et al., 2012; González-Loureiro & Vlačić, 2016). While widely used, these tools focus on preferences and self-perceptions, providing limited insight into experiential or performance-based aspects of cognition. To address this, the present study employs two attention-related tasks, the Framed-Line Tasks (FLT), which objectively assesses analytic versus holistic cognitive style through visual processing tendencies, and a visual search task, which measures attentional performance under conditions of cognitive load. Both tasks and experiments aim to reduce self-report bias, which is difficult for participants to control and reflects managerial cognitive challenges (Cheng et al., 2022). The FLT captures differences in how people allocate their attention to focal objects versus contextual information as aspects of analytic and holistic processing, with neuroimaging evidence showing that these differences are associated with activity across multiple brain regions involved in attention and cognitive control (Teng et al., 2024). This task has been validated across cultures and within a culture, demonstrating differences in attention and perception between analytic and holistic styles (Bakhchina et al., 2021; Kitayama et al., 2003; Masuda & Nisbett, 2001; Mavritsaki et al., 2025).

Cognitive style influences general managerial behaviour and the enactment of specific managers' strategic roles. Analytic-style managers, who favour linear reasoning, rule-based logic, and focused attention, are more effective at synthesising and implementing roles. The synthesising role requires integrating and organising complex information, a task well-suited to the structured reasoning of an analytic style. Likewise, implementing a strategy requires procedural execution, goal monitoring, and consistency, all of which are strengths of an analytic style. In contrast, holistic style managers exhibit contextual reasoning, integrative thinking, and relational awareness, making them suited to championing and facilitating roles. Championing strategic initiatives involves exerting upward influence, framing visions, and navigating political dynamics, thereby demanding persuasive communication. Facilitating adaptability requires emotional intelligence, social cohesion, and responsiveness to change, all of which align with a holistic cognitive style (Huy et al., 2002; Nisbett et al., 2001; Priola et al., 2004). MMs with a holistic style tend to embrace ambiguity, synthesise diverse viewpoints, and manage interpersonal complexity effectively.

While cognitive-role alignment can enhance effectiveness, misalignment can lead to role conflict. For instance, MMs with an analytic style struggle to champion roles that require tolerance for ambiguity and political agility. Likewise, holistic managers experience discomfort in roles demanding procedural precision and standardisation, such as implementation. These mismatches generate psychological challenges, reduce performance, and lead to attentional fatigue. Prior research has rarely addressed this cognitive-role mismatch as a source of role conflict (Tullett, 1995; Wooldridge et al., 2008), despite its explanatory value for understanding variation in MMs' effectiveness. This thesis proposes that mismatches

represent a cognitive mechanism underlying role conflict, thereby connecting MMs' cognitive profiles with structural and behavioural outcomes.

The relationship between cognitive style and the strategic role enactment, therefore, is not merely a matter of preference but of compatibility. Each of the four strategic roles places distinct cognitive and attentional demands on MMs, which interact with their cognitive style to shape how they perceive, interpret, and enact these responsibilities (Leonard & Straus, 1997). These differences mean that managers tend to gravitate towards roles that align with their dominant cognitive tendencies and attentional capacities. However, when managers assume roles that do not fit their cognitive style, resulting role conflict can deplete their attentional resources and reduce attentional performance over time. This misalignment also affects decision-making processes, where cognitive style shapes how managers collect, process, and evaluate information (Cools & Broeck, 2008; Gallen, 1997). As such, differences in strategic role enactment show differences in how information is processed, not just what is decided, but how the decision is made. Understanding the implications of these styles is essential, as they guide MMs' choices and the direction of organisational action (Cools & van den Broeck, 2008). Thus, this thesis argues that cognitive style serves as a mechanism linking managerial cognition, role enactment, and conflict.

2.5 Attention

As humans live in a complex environment consisting of scattered, overwhelming information to process simultaneously (Giesbrecht et al., 2014; Ungerleider, 2000), the attention mechanism serves as a cognitive function to cope with this complexity. Attention governs how individuals select, prioritise, and regulate information to allocate their limited cognitive resources efficiently in dynamic environments (Slagter et al., 2007). Attention is defined as the

process by which the brain controls, processes, and selects information during perception, excluding irrelevant aspects and focusing on a specific goal (Carrasco, 2011; Chun et al., 2011; Knudsen, 2007; Lamberts & Goldstone, 2005; Tsotsos et al., 2018). It serves as a gateway to higher-order mental operations, including perception, learning, working memory, and decision-making. In particular, visual attention enables individuals to respond to their environment by selectively attending to meaningful visual cues while suppressing distractions, given limited cognitive resources (Carrasco, 2011; Evans et al., 2011; Wolfe, 1994, 2000). This process is not passive; instead, it enables humans to function as an active, goal-directed system that modulates neural activity in response to internal intentions and external task demands (Chun & Wolfe, 2001; Desimone & Duncan, 1995).

The conceptualisation of attention has transformed over the past 150 years, evolving from mechanistic to network-based frameworks in cognitive neuroscience. Early pioneers such as Hermann von Helmholtz and William James (Carrasco, 2011) laid the groundwork for modern theories by distinguishing between covert and overt attention; they proposed that attention could be directed either to the sensory world (external) or to mental representations (internal). This foundation leads to empirical investigations into selective attention investigations, such as Cherry (1953) and Broadbent (1958), which revealed the brain's capacity to filter simultaneous inputs; and further refined by Treisman (1964), who proposed the attenuation model, argues that unattended stimuli are not completely blocked but are instead weakened (Joyce & Hrin, 2015). Further conceptual advancement came from Kahneman's capacity model (1973), which reframed attention as a limited but flexibly allocated resource, distributed according to effort, arousal, and motivation (Aston-Jones et al., 1999; Bruya & Tang, 2018). This model integrated attention as a resource-governed element of cognitive control. Neuroimaging evidence confirmed that greater attentional effort corresponds with heightened

neural activation and increased metabolic demand, particularly in the prefrontal cortex (PFC) and anterior cingulate cortex (ACC), regions involved in executive regulation (Bruya & Tang, 2018).

Attention is studied in diverse forms and functions which operate across perceptual, cognitive, and neural levels. There are three main types attention based on distinct allocation mechanisms (Carrasco, 2011): (1) Spatial attention, refers to focusing cognitive resources on particular regions of visual field and deployed in two modes: overt spatial attention, where eye movement aligns with attentional focus, and covert attention, where attention shifts without corresponding eye movements; (2) Feature-based attention, enhances sensitivity to specific attributes such as colour, orientation, or motion to the entire visual field, independent of spatial location; (3) object-based attention, which involves selecting objects for enhanced processing based on their perceptual structure. Attention is also classified according to its target, distinguishing external from internal attention. External attention involves the selection of sensory input from the environment, such as features, objects, spatial locations, time points, and sensory modalities; in contrast, internal attention operates on internal mental representation, including working memory, task rules, long-term memories, or response selection (Chun et al., 2011). Both internal and external attention are regulated by two controls, endogenous attention (top-down, goal-driven, and sustained), and exogenous attention (bottom-up, stimulus-driven, and transient) (Rueda et al., 2023; Wolfe, 2020a). These mechanisms help explain how individuals switch between internal goals and external distractions during tasks and decision-making, enabling them to respond to environmental change efficiently (Katsuki & Constantinidis, 2014).

Other classifications focus on executive attention, which governs higher-order cognitive functions in maintaining task goals, resolving conflicts, and regulating competing streams of information. Executive function is defined as a meta-level control system responsible for coordinating various attentional processes in response to complex cognitive demands, with the prefrontal cortex as a key structure for its performance (Funahashi & Andreau, 2013). It involves three capacities: selective attention (the ability to focus on relevant stimuli while suppressing distractions), focus attention (which sustains mental engagement on a singular goal or task for an extended duration), and divided attention (the capability to process multiple inputs or tasks simultaneously although with reduced efficiency) (Talalay, 2024; Yang et al., 2019). Together, these classifications show that attention is an interrelated system with specific demands and operates at different levels of cognitive function. While visual attention helps filter perceptual input, internal and external attention organise processing priorities, and executive attention ensures that cognitive control is sustained in dynamic and unpredictable contexts (Funahashi & Andreau, 2013). Thus, attention provides a robust conceptual foundation for examining how individuals perform under pressure and manage complexity.

Although attention is often discussed in a single mechanism, research shows that it operates through two interconnected systems: bottom-up, stimulus-driven attention, and top-down, goal-directed attention (Buschman & Kastner, 2015; Corbetta & Shulman, 2002). Bottom-up attention is triggered automatically by salient cues in the environment, such as emails, unexpected disruptions, or sudden changes in performance indicators, which pull people's focus regardless of their intentions (Iaria et al., 2008). In contrast, top-down attention is guided by goals, expectations, and prior knowledge; thus, people can prioritise long-term objectives, interpret signals and maintain focus despite competing demands. These mechanisms are shaped by executive functions, the higher-order cognitive processes that govern the dynamic of human

cognition and action (Miyake & Friedman, 2012). These functions regulate how attention is deployed by inhibiting irrelevant information, updating task goals in working memory, and promoting flexibility to shift between competing tasks or perspectives in dynamic environments. The operation of these attentional and executive systems is evident in visual search tasks that examine how people locate relevant targets among distracting stimuli (Treisman & Gelade, 1980; Wolfe, 2020a). Visual search distinguishes between single-feature search (easy), which allows rapid detection of obvious cues, and conjunction search (difficult), which requires slower, serial processing to suppress the multiple irrelevant attributes (Mavritsaki et al., 2025). Performance on these tasks reflects the efficiency of attention under cognitive load and shows how bottom-up salience, top-down intentions, and executive control interact to guide attentional selection. In managerial contexts, role conflict often emerges when bottom-up pressures disrupt top-down strategic focus, leading to cognitive strain as MMs attempt to reconcile immediate operational demands with broader strategic expectations (Nikolla et al., 2018). Cognitive style further influences how MMs balance these two systems: analytic managers tend to prioritise top-down structure and selective focus, whereas holistic managers remain more receptive to a broader range of contextual cues. These dynamics show that managerial attention is not simply a matter of capacity but reflects ongoing competition between reactive and intentional processing systems.

Neuroscience research has revealed the complex architecture of brain regions that regulate and allocate attention. There are three distinct but interdependent attentional systems, such as alerting, orienting, and executive control, which are supported by specific neural structures, including the prefrontal cortex (PFC), anterior cingulate cortex (ACC), and posterior parietal cortex (PPC), which regulate goal, conflict monitoring, and perceptual prioritisation (Petersen & Posner, 2012). The dorsolateral prefrontal cortex (dlPFC) plays a role in maintaining task-

relevant information, filtering irrelevant inputs, and sustaining attention over time (Martinez-Trujillo, 2022; Tsotsos et al., 2018). The ACC functions as a conflict-monitoring hub, initiating control adjustments when attentional resources are under strain (Joyce & Hrin, 2015; Rueda et al., 2023). Meanwhile, the posterior parietal cortex is implicated in shifting attentional focus and in modulating perceptual identification (Chun et al., 2011; Petersen & Posner, 2012). All these regions form two interacting neural systems that are associated with voluntary, goal-directed (top-down) attention and involuntary, stimulus-driven (bottom-up) attention (Katsuki & Constantinidis, 2014; Long & Kuhl, 2018; Wolfe, 2020a).

Functional MRI and EEG research further demonstrates that internal and external environmental factors influence attentional control. Environmental noise can interfere with selective attention, particularly during top-down processing, reduce accuracy, and make tasks harder to learn (Lavie, 2005). EEG results show increased prefrontal activity, reflecting the need for greater effort to block distractions (Clayton et al., 2015). Although environmental noise, such as stress, fatigue, and ageing, can weaken attentional control and reduce the brain's ability to maintain focus on the goal (Sänger & Wascher, 2011), individuals can develop coping strategies over time (Szalma & Hancock, 2011). Furthermore, demanding activities such as task switching or extended decision-making, the brain allocates attention resources to sustain performance (Braver, 2012). However, this flexibility operates within the limits of the brain's processing capacity; therefore, attention prioritises and filters the most relevant stimuli (Buschman & Kastner, 2015). Thus, under conditions of sustained mental effort (such as the demands of middle managers' roles), they will experience reduced control, slower attention shifting, and a decline in performance (Carrasco, 2011).

The performance of attentional mechanisms is also shaped by individual cognitive styles, particularly in complex environments. An individual with an analytic style focuses on the most crucial target, employs structured, rule-based reasoning, and executes tasks accordingly, which suits environments that demand sequential precision; meanwhile, a holistic individual tends to scan broader stimuli, attend to contextual relations, and integrate multiple information, which is advantageous in complex or ambiguous situations (Alotaibi et al., 2017; Boduroglu et al., 2009; Chang et al., 2019; Kuwabara & Smith, 2012; Mavritsaki et al., 2025; Stokes, 2018). These preferences influence how people manage competing inputs under cognitive load: the holistic type maintains broader situational awareness, while the analytic type excels at focused execution. A person with complex roles needs the ability to shift mental set in response to changing demands (cognitive flexibility) to support attention performance in fluid situations (Braem & Egner, 2018; Uddin, 2021). Thus, attentional performance can be defined as a capability shaped by personal style and situational requirements.

2.6 Attention Performance in Managerial Contexts

2.6.1 Cognitive Control and Selective Attention in Strategic Roles

Attention is recognised as a strategic cognitive resource in organisational settings. The concept of managerial attention explains how decision-makers filter, prioritise, and allocate cognitive effort across competing stimuli to support organisational outcomes (Lo et al., 2020; van Knippenberg et al., 2015). Visual attention supports this process by enabling managers to scan their environment to identify key cues while suppressing irrelevant inputs (Hendler et al., 2023; Orquin et al., 2021). This mechanism is facilitated by cues that guide selective attention toward the relevant tasks, allowing the prioritisation of targets while ignoring noise (Dietze & Poth, 2024). In strategic contexts, attention helps to improve alignment with organisational goals by ensuring that relevant information is prioritised in decision-making (Chen et al., 2016). These

attentional processes also align with organisational theories such as the Attention-Based View (ABV), which proposes that the distribution of managerial attention determines strategic priorities (Brielmaier & Friesl, 2023; Ocasio, 1997).

The study of attention in management integrates psychological and organisational perspectives to explain how attention in the organisational context (Cho & Hambrick, 2006; Ocasio, 2011). From a psychological perspective, selective attention is viewed as a result of simultaneous limitations in processing a large amount of information (Mavritsaki et al., 2006). Meanwhile, the organisational perspective highlights selective attention as a top-down attentional process driven by goals, task demands, and prior cognitive orientation (Ocasio, 1997, 2011). This understanding is particularly relevant for managers who are tasked with responding to an abundance of strategic information that exceeds their cognitive processing capacity (Nadkarni & Barr, 2008). Given the limitations of the human brain, attention helps managers selectively filter incoming constraints and environmental pressures within a given timeframe (Kaur, 2022; Nadkarni & Barr, 2008; Ocasio, 1997). This focus contributes to the success of organisational strategy by enabling managers to focus on strategic issues, thereby shaping the organisation's strategic direction (Laureiro-Martínez et al., 2015).

Managers' ability to attend to relevant information and suppress irrelevant information underpins the achievement of strategic outcomes (Ocasio, 1993, 1997; Ocasio & Joseph, 2018). Organisational adaptability also depends on attentional direction; managers who attend to external cues are more likely to facilitate timely responses to environmental shifts (Nadkarni & Barr, 2008). Moreover, managerial attention serves as a key to organisational learning. It determines what information to absorb, internalise, and disseminate across the organisation (Andrews & Delahaye, 2000; Dutton & Jackson, 1987; Yaniv, 2011). In doing so, attention

guides the acquisition and integration of new knowledge, enhancing the organisation's learning capability and strategic agility (Ocasio, 1997). Thus, managers who effectively utilise selective attention are more likely to learn from their experiences, adapt to changes, and improve their performance over time (Argote & Miron-Spektor, 2011).

In day-to-day decision-making, selective attention enhances problem-solving, task prioritisation, and adaptation under pressure (Dux et al., 2006; Fenske & Raymond, 2006; Forgas & George, 2001; Zhang et al., 2023). It also influences how managers respond to complexity, absorb ambiguous information, and act upon environmental stimuli (Ocasio, 1997; Walsh, 1995). As "information workers", managers filter stimuli to avoid cognitive overload, ensuring attention is allocated to the most strategic concerns (McCall & Kaplan, 1985, as cited in Walsh, 1995). These attentional patterns serve as the internal control system for managing dynamic organisational complexity, achieving alignment with evolving goals, and avoiding the wasteful allocation of resources to irrelevant matters (Helfat & Peteraf, 2015; Zeng & Mackay, 2018). By directing attention toward salient problems and filtering distractions, managers enhance their ability to make sense of complex situations and maintain strategic coherence. Moreover, managerial attention serves as a mediator, integrating experience and knowledge into the decision-making process, thereby linking cognition, learning, and performance (Cho & Hambrick, 2006; Ocasio, 1997).

Furthermore, in managerial roles, the ability to scan for and search out new information that others might overlook is crucial. Here, the cognitive style of a manager is instrumental in enhancing attention, allowing them to remain alert to relevant environmental cues and to synthesise information for strategic decision-making among various alternatives effectively (Sasseti et al., 2022). How managers prioritise and focus their attention, influenced by their

unique cognitive styles, is referred to as manager-fixed effects, leading to various strategic decisions, especially in challenging environments (Dessein & Santos, 2021). Selective attention becomes even more crucial during crises, as managers must rapidly identify critical issues and efficiently manage resources (D'Aveni & MacMillan, 1990). Consequently, further exploration is important to understand the influence of managerial attention on the enactment of strategic roles, especially given the scattered information managers receive in their formal and informal positions within the organisation. Understanding these aspects can provide valuable insights into organisational dynamics and information management strategies (Cho & Hambrick, 2006; Ocasio, 2011).

Building on this individual-level perspective, the ABV extends these mechanisms to the organisational level, positioning attention as the bottleneck of organisational cognition and the key determinant of strategic action (Brielmaier & Friesl, 2023). The ABV (Ocasio, 1997) conceptualises organisational behaviour and strategy as the result of how decision-makers allocate their limited attention. Since managers cannot process all available information, attention becomes the scarce cognitive resource that determines which issues are noticed and which actions are taken. Within this framework, strategy is viewed as a pattern of organisational attention, characterised by how decision-makers devote time, energy and cognitive effort to specific problems, opportunities, and actions (Joseph et al., 2024). Ocasio (Ocasio, 1997) defines attention as “the noticing, encoding, interpreting, and focusing of time and effort by organisational decision-makers on both (a) issues: the available repertoire of categories for making sense of the environment, and (b) answers: the available repertoire of action alternatives”. In this sense, the ABV provides a cognitive foundation for understanding how managerial attention is channelled, distributed, and maintained within an organisation, linking managers’ cognition to collective strategic outcomes.

Attention in this view is not passive but an intentional and sustained allocation of cognitive resources that guides problem-solving, sensemaking, and decision-making (Pereira Bueno et al., 2024). It requires a continuous focus on selected environmental cues, the repertoire of possible actions, and relationships among them. The notion extends to the concept of attentional engagement, as the combination of attentional focus (how deeply managers attend to specific issues) and attentional consistency (how steady that focus is maintained over time); and the degree of focus and consistency determines whether managerial action yields coherent strategic direction or fragmented responses to change (Mack et al., 2024). The differences in attentional processes, therefore, explain variations in managers' strategic responsiveness, innovation, and learning capacity. At the organisational level, firm-level behaviour emerges as the aggregation of managers' attention (Brielmaier & Friesl, 2023); thus, this capability determines individual decision outcomes and broader behavioural dynamics of the firm.

The Attention-Based View also provides a lens for interpreting role conflict as competition for scarce attentional resources in organisations. When MMs face conflicting expectations from stakeholders, each demand acts as an attentional stimulus (Anicich & Hirsh, 2017). Managers are forced to make trade-offs between focusing on specific directives or maintaining broader situation awareness (Eklund & Mannor, 2021). Such cognitive trade-offs explain how role conflict drains attention, leading to declines in decision quality and strategic coherence. By integrating ABV, this thesis conceptualises role conflict as a cognitive-behavioural manifestation of attentional competition, in which limited cognitive resources are continuously redistributed across complex demands.

2.6.2 Metrics of Managers' Attention Performance

To assess attentional effectiveness in managerial contexts, objective performance indicators derived from visual search experiments, namely reaction time (RT), set-size slope, and attention index. Each metric offers a distinct yet complementary aspect of attention performance, particularly under cognitive load and task complexity, such as strategic roles. Reaction time reflects how quickly attention is deployed to the identified target; the slope indicates the efficiency of selective attention as the set size increases; and the attention index integrates these measures to represent overall attention efficiency across different task conditions (Michaelsen et al., 2024; Wolfe & Horowitz, 2017).

In visual search experiments, reaction time is recorded for single-feature (simple tasks) and conjunction search (complex tasks) conditions. The mean RTs for each condition provide a baseline measure of attentional speed and control, with shorter RTs indicating more efficient target detection (Wolfe, 1994). However, because RTs can be influenced by increased visual complexity, the set-size slope is a more sensitive indicator of attentional efficiency. The slope represents the rate at which RT increases with larger set sizes, as the number of distractors grows. A shallower slope indicates better selective attention, indicating managers' ability to maintain performance even as visual complexity increases; in contrast, a steeper slope reflects higher attentional cost, indicating that the participant's processing speed slows rapidly with increasing task difficulty (Palmer et al., 2011; Wolfe et al., 2011). Further, the measures employed the attention index derived from slope values in both search conditions. This index captures the difference in attentional control between simple and complex search tasks (Wolfe & Horowitz, 2017), providing an indicator of how efficiently managers sustain attention across varying levels of cognitive demand. A higher index score indicates greater difficulty

maintaining efficiency, while a lower index score reflects stronger adaptability and attentional control under complex conditions.

Together, these metrics provide a multi-dimensional understanding of attention performance. Unlike self-reported measures of attentional traits or personality-based reports, visual search experiments provide objective, real-time indicators of cognitive processing under task challenges, which are particularly relevant in managerial scenarios where quick and accurate decisions are needed amidst competing priorities (Shirey et al., 2013; Tabesh & Vera, 2020). Thus, these measures enable a comprehensive analysis of how cognitive styles affect attention during strategic information processing, providing a robust basis for evaluating attentional performance in high-demand managerial contexts. Consequently, they enable a comprehensive analysis of attention performance, facilitating the exploration of cognitive pathways linking attention, strategic role enactment, and role conflict.

2.7 Conceptual Integration: Cognitive Styles, Attention Performance, and Roots of Role Conflict

2.7.1 Synthesising Theoretical Insights from Literature

Cognitive style shapes how MMS allocate attention in demanding environments. Analytic style tends to focus on sequential, rule-based processing, enabling them to maintain concentration on target stimuli and suppress distractions (Alotaibi et al., 2017; Evans et al., 2010). In contrast, the holistic style exhibits broader, integrative attention, often prioritising relational cues and contextual patterns (Boduroglu et al., 2009; Kuwabara & Smith, 2012). These distinct tendencies influence how managers scan, process, and respond to strategic information, making cognitive style a determinant of attentional preference and effectiveness.

Each of the four strategic roles carries specific cognitive and attentional demands that align with different cognitive styles, either analytic or holistic (Alotaibi et al., 2017; Floyd & Wooldridge, 1997; Giancola et al., 2022; Hongdizi et al., 2023). The Synthesising and Implementing roles are cognitively suited to analytical managers, who excel at structured, rule-based processing and at focusing their attention. The Synthesising role requires systematic comparison across hierarchical and functional domains, demanding deep analysis and integration of complex information streams. Similarly, the Implementing role involves sustained attention, goal-oriented precision, and the suppression of irrelevant details, all of which align with the strengths of the analytic style. In contrast, the Championing and Facilitating roles require attentional breadth, interpersonal sensitivity, and contextual awareness, attributes commonly found in a holistic cognitive style. The Championing role, which entails scanning the environment and persuading stakeholders, requires MMs to shift attention and respond to subtle social cues. The Facilitating role involves coordinating across departments, resolving conflicts, and maintaining group cohesion, relying on distributed attention and relational thinking in the face of uncertainty.

When cognitive style aligns with the attention demands of strategic roles, managers and managers (MMs) experience cognitive fit, resulting in improved performance and reduced psychological strain (Cools & Broeck, 2007). This alignment enables managers to process information in ways that match their internal preferences, supporting sustained attention and enhancing role satisfaction (Armstrong et al., 2012). However, mismatches, such as assigning a holistic person to repetitive implementation tasks or an analytical manager to high-ambiguity tasks, can cause attentional overload and cognitive dissonance (Leshem, 2016). These misalignments serve as precursors to role conflict, as the friction between internal cognitive preferences and external demands of the roles.

Although strategic roles are structurally defined, their enactment is cognitively mediated. When an MM's cognitive style is incompatible with the attention requirements of a role, a misfit occurs. This attentional misalignment can disrupt concentration, reduce motivation, and lead to internal tension, manifesting as ambiguity, psychological challenges, or conflict. For example, a holistic manager repeatedly assigned to structured, detail-heavy implementation tasks can experience escalating frustration or disengagement over time due to persistent misalignment (Epstein et al., 1996; Leshem, 2016). In such cases, role conflict arises from the incompatibility between how managers prefer to process information and the way their role requires them to focus their attention (Dux et al., 2006; Wooldridge et al., 2008). This tension can diminish role satisfaction and hinder attention performance by overloading cognitive resources and reducing the manager's ability to maintain sustained focus (Dux et al., 2006). Moreover, sustained or excessive stress from unresolved conflict can deplete attentional resources, impair cognitive control, and hinder task execution (Leshem, 2016; Plessow et al., 2011). Thus, certain cognitive styles may struggle to maintain focus during conflict or in tasks requiring frequent attention switching, intensifying the risk of attentional overload and exacerbating the negative effects of role misfit (Leshem, 2016; Park et al., 2024)

Therefore, this thesis conceptualises role conflict as a cognitive-behavioural phenomenon rooted in the dynamic interplay between internal cognitive-attention profiles and the structural demands of managerial roles. Managers interpret and enact their roles through the lens of these profiles (Leonard & Straus, 1997), and when a mismatch occurs, it undermines role effectiveness and disrupts individual well-being and attention efficiency. This reframing of role conflict as an outcome of attentional misfit rather than organisational dysfunction serves as a bridge into the next section. The following chapter synthesises these perspectives to develop a

conceptual framework that integrates cognitive style, strategic role enactment, attentional fit, and role conflict into the unified explanatory model.

2.7.2 Rationale for an Integrated Framework

The preceding sections have outlined the complex and interdependent nature of MMs' strategic role enactment, cognitive styles, role conflict, and attention performance. Section 2.1 established that MMs occupy an ambiguous position within organisations, simultaneously facing upward and downward demands that require them to enact four distinct strategic roles: synthesising information, championing alternatives, facilitating adaptability, and implementing deliberate strategy. These roles differ in their objectives and cognitive demands. Section 2.2 extended this by examining role conflict as a challenge in managerial work, particularly when cognitive capacities are misaligned with role expectations. It argued that role conflict is not merely structural but a cognitive-behavioural outcome shaped by the degree of congruence between a manager's information processing style and the role's behavioural demands. Misalignment, particularly in high-challenge or ambiguous strategic roles, can lead to psychological challenges, resulting in decreased role clarity, reduced performance, and emotional exhaustion.

Building on this, sections 2.3 and 2.4 examined cognitive styles (analytic-holistic styles) as stable yet malleable individual differences that shape how MMs perceive, process, and respond to information. MMs with analytic styles tend to favour structured, rule-based approaches and excel in implementing and synthesising roles, whereas those with holistic styles are better suited for facilitating and championing roles due to their integrative, contextual orientation. However, these cognitive predispositions also set boundaries on attentional capacity and behavioural fit, especially when MMs are assigned roles that mismatch their cognitive style.

Sections 2.5 and 2.6 deepened the discussion by situating attention as a core managerial function. Attention is a prerequisite for decision-making and strategic action, and it is also a limited cognitive resource that is shaped by an individual's style and task demands. The efficiency of selective attention, measured through objective indicators such as mean reaction time, set-size slope, and attention index, depends on how well MMs' cognitive styles align with the attentional demands of the strategic role they enact. A misfit between cognitive style and role expectations can overburden attentional control, leading to slower responses, steeper slopes, and a decline in attentional performance over time. Together, these insights from the literature suggest that cognitive style, role enactment, attention performance, and role conflict are not independent constructs but rather part of a dynamic system. Cognitive styles shape how MMs enact roles and manage attention; when there is a mismatch between internal style and external role demands, role conflict arises, impacting behaviour and cognition. These interdependencies suggest the need for an integrated framework that captures the cognitive-behavioural mechanisms linking these constructs within the reality of strategic managerial work.

The synthesis of the literature on MMs' strategic roles, cognitive styles, role conflict, and attention performance indicates the absence of a unified theoretical model that explains how these elements interact in practice. Existing research tends to examine these constructs in isolation, focusing either on cognitive style as a stable individual difference, strategic role enactment as a behavioural output, attention as a cognitive process, or role conflict as an organisational challenge. What remains underexplored is how these components operate interdependently within the dual influences (upward and downward) of the strategic roles and the cognitively demanding environment in which MMs operate. First, while cognitive style is widely recognised as a determinant of how managers approach problem-solving and decision-

making, prior studies rarely address its role in shaping the behavioural enactment of strategy. Strategic roles, such as synthesising, championing, facilitating, and implementing, require different levels and forms of cognitive abilities, yet these are underexplored. The absence of such linkage limits our understanding of why some managers excel in certain strategic functions but struggle in others, despite having similar organisational resources or positional authority.

Second, role conflict has traditionally been treated as a contextual or structural issue arising from ambiguous expectations or conflicting demands. However, the literature reviewed suggests that role conflict also stems from an internal mismatch between cognitive preferences and the role's requirements. A middle manager with an analytical preference may find people-oriented roles, such as facilitating or championing more challenging tasks, to be less effective, leading to internal friction. Conversely, a holistic style manager, placed in a rigid implementation role, can experience cognitive challenges and attention fatigue. Yet, no integrated model explicitly theorises role conflict as a product-role misfit or explores its impact on attention performance. Third, attention, while recognised as a foundation of managerial cognition, is often overlooked in frameworks linking individual differences to strategic behaviour. However, attention is not merely a precursor to decision-making; it is a dynamic cognitive function that filters stimuli, guides information prioritisation, and regulates focus amidst environmental complexity. The ability to manage attention is not uniform across managers; it varies by cognitive style and is further strained by role conflict. These tensions can impair performance, leading to behavioural inefficiency and psychological burden.

Therefore, this thesis proposes a novel integrated framework that positions role conflict as a cognitive-behavioural mediating construct, connecting cognitive style, strategic role

enactment, and attention performance. It argues that cognitive style influences which strategic roles managers are more likely to enact and how effectively they manage attentional demands. When a misfit between style and role exists, role conflict arises, which in turn affects role performance and cognitive functioning. Additionally, the framework examines the predictive relationship between strategic role enactment and attention performance, and moves beyond the mediating influence of role conflict. The following section presents an integrated conceptual framework grounded in this theoretical synthesis.

2.7.3 Role Conflict as a Mediator

The proposed framework redefines role conflict as more than a structural or contextual phenomenon; it is conceptualised here as a bridge that translates cognitive predispositions into behavioural and cognitive outcomes. Unlike traditional models that treat role conflict as a peripheral stressor or outcome variable, this thesis positions it as a cognitive-behavioural connector. It is the mechanism through which internal cognitive style either facilitates or obstructs strategic role enactment and attention performance.

This reconceptualisation is grounded in several theoretical insights. First, cognitive-role (mis)fit theory suggests that the degree of alignment between MMs' cognitive style and their task environment determines task satisfaction, role clarity, and psychological conflict (Hodgkinson, 2003; Zhang, 2002). Second, empirical findings confirm that role conflict undermines executive functioning, narrows attentional capacity, and heightens emotional challenge, particularly in MMs who operate at the upward and downward strategic demands (Floyd & Wooldridge, 1997; Huy et al., 2002; Plessow et al., 2011), making role conflict not just an outcome of managerial complexity but a mediator of it.

2.7.4 Introducing the Three-Pathway Conceptual Framework

Building on the preceding rationale, this thesis introduces a novel conceptual framework that integrates cognitive style, strategic role enactment, role conflict, and attention performance through three interrelated pathways: the behavioural, cognitive, and behavioural-to-attention pathways. These pathways capture the interplay between how MMs think, behave, experience psychological tension, and regulate attention in demanding organisational environments. At the core of this model is role conflict, which operates as a cognitive-behavioural connector linking individual predispositions to strategic action and cognitive performance.

(1) The Behavioural Pathway: Cognitive Style → Role Conflict → Strategic Role Enactment

The first pathway emphasises how cognitive style shapes the likelihood of strategic role enactment by mediating the influence of role conflict. Analytic and holistic cognitive predispositions lead managers to process information, structure tasks, and engage with others in distinct ways. When there is alignment between cognitive style and role demands, for instance, an analytic style manager performing the implementing role, role conflict is minimised, and behavioural output is more effective. Conversely, when a mismatch occurs, such as when a holistic manager is required to implement rigid plans, internal tension arises. This psychological challenge (role conflict) influences the extent to which managers enact their strategic roles. Thus, role conflict acts as a mediator through which cognitive style shapes behavioural outcomes in the organisation.

(2) The Cognitive Pathway: Cognitive Style → Role Conflict → Attention Performance

The second pathway highlights the cognitive consequences of role conflict, particularly its influence on attentional performance. Attention is a finite cognitive resource, and its deployment is sensitive to internal conflict and misalignment. Cognitive styles influence

attentional preferences; for instance, holistic managers distribute attention broadly, while analytic managers focus narrowly and sequentially. When role conflict arises due to a mismatch between an MMs' style and the task at hand, it drains attentional resources, resulting in reduced efficiency and focus. Attention performance is assessed using performance metrics, which reflect the manager's capacity to balance speed and accuracy under pressure. The set size is manipulated during the visual search task to examine attention under increasing cognitive load. Role conflict is therefore theorised as a behavioural stressor and as a form of psychological conflict that impairs core cognitive functions, particularly attentional flexibility and selectivity. Managers experiencing greater role conflict exhibit slower, less accurate visual search performance, especially as attentional load intensifies, due to compromised resource allocation.

(3) The Behaviour-to-Attention Pathway: Strategic Role Enactment → Attention Performance

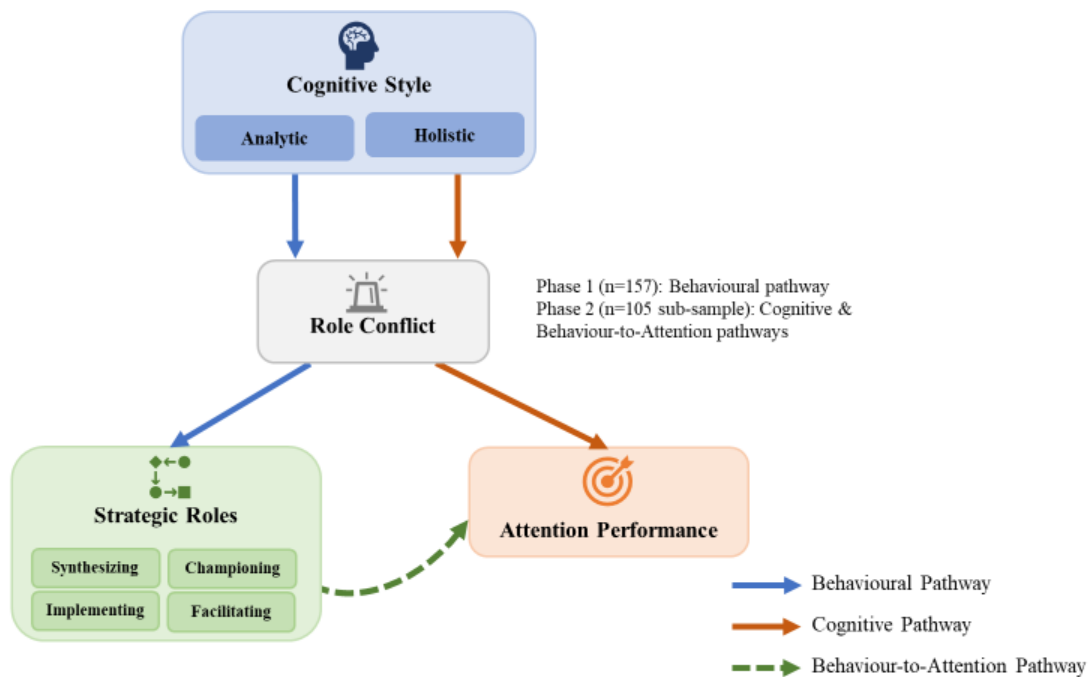
The third pathway examines the direct predictive relationship between strategic role enactment and attentional performance. It extends the framework by investigating whether the type of strategic role a middle manager enacts influences their attention. This pathway is theoretically motivated by evidence that different strategic roles carry distinct cognitive and relational demands. Analytical roles, such as Synthesising and Implementing, require focused, structured information processing, whereas Championing and Facilitating roles involve high relational complexity and ambiguity. These differing demands may be differentially associated with attentional outcome. Together, these three pathways provide a more comprehensive and psychologically account of MM's functioning. They move beyond static trait-performance models and account for reciprocal, context-sensitive, and psychologically mediated relationships between cognition, behaviour, and performance. By positioning role conflict as a central connector, the framework advances our understanding of why some managers thrive in

complex strategic roles while others struggle. This integrated model serves as the foundation for the hypotheses presented in the next chapter.

The three pathways:

- (1) Cognitive styles → role conflict → strategic role enactment (behavioural pathways)
- (2) Cognitive styles → role conflict → attention performance (cognitive pathways)
- (3) Strategic role enactment → attention performance (behaviour-to-attention pathway)

Figure 3 *Mediation Model of Role Conflict in Middle Management*



Note. The behavioural pathway (blue) and cognitive pathway (orange) represent relationships mediated by role conflict. The behavioural-to-attention pathway (green) represents a direct predictive association between strategic role enactment and attention performance.

2.7.5 Theoretical Contribution of the Framework

The proposed three-pathway conceptual framework advances theory in several important ways.

First, it offers a cognitive-behavioural integration of constructs that are examined in isolation (cognitive style, attention, strategic role enactment, and role conflict), explaining their

significance and interdependence. By placing role conflict at the centre of this system, the framework moves beyond trait-to-performance models and offers a mechanism-based account of managerial performance. Second, this framework extends the literature on MMs by focusing on their cognitive constraints and attentional demands, not only their positional or functional challenges. While existing studies have established the strategic importance of MMs (Floyd & Wooldridge, 1992, 1997), they overlook how cognitive fit and psychological conflict shape whether and how these roles are performed. This model fills that gap by theorising how style-role misalignment leads to conflict and, in turn, affects behaviour and cognition.

Third, it contributes to managerial cognition and attention research by incorporating objective, performance-based metrics (e.g., RTs, Slopes and Index) to assess attentional performance. Most organisational studies on attention rely on interviews, self-reporting, or indirect inference; this thesis integrates experimental methods with managerial constructs to ground attention as a measurable and theoretically relevant variable in managerial roles. Finally, the framework is methodologically generative, offering pathways for empirical testing via mediation models and two-phase designs. It lays the groundwork for understanding how internal cognitive traits, external role requirements, and cognitive-behavioural challenges interact in the day-to-day complexity of strategic roles. In doing so, it provides a bridge between cognitive psychology and organisational strategy.

2.8 Summary and Research Gaps

This chapter reviewed and synthesised literature on middle managers' (MMs) strategic roles, cognitive style, role conflict, and attention performance. The review showed that MMs occupy complex, ambiguous positions and are expected to perform in cognitively distinct roles (synthesising, championing, facilitating, and implementing), each of which places different

demands on behavioural execution and cognitive control. The chapter further demonstrated that role conflict has been conceptualised as a negative outcome of incompatible role expectations. The review of cognitive style literature showed that the analytic-holistic dimension represents stable differences that influence how managers process information, perceive ambiguity, and experience psychological conflict. Attention performance was identified as a cognitive outcome and strategic capability, and was sensitive to role challenge. Then integrate these themes into an analysis of how cognitive styles influence attentional fit with strategic roles, and explain how mismatched roles generate role conflict as a cognitive-behavioural phenomenon. Finally, this thesis brought these concepts together into a novel integrated framework comprising three interrelated pathways: behavioural, cognitive, and behaviour-to-attention.

Despite growing recognition of the role of cognition in strategic management, several important gaps remain in the literature. First, current research tends to examine either strategic roles or cognitive styles in isolation, with little attention to how internal cognitive preferences shape external role enactment. Second, although role conflict is acknowledged as a common experience among MMs, it is often treated as a contextual rather than a psychological mechanism shaped by an internal misfit between cognition and role demands. Third, attention performance, while crucial for managerial effectiveness, has been excluded from integrative models that seek to link cognition, behaviour, and performance. Lastly, most existing frameworks are static or linear, failing to capture the recursive, dynamic nature of managerial cognition and behaviour over time.

To begin addressing these gaps, this thesis undertakes a systematic literature review (SLR) as the first step. By consolidating and evaluating existing studies on cognitive styles and

managerial roles, the SLR establishes whether current knowledge is adequate support for the conceptual relationships proposed here. The review situates the research within an empirical context and highlights the need to integrate role conflict (mediation) and attention performance (outcome) into the framework to understand middle managers' cognition. Building on the insights from SLR, this thesis then presents an empirical study to test the three-pathways conceptual framework. Phase 1 investigates how cognitive style influences role conflict and strategic role enactment, while Phase 2 explores how cognitive style affects attention performance, using role conflict as a bridge; additionally, it examines how the enactment of strategic roles influences attention performance. In doing so, this research offers a more comprehensive understanding of how MMs navigate behavioural demands and cognitive limits within strategic roles.

2.9 Systematic Literature Review: Cognitive Styles and Managerial Roles

2.9.1 Purpose and Rationale

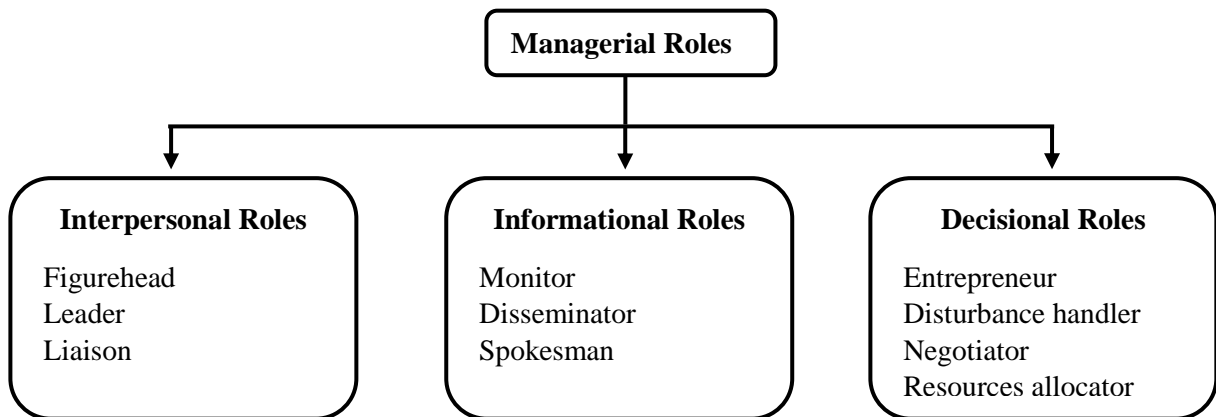
This section presents a systematic review (SLR) of existing empirical studies examining the influence of cognitive styles on managerial roles. Drawing upon Mintzberg's established framework of managerial roles, this review examines how managers' cognitive preferences share role enactment within organisational contexts. The purpose of this review is: first, to map the current knowledge on the relationship between cognitive styles and managerial roles; second, to identify gaps that limit our understanding of how these cognitive styles interact with more specific strategic roles and psychological challenges faced by managers. The SLR follows a structured search and selection process, ensuring a transparent and replicable synthesis of the relevant literature. Findings from this review provide the foundation for the conceptual model

developed in the following chapter, identifying what is known and what remains underexplored in the literature.

2.9.2 Introduction

An organisation's survival and success depend on the effectiveness of managers in their roles (Kumar, 2015). Mintzberg (1973) defined managerial roles as a structured set of behaviours that guide managers in addressing both internal and external challenges (Butt et al., 2022). As widely recognised in managerial studies, these roles are grouped into three domains: *interpersonal roles* to provide information, *informational roles* to process the information, and *decisional roles* to use the information (Muma et al., 2006). Each domain is divided into ten specific roles that define managerial responsibilities within an organisation, as shown below (Dandalt, 2021; Kumar, 2015; Mintzberg, 2019). In interpersonal roles, managers are figureheads, representing the organisation at events; leaders, motivating and developing employees; and liaisons, establishing connections beyond formal hierarchies. The informational roles involve monitoring the environment, disseminating crucial information, and serving as a spokesperson to stakeholders. Lastly, within decisional roles, managers operate as entrepreneurs, initiating improvement and driving innovation; as disturbance handlers, addressing unforeseen organisational challenges; and as negotiators, facilitating stakeholder agreements.

Figure 4 Mintzberg's (1973) Managerial Typology



Note. Mintzberg categorises managerial roles into three categories: interpersonal, informational, and decisional.

In recent years, a growing number of studies have examined cognitive styles in business and management. Cognitive styles refer to relatively stable yet malleable individual differences in how people perceive, process, and respond to information in their environment (Kozhevnikov et al., 2014; Lacko et al., 2023). These styles influence thinking, problem-solving, learning, and decision-making preferences, shaping how managers manage people, tasks, and complexity (Priola et al., 2004). Research indicates that personality and psychological characteristics, including cognitive styles, influence the development of strategic decisions (Armstrong et al., 2012; Hough & Ogilvie, 2005). This influence is more significant than observable characteristics such as age and educational background (Gallén, 2006). Although cognitive styles are relatively stable, they can be developed through experience and training, making them a relevant and actionable domain for improving managerial effectiveness (Fan et al., 2021).

Several instruments have been developed to measure cognitive styles (Armstrong et al., 2012; Kozhevnikov, 2007). The Myers-Briggs Type Indicator (MBTI) is one of the most widely used

tools to assess preferences across four dimensions: extraversion-introversion (orientation to outer vs inner world), sensing-intuition (concrete vs abstract information), thinking-feeling (decision-making based on logic vs. empathy), and judging-perceiving (structured planning vs. adaptable spontaneity). The Cognitive Style Index (CSI) classifies individuals along an analytic-intuitive continuum, while the Kirton Adaptation-Innovation Inventory (KAI) distinguishes between adaptive and innovative problem-solving preferences. Most of these tools are self-reported and accessible for organisational research. Table 1 summarises several common instruments and the dimensions they measure. Although each model uses different terminologies, such as ‘field-dependent’, innovator’, or ‘intuitive’, they share a focus on how people process, structure, and act on information. The widespread use of these instruments has enabled a growing body of research linking cognitive styles to managerial contexts, including organisational behaviour, change capabilities, performance, innovation, and decision-making (Armstrong et al., 2012; Krupskyi & Grynko, 2018; Sukoco et al., 2022).

Table 1 *Instruments and Dimensions of Cognitive Styles*

Instrument	Measurement Type	Key Dimension/ Styles	Application Contexts
Myers–Briggs Type Indicator (MBTI) (Myers et al. 2003)	Self-report	Extraversion–Introversion, Sensing–Intuition, Thinking–Feeling, Judging–Perceiving	Leadership, team building, communication, and decision-making
Cognitive Style Index (CSI) (Allinson and Hayes, 1996)	Self-report	Analytic–Intuitive continuum	Decision-making, strategic thinking, and leadership behaviour
Kirton Adaption–Innovation Inventory (KAI) (Kirton 1976)	Self-report	Adaptation–innovation	Innovation management & change management
Dialectical Self Scale (Spencer-Rodgers et al., 2008)	Self-report	High vs. Low Dialectical Thinking	Cross-cultural leadership and conflict management
Linear/ Nonlinear Thinking Style (LNTS) (Vance et al., 2007)	Self-report	Linear (sequential, logical) vs. Nonlinear (holistic, intuitive) thinking	Problem-solving and information processing

Tolerance/ intolerance of ambiguity (Budner, 1962)	Self-report	Tolerance vs. Intolerance of Ambiguity	Decision-making under uncertainty, risk perception, and leadership in complex settings
Group Embedded Figures Test (GEFT) (Witkin et al., 1971)	Performance-based	Field-Dependent vs. Field-Independent	Attentional control and information processing
Need for Cognition (High - Low Need for Cognition) (Cacioppo & Petty, 1982)	Self-report	High vs. Low Need for Cognition	Information-seeking and management
Cognitive Style Indicator (CoSI) (Cools & Van den Broeck, 2007)	Self-report	Knowing, Planning, Creating	Team role, leadership style, innovation, and adaptability
Sternberg's Thinking Styles (TSI) (Sternberg, 1997)	Self-report	Judicial, Legislative, Executive	Change acceptance, rule formulation, and policy innovation

Note. The cognitive style instruments are used across psychology and management research.

Despite growing attention to cognitive styles in business and management research, a comprehensive synthesis of how they influence managerial roles remains necessary. A previous systematic review by Armstrong et al. (2012) provided a broad analysis of cognitive styles in business and management, identifying eight thematic areas: decision-making, creativity, innovation and entrepreneurship. However, this review did not focus on how cognitive styles influence managerial roles, leaving a gap in the literature. To address this gap, the present review investigates the question: "*How do cognitive styles influence managerial roles?*". Cognitive styles shape how managers process information, lead teams, make strategic decisions, and respond to complex organisational environments. While research on cognitive styles in management has grown extensively, understanding how these styles relate to managerial roles remains fragmented. This systematic review consolidates findings from 71 empirical studies to explore the relationship between cognitive styles and managerial roles, offering new theoretical and practical implications and proposing a future research agenda.

2.9.3 Method

This systematic review aims to map and synthesise existing empirical research on the influence of cognitive styles on ten managerial roles as defined by Mintzberg. Additionally, it explores emerging research streams, evaluates the methodologies, and identifies gaps for future research. Through a comprehensive search and synthesis of existing studies, this review organises the findings into thematic categories, establishing a framework that enhances understanding of this topic. To define the scope of this review, we adopt the widely accepted definition of cognitive styles as *individual preferences in perceiving, processing and managing information, as well as in problem-solving, decision-making and relating to others* (Allinson & Hayes, 2012; Bendall et al., 2016; Chang et al., 2019; J. Hayes & Allinson, 1994; Kozhevnikov, 2007; Nosal, 2010; Rayner & Riding, 1997; Riding & Cheema, 1991; Witkin et al., 1977). For managerial roles, we employed Mintzberg's (1973) typology, which categorises managerial activities into three primary roles: *interpersonal roles* (figurehead, leader, and liaison), *informational roles* (monitor, disseminator, and spokesman), and *decisional roles* (entrepreneur, disturbance handler, negotiator, and resource allocator) (Butt et al., 2022).

We adopted a rigorous and transparent methodological approach to ensure the credibility and replicability of this review. In the **first** stage, we conducted pre-study meetings to develop a structured review protocol, finalising the research questions, search strategy, inclusion and exclusion criteria, data extraction and synthesis method. This protocol was informed by established systematic review guidelines (Boland et al., 2017; Rojon et al., 2021; Tranfield et al., 2003) to enhance methodological robustness. The review process was designed to adhere to the best practices in literature synthesis (Portyanko et al., 2022; Xiao et al., 2022), as illustrated in Figure 5. The **second** stage, completed in March 2024, involved conducting a comprehensive literature search across three electronic databases: Scopus, Web of Science and

Ebscohost, using a combination of keywords related to cognitive styles and managerial roles. The search words used were: manager* OR leader* AND “cognitive style*” OR “thinking style*” OR “individual difference*” in all fields, including title, abstract, keywords and excluding only full text. We exclude conference papers, book chapters, and non-academic reports and consider only academic articles. Additionally, we set the time range from 1970 to 2023, as the 1970s marked the development of cognitive style research in business and management (Kozhevnikov et al., 2014). This procedure generated a substantial number of results (N = 1,734), and the databases and numbers of documents returned are presented in Table 2.

Table 2 *Data Search Results*

Database	Number of Entries
Scopus	929
Web of Science	264
EBSCO	541
Total	1734

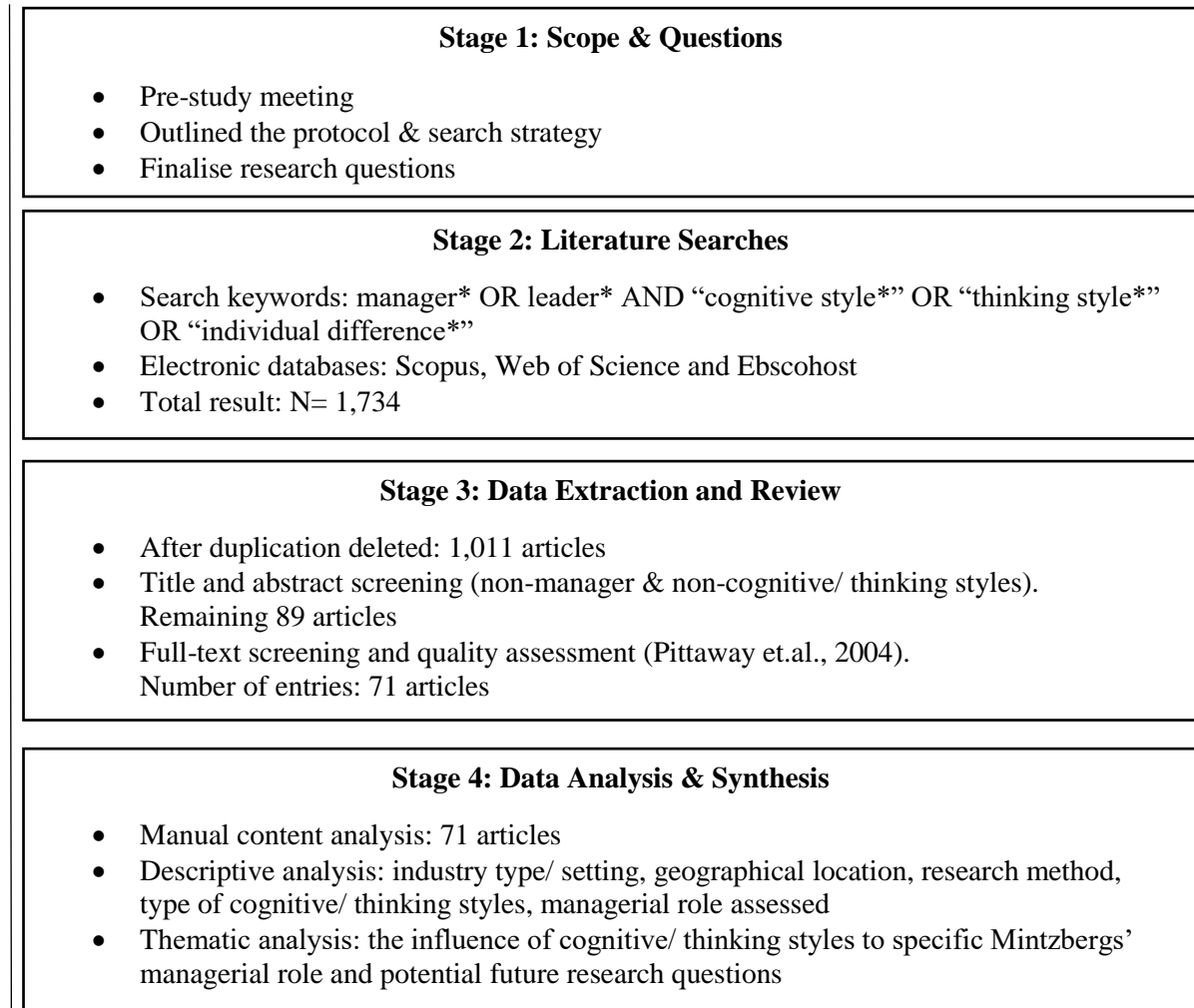
Note. Total number of papers from the database

The **third** stage involved reviewing and extracting data to ensure only relevant studies were included. Initially, duplicate removal reduced the database from 1,734 to 1,011 articles. Next, four authors independently screened titles and abstracts based on predefined inclusion and exclusion criteria. To enhance efficiency and transparency, we employed Rayyan.ai, which is known for its responsiveness and intuitiveness in systematic reviews (Ouzzani et al., 2016; Valizadeh et al., 2022). Articles flagged as conflicts were discussed among authors, leading to a consensus-based selection process. At the full-text screening stage, we assessed whether each study explicitly examined the influence of cognitive styles and thinking styles (Kozhevnikov, 2007) on managerial roles. We also evaluate whether the studies discussed one or more of Mintzberg’s managerial roles (such as leadership, information dissemination, strategic

decision-making, or resource allocation). Only studies that addressed cognitive styles in a managerial context and at least one of Mintzberg's ten roles were included in the final synthesis. Following this step, 89 articles remained. To further ensure methodological rigour, we applied quality assessment metrics adapted from Pittaway et al. (2004), critically evaluating the methodology, theoretical robustness, implications for practice and generalizability. Based on this evaluation, a final sample of 71 empirical articles met all the specified criteria and was selected for in-depth synthesis.

In stage **four**, we employed manual content analysis for the qualitative data and synthesis of final sample articles (Johnson et al., 2020; Siddaway et al., 2019), as the influence of cognitive style terms is assessed through various tools, and Mintzberg's managerial roles are often not directly mentioned in the articles. The approaches to content analysis strategies were conventional, directed, and summative (Hsieh & Shannon, 2005). We extracted key information into an Excel database, documenting study attributes such as title, authors, year of publication, research method, research questions, organisational type/ setting, geographical location, sample studied (supervisors, middle managers, upper managers, and owner-managers), type of cognitive/ thinking styles, and managerial role assessed. Because the main objective of this review is to find the influence of cognitive and thinking styles on Mintzberg's managerial role, we organise the findings into thematic categories by identifying common themes or patterns across multiple studies (Tranfield et al., 2003). As a result, we classified our findings as follows: 17 articles in the interpersonal roles category, 17 in the informational roles category, and 37 in the decisional roles category.

Figure 5 *Methodological Process of the Systematic Literature Review*



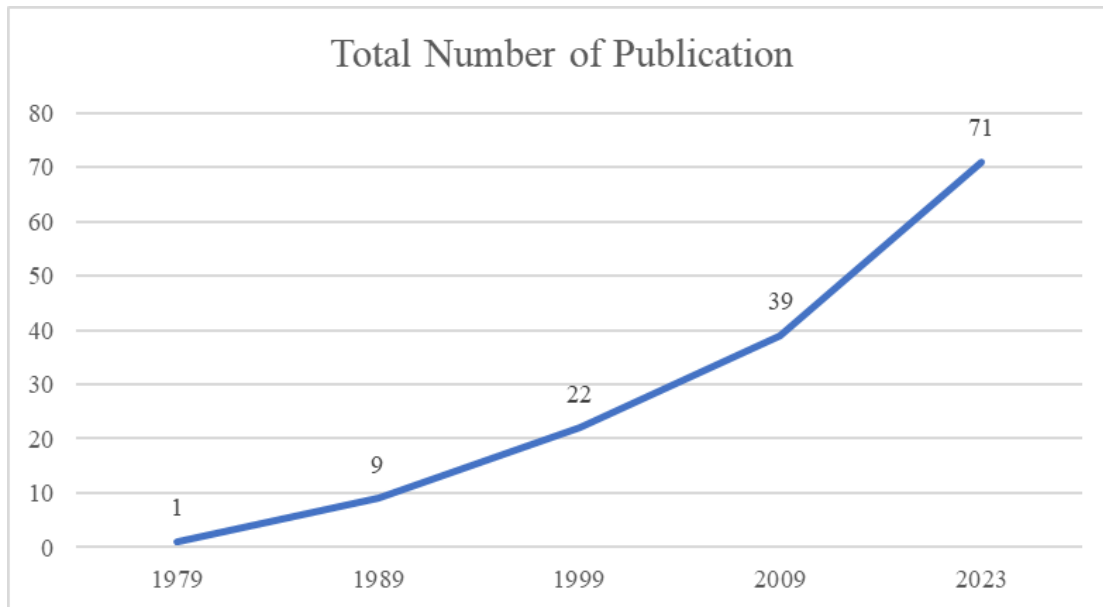
Note. The review followed a four-stage process, including protocol development, systematic database searching, screening and quality appraisal, and thematic synthesis of empirical studies.

2.9.4 Findings

This systematic review synthesises the literature on the influence of cognitive styles on managerial roles, based on Mintzberg's three categories of managerial roles. The findings are presented in two ways: descriptive findings, which provide an overview of research trends, study characteristics, and methodological approach, and thematic findings, which examine how cognitive styles influence managerial roles (Tranfield et al., 2003). Figure 6 shows that interest in cognitive styles and managerial roles has increased over time, beginning in 2009. This figure

presents the cumulative number of articles published between 1979 and 2023, illustrating an increase in scholarly interest in this topic since 2009.

Figure 6 *Cumulative Publications on Cognitive Styles and Managerial Roles (1979-2023)*



Note. The number of empirical studies has increased in research activity over the years.

In the following section, we present the descriptive findings, including organisational type and setting, geographical location, sample studied, research method, and cognitive or thinking styles for each managerial role, followed by the thematic findings. A detailed description of these descriptive findings is provided in Appendix F *SLR Descriptive Findings*, where the data are presented in tabular format for clarity and completeness.

To guide the thematic synthesis, we provide definitions of the three categories of managerial roles by integrating the cognitive styles commonly used, as identified through manual context analysis of each core article. *Interpersonal* roles refer to relationship-oriented responsibilities that include the figurehead, leader, and liaison functions (Altamony et al., 2017). As

figureheads, managers often represent the organisation in ceremonial tasks. In the leader role, they are responsible for motivating, guiding, and developing employees. As liaisons, they build and maintain networks of contacts outside the formal chain of command. These functions require behavioural competencies such as emotional intelligence, empathy, effective communication style, and the ability to navigate social dynamics. However, the reviewed studies predominantly focus on the leader role and demonstrate how cognitive styles shape leader-member exchange (LMX), trust-building, communication, conflict management, and creativity facilitation. Commonly used cognitive style assessments include the analytic-intuitive (CSI) and adaptation-innovation (KAI) styles, as well as rational-behavioural and linear-nonlinear thinking styles. These styles help explain how managers enact relationally and adapt their leadership behaviour. However, limited attention has been given to the figurehead and liaison roles.

Informational role involves acquiring, processing, and disseminating information through the monitor, disseminator, and spokesperson functions. As monitors, managers gather and evaluate information for decision-making (Kumar, 2015). In the disseminator role, they communicate critical information across departments while spokespeople present the organisation's position to external stakeholders. These roles demand cognitive styles such as information-processing style, tolerance for ambiguity, media preferences, and adaptability to technology. The reviewed studies focus on the monitoring role, revealing how cognitive styles shape information seeking, data interpretation, and technology adoption. Tools such as MBTI, KAI, and the Need for Cognition (NFC) are used to explain differences in media use, visual data preferences, and engagement with complex information. However, the study examines disseminators and not spokesperson roles.

Decisional roles involve activities related to making judgments, solving problems, managing change, and allocating resources (Altamony et al., 2017). These include the entrepreneur, disturbance handler, resource allocator, and negotiator functions. Managers in these roles initiate innovation, resolve conflicts, distribute resources, and negotiate on behalf of the organisation. Such functions require cognitive styles related to strategic thinking, risk orientation, cognitive complexity, and adaptability. Instruments such as the Cognitive Style Index (CSI), Kirton Adaptation-Innovation Inventory (KAI), and Sternberg’s thinking styles are commonly used to assess these tendencies. However, most research prioritises entrepreneurial and conflict resolution functions, with limited attention to resource allocation and negotiation.

The table below provides an overview of how studies are distributed across categories, along with common themes, instruments used, and regional context.

Table 3 *Summary of Thematic Categories by Managerial Role Types*

Role categories	No. of Entries	Key Themes	Common Instruments	Geographic Focus
Interpersonal	17	LMX, trust, communication style, team role congruence, and emotional intelligence	CSI & KAI	China, UK, USA
Informational	17	Ambiguity tolerance, media use, tech. adoption, information presentation	MBTI, KAI	USA
Decisional	37	Strategic decision-making, innovation, change & conflict management, risk, ethics & resource allocation	MBTI & KAI	USA, UK

Note. Role categories are based on Mintzberg’s (1973) classification of interpersonal, informational, and decisional managerial roles. Instruments include the Cognitive Style Index (CSI), Kirton Adaptation-Innovation (KAI), and Myers-Briggs Type Indicator (MBTI), and geographic reflects the dominant study contexts.

2.9.4.1 Descriptive Findings

Our review identified seventeen papers examining the influence of cognitive style on interpersonal roles. However, no studies specifically investigated the role of figureheads and liaisons. The dominant focus was on leader-member exchange (LMX), which aligned with Mintzberg's concept of managerial roles. In this role, the Cognitive Style Index (CSI) is mainly used to evaluate a manager's position on the analytic-intuitive cognitive style spectrum. Quantitative research methods are widely employed to investigate the relationship between cognitive styles and managerial roles, providing empirical evidence on how these styles influence leadership effectiveness. However, these studies have a geographical imbalance, with China being the predominant country conducting such research.

Similarly, within the informational role category, we found seventeen papers, with the majority focusing on cognitive styles related to the monitor role, followed by the disseminator role as outlined in Mintzberg's managerial role categories. However, there is a gap in the literature, as no studies have addressed the role of the spokesperson. The Myers-Briggs Type Indicator (MBTI) is a widely used cognitive style assessment tool in this category. Methodologically, the survey methods, combined with statistical analyses such as structural equation modelling (SEM), are primarily used to assess the relationship between cognitive styles and the informational role of managers. The studies are predominantly conducted in the USA, with data from various industries.

Lastly, our review uncovered 37 papers that researched the impact of cognitive styles on the decisional role within Mintzberg's managerial role categories. The entrepreneur role emerged as the most extensively studied within the cluster. However, there is a notable absence of research on the negotiator role. The common cognitive style assessment tools used in this

cluster are the Myers-Briggs Type Indicator (MBTI) and the Kirton Adaption-Innovation Inventory (KAI). As with other managerial roles, survey methods combined with various statistical analyses are primarily used to assess the relationship between cognitive styles and managers' decision-making roles. The studies are predominantly conducted in the United States and the United Kingdom, and draw on data from various industries.

2.9.4.2 Thematic Findings

2.9.4.2.1 The Influence of Cognitive Styles on Interpersonal Roles

Research on interpersonal roles and organisational citizenship behaviours (OCBs) underscores the importance of cognitive style congruence between leaders and followers. OCBs, which operate independently of formal incentives (Donkor & Segbenya, 2023), tend to improve when leaders and followers share similar cognitive styles, foster more transparent communication and build trust. For example, managers with an intuitive cognitive style enhance OCB through effective communication, with trust serving as a mediator in this relationship (Wang et al., 2023). However, mismatches in cognitive styles introduce challenges. While analytic leaders may value the creativity of intuitive followers, intuitive leaders can struggle with the systematic, detail-oriented approach of analytic followers; similarly, analytical followers find the flexible, less structured methods of intuitive leaders confusing (Armstrong & Qi, 2020). Additionally, cognitive style congruence strengthens organisational climate but does not necessarily enhance creativity, as innovative leaders do not always generate creative output when paired with like-minded followers (Tierney et al., 1999). In summary, while shared cognitive styles support OCB and organisational climate, they have a limited impact on fostering creativity among innovative individuals.

Diversity can generate conflicting values and interests within teams, leading to intra-group tensions. High-quality LMX, which fosters mutual understanding and trust over transactional interactions (Anand et al., 2011), mediates these tensions by managing cognitive complexity (Qi & Armstrong, 2019). Cognitive congruence between managers and employees enhances team communication satisfaction, with intuitive leaders fostering higher satisfaction (Erdil & Tanova, 2015). However, effective leaders can mitigate mismatches by adapting communication strategies to align with diverse cognitive styles (Santalla-Banderali & Alvarado, 2022). Similarly, cognitive style influences how team knowledge is managed and leveraged for creativity. Systematic leaders improve creativity by establishing structured knowledge management practices, particularly in uncertain environments, while intuitive leaders foster creativity when the team possess a rich knowledge base (Sung & Choi, 2012). Thus, even though they operate differently, these styles have a positive impact on the team's creativity under various conditions.

Another critical aspect that shapes the quality of LMX is the leader's ability to actively listen to employees' voices (Carnevale et al., 2020). Leaders who actively listen enhance work engagement and individual performance, thereby creating a positive work environment (Eibl et al., 2020; L. Li et al., 2021). Those with an originality cognitive style are more receptive to constructive feedback, which drives higher-quality LMX than role-governance, as it resists change (Xu et al., 2023). Thus, assigning leaders based on internal needs can optimise performance in dynamic environments.

The similarity-attraction paradigm suggests favourable attraction occurs when people perceive similarity in personal characteristics with others (Abbasi et al., 2024). However, empirical evidence indicates that incongruence between leaders and followers enhances certain socio-

emotional aspects of their relationship. Leaders with intuitive cognitive styles, paired with analytic members, are perceived as more nurturing and are more likely to earn greater respect. In contrast, leaders with an analytic type, paired with intuitive or analytic followers, are often seen as more dominant and less nurturing (Allinson et al., 2001). This thought supports the whole-brain approach, where cognitive diversity can lead to more balanced dyadic interaction and promote innovation (Leonard & Straus, 1997).

Effective leadership is crucial for managing conflict, which entails identifying and resolving disputes fairly and efficiently, thereby promoting a healthy work environment (Saeed et al., 2014). It is also influenced by leader traits in mitigating the negative effects of conflict (Anastasiou, 2020). While incongruence in cognitive styles, such as that between adaptors and innovators, can often spark tensions that disrupt team dynamics (Lindsay, 1985), leaders with strong dialectical thinking tend to adopt a cooperative approach to conflict management (Bai et al., 2015; Zheng et al., 2021). Such leaders enhance employees' creative self-efficacy, encouraging innovation (Han & Bai, 2020), as creative employees are more inclined to participate in innovative activities and experiment with new ideas (Han et al., 2022). Thus, adopting a dialectical thinking approach in conflict management resolves disputes and transforms conflict into a catalyst for organisational creativity.

Managers' cognitive style significantly shapes their team role preferences and leadership effectiveness. For instance, the KAI reveals that managers with higher levels of innovativeness tend to assume roles such as plant, shaper, and resource investigator positions that drive creativity and change, in contrast to the managers with a more adaptive style are more likely to perform roles focused on operational efficiency, such as completer, finisher, implementer, team worker, and specialist (Aritzeta et al., 2005). Additionally, leaders with synthesis and analyst

thinking styles are more effective in innovative environments than those with pragmatist and realist thinking styles, as they are result-oriented (Alshammri & Alenezi, 2021). Leaders who combine rational and behavioural coping with imagination style positively correlate with transformational leadership, inspiring teams to exceed expectations (Curtis et al., 2017).

Emotional intelligence (EI) is a crucial factor in effective leadership, enabling managers to understand and manage their own emotions and those of others (Cherniss & Roche, 2020; Saha et al., 2023). Leaders with intuitive cognitive styles tend to exhibit higher emotional intelligence (EI) and a greater tendency toward transformational leadership than their analytic counterparts, who often adopt transactional leadership styles (Downey et al., 2006). Moreover, managers can balance masculine and feminine cognitive styles beyond gender norms, enabling adaptability in project management. (Thomas & Buckle-Henning, 2007). Additionally, linear thinkers excel at regulating their emotions, whereas nonlinear thinkers are more adept at leveraging emotions to facilitate thought (Groves & Vance, 2009). Balancing these approaches enables managers to harness EI effectively as a critical factor in high-stress environments, bolsters employee commitment.

In summary, cognitive styles influence managers' interpersonal roles. Cognitive style congruence between leaders and followers can enhance OCB and strengthen the organisational climate, while cognitive style diversity may yield socio-emotional benefits and foster innovative interactions. Effective conflict management, especially through dialectical thinking, transforms interpersonal challenges into opportunities for creativity and improved performance. Moreover, cognitive style influences team role preferences and leadership effectiveness and underpins emotional intelligence as a critical component of adaptive and transformational leadership. Incorporating cognitive style considerations into leadership

development strategies to foster robust interpersonal relationships, effective conflict resolution, and organisational success.

2.9.4.2.2 The Influence of Cognitive Styles on Informational Roles

In a dynamic and ambiguous environment, managers must navigate the flow of information and multiple interpretations, which often lead to doubt (Taylor et al., 2021). Research indicates that managers' perceptions of environmental uncertainty and ambiguity influence how they approach such situations, shaping their decision-making processes (Sniazhko, 2019). Those with a high tolerance for ambiguity tend to integrate qualitative cues and dynamic environmental signals, enabling adaptive decision-making; conversely, those with an intolerance of ambiguity rely on a quantitative, historical data strategy that promotes consistency but limits responsiveness to emerging challenges (Dirsmith & Lewis, 1982). Furthermore, evidence suggests that when ambiguity tolerance is combined with a field-dependent cognitive style, managers exhibit greater confidence in interpreting uncertain accounting information than their field-independent peers (Gul, 1984). Managers with higher cognitive complexity also interpret intricate datasets, leveraging organisational values to navigate uncertainty (Downey et al., 1977; Jia & Li, 2020). This interplay between cognitive styles and information processing raises important questions about managerial alignment with organisational objectives during uncertainty.

Cognitive styles extend into media communication and technological contexts. Ambiguous situations can erode employees' sense of ownership, making communication media critical for maintaining commitment to strategy implementation (Gulbrandsen, 2019). While managers tend to prefer rich media (e.g. face-to-face) in highly equivocal situations, differences emerge under low-equivocality conditions, where judging-style managers prefer leaner media such as

email; in contrast, perceiving-style managers opt for richer interactions (Trevino et al., 1990). Digital transformation further highlights the influence of cognitive style on technology adoption (Roberts et al., 2021). Systematic and analytical managers show positive attitudes toward microcomputers, whereas intuiting-sensing managers are less critical of technology-dependent roles (Igarria & Parasuraman, 1989). Yet, this effect is not universal. Female managers who score lower on the feeling-thinking cognitive style exhibit greater anxiety and negative attitudes towards microcomputers than male managers (Parasuraman & Igarria, 1990), underscoring the importance of formal training and familiarity with technology adoption (Fisher, 1995). Moreover, while innovative managers often integrate a broad suite of software applications, their adaptive counterparts focus on efficiency and stability, using fewer tools (Foxall & Hackett, 1992). These findings emphasise that cognitive style is not an isolated predictor of technology adoption.

The way information is presented also interacts with cognitive styles. Heuristic cognitive style managers perform better when information is displayed graphically, allowing rapid pattern recognition, whereas analytic or logical managers benefit from detailed tabular information formats that facilitate in-depth analysis (Garceau et al., 1988; Lucas, 1981). Similarly, field-independent managers perceive tabular formats as more useful for financial analysis than graphical presentation (Liberatore et al., 1988). These findings suggest that aligning information presentation with cognitive preferences can enhance managerial effectiveness and accuracy in decision-making

Cognitive style further influences intra-organisational networks in bridging gaps between information needs and information processing (Chong, 1996). The “higher differentiator” style, those who actively seek diverse sources of information, excel in flexible structures where

communication is open; in contrast, the “low differentiator” style often performs better in traditional communication hierarchies (Wilson & Dolly Malik, 1995). This result calls for a critical evaluation of organisational designs: aligning communication infrastructures with managers' cognitive profiles can optimise information flow and task performance. Furthermore, flexibility is crucial for sustainable development practices and is moderated by cognitive style. Intuitive managers are adept at integrating diverse perspectives and rapidly adapting to changing environments, whereas systematic managers rely on established routines and rule-based processes that enhance consistency but may slow down adaptability. (Yu et al., 2021). Understanding this balance is essential for organisations striving for sustainable development through enhanced adaptive capability (Hahn & Knoke, 2010).

Managing information overload presents another cognitive challenge for managers (Edmunds & Morris, 2000). Managers with a high need for cognition (NFC) style excel at processing both financial and non-financial data, such as customer data, but may experience diminished effectiveness when overwhelmed by excessive information (Hioki et al., 2020). However, high NFC managers are proactive in leveraging their networks to access critical information, an ability that, when combined with strong ethical judgment, enhances fraud detection (Anderson, 2008; Bernardi, 1994). Thus, while cognitive style can facilitate superior information processing, it also necessitates organisational measures to prevent overload and optimise network utilisation.

Finally, in their disseminator role, the managers' capability to maintain market competitiveness and innovation through knowledge management influences organisational performance (Fassehi et al., 2024; Rezaei & Katz, 2004). Cognitive style influences how managers facilitate knowledge dissemination. Managers with an adaptor style can effectively support knowledge

management in regulated environments, such as the public sector, whereas a radical and innovative collaborator style may encounter challenges in this setting due to its less conventional approach (Jain & Jeppe Jeppesen, 2013). This context-dependent relationship emphasises that effective knowledge management requires alignment between managers' cognitive styles and the organisational environment.

In summary, studies of the influence of cognitive style on the informational role are multifaceted and context-dependent. Whether shaping the interpretation of ambiguity, guiding communication strategies, informing technology adoption, or determining data presentation preferences, cognitive styles drive a dynamic interplay between individual cognition and organisational process. Recognising and strategically aligning these styles with specific managerial functions can enhance decision-making efficiency and organisational performance.

2.9.4.2.3 The Influence of Cognitive Styles on Decisional Roles

Cognitive style shapes managerial approaches to strategic decision-making. According to Cools and Broeck (2008), distinct managerial profiles emerge: the “knowing” managers rely on analytical, straightforward, rational communication; the “planning” style balances structure and diplomacy; and the “creating” type integrates intuition with analytical reasoning for adaptive decision-making. These differences imply that the quality and effectiveness of decisions are closely tied to a manager’s cognitive style. Moreover, managers’ cognitive styles impact decision-support systems, with analytical managers benefiting most from structured data integration, whereas heuristic managers demonstrate adaptability in unstructured environments (Green & Hughes, 1986; Zhai et al., 2020). Furthermore, evidence suggests that individuals with intuitive thinking (NT) make more decisive, higher-quality strategic decisions by integrating intuition with analysis, whereas sensing-thinking (ST) managers tend to have a

less innovative, operational focus (Hough and Ogilvie, 2005). Cognitive style determines training and information preferences and shapes strategic approaches and decision quality.

Research on the entrepreneurial dimension further underscores the influence of cognitive styles on strategic decisions. Drawing on Miles and Snow's framework (Akingbade, 2020; Blackmore & Nesbitt, 2013; Walker, 2013), organisations are characterised by strategic archetypes (defender, prospector, and analyser) that reflect how firms adapt to their competitive environments. Managers with sensing styles (ST and SF) favour defender strategies that emphasise stability and incremental growth, whereas those with intuitive style managers (NF and NT) pursue prospector strategies by proactively seeking new markets and fostering innovation (Gallén, 2006). Despite these differences, many organisations converge on an analyser strategy- a hybrid combining defender and prospector approaches. At the group level, challenging the traditional views which argue that higher group cohesion can lead to group thinking (irrational and dysfunctional decision-making outcome) (Chatterjee, 2014), a management team with diverse cognitive styles is more inclined to adopt prospector strategies as this diversity encourages risk-taking and innovative behaviours (Gallén, 2009). These findings suggest that leveraging cognitive diversity is critical for aligning innovation strategies with organisational effectiveness, and companies targeting radical innovation may benefit from NF managers.

Fostering innovation requires managers to assess the business environment, identify opportunities, and implement creative solutions as decision-makers (Balconi et al., 2024; Chiu & Fogel, 2017; Mueller et al., 2018). Managers with “bisociative” cognitive styles are effective in technology-driven projects, whereas those with associative styles perform better in application-oriented settings that demand systematic problem-solving and punctuality

(McDonough, 1990). Studies using KAI tools reveal that managers with innovative styles foster a creative environment and intrinsic motivation, particularly in diverse environments (Jaskyte & Kisieliene, 2006), while adaptor-type managers favour efficiency and a rule-based approach, while innovator-type managers pursue riskier, novel strategies. Notably, both styles may engage in minor, safe rule-breaking when framed positively (Dew, 2009). Additionally, time flexibility enhances the performance of innovators with proactive personalities, enabling them to generate and refine creative ideas in high-pressure environments (Chen et al., 2015). These findings suggest that organisations must balance cognitive styles to optimise structured and disruptive innovation.

Innovation is fundamental to sustaining competitive advantage (Si & Chen, 2020), and managers assess the business environment, identify promising ideas or projects, and drive innovation implementation (Chiu & Fogel, 2017; Crowley & Bourke, 2018). Research suggests an independent cognitive style drives intra-SBU exploration, while a reflection style facilitates inter-SBU exploration, enabling organisations to shift from incremental to radical innovation (Lin & McDonough, 2014). At the executive level, intuitive cognitive styles are associated with radical innovation, which involves developing new products and markets, whereas analytic styles tend to support incremental innovation, focusing on modifying and improving existing processes and products (Visser & Faems, 2015). Moreover, managers characterised as “convergers” exhibit a higher level of innovativeness compared to “divergers”, who lead toward concrete experiences and reflective observation (Batra & Vohra, 2016). Cognitive styles also influence their willingness to adopt open innovation. A rational cognitive type systematically assesses potential benefits and barriers, while intuitive managers excel in navigating ambiguous situations, even though they may not directly drive open innovation adoption (Marzi et al., 2023). These findings suggest that cognitive styles predict the

effectiveness of innovation management and shape how organisations navigate the barriers to change.

Over decades, studies using tools like KAI and MBTI have demonstrated that managers' cognitive styles influence key factors in managing change projects, as it's a continuous process that demands advanced skills and adaptive leadership (By, 2005; Errida & Lotfi, 2021). Project managers often exhibit more innovative cognitive profiles than their general management counterparts, and research indicates that female managers have higher levels of innovation by crossing traditional boundaries (Tullett, 1995) and working in traditionally male-dominated areas (Stum, 2009). However, the success of change initiatives also depends on employee acceptance, which is shaped by the workforce's cognitive or thinking styles (Rehman et al., 2021; Samah, 2018). Thus, while boundary crossing and innovative thinking are critical, the interplay between a manager's cognitive styles and an employee's behavioural response is central to effective change management.

Addressing rapid environmental changes requires organisations to cultivate dynamic capabilities- continuous actions and internal resources (Kurtmollaiev, 2020). Different types of environmental change require managers with varied cognitive strengths. For instance, ENTJ-type managers, with their abilities in knowledge accumulation and transformation, are ideally suited for driving innovation, while INFJ-type managers, known for their visionary and transformative capabilities, are particularly effective in companies undergoing market or product shifts (Krupskyi & Grynko, 2018). In a public sector setting, managers with "creating" cognitive styles are valuable for navigating complex bureaucratic transformation (Sukoco et al., 2022). Furthermore, managers with intuitive tendencies tend to thrive in dynamic, unstructured environments due to their high adaptability and ability to navigate complexity

(Saini et al., 2022). In this way, empowering diverse managerial cognitive profiles enables organisations to confront environmental challenges better and sustain competitive performance.

Founder managers often exhibit more innovative cognitive styles, driving transformative initiatives and risk-taking, whereas non-founder managers adopt more adaptive styles similar to those of latent entrepreneurs (Walsh & Anderson, 1995). Their intuitive decision-making enables rapid expansion in dynamic markets, though it may compromise long-term stability (Brigham et al., 2010). Similarly, managers with intuitive cognitive styles have been found to enhance financial and non-financial performance, particularly in fast-growing firms, such as small and medium-sized enterprises operating in dynamic, uncertain environments (Sadler-Smith, 2004). These findings challenge the conventional assumption that purely rational analysis is always optimal for financial decisions and sustained firm expansion, highlighting that innovative and adaptive cognitive styles contribute in context-specific ways.

In making new product portfolio decisions, high-analytic managers excel at deconstructing complex problems and rely on tools such as product roadmaps to evaluate complex criteria (McNally et al., 2009). Managers with a procedural rationality cognitive style emphasise systematic information gathering and continuous re-evaluation of decision criteria, ensuring that their methods adapt to the new data (Hammedi et al., 2011). Team reflexivity, where groups openly discuss and revise their decision-making process, mediates this cognitive style, even though it may delay the process. While analytic and rational approaches are fundamental for structured decisions, their impact is optimised when paired with continuous team reflection and process improvement.

The role of managers as disturbance handlers becomes paramount, suggesting a “brain” to solve various business issues (Tuffour et al., 2022). Managers' cognitive styles influence how effectively they can solve problems. For example, managers with intuition feeling (NF) and intuiting thinking (NT) are adept at addressing open-problem types that demand unique, innovative solutions (Saha & Sharma, 2020). In contrast, managers with a “critical and practical” thinking type thrive in fast-paced sales environments where immediate, outcome-driven problem-solving is crucial, while those with an “initiative and managerial” type are suited to creative and collaborative tasks in advertising and marketing contexts (Belousova & Mochalova, 2020). These distinctions underscore that problem-solving effectiveness is linked to cognitive styles and that different environments require different problem-solving approaches.

Managers face a dilemma between ethical principles and benefits (Luca Casali & Perano, 2021). Ethical judgements, driven by individual moral assessment, shape ethical behaviour (Al Halbusi et al., 2021; Valentine & Godkin, 2019). Research indicates that managers with a balanced linear and nonlinear thinking style are inclined to make ethical decisions, particularly in situations involving conflicts of interest, environmental concerns, and personal integrity (K. Groves et al., 2008). However, cross-cultural comparisons between U.S. and Korean managers suggest that ethical reasoning is not solely determined by cognitive style; instead, the ability to align with evolving global ethical standards through training appears critical (Paik et al., 2019). Additionally, while a rational style tends to behave more ethically, those with a spontaneous style also exhibit ethical behaviour driven by gut reactions rather than calculated reasoning (Berisha et al., 2023). These findings underscore the need for comprehensive training and personal development programs to foster ethical decision-making across diverse cognitive styles.

Strategic decisions with overloaded information become more challenging, often leading to cognitive bias (Acciarini et al., 2020). Different cognitive styles exhibit tendencies towards specific biases. For instance, sensing-thinking (ST) style managers tend to exhibit selective bias by rejecting the feasibility and novelty approach, while sensing-feeling (SF) type managers are based on external validation (Stumpf & Dunbar, 1991). Similarly, in this study, intuiting-thinking (NT) style managers are prone to positivity bias and to ignoring contradictory information, while intuiting-feeling (NF) style managers frequently rely on reasoning by analogy. These varied biases influence how managers interpret data and make decisions, highlighting the importance of cognitive diversity within decision-making teams to counterbalance potential distortions. However, even within diverse groups, individual styles can dominate outcomes. Managers with ESTP style tend to make rapid, action-oriented decisions but risk overconfidence, whereas ESTJ-type managers who are more structured and systematic, may also be prone to excessive control (Cristofaro, 2017). Moreover, managers with a high need for cognitive closure favour straightforward and decisive approaches to minimise ambiguity and cognitive overload (Tetlock, 2000). Together, these findings suggest that understanding an individual's cognitive style is crucial for maintaining balanced, well-informed decision-making in the face of information overload.

In the resource allocator role, the manager's cognitive styles shape the resource management process (Fraser & Estabrooks, 2008), which begins with defining the types, assembly, and deployment of resources (Zahra, 2021). Between routine and non-routine allocation, non-routine decisions are particularly influenced by decision-makers' cognitive characteristics (Chang et al., 2002). For example, managers with a sensation style are more likely to incorporate historical expenditure data into their decisions, whereas intuitive managers tend to

exclude them, seeking additional information and favouring flexibility in evaluating alternatives (Chenhall & Morris, 1991). Furthermore, how managers perceive opportunities and threats also varies by cognitive style. Those with extroverted, judging, intuiting and thinking styles perceive situations as more controllable and appraise them as opportunities, while managers with introverted, perceiving, sensing, and feeling styles are more cautious and sensitive to potential threats (White et al., 2003). This divergence is also reflected in sector-specific trends: public sector managers with ST and SF styles excel in consultative, detail-oriented processes that prioritise stability, whereas private sector managers with NT and NF styles thrive in dynamic, high-risk environments that demand innovative, collaborative decision-making (Nutt, 2006). Consistent with a previous study, managers with an intuitive cognitive style who are comfortable with ambiguity are more inclined to pursue bolder strategies, while those with a deliberative style tend to take a more calculated risk (Bonfim et al., 2018).

Financial decision-making in this arena is inherently risky and subject to individual and cultural influences (Abdul Kareem et al., 2023). Traditional views often contrast the Western analytic style with the Eastern holistic style (Ahmad, 2020; H. Li et al., 2022; Ogunlusi & Obademi, 2021); however, recent studies suggest that professional training and market context modulate these tendencies. For instance, Chinese fund managers who have received training in economics and finance tend to adopt a more analytical approach, whereas their Western counterparts display a higher propensity for intuitive decision-making, which is advantageous in dynamic and less structured environments (Wu, 2022). In specific contexts, such as agriculture, farmer-managers with aggressive or passive-defensive styles may struggle to scale operations due to limited interpersonal skills (Howard et al., 1997). While cognitive style is

critical in financial decision-making, continuous professional development is essential for managers to navigate market challenges and organisational needs effectively.

In conclusion, the reviewed research demonstrates that cognitive styles are not merely abstract constructs but rather central determinants of managerial decision-making roles across diverse contexts. These styles shape their strategic approaches and influence training needs, decision support utilisation, and decision quality. These differences are further reflected in entrepreneurial strategies, innovation management, change management, resource allocation, and financial decision-making. Whether navigating complex, information-rich environments that trigger specific cognitive biases or balancing ethical considerations under pressure, managers' decision-making processes are intertwined with their cognitive styles. Moreover, the interplay of individual styles within management teams fosters innovation and risk-taking, serving as a critical counterbalance to potential pitfalls such as groupthink and overconfidence. These findings underscore the organisation's need to tailor managerial development, promote cognitive diversity, and invest in targeted training programs.

2.9.5 Discussion and Bridge to Empirical Studies

This systematic review shows that cognitive styles are dynamic constructs that shape managerial behaviour. While existing research extensively explored decisional roles, there is limited focus on interpersonal and informational roles, particularly the spokesperson and negotiator roles. This gap underscores the need to investigate further how cognitive styles influence managerial communication, stakeholder engagement, and external representation. The empirical evidence synthesised in this review demonstrates that cognitive styles influence organisational outcomes through direct and indirect pathways. At the direct level, cognitive styles shape how managers make strategic decisions, resolve conflicts, process information,

and communicate with organisations. However, their influence is not isolated; various internal organisational factors mediate it. Elements such as trust, team dynamics, and structural flexibility mediate the translation of cognitive styles into managerial effectiveness and contribute to organisational outcomes. Beyond this mediating mechanism, cognitive styles function as moderators, determining the strength and direction of the relationship between organisational factors and managerial effectiveness. These findings reveal that cognitive styles do not operate in isolation but interact within broader organisational and environmental contexts. To structure and interpret complex relationships, we developed a conceptual framework that synthesises the direct, mediating, and moderating effects of cognitive styles on managerial roles.

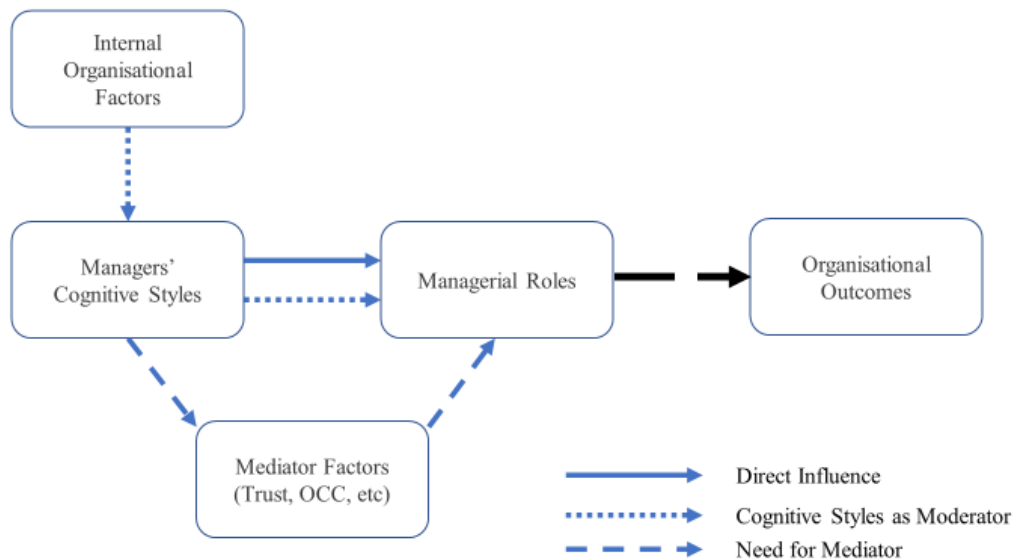
Conceptual Framework: Cognitive Styles in Managerial Roles

The proposed conceptual framework illustrates how cognitive styles influence managerial roles through multiple pathways (see Figure 7). At the direct level, cognitive styles shape how managers operate and respond to organisational challenges. For instance, managers with a high dialectical thinking style integrate divergent perspectives, foster employee creativity, drive innovation and improve organisational performance (Han & Bai, 2020). Similarly, managers with a high need for cognition are more effective in information search and network utilisation compared to those with a low need for cognition (Anderson, 2008).

Beyond their direct influence on managerial roles, cognitive styles function as moderators and need mediators. As moderators, cognitive styles influence the strength or direction of relationships between internal organisational variables and managerial effectiveness. For example, cognitive styles moderate the relationship between environmental attitude and managerial sustainable development flexibility, with intuitive styles being more adaptable to

environmental changes. Meanwhile, systematic style managers tend to exhibit rule-based information processing, leading to delayed responses (Yu et al., 2021). Meanwhile, mediating factors, such as trust, LMX, and conflict management strategies, serve as mechanisms that facilitate the impact of cognitive styles on managerial processing. For instance, trust has been identified as a key mediating variable in leadership effectiveness, facilitating the relationship between leader-member cognitive style congruence and organisational citizenship behaviour (OCB) (Wang et al., 2023). These findings underscore that cognitive styles alone are insufficient predictors of managerial effectiveness. Instead, their impact is contingent on mediating factors that shape how cognitive styles interact with organisational and environmental conditions. Figure 7 illustrates these relationships, showing the pathways through which cognitive styles and internal organisational factors interact to drive managerial performance and lead to organisational outcomes.

Figure 7 *Conceptual Relationship between Cognitive Style and Managerial Roles*



Note. Dominant pattern identified in prior studies, distinguishing studies that examine the direct influence of cognitive styles on managerial outcomes, conceptualise cognitive style as a moderating factor, and the need for a mediator to explain how cognitive styles translate into managerial roles and performance.

While the framework above provides a comprehensive understanding of cognitive style in managerial roles, the review studies overlook the specific strategic roles enacted by middle managers (MMs) and the psychological tension that arises when they operate between hierarchical levels. These gaps are important given that MMs operate in ambiguous environments where their strategic roles are enacted amid competing demands. This complexity requires a comprehensive framework that integrates cognitive style, strategic role enactment, psychological tension in role execution, and attention performance as a fundamental managerial cognitive function. In cognitively demanding environments, attention operates as the gateway to all high-order processes, including perception, evaluation, and strategic decision-making (Kahneman, 1973; Ocasio, 1997). Managers must first attend to relevant stimuli, whether environmental signals, stakeholder cues, or operational disruptions, before they can interpret, prioritise, or act upon them. Thus, MMs' attention performance underpins their cognitive fit with strategic roles demands and shapes the quality, timeliness, and focus of their decisions.

The gaps in previous research are significant because they can leave unresolved how cognitive tendencies manifest in managerial actions, particularly when attention, role conflict, and role expectation intersect. To address this theoretical and empirical gap, the current research advances a cognitive-behavioural framework that positions role conflict linking those variables. This framework integrates three interrelated pathways (1) the behavioural pathway examines the influence of cognitive styles to role conflict and strategic role enactment, and the mediating role of role conflict, (2) the cognitive pathway explores how cognitive style and role conflict influence attention performance, (3) behaviour-to-attention pathway consider whether patterns of strategic role enactment predicts attentional performance.

Bridging Towards Hypothesis Development

While the systematic review in this chapter has consolidated empirical knowledge on how cognitive styles influence managerial roles, it also reveals critical conceptual advancements by mapping direct, mediating, and need-for-moderator pathways through which cognitive styles shape managerial roles within organisations. This framework shows that cognitive styles influence not only decision-making and interpersonal dynamics but also interact with organisational variables such as trust, conflict management, and team processes. However, despite the contributions, the reviewed studies do not examine the specific roles enacted by MMs, nor do they consider role conflict or attention performance as part of the cognitive-behavioural dynamics of role enactment.

These gaps are important given that MMs operate in structurally ambiguous environments where their strategic role is enacted under competing demands. As such, we need a more comprehensive framework that integrates cognitive style, strategic role enactment, psychological tension in role execution, and attention as a managerial cognitive function. In cognitively demanding environments, attention operates as the gateway to all high-order processes, including perception, evaluation, and strategic decision-making (Kahneman, 1973; Ocasio, 1997). Managers must first attend to relevant stimuli, whether environmental signals, stakeholder cues, or operational disruptions, before they can interpret, prioritise, or act upon them. Thus, attention underpins cognitive fit with strategic roles and shapes the quality and focus of subsequent decisions. The following chapter develops hypotheses based on the insights from this SLR, providing a basis for the empirical investigations in Phase 1 and 2.

3 CHAPTER HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter presents the hypotheses derived from the conceptual framework developed in Chapter 2. The purpose of this chapter is to translate the framework's conceptual propositions into empirical models, each aligned with the study's research objectives. The framework posits that MM's cognitive style, role conflict, strategic role enactment, and attention performance constitute a dynamic, interdependent system. In particular, role conflict is positioned as a central mediating mechanism through which cognitive style shapes strategic role enactment and attentional performance. The hypotheses are organised across interconnected pathways: *the behavioural pathway, the cognitive pathway, and the behaviour-to-attention pathway*. These pathways theorised relationships, starting from cognitive style and moving toward strategic role enactment and attention performance, with the behaviour-to-attention pathway examining the direct association between strategic role enactment and attentional performance. The chapter is structured, with each section focusing on a distinct pathway and its associated theoretical logic.

The first pathway, the behavioural pathway, focuses on how cognitive style influences strategic role enactment either directly or through the mediating role of role conflict. The second pathway, the cognitive pathway, examines the impact of role conflict on attention performance and whether cognitive style has an indirect influence on attentional outcomes. Here, attention is conceptualised as cognitive mechanisms through which brain selectively focuses on relevant information and functioning as a gatekeeper of cognitive resources; its operationalised in this study as attentional performance, assessed through objective indices, including reaction times, the slope of response time across set sizes, and an index that captures attentional efficiency

under increasing task complexity. The third pathway examines whether strategic role enactment predict attentional performance. Each section of this chapter builds on these theoretical assumptions to articulate a series of hypotheses. These hypotheses are designed to be tested across two phases, enabling the empirical examination of direct and mediated relationships among cognitive, behavioural, and performance constructs in the context of MMs' roles.

3.2 The Behavioural Pathway: From Cognitive Style to Strategic Role Enactment

This section develops hypotheses linked to the behavioural pathway in the integrated framework, which conceptualises MM's cognitive style as influencing the strategic role they enact, either directly or indirectly through role conflict. This pathway views cognitive style as the foundation of strategic behaviour, with role conflict acting as a mediator that arises when internal cognitive tendencies do not align with external role expectations. It reflects the foundational proposition that cognitive predispositions shape how managers think and also how they behave within organisations. Middle managers operate within structural ambiguity, occupying a position between strategic decision-making and operational execution. To navigate this complexity, they are expected to enact four strategic roles: Synthesising, Championing, Facilitating, and Implementing (S. W. Floyd & Wooldridge, 1997), each of which requires different cognitive demands.

3.2.1 Cognitive Style and Strategic Role Enactment (Objective 1)

Cognitive style (analytic vs. holistic) determines how MMs approach information processing, problem-solving, and interpersonal engagement (Clarke et al., 2007; Nisbett et al., 2001). Analytic cognitive style is characterised by linear reasoning, rule-based logic, and a preference for structured processes. Holistic cognitive style, in contrast, involves contextual reasoning,

divergent thinking, and an emphasis on relationships and patterns. It is hypothesised that these styles align differently with the four strategic roles. MMs with an analytical style are expected to perform better in roles that prioritise order, precision, and structured processes, such as Synthesising and Implementing. Holistic MMs, by contrast, are theorised to gravitate toward roles requiring flexibility, contextual insight, and emotional and interpersonal engagement, such as Championing and Facilitating. Therefore, hypothesis 1 below addresses the research objective, which examines how cognitive style influences the enactment of four strategic roles.

Hypotheses 1

H1a: Middle managers with a holistic cognitive style demonstrate a greater extent of enactment of the Championing role than the analytic cognitive style.

H1b: Middle managers with a holistic cognitive style MMs demonstrate a greater extent of enactment of the Facilitating role than the analytic cognitive style.

H1c: Middle managers with an analytic cognitive style MMs demonstrate a greater extent of enactment of the Synthesising role than the holistic cognitive style.

H1d: Middle managers with an analytic cognitive style MMs demonstrate a greater extent of enactment of the Implementing role than the holistic cognitive style.

3.2.2 Cognitive Style and Role Conflict (Objective 2)

The behavioural fit between cognitive style and role demand is not always ideal. When MMs are required to enact roles that do not align with their cognitive orientation, they can experience internal challenge, which is expressed as role conflict. Traditionally viewed as a function of structural ambiguity or conflicting demands (Kahn et al., 1964), this thesis extends the concept by positioning role conflict as a cognitive-behavioural outcome of style-role misalignment. MMs with holistic styles find it more challenging to enact roles characterised by rigidity,

procedural rules, and linear execution (e.g., Implementing role). Conversely, analytic cognitive style managers conflict with ambiguity and relational sensitivity, such as Championing or Facilitating roles. While both styles experience role conflict under certain conditions, holistic managers may experience it more often, particularly given the dominance of procedural and implementation demands in many organisations.

Hypotheses 2

H2: Middle managers with a holistic cognitive style will report significantly higher levels of role conflict than those with an analytic cognitive style.

3.2.3 Role Conflict and Strategic Role Enactment (Objective 3)

Role conflict is expected not only to emerge from misfit but also to influence strategic behaviour itself. High levels of role conflict can result in reduced behavioural fluency, emotional fatigue, and a decreased willingness to enact challenging tasks (Huy et al., 2002). In the context of MMs, these effects can manifest as avoidance, disengagement, or compensatory overcommitment to particular roles. It is hypothesised that role conflict will predict the differences in strategic role enactment. For example, Championing and Facilitating, which rely on interpersonal engagement and navigating ambiguity, can be either amplified or inhibited depending on the manager's psychological resources.

Hypotheses 3

H3a: A higher level of role conflict will significantly predict greater enactment of Championing roles.

H3b: A higher level of role conflict will significantly predict greater enactment of Facilitating roles.

H3c: A higher level of role conflict will significantly predict lower enactment of Synthesising roles.

H3d: A higher level of role conflict will significantly predict lower enactment of Implementing roles.

3.2.4 Role Conflict Mediates between Cognitive Style and Strategic Role Enactment (Objective 4)

Bringing these concepts together, this section proposes that role conflict mediates the relationship between cognitive style and the enactment of strategic roles. That is, cognitive style may not directly determine behaviour, but its effects are filtered through psychological conflict caused by cognitive-role misfit; situates role conflict as a connector between cognitive style and behaviour, bridging internal processing tendencies and the external enactment of strategic responsibilities.

Hypotheses 4

H4a: Role conflict will mediate the difference between holistic and analytic cognitive style in the enactment of the Championing role, such that holistic cognitive style predicts higher role conflict, which in turn predicts greater Championing role enactment.

H4b: Role conflict will mediate the difference between holistic and analytic cognitive style in the enactment of the Facilitating role, such that holistic cognitive style predicts higher role conflict, which in turn predicts greater Facilitating role enactment.

H4c: Role conflict will mediate the difference between holistic and analytic cognitive style in the enactment of the Synthesising role, such that analytic cognitive style predicts lower role conflict, which in turn predicts greater Synthesising role enactment.

H4d: Role conflict will mediate the difference between holistic and analytic cognitive style in the enactment of the Implementing role, such that analytic cognitive style predicts lower role conflict, which in turn predicts greater Implementing role enactment.

3.3 Cognitive Pathway: From Cognitive Style to Attention Performance

This section develops hypotheses related to the conceptual framework's cognitive pathway, which posits that attention performance is a cognitive outcome shaped by cognitive style and role conflict. This pathway builds on the proposition that attention performance reflects cognitive efficiency in how people deploy their attention quickly, selectively, and consistently under increasing task demands. Due to the limitations of the human brain, attention serves as a mechanism to filter information, allocate processing capacity, and sustain goal-directed focus. In cognitive psychology, faster reaction times (RTs), shallower slopes, and lower index scores indicate better cognitive efficiency because they show that individuals can detect targets more quickly (RTs), maintain attentional stability as complexity increases (slopes), and sustain performance across easy and difficult search conditions (index). In contrast, slower RTs, steeper slopes, and higher index scores reflect poorer efficiency and show greater effort in their attention processes. The cognitive pathway is grounded in two principles. First, cognitive style shapes attentional performance. Analytic thinkers demonstrate focused, sequential, top-down attention, whereas holistic thinkers exhibit diffuse, context-oriented attention, integrating multiple cues simultaneously (Nisbett et al., 2001). Second, role conflict imposes a cognitive load, drawing on executive control resources required for attention processes (Mansouri et al., 2009; Plessow et al., 2011). When people experience psychological strain from misaligned expectations, attention efficiency can decline, with slower processing, weaker filtering, and reduced sustained focus. In middle managerial roles, where demands are high, uncertainty is

frequent, and cognitive-emotional regulation is essential, attentional performance is a determinant of functional effectiveness.

3.3.1 Cognitive Style and Attention Performance (Objective 5)

Cognitive styles reflect individual differences in attentional preferences and information-processing strategies. Analytic cognitive styles favour structured approaches, which align with selective, top-down attentional control. In contrast, holistic cognitive styles promote broader attentional allocation, which can be advantageous in relational or contextual decision-making but can reduce efficiency in tasks requiring narrow visual focus. In this study, attention performance is defined as the ability to deploy attention rapidly, maintain stability as task complexity increases, and minimise processing effort. Therefore, faster reaction times (RTs), shallower slopes, and lower index scores represent higher cognitive efficiency, because they indicate quicker detection, reduced performance cost as set size increases, and more stable attention across easy and difficult task conditions. Meanwhile, slower RTs, steeper slopes, and higher index scores signal reduced cognitive efficiency. Based on these principles, it is hypothesised that MMs with analytic cognitive styles will demonstrate better attention performance across RTs, Slopes, and index metrics, while those with holistic cognitive styles will show lower attentional efficiency, particularly under complex task conditions.

Hypotheses 5

H5a: MMs with an analytic cognitive style will demonstrate more efficient visual search performance compared to those with a holistic cognitive style, as indicated by shallower slopes

H5b: MMs with an analytic cognitive style will demonstrate a smaller efficiency gap between simple and complex visual search tasks (*lower Index score*) compared to those with a holistic cognitive style

H5c: MMs with analytic cognitive style will demonstrate faster overall response times in visual search tasks (*shorter mean RT*) compared to those with holistic cognitive style

3.3.4 Role Conflict and Attention Performance (Objective 6)

This subsection addresses the research objective, which examines whether role conflict influences attention performance. Although role conflict is traditionally understood as a stressor affecting satisfaction and role clarity, cognitive psychology and organisational behaviour literature show that it also impairs cognitive functioning, particularly attention (J. Kim et al., 2017; Mackie et al., 2013). The cognitive cost of role conflict stems from the need to continuously shift between incompatible expectations or value systems, draining executive control and flexibility. Under conditions of high cognitive load, such as increased set size in visual search, this strain can manifest as slower RTs, steeper slopes, and reduced efficiency. This section examines competing hypotheses to determine whether MMs experiencing higher levels of role conflict perform better or worse on attention tasks.

Hypotheses 6

H6: Higher levels of role conflict predict poorer visual attention performance (steeper slope, Higher Index Score, Longer Total mean RT)

3.3.5 Role Conflict Mediates between Cognitive Style and Attention (Objective 7)

This section proposes that role conflict mediates the relationship between cognitive style and attention performance, positioning role conflict as a cognitive-affective bridge that translates internal processing tendencies into performance outcomes. A cognitive style mismatch with role demands induces persistent psychological strain, which in turn depletes attentional control. This model examines direct effects and tests a sequential flow: Cognitive Style → Role

Conflict → Attention Performance, which helps explain why style-based attentional patterns are not always stable across contexts, as they are shaped by whether individuals are operating in compatible cognitive environments.

Hypotheses 7

H7a: Role conflict mediates the relationship between cognitive style and efficiency in simple tasks and complex search tasks (Feature Slope and Conjunction Slope)

H7b: Role conflict mediates the relationship between cognitive style and the efficiency gap between simple and complex tasks (Index score)

H7c: Role conflict mediates the relationship between cognitive style and overall response time (Mean Total RT of Feature and Conjunction tasks)

3.4 The Behaviour-to-Attention Pathway: From Strategic Role Enactment to Attention Performance

The final section of this chapter develops hypotheses based on the behaviour-to-attention pathway by examining whether the type of strategic role enactment is associated with attentional performance. This pathway is theoretically motivated by the proposition that role characterised by high emotional and cognitive complexity, and therefore prone to role conflict, as established in the behavioural pathway, may carry distinct attentional implication for managers who regularly enact them. Managers who frequently enact in relational, complex coordination, interpersonal negotiation, and ambiguity management such as Championing and Facilitating, may over time develop differential patterns of attention capacity compared to those who predominantly enact more structure, task-focused roles such as Synthesising and Implementing (roles often involve task-focused, rule-based problem-solving and operational precision). Whereas the cognitive pathway framed cognitive style as a predictor of attentional

performance via role conflict, this pathway examines whether the nature of repeated enacted strategic roles predict attentional capacity in a predictive association of these two variables.

3.4.1 Strategic Role Enactment and Attention Performance (Objective 8)

This subsection tests whether different types of strategic role enactment are associated with distinct patterns of attention performance. It is hypothesised that roles requiring relational navigation and emotional integration (championing, facilitating) are more cognitively demanding than those requiring procedural and problem-solving (implementing, synthesising). Thus, MMs who enact the former roles more often exhibit signs of attentional inefficiency, especially under high cognitive load.

Hypotheses 8

H8a: Enactment of the Synthesising role predicts better attention performance (shallower slope, Lower Index Score, Shorter mean RT)

H8b: Enactment of the Implementing role predicts better attention performance (shallower slope, Lower Index Score, Shorter mean RT)

H8c: Enactment of the Championing role predicts poorer attention performance (steeper slope, Higher Index Score, longer mean RT)

H8d: Enactment of the Facilitating role predicts poorer attention performance (steeper slope, Higher Index Score, longer mean RT)

3.5 Chapter Summary

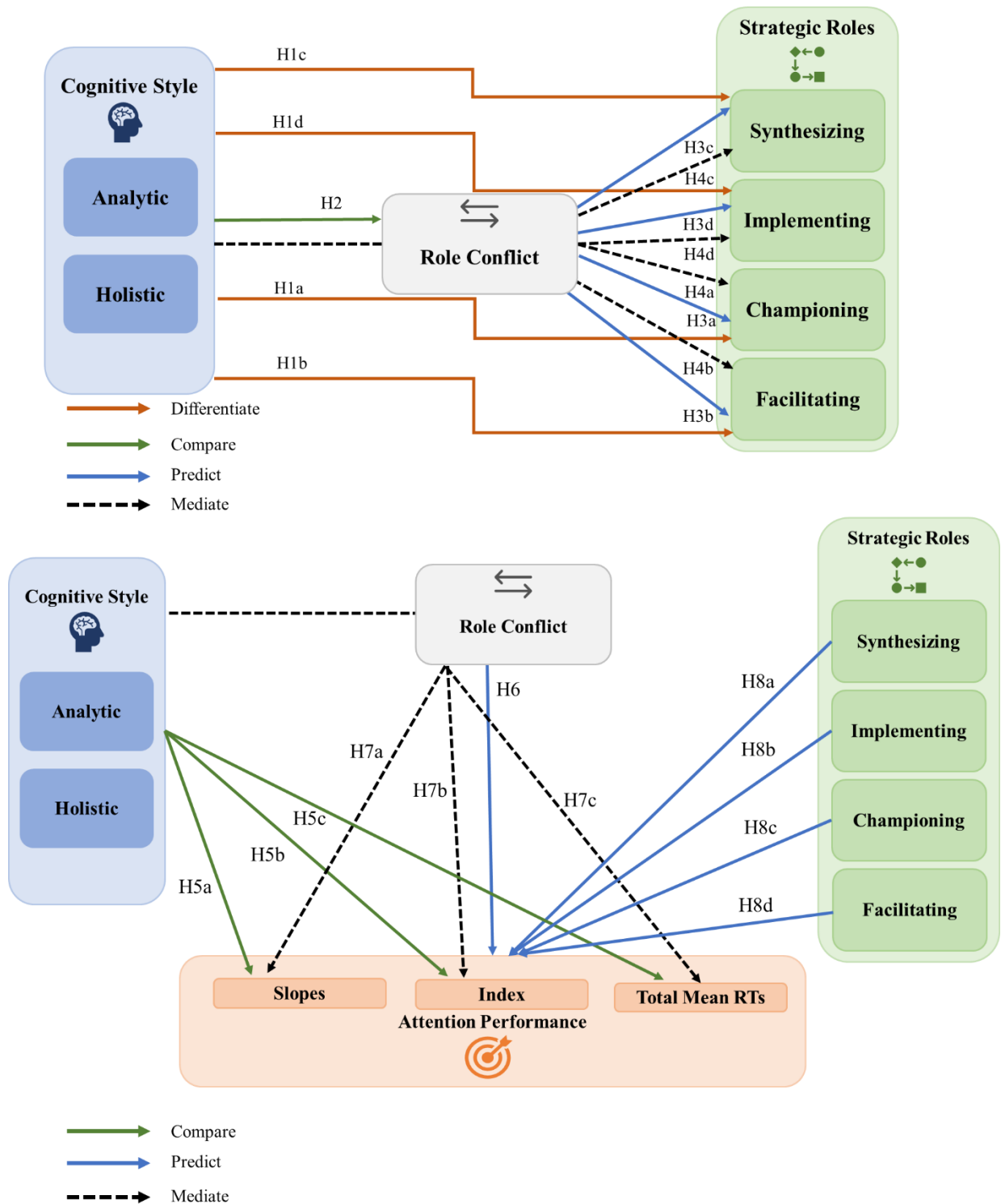
This chapter presents a set of hypotheses grounded in the integrated conceptual framework developed in Chapter 2. Organised across three interrelated pathways: behavioural, cognitive, and behaviour-to-attention. These hypotheses capture the multi-directional relationships

among cognitive style, strategic role enactment, role conflict, and attention performance in the context of MM's strategic roles. The chapter positions role conflict as a cognitive-behavioural mediator linking MMs' traits to behavioural and cognitive performance. By extending attention performance measures to include set-size and response-time slopes, the proposed hypotheses offer a novel empirical assessment of how psychological challenges affect attentional control under cognitive load. The next chapter outlines the research design and methodology used to test these pathways and hypotheses across a two-phase empirical study.

Table 4 *Summary of Hypotheses, Phase 1 and Phase 2*

Pathway	Focus	Hypotheses
<i>Phase 1</i>		
Behavioural Pathway	Cognitive style → Strategic role enactment	H1a – H1d
	Cognitive style → Role Conflict	H2
	Role Conflict → Strategic role enactment	H3a – H3d
	Cognitive style → Role Conflict → Strategic Role Enactment	H4a – H4d
<i>Phase 2</i>		
Cognitive Pathway	Cognitive style → Attention Performance (RTs, Slopes, Index)	H5a – H5c
	Role Conflict → Attention Performance (RTs, Slopes, Index)	H6
	Cognitive style → Role Conflict → Attention Performance (RTs, Slopes, Index)	H7a – H7c
Behaviour-to-Attention Pathway	Strategic role enactment → Attention Performance (RTs, Slopes, Index)	H8a – H8d

Figure 8 Summary of Hypotheses, Phase 1 and Phase 2



4 CHAPTER 4: METHODOLOGY & METHOD

This chapter outlines the methodology and the procedures rooted in a post-positivist paradigm. The research adopts a deductive, quantitative approach to examine the relationship of MMs' cognitive styles, role conflict, strategic role enactment, and attention performance. The chapter elaborates on how the research philosophy, design choices, and data collection procedures align with the research's conceptual framework and objectives. The methods used are survey-based and experimental for both Phase 1 and Phase 2. Phase 1 focuses on the behavioural pathway, exploring how cognitive style influences the extent of strategic role enactment, with role conflict as a mediating factor. Phase 2 examines the cognitive and behaviour-to-attention pathways, assessing how cognitive styles and strategic roles, via role conflict, influence attention performance; and how strategic role enactment influences attention performance.

The chapter is organised into several sections. Section 4.1 outlines the philosophical and ontological foundations guiding the research. Section 4.2 presents an overview of the research design, followed by Section 4.3, which describes sampling strategies and participant profiles. Section 4.4 details the instruments used to measure key constructs, and Section 4.5 explains the data collection procedures, including a pilot study. Section 4.6 presents data cleaning and screening procedures, and Section 4.7 provides a rationale for the use of statistical techniques. Section 4.8 presents the validity and reliability results, concludes with a discussion of the ethical procedures undertaken, and is followed by Section 4.9, which summarises the chapter.

4.1 Philosophical Foundation and Research Paradigm

This thesis adopts a post-positivist research paradigm, reflecting a commitment to empirical inquiry while recognising the complex and subjective nature of managerial cognition and behaviour. Post-positivism asserts that an external, objective reality exists independently of

human perception; however, even though the theoretical framework shapes the observations, it is fallible and acknowledges the limitations of measurement and the researcher's perspectives (Maksimović & Evtimov, 2023; Panhwar et al., 2017; G. S. Ryan, 2019). Unlike positivism, which posits absolute value of objectivity and neutrality, post-positivism allows for a critical and self-reflective approach to studying social phenomena, strives for objectivity through rigorous methods, while accepting that our knowledge of reality is provisional and subject to revision (Maksimović & Evtimov, 2023).

This philosophical positioning enables a balance between theoretical structure and empirical investigation; thus, it is essential for the present study, which investigates cognitive styles, role conflict, strategic role enactment, and attention performance as constructs that emerge from individual cognition and are systematically measurable. Post-positivist social and psychological constructs, such as variables in the present study, cannot be measured with absolute precision, but can be approximated through validated operationalisations (Tripathi et al., 2024). Instruments like the Framed-Line Task (FLT), Likert-scale role conflict and strategic roles measure, and attention performance metrics (RTs, slopes, index) serve as theoretical tools that approximate cognitive and behavioural constructs. This epistemological foundation reflects the critical objectivist view that knowledge about reality is attainable but partial, fallible, and shaped by theory and context (Ryan, 2019).

A central principle of post-positivism is its deterministic but probabilistic orientation. It assumes that behavioural and cognitive patterns exist, yet these patterns are not fixed laws, but rather probabilistic tendencies that can be systematically observed (Panhwar et al., 2017). This thesis does not employ experimental designs capable of establishing causality; it proposes directional, predictive hypotheses (e.g., cognitive style → role conflict → strategic role

enactment), based on established theoretical frameworks. Such an approach reflects the post-positivist belief that reality is structured to support systematic inquiry, even when causality cannot be established (Dulal, 2025; Kouam, 2025; Maksimović & Evtimov, 2023).

From an ontological perspective, this study adopts a realist position, aligned with the assumption of critical realism. It assumes that constructs such as cognitive style, role conflict, strategic role enactment, and attention performance reflect real psychological and behavioural dispositions that exist independently of researchers' interpretations (Hiller, 2016). These constructs are seen as stable tendencies with observable implications in organisational contexts. Although shaped by context and culture, patterns such as a holistic cognitive style, a championing role, or role conflict can impair attention; these tendencies can be empirically identified using reliable instruments. This view supports the thesis's goal of examining the relationship between cognition and performance within an organisation.

From an epistemological perspective, this research is guided by objectivism. It assumes that objective knowledge can be pursued through empirical investigation while recognising the role of theory and interpretation in shaping knowledge (Alcoff, 2010; Saunders et al., 2023; Wullweber, 2014). In practice, this involves employing a deductive approach, a priori hypotheses, and quantitative tools to test relationships (Samuels, 2024). However, the research also acknowledges that the researcher's values and theoretical and methodological decisions shape data collection and interpretation. Therefore, statistical findings are treated not as definitive truths but as probabilistic approximations of tendencies in how MMs think, act, and respond to strategic role challenges (Hiller, 2016).

Despite its strengths, the post-positivist approach also recognises several limitations, particularly the challenge of measuring internal cognitive constructs such as attention, cognitive style, and role conflict. Post-positivism accepts that all observations are influenced by theory and that measurement instruments in social and psychological research involve a degree of subjectivity (Ryan, 2006). Cognitive constructs rely on indirect indicators (reaction times, behavioural performances, Likert scales, and interpretative categorisations), which do not capture mental states with perfect accuracy (Flake & Fried, 2020). This paradigm addresses such limitations by emphasising methodological triangulation, integrating self-report measures (strategic roles, role conflict), cognitive style assessment (Framed-Line Task), and an objective performance-based measure of attention (visual search experiment) to reduce reliance on a single method and mitigate subjective bias.

Finally, the two-phases study design with Phase 1 examines the behavioural pathway, linking cognitive style to strategic role enactment via role conflict, while Phase 2 focuses on cognitive and behaviour-to-attention pathways, investigating how cognitive styles and strategic roles influence attention performance. While this study do not aim to prove causality, this design enables the detection of probabilistic relationships and theoretical coherence across constructs. The integration of theoretical structure and empirical study embodies the post-positivist logic of inquiry, with a commitment to objectivity, theoretical clarity, methodological rigour, and empirical transparency, while acknowledging the complexity of the study's phenomena and the limitations of measuring constructs.

4.2 Research Design

This thesis uses a quantitative research design, aligned with a post-positivist paradigm and a realist ontological stance. Quantitative research is understood as a formal, objective, and

systematic process for describing variables, testing relationships, and examining their associations using numerical data and statistical analyses (Bloomfield & Fisher, 2019). Grounded in the belief that reality is structured enough to permit systematic inquiry, this thesis argues that psychological and behavioural constructs such as cognitive style, role conflict, strategic role enactment, and attention performance can be objectively measured and analysed to uncover patterns in middle managers' roles (Davies & Fisher, 2018).

Furthermore, research employs a cross-sectional design, which collects data from participants at a single point in time and captures differences across MMs without tracking developmental changes or longitudinal trajectories (Kesmodel, 2018). This approach is suitable for current research, given the thesis's focus on relatively stable individual differences such as cognitive style. By examining variations across participants without repeated measures, the cross-sectional method allows the study to identify relationships between cognitive and behavioural aspects in managerial settings. Although this design does not allow for causal inference, it aligns with the post-positivist paradigm, which holds that systematic, empirical inquiry can still uncover probabilistic patterns in complex managerial behaviour (Kesmodel, 2018; Panhwar et al., 2017).

The study was originally designed to investigate the behavioural pathway, examining the relationship between cognitive style, role conflict, and strategic role enactment. Following the completion of Phase 1 data collection, the scope was extended to incorporate a second phase examining attentional performance through a visual search experiment. This extension was motivated by the recognition that the behavioural pathway alone did not fully capture the cognitive mechanism through which cognitive style and role conflict might influence managerial roles, specifically whether these constructs would also be associated with

differences in objective attentional performance. This particular reason is also supported by the literature review, including the systematic literature review (SLR) presented at the end of Chapter 2, which serves as the initial step by consolidating existing evidence on cognitive styles and managerial behaviour. The SLR identifies gaps in the literature, such as a lack of systematic integration of role conflict and attention performance into the framework of MMs' cognitive, and establishes the conceptual foundation for hypothesis development. Because extending the study required a new experimental task and the recruitment of participants, a second ethics application was submitted. Of the 157 middle managers who participated in Phase 1, 105 (excluding outliers) subsequently agreed to participate in Phase 2 and completed the visual search experiment.

Table 5 *Phase and Hypotheses Testing*

Phase	Hypotheses	Measure	Sample
Phase 1	H1-H4 (Behavioural)	Cognitive style, role conflict, strategic role enactment	157
Phase 2	H5-H7 (Cognitive and Behaviour-to-Attention)	Cognitive style, role conflict, strategic role enactment, attention performance	105

Note. Phase 2 participants were re-recruited from the Phase 1 sample following approval of the second ethics application.

Following the hypotheses, this research design unfolds into two phases: Phase 1 examines the behavioural pathway by investigating how cognitive styles influence strategic role enactment via role conflict, while Phase 2 investigates the cognitive and behaviour-to-attention pathways by exploring how cognitive styles and role enactment influence attention performance, again considering role conflict as a mediator. Phase 1 combines an experimental task, the Framed-Line Task (Kitayama et al., 2003), with Likert-based self-report measures of strategic role enactment and role conflict (Floyd & Wooldridge, 1992; Rizzo et al., 1970). Phase 2 integrates

these with attentional performance metrics, derived from a visual search experiment that generates RTs, slopes, and indices across feature and conjunction conditions (Wolfe, 2020a).

The thesis follows a deductive logic, testing pre-specified and theoretically grounded hypotheses derived from conceptual synthesis. Statistical methods such as t-tests, mixed ANOVA, MANOVA, regression, and mediation are employed to identify patterns of relationships and indirect effects. In summary, the decision adopts a quantitative, cross-sectional, and two-phases study design that aligns with the theoretical and empirical objectives of this research. It enables a structured exploration of how MMs' cognitive styles shape their managerial behaviour and attentional performance, while acknowledging the interpretive limits of non-experimental inquiry.

4.3 Sampling Strategies and Participants

This research employed purposive sampling with the snowball technique (Samuels, 2022) alongside professional participant recruitment through the Prolific platform. It is known as one of the superior platforms compared to other crowd-working platforms by providing high-quality data, pre-screened and diverse participants, and strong potential for social science research (Palan & Schitter, 2018). Purposive sampling was necessary because middle managers constitute a specific population within the organisation and are not easily accessible through general population sampling. The initial recruitment was sourced from the researcher's professional and academic networks, targeting individuals who met predefined criteria for middle management roles. Invitations were sent via email and LinkedIn, and we encouraged recipients to recommend colleagues who met the same eligibility requirements, creating a snowball effect that expanded the sample within managerial networks. This approach was complemented by purposive sampling through the Prolific platform to enable rapid, reliable

access to eligible participants outside the researcher's immediate networks. The combined recruitment strategy was chosen to maximise sample diversity while maintaining adherence to inclusion criteria.

Phase 1. This phase tested hypotheses regarding the relationships among cognitive style, role conflict, and strategic role enactment using MANOVA, t-tests, simple regression, and mediation models. A series of a priori G*Power analyses (Faul et al., 2007, 2009) was conducted to determine the minimum required sample sizes for each analysis. For objective 1 (H1a-H1d), which examined whether analytic and holistic managers differed across the four strategic roles, a MANOVA with two groups and four dependent variables was used. A medium effect size ($f = 0.25$) was used as an approximation, and the results indicated a required sample of 128 participants in total. For objective 2 (H2), an independent-samples t-test assessing differences in role conflict between cognitive style groups yielded a medium effect size ($d = 0.50$) and a required sample of 128 participants. For objective 3 (H3a-H3d), which tested whether role conflict predicted each strategic role through linear regression, a medium effect ($f^2 = 0.15$) required 54 participants; thus, the available participants exceeded this requirement. For objective 4 (H4a-H4d), mediation analyses assessed whether role conflict as a mediator between cognitive style and strategic role enactment. Following the guidance of Fritz and MacKinnon (2007) for detecting small-to-medium indirect effects, a minimum sample of approximately 116 participants was recommended. Data collection yielded 157 participants (48 from network-based snowball sampling and 109 from Prolific), exceeding the target of 116-128 participants.

Phase 2. This phase examined how cognitive style, role conflict, and strategic role enactment predicted attention performance in visual search tasks. Power analysis was again conducted to

determine the minimum required sample sizes for mixed ANOVA, regression, and mediation analyses. For objective 5 (H5a-H5c), which assessed cognitive style differences in slopes, index score, and total mean reaction times, using a medium effect size ($f = 0.25$) required 128 participants. For objective 6 (H6), regression testing whether role conflict predicted attentional efficiency required only 54 participants. For objective 7 (H7a-H7c), mediation analyses examining whether role conflict mediated the relationship between cognitive style and attention again required approximately 116 participants. Finally, for objective 8 (H8a-H8d), multiple regression models testing whether the four strategic roles predicted attention performance (with $f^2 = 0.15$) required 84 participants. However, Phase 2 recruited 108 participants via Prolific. Phase 2 yielded a final sample of 105 participants following data cleaning and exclusions (describe in section 4.6). Although slightly below the ideal target of 116-128, the sample was above the threshold for all regression analyses. In addition, visual search experiments in cognitive psychology typically yield medium to large effect sizes, meaning the achieved sample size remains adequate for planned analyses.

Inclusion criteria for participation required individuals to (a) hold a current middle management role defined as occupying a position above first-line supervision and below senior executive level, (b) be employed in a medium-sized or large organisation, and (c) demonstrate proficiency in English sufficient to complete the cognitive tasks and questionnaires. Exclusion criteria applied to participants with diagnosed neurodevelopmental or neurological disorders (e.g., ADHD, epilepsy), as these conditions could impact visual attention and cognitive control, thereby confounding experimental measures (Mullane & Klein, 2008)

Participants' demographic characteristics reflect a diverse background of MMs, supporting external validity (McDermott, 2011). Based on data from Phase 1, participants' age ranged

from 20 to above 43 years, with the majority falling between 32 and 43 years ($M = 3.31$ on a 5-point scale, $SD = 1.29$). Regarding educational background, most participants held undergraduate or postgraduate qualifications ($M = 3.27$, $SD = 0.81$). Managerial experience was also varied: some had 1-3 years, while a substantial proportion reported having over 10 years of experience in a management role ($M = 2.57$, $SD = 1.05$). Participants came from diverse disciplinary backgrounds, including business and management, psychology, engineering, law, and other social sciences ($M = 2.89$, $SD = 1.64$). Additionally, respondents held a range of positions within the organisational hierarchy, with most located 2 or 3 levels below the CEO ($M = 2.80$, $SD = 1.10$). These characteristics confirm that the sample captures the MMs populations across sectors and organisational structures.

4.4 Measures and Instrumentation

This research employed experimental tasks and questionnaires to measure four constructs to understand MMs' cognitive-behavioural processes: cognitive style, strategic role enactment, role conflict, and attention performance. Cognitive style refers to an individual's preferences in processing, organising, and interpreting information; in this phase, it was categorised as an analytic-holistic dimension. Strategic role enactment captures the extent to which MMs fulfil four roles (Synthesising, Championing, Facilitating, and Implementing) as part of their strategic responsibilities. Role conflict is defined as the psychological challenge that arises when conflicting expectations exist across MMs' multiple strategic roles. Attention performance refers to the efficiency and accuracy of visual information under cognitive load, operationalised through reaction times, accuracy rates, and visual search slopes. These constructs provide a lens on how internal cognitive preferences shape external role performance and cognitive function. Table 6 summarises the operationalisation of each construct.

Table 6 *Summary of the Operationalisation of Constructs*

Construct	Measure Instrument	Source/ Citation	Items/ Trials	Response/ Format/ Output	Notes
Cognitive Style	Framed-Line Task (FLT)	(Kitayama et al., 2003)	12 trials	Error scores in mm (absolute vs relative)	Style classification via mean score error differences
Strategic Role Enactment	Strategic Roles Questionnaire	(Floyd & Wooldridge, 1992)	20 questions	5-point Likert scale	Composite score per role
Role Conflict	Role Conflict Questionnaire	(Rizzo et al., 1970)	8 questions	5-point Likert scale	Composite score
Attention Performance	Visual Search Task	(Treisman & Gelade, 1980; Wolfe, 1998)	3, 6, 12, 24 set sizes	Reaction time, Slopes, and index	Feature vs conjunction search

Note. Composite scores were computed by averaging item responses for each strategic role and role conflict measure.

Cognitive Style. Cognitive style was measured using the Framed-line task (FLT), which distinguishes between analytic and holistic cognitive styles based on an individual's pattern of visual attention (Kitayama et al., 2003). The FLT was selected for several reasons. First, unlike self-report measures such as MBTI or CoSI, which are susceptible to social desirability and self-perception biases, the FLT captures cognitive style through perceptual and judgmental behaviours (Miyamoto & Wilken, 2010). Second, the processing tendencies it operationalises, where contextual independence in the Absolute task and contextual integration in the Relative task, show a stable cognitive orientation. Kitayama et al. (2003) demonstrated that FLT performance correlated with broader attentional patterns across perceptual tasks, while Nisbett et al. (2001) established that analytic and holistic tendencies generalise reasoning, categorisation, and causal attribution. Third, these processing tendencies have been documented in managerial behaviour, supporting the validity of the measure in the occupational context. Analytic managers tend to decompose problems in detail, apply rule-based logic, and filter out peripheral information (Hodgkinson & Sadler-Smith, 2018; Hongdizi

et al., 2023) (tendencies that are associated with Synthesising and Implementing roles, which require structural information processing and operational precision). Holistic managers, by contrast, tend to integrate multiple contextual cues and attend to relational and environmental dynamics (Armstrong & Qi, 2020; Choi et al., 2007) (tendencies that align with Championing and Facilitating roles, which require contextual sensitivity). The Absolute task of FLT requires participants to isolate the focal line from its surrounding frame; operationalise the same cognitive tendency that analytic managers deploy when filtering strategic information from organisational noise, while the Relative task operationalises the integrative tendency characteristic of holistic managers. Participants were therefore shown a series of framed vertical lines and asked to reproduce either the absolute length of each line (absolute task) or its relative length within its frame (relative task).

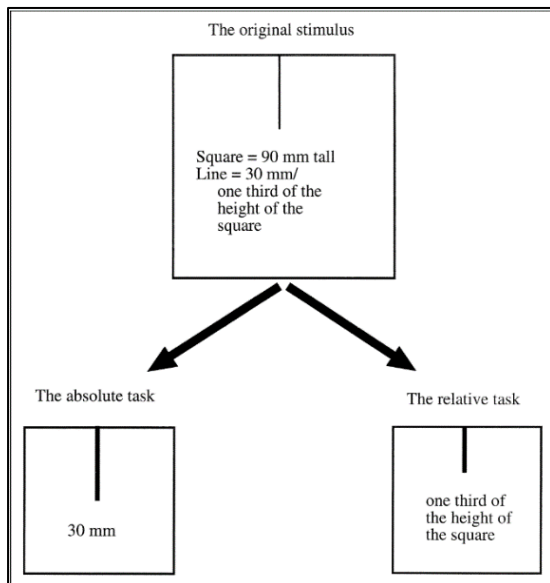
The FLT comprised 12 experimental trials in total (six in the Absolute tasks and six in the Relative tasks), each preceded by a practice trial to familiarise participants with the response procedure. In the Absolute task, participants were instructed to reproduce the line's actual length independently of the surrounding frame (requiring them to ignore contextual information). In the relative task, participants reproduce the line's proportional length relative to its frame (requiring integration of the focal line and its context). Each trial presented the first frame and line for five seconds, after which participants reproduced the line in a new frame. Table 6 presents the trial structure for both tasks, showing the first frame size, target line length, proportional relationship, and second frame size across six trials. An example of the stimuli for the Framed-Line Task is presented in Figure 9.

Table 7 Trial Structure of the Framed-Line Task

Trial	First Frame	Target Line	Proportion	Second Frame
1	Smaller (81)	68	$\frac{3}{4}$ - Longer	Larger (162)
2	Smaller (108)	22	$\frac{1}{4}$ - Shorter	Larger (162)
3	Same (141)	102	$\frac{3}{4}$ - Longer	Same (141)
4	Same (101)	28	$\frac{1}{4}$ - Shorter	Same (101)
5	Larger (108)	73	$\frac{1}{3}$ - Longer	Smaller (81)
6	Larger (162)	30	$\frac{1}{4}$ - Shorter	Smaller (81)

Note. The same six trial configurations were used in both Absolute and relative tasks. In the Absolute task, participants reproduce the line’s actual length independently of frame size. In the Relative task, participants reproduced the lines. proportional length relative to the new frame. Frame and line dimensions are in millimetres. Adapted from Kitayama et al. (2003)

Figure 9 An Example of Stimuli in the Framed-Line Task.



Note. In the absolute task, participants reproduced the line's length; in the relative task, they reproduced its proportional length relative to the frame. Adapted from Kitayama et al (2003, p. 202).

Scoring and Classification. The task was developed and administered online using Gorilla experiment builder (Anwyl-Irvine et al., 2020). Accuracy was measured as the deviation from the target length (in millimetres), with lower scores indicating greater accuracy. Two average

error scores were calculated per participant: one for absolute trials and one for relative trials, yielding two mean error scores per participant. Classification was determined by comparing each participant's mean Absolute error against the mean Relative error. A participant was classified as analytic if their mean error was lower in the Absolute tasks than in the Relative task, indicating a tendency to encode the focal line independently of its surrounding frame. A participant was classified as holistic if their mean error was lower in the Relative task, indicating sensitivity to the proportional relationship between the line and the frame. This within-person directional comparison follows the established FLT protocol (Kitayama et al., 2003; Miyamoto & Wilken, 2010). In the present study, this procedure yielded 84 analytic and 73 holistic managers. Table 8 illustrates this classification procedure with example participant data.

Table 8 *Example Classification of Cognitive Style Based on Framed-Line Task Performance*

Participant	Absolute task Average Error	Relative task Average Error	Result
1	23.1	3.0	Holistic
2	4.1	12.5	Analytic
3	8.7	4.9	Holistic
4	6.9	20.9	Analytic
5	32.1	10.2	Holistic

Note. Values represent average absolute error (in millimetres) across trials for the absolute and relative framed-line tasks (FLT). Participants were classified as analytic when the average error was lower on the absolute task than on the relative task, and as holistic when the average error was lower on the relative task. This classification follows established procedures for FLT by Kitayama et al. (2003).

The Four Strategic Roles. Strategic role enactment was measured via self-report, using the established framework of MMs' roles developed by Floyd and Wooldridge (1992). Each of the four roles (Synthesising information, Championing alternatives, Facilitating adaptability, and

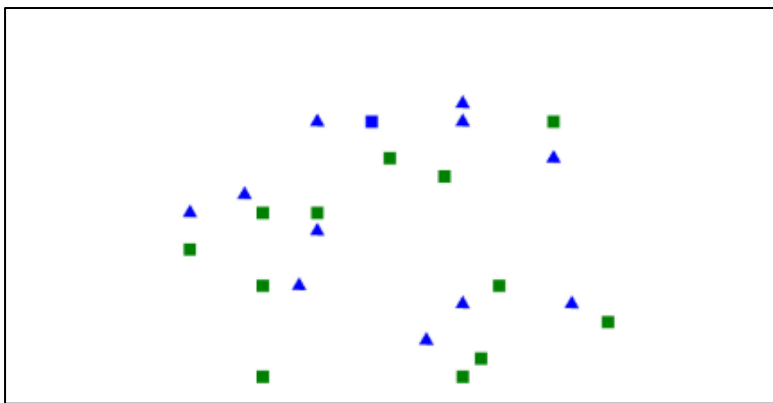
Implementing deliberate strategy) was measured using Likert-scale items capturing the intensity of role enactment in participants' managerial roles. Each subscale consisted of 4 to 7 items rated on a 5-point Likert scale (1=Never, 5 = Always). Sample items included: "*Gather information on the feasibility of new programs*" (Synthesising) and "*Propose programs or projects to higher-level managers*" (Championing). Composite scores for each role were calculated by averaging the items, with higher scores indicating more intense role enactment.

Role Conflict. To measure role conflict, this research adapted items from the seminal scale by Rizzo et al. (1970) and developed an 8-item questionnaire rated on a 5-point Likert scale (1 = Never, 5 = Always). The items capture the experience of contradictory demands, ambiguity, and incompatible expectations in role enactment. Sample items included: "*I have to do things that should be done differently,*" and "*I receive incompatible requests from two or more people*". Composite scores were calculated by averaging item scores; higher scores indicated greater perceived role conflict.

Visual Search Experiment. Attention performance was assessed using a computerised visual experiment programmed in the Gorilla Experiment Builder platform to capture the precise timing of stimuli and responses (see Figure 10). The two conditions followed the established distinction between single-feature and conjunction search conditions (Wolfe, 1998) as indicators of attention control across different cognitive load levels (Solman et al., 2011). Single-feature search involves detecting a target defined by a single salient attribute, while conjunction search requires integrating multiple features to identify the target among heterogeneous distractors (Humphrey & Kramer, 1997; Wolfe, 1998). The single-feature search condition presented a target defined by a blue square among uniform distractors (blue triangles or green squares). This condition requires minimal attention control, as the target

‘pops out’ regardless of the number of distractors. By contrast, the conjunction search condition also used a blue square as the target, but embedded it among a combination of distractors (a blue triangle and a green square), which increased attentional load. Stimuli were displayed against a neutral white background, arranged randomly around a central fixation cross. Three set sizes (6, 12, and 24) were used to manipulate perceptual load and permit analysis of performance costs as display size increased. Participants completed 180 trials across both conditions. In the single-feature condition, participants completed 60 trials in total, split evenly across 20 trials per set size, with target-present trials distributed equally to the left and right of the screen (30 trials each). For the conjunction condition, participants completed 120 trials, split evenly across set sizes, with target-present trials equally distributed to the left and right of the screen (60 trials each).

Figure 10 *An Example of Visual Search*

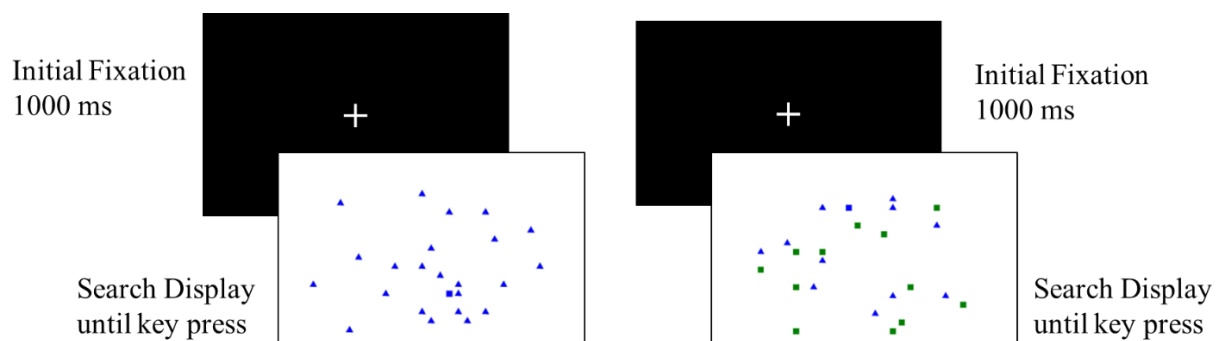


Note. The display shows a search trial in which the target (a blue square) is presented among distractors (green squares and blue triangles).

To quantify attentional performance, four metrics were derived from cleaned data. First, to provide a basic indicator of processing speed under varying cognitive load, mean reaction times (RTs) were calculated separately for each set size within single-feature and conjunction-search conditions (Palmer et al., 2011; Treisman & Gelade, 1980; Wolfe, 1998). Second, to yield an

overall measure of response speed under simple (single-feature) and complex (conjunction) task demands, mean total RTs were computed for each condition (Bueichekú et al., 2019; Burnham, 2010). Third, search slopes were estimated by regressing RTs on set size for each condition (ms/item), indicating the efficiency of attentional processing as display size increased; steeper slopes reflect less efficient selective attention. Finally, an index score was calculated to capture the proportional efficiency gap between simple and complex search conditions ($\text{Index} = \text{Slope Conjunction} - \text{Slope Single Feature} / \text{Slope Conjunction}$) (Wolfe & Horowitz, 2017). These metrics provided multidimensional, objective indicators of attentional capacity under task demand, and for testing hypotheses linking cognitive style, strategic roles, and the experience of role conflict.

Figure 11 *Example of Search Displays*



Note. The displays for two search conditions: single-feature (left) and conjunction (right) (Mavritsaki et al., 2025).

4.5 Data Collection Procedures

4.5.1 Data Collection Overview

Data collection for this thesis was designed to ensure methodological rigour, consistency across participants, and adherence to ethical standards. Phase 1 and Phase 2 followed protocols that standardised every stage of participant engagement, from briefings and informed consent

through task administration to participant debriefing. The goal was to create a data collection environment that minimised bias, maximised data quality, and prioritised participants' understanding and well-being.

Across both phases, participants first received a comprehensive briefing that explained the purpose of the research, what their participation would entail, and their rights, including the voluntary nature of their involvement and the ability to withdraw at any time without consequence. Informed consent was obtained via an online form that required participants to acknowledge their understanding of the study's procedures, potential risks, confidentiality assurances, and data use. Instructions were presented in a standardised format on screen text to ensure all participants received identical guidance, reducing variability in task comprehension and performance. Upon task completion, participants were provided with a debriefing form that included contact information in case they had further questions or wished to withdraw their data. Throughout the data collection process, the researcher monitors progress to identify and address technical or procedural issues quickly. Ethical considerations underpinned every aspect of data collection, aligning with Birmingham City University's research ethics guidelines.

It should be noted that both phases were conducted remotely via the Gorilla platform, meaning participants completed the tasks and the experiment at various times of day (while the researcher attended the online meeting) on their personal devices. This is particularly relevant to the visual search experiment, as attention performance might vary across the circadian cycle (Bouckenooghe et al., 2007). The potential impact of time-of-day variation on the attention performance data is acknowledged as a limitation of the present study and is discussed further in Chapter 6.

4.5.2 Data Collection for Pilot Study

A pilot study was conducted to identify and address potential issues related to participant comprehension, task design, and technological implementation before recruiting a large sample. Six middle managers were recruited through a professional network within Birmingham City University. The pilot study mirrored the protocols for Phase 1: participants completed the demographic questionnaire, followed by the Framed-Line Task (FLT) to assess cognitive style, then questionnaires measuring the strategic role enactment and experience of role conflict. The tasks and surveys were administered via the Gorilla Experiment Builder platform, allowing for testing the technical stability of online delivery and response recording. Participants were briefed using the same standardised instructions that would later be used in the main data collection. Upon completing the tasks, they received a debriefing explaining the nature of the research and its objectives.

Feedback from the pilot study's participants was collected through follow-up discussions and brief post-task surveys. Comment focused on the clarity of instructions, pacing of the FLT trials, ease of questionnaire completion, and overall participant experience. Based on the feedback, minor refinements were made, including adjustments to instructional wording to enhance clarity. No substantive changes to the questionnaires themselves were necessary, as the items were adapted from validated instruments. The Pilot study confirmed that the estimated completion time was approximately 20-30 minutes and was met across a range of participant devices, and that the briefing and consent procedures were clear and effective.

4.5.3 Data Collection for Phase 1

The official data collection for Phase 1 was designed to capture MMs' cognitive styles, their extent of strategic role enactment, and their experience of role conflict through a combination

of cognitive tasks and self-report questionnaires. Recruitment focused on MMs with diverse professional backgrounds, leveraging purposive sampling through personal networks and online platforms, including Prolific. Participants completed the study remotely, accessing tasks through the Gorilla platform. Upon enrolment, participants were provided with a digital briefing document outlining the study's objectives, procedures, expected duration, confidentiality assurances, and their right as participants to withdraw at any time. Consent was obtained electronically by requiring participants to acknowledge and agree to an informed consent statement before proceeding. Instructions were presented on screen in the early session of the study to maintain the understanding and reduce procedural bias.

The data collection sequence began with answering the demographic questionnaire, followed by the Framed-Line Task (FLT), which assessed participants' cognitive style (analytic or holistic) based on the accuracy across absolute and relative trials. This task was programmed with clear instructions and a series of practice trials to familiarise participants with response expectations. Following completion of FLT, participants answered two sets of questionnaires using Likert scales, one measuring the enactment of four strategic roles (Synthesising, Championing, Facilitating, and Implementing), adapted from Floyd & Wooldridge's established framework (1992), and another assessing role conflict using items adapted from Rizzo et al. (1970).

The average time to complete Phase 1 was 20-30 minutes per participant. Participants completed the study using their own devices and were automatically recorded on Gorilla's platform. After completing all components, participants were presented with a debriefing document that reiterated the study's purpose, the significance of their contributions to research

on middle manager strategic roles, and provided contact information for the research team in case they had questions or wished to withdraw from the study.

4.5.4 Data Collection for Phase 2

Data collection for Phase 2 focused on assessing participants' attention performance using the visual search experiment, while drawing on the cognitive style and strategic roles enactment data previously collected during Phase 1. Of the 157 MMs who participated in Phase 1, 108 continued to Phase 2, completing the visual attention experiment after their initial survey and cognitive style data were stored. Participants were recruited through Prolific using purposive sampling filters, ensuring they met eligibility criteria consistent with Phase 1 (e.g., managerial position, absence of neurological conditions). The procedure started with reviewing an online briefing document outlining Phase 2's objective, detailed procedures, estimated duration, and ethical considerations, and electronic consent was obtained before proceeding.

The visual search experiment comprised two search types, designed to capture aspects of attentional performance: single-feature and conjunction searches. In the single feature search condition, participants identified a target defined by a single salient attribute, which required relatively low attentional demands; while in the conjunction search, participants located targets defined by a combination of features, introducing a higher complexity and requiring more sustained attention (Kim & Cave, 1995; Mavritsaki et al., 2025). Both tasks were programmed in the Gorilla platform, recording precise timing, optimised frame rates, and standardised target to-distractor across trials. Practice trials were provided before each task, and reaction time (RT) and accuracy were automatically recorded. The average duration for phase 2 is approximately 40-50 minutes per participant. Upon completing the visual search tasks, participants received a debriefing document explaining Phase 2's objectives, the relevance of visual attention

measures, and how these data contribute to understanding cognitive processes on MMs' strategic behaviour. Contact details for the research team and information on data withdrawal rights were provided.

4.5.5 Measures to Minimise Bias and Standardise Administration

Multiple strategies were implemented across both phases to minimise potential bias and ensure standardised administration, internal validity and reliability of the research. Through the Gorilla platform, automatic measurements were recorded, and the instructions were standardised and delivered on-screen. By eliminating researcher-delivered explanations during data collection, this approach minimised variation in tone, emphasis, or phrasing that could influence participants' understanding or performance. To reduce the learning effect, practice trials were integrated for the Framed-Line Task and visual search experiments. This practice session allowed participants to become familiar with response formats, task demands, and timing without influencing the data collected in actual trials. Order effects were controlled by presenting tasks and questionnaires in a fixed, consistent sequence for every participant within each phase.

Technical oversight during data collection was achieved through real-time monitoring of participants' progress using Gorilla's administrative dashboard. This approach enables researchers to track participants' completion status, identify technical issues, and intervene if necessary, either by providing technical support or excluding corrupted data in accordance with predefined criteria. Moreover, device requirements (e.g., using a mouse) were communicated to ensure uniformity in stimulus presentation across participants' devices. Finally, all written instructions, consent forms, and debriefing materials were pilot tested with MMs before the main phases to eliminate ambiguities that could lead to differential interpretations or responses.

This approach to minimising bias and standardising administrative procedures enhances the methodological robustness of the data collection phase.

4.6 Data Cleaning and Screening

Before conducting the data analysis, a data cleaning and screening process was undertaken to ensure accuracy, completeness, and integrity of the dataset. Given the experimental and survey-based design of this thesis, data screening focused on identifying and managing incomplete responses, outliers, and violations of statistical assumptions such as normality and linearity. The goal was to retain high-quality data that met standards required for robust quantitative analysis, while preserving representativeness and minimising data loss. The first stage involved removing cases with substantial missing data. In Phase 1, participants who did not complete the full FLT trial or who failed to submit all questionnaires were excluded. Similarly, in Phase 2, participants who failed to complete the attention performance task were removed from the final data set. This approach ensured data completeness and prevented cognitive and behavioural scores from being compromised by partial or unreliable input.

For the questionnaire type and FLT tasks, the Gorilla platform was configured to require responses before participants could proceed, thereby eliminating the possibility of item-level missing data. As such, there were no missing values for the demographic questionnaires, the four strategic roles, role conflict, or cognitive style. In the visual search experiment, however, some trials were missing due to non-responses or timeouts. To maintain consistency and reliability in the calculation of the integrated performance score, participants with any missing trial-level data were excluded from the final analysis; only participants who completed all required trials were retained. Thus, the final dataset used to calculate attention performance metrics was 100% complete.

Outlier inspection was conducted separately for Phase 1 and Phase 2 using visual and descriptive methods (Mowbray et al., 2019; Osborne, 2010). For Phase 1, which focused on survey-based variables, outlier assessment centred on the composite scores for the four strategic roles and role conflict. Outlier detection was conducted using histograms and boxplots to assess distributional patterns and context-specific criteria rather than rigid cut-offs, along with the examination of descriptive statistics such as means, standard deviations, and minimum and maximum values (Dawson, 2011; Leys et al., 2013). While a few mild outliers were observed, all values fell within the valid response range of the Likert-scale (1 to 5) and showed no sign of invalid or inconsistent responding such as straight-lining or alternating extremes). Thus, these cases were retained, since mild deviations within scale should not be excluded unless measurement error or disengagement (Mowbray et al., 2019; Osborne & Overbay, 2004).

Meanwhile, in Phase 2, outlier detection was applied to the data from the visual search experiment, targeting task-level indicators, specifically total correct responses and total reaction times (RTs). Visual methods such as histograms and box plots were used to identify extreme patterns. Two participants exhibited total RTs exceeding 14,000 milliseconds, above the group's interquartile range and identified as extreme outliers, and were excluded from further analysis (Dawson, 2011). Given the task's cognitive demands and pacing, such high RTs likely indicate a lack of engagement, which can undermine data validity (Jones, 2019). One additional participant was removed due to incomplete trial-level data. In total, three participants were excluded from Phase 2 due to invalid or incomplete task performance. This approach prioritises data quality while avoiding unnecessary loss of valid cases.

Following data cleaning, assumption testing was conducted to ensure the suitability of the planned analysis and that the assumptions were not violated across Phase 1 and Phase 2. These include mixed ANOVA, MANOVA, linear regression, and mediation analysis, as well as statistical tests and visual inspection (Hoekstra et al., 2012; Shatz, 2023). Normality of continuous variables (strategic roles, role conflict, and attention performance) was assessed using histograms, Q-Q plots, and the Shapiro-Wilk test. Skewness and kurtosis values between -2 and +2 were deemed acceptable (Demir, 2022). Mild deviations from normality were not considered serious because the statistical test used was robust (Shatz, 2023). This approach is further supported by the principle that perfect normality is not required when sample sizes are large enough, and group sizes are relatively balanced (Tabachnick & Fidell, 2007). Homogeneity of variance for the t-test and MANOVA was tested using Levene's test and Box's M test (Garson, 2012; Huang, 2020). Further, multicollinearity among predictors was assessed using Variance Inflation Factors (VIFs), with all values below the threshold of 5; while linearity, homoscedasticity, and normality of the regression analysis were confirmed using Q-Q plots and residual vs. predicted plots, no transformation was required (Garson, 2012). Finally, after applying the data cleaning and screening criteria, the final sample for Phase 1 is 157 participants and final sample of Phase 2 comprised 105 participants.

4.7 Statistical Analyses and Justification

This research adopted a deductive hypotheses-testing approach aligned with the thesis's three-pathway conceptual model. Statistical analyses were chosen to address the research objectives and test hypotheses developed in Chapter 3. To test these pathways, a series of statistical analyses was conducted using an open-source software JASP (version 0.19) (Love et al., 2019; Weems, 2024).

In Phase 1, behavioural pathway hypotheses, a multivariate analysis of variance (MANOVA) was used to address objective 1 (H1a-H1d), examine the relationship between cognitive style (independent variable: analytic vs holistic) and the extent of enactment of four continuous dependent variables: Championing, Facilitating, Synthesising, and Implementing strategic roles. MANOVA was chosen to control for Type I error and to account for intercorrelations among dependent variables (Hancock et al., 2000), and post hoc univariate ANOVAs were followed to identify specific differences for each role. For objective 2 (H2), an independent-samples t-test compared the dependent variable (experience of role conflict) across two cognitive styles. The study aimed to determine whether managers with different types of cognitive experience have significantly different levels of psychological tension in their roles. For objective 3 (H3a-H3d), four multiple regression analyses were conducted to examine the predictive relationship between role conflict experience and hierarchical level (level below the CEO) included as a covariate and the enactment of four strategic roles (Championing, Facilitating, Synthesising, and Implementing). All regression models across Phase 1 and 2 were estimated using bias-corrected accelerated (BCa) bootstrapping with 5,000 resamples. Bootstrap estimation was adopted for several reasons. First, BCa bootstrap confidence intervals do not assume normality of the sampling distribution of regression coefficients, as residual distributions may deviate from normality in moderate samples (Field, 2024). Second, with ample sample sizes of $n = 157$ in Phase 1 and $n = 105$ in Phase 2, bootstrap resampling provides more stable and accurate estimates of standard errors (Eck, 2018). Third, inspection of model diagnostics for the conjunction slope outcome in Phase 2 showed a Durbin-Watson statistic of 1.44 ($p = 0.004$), indicating positive autocorrelation in the residuals. Therefore, applying the bootstrap ensures comparable inference across the Phase 1 and 2 analyses. Lastly, for objective 4 (H4a-H4a), mediation analysis was conducted to test whether role conflict mediated the relationship between cognitive style and each of the four strategic roles. The rationale for

mediation testing lies in the three-pathway conceptual framework, proposing that cognitive style influences strategic role enactment indirectly through the experience of role conflict. Mediation was tested by estimating the indirect effect of cognitive style on each strategic role outcome through role conflict, following the Hayes (A. Hayes, 2015; A. F. Hayes, 2009)

Approach. Indirect effects were estimated using maximum likelihood with 5,000 BCA bootstrap resamples, and the significance of indirect effects was determined by whether the 95% confidence interval excluded zero (A. Hayes, 2015; MacKinnon et al., 2000; Zhao et al., 2010). This mediation approach is also applied to mediation analysis in Phase 2.

In Phase 2, cognitive pathway hypotheses, objective 5 (H5a-H5c), and mixed ANOVA and t-test analyses were used to evaluate the relationship between cognitive style (analytic=1, holistic=2) and continuous attention performance metrics: reaction times, slopes, and the index. This analysis tests whether cognitive style relates to attentional efficiency under increasing cognitive load. For objective 6 (H6), linear regression was again used to test whether role conflict (continuous predictor) predicts attention performance (RTs, slopes, and index) as the dependent variable. This analysis tests competing hypotheses about whether higher role conflict, as a work stressor, is associated with enhanced or diminished attention control. Further, for objective 7 (H7a-H7c), mediation analyses were used to determine whether role conflict mediates the relationship between cognitive style (independent variable) and attention performance (dependent variables: RTs, slopes, and index). Finally, behaviour-to-attention pathway hypotheses, objective 8 (H8a-H8d), linear regression was used to test whether the extent of strategic role enactment predicts attention performance. Each of the four strategic role scores was used as a predictor in separate models with RTs, slopes, and index as outcomes. This objective hypothesises that sustained enactment of particular strategic roles places cognitive demands that either enhance or deplete attentional resources.

4.8 Validity and Reliability

Prior to hypothesis testing, the reliability and construct validity of all survey-based measurement instruments were assessed. Internal consistency reliability was evaluated using Cronbach's alpha, and construct validity was assessed through Exploratory Factor Analyses (EFA) conducted in JASP.

Internal Consistency. The four strategic roles subscales (Championing, Facilitating, Synthesising, and Implementing) were adapted from Floyd and Wooldridge (1992), while the role conflict scale was adapted from Rizzo et al. (1970). Prior literature supports the theoretical and empirical validity of these instruments in managerial contexts (Flores, 2016). All subscales demonstrated acceptable internal consistency, with Cronbach's alpha coefficients ranging from 0.69 to 0.77 for the strategic roles and 0.84 for role conflict, meeting the conventional threshold of $\alpha \geq 0.70$ (Robertson & Evans, 2020). Item correlations were inspected to confirm that each item contributed meaningfully to its respective scale. Table 9 Represents construct-level and reliability and validity statistics, and Table 10 represents item-level reliability statistics.

Construct Validity. For strategic roles, scale sampling adequacy was strong (KMO = 0.84; all items $MSA \geq 0.71$), and Bartlett's test of sphericity was significant, confirming that the correlation matrix was suitable for factor analysis. The oblimin-rotated EFA (Brown, 2009) yielded a four-factor solution consistent with Floyd and Wooldridge's (1992) theorised subscale structure, with items loading onto their expected factors with minimal cross-loadings. The solution explained 42% of the total variance, which fell below the conventional 50% threshold (Aguirre-Urreta & Hu, 2019; Podsakoff et al., 2024). A few items with uniqueness were retained based on theoretical relevance and an acceptable contribution to overall scale

reliability (Razzaq, 2022). For the role conflict scale, the KMO was 0.871 with individual item MSAs ranging from 0.844 to 0.914, and EFA confirmed a single-factor solution consistent with the unidimensional conceptualisation of role conflict in the literature (Rizzo et al., 1970). This had an eigenvalue of 3.782 and explained 40.3% of the total variance.

Common Method Bias. Common-method bias was considered because role conflict and strategic role enactment were measured via self-report questionnaires. However, the overall design reduced reliance on a single measurement method by combining self-report with performance-based tasks. Harman’s single-factor test was conducted as a descriptive diagnostic to examine whether one factor dominated the item covariance structure. The first unrotated factor accounted for 27.7% of the variance among strategic role items and 40.3% among role conflict items, suggesting that a single factor did not dominate the covariance structure. However, given the limitations of this test, the result was interpreted cautiously and was not treated as definitive evidence that common method bias was absent (Podsakoff et al., 2024).

Table 9 *Constructs-Level Reliability and Validity Summary*

Construct	No. of Items	α	Item-Total Correlation Range	Factor Loadings (Main Items)	KMO
Championing	5	0.70	0.40 – 0.58	Q1 = 0.86, Q3 = 0.81	0.855 – 0.898
Facilitating	7	0.77	0.38 – 0.66	Q6 = 0.55, Q3 = 0.62	0.740 – 0.883
Synthesising	4	0.69	0.40 – 0.58	Q3 = 0.60, Q4 = 0.71	0.763– 0.916
Implementing	4	0.72	0.38 – 0.65	Q2 = 0.78, Q3 = 0.78	0.713 – 0.830
Role Conflict	8	0.84	0.43 – 0.70	Q5 = 0.70, Q7 = 0.68, Q6 = 0.62	0.844 – 0.914

Note. Cronbach's alpha coefficients indicate internal consistency reliability at the construct level. Factor loadings demonstrate adequate item contribution to the constructs. Kaiser-Meyer-Olkin (KMO) values indicate sampling adequacy for factor analysis.

Table 10 *Item-Level Reliability Statistics for All Constructs*

Item Code	Item	Item-to-total correlation	Cronbach's Alpha
C	Championing Role		0.703
CQ1	Justify and define new programs	0.579	
CQ2	Evaluate the merits of new proposals	0.542	
CQ3	Search for new opportunities	0.318	
CQ4	Propose programs or projects to higher-level managers	0.465	
CQ5	Justify programs that have already been established	0.401	
F	Facilitating Role		0.774
FQ1	Encourage informal discussion and information sharing	0.362	
FQ2	Relax regulations to get new projects started	0.482	
FQ3	'Buy time' for experimental programs	0.57	
FQ4	Develop objectives and strategies for unofficial projects	0.46	
FQ5	Encourage multidisciplinary problem-solving teams	0.381	
FQ6	Locate and provide resources for trial projects	0.655	
FQ7	Provide a safe haven for experimental programs	0.559	
S	Synthesising Role		0.691
SQ1	Gather information on the feasibility of new programs	0.437	
SQ2	Communicate the activities of competitors, suppliers, etc.	0.403	
SQ3	Asses changes in the external environment	0.583	
SQ4	Communicate the implication of new information	0.499	
I	Implementing Role		0.721
IQ1	Monitor activities to support top management objectives	0.495	
IQ2	Translate goals into activities plans	0.648	
IQ3	Translate goals into individual objectives	0.596	
IQ4	Sell top management initiatives to subordinates	0.381	
RC	Role Conflict		0.837
RCQ1	I have to do things that should be done differently.	0.537	
RCQ2	I receive assignments without the manpower to complete them	0.616	
RCQ3	I have to buck a rule or policy in order to carry out an assignment.	0.52	
RCQ4	I work with two or more groups who operate quite differently	0.435	
RCQ5	I receive incompatible requests from two or more people.	0.695	
RCQ6	I do things that are apt to be accepted by one person and not accepted by others.	0.618	

RCQ7	I receive assignments without adequate resources and materials to execute it.	0.679
RCQ8	I work on unnecessary things.	0.434

Note. Item-to-total correlations indicate the contribution of each item to its respective scale. Cronbach's alpha values are reported at the construct level and represent internal consistency reliability.

Beyond statistical tests, construct validity was strengthened by integrating two methodological approaches, self-report and experimental tasks. Self-report captured perceptions and experiences of strategic role enactment and role conflict, whereas performance-based tasks (the Framed-Line Task and the visual search experiment) measured cognitive processing and attentional performance through observable behavioural responses. This multimethod design reduces the likelihood of method variance biasing the findings because each construct was operationalised with theoretically distinct measures. For example, cognitive style was indexed using task rather than self-judgement, and attention performance was computed from reaction times and slopes rather than reflective ratings. The richness of these independent measurement forms enhances construct validity. In addition, performance-based tasks were adapted from established task designs (Kitayama et al., 2003; Wolfe, 1998) and standardised across participants through uniform instructions, controlled stimulus timing, and practice trials. Performance indicators, including reaction times, slopes, and indices, were recorded and calculated using established scoring methods widely used in cognitive and attention research.

Finally, all research activities were conducted with approval by the Birmingham City University Faculty of Business, Law and Social Sciences (BLSS) Research Ethics Committee. Ethics approval was obtained for both phases for all aspects of participant recruitment, consent, data collection, data storage, and withdrawal rights. Participants provided informed electronic consent and were assured that their participation was voluntary, that data would be kept confidential, and that they could withdraw without penalty. Further, to protect data privacy, all

responses were anonymised, and data were stored on university servers, in compliance with the UK GDPR and the Data Protection Act (2018). Research data will be stored for 10 years, in line with BLSS data retention policy. To minimise psychological risk, participants were briefed on the cognitive demands of the attention tasks. Practice trials were included to reduce performance anxiety and familiarise participants with the experiment procedures. Upon task completion, participants were debriefed, and contact details for the researcher and the ethics committee were made available for post-participation inquiries.

4.9 Summary

This chapter has outlined the research design, methodological procedures, and strategies used to examine the relationships among cognitive styles, strategic role enactment, role conflict, and attention performance among middle managers. Adopting a post-positivist paradigm, the study used a quantitative, two-phase design to test hypotheses of three-pathways: the behavioural, cognitive, and behaviour-to-attention pathways. The chapter began by establishing the philosophical foundation and rationale guiding the chosen methodology. It detailed the sampling strategies and participant profiles for both phases, as well as the efforts to ensure diversity, representativeness, and statistical power. Measurement instruments were selected based on theoretical relevance and empirical validation, encompassing self-report scales and experimental cognitive tasks. This multimethod approach enables the assessment of subjective experiences and objective performance, consistent with the multidimensional nature of the constructs.

Subsequent sections describe the data collection procedures and scoring protocols, including those used in the Framed-Line Task and visual search experiment. Standardised scoring, attention performance indices, and thorough data cleaning procedures were employed to ensure

data quality. The statistical analysis plan was aligned with the research objectives and hypotheses, involving multivariate, univariate, and mediation analyses to test direct and indirect effects across three pathways. Further, to enhance validity and reduce potential biases, the chapter also addresses reliability testing, exploratory factor analysis, and common-method bias checks. Design choices were justified on theoretical and statistical grounds. By integrating psychological experimentation with organisational behaviour constructs, the methodological approach explained the cognitive and behavioural dimensions of managerial actions. Together, this chapter provides the foundation for the empirical analyses presented in the following chapters. Chapter 5 will report the results of Phase 1, focusing on the behavioural pathway, and the findings from Phase 2 related to the cognitive and behaviour-to-attention pathways. These analyses aim to present a comprehensive and integrative understanding of how MMs think, act, and adapt within complex organisational environments.

5 CHAPTER 5: FINDINGS

5.1 Overview

This chapter presents findings on role conflict as a mediator linking cognitive styles, strategic role enactment, and attention performance among middle managers. Phase 1 explores the behavioural pathway, examining how cognitive style predicts role conflict and strategic role enactment, and whether role conflict serves as a mediator between cognitive style and strategic role enactment. Phase 2 extends the model to the cognitive and behaviour-to-attention pathways, analysing how cognitive style and strategic role enactment relate to visual attention performance and whether role conflict mediates these relationships.

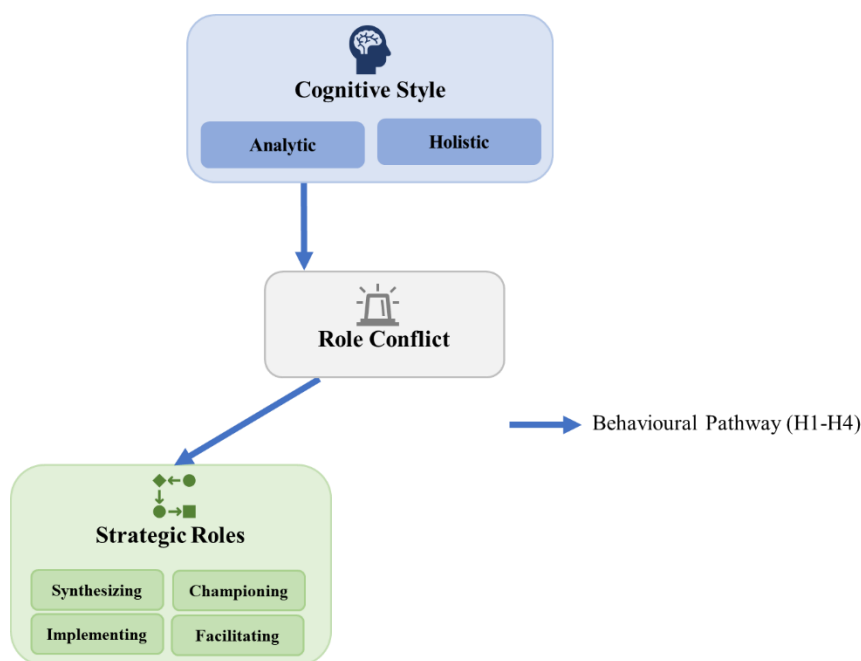
5.2 Results and Analysis Phase 1

5.2.1 Overview of Phase 1

This chapter presents the results of Phase 1, which explores the behavioural pathway linking cognitive style, role conflict, and the enactment of middle managers' (MMs) strategic role. This study investigates whether cognitive style (analytic vs. holistic) differences in the extent to which middle managers enact the Championing, Facilitating, Synthesising, and Implementing roles, and whether this relationship is mediated by role conflict experience, as shown in Figure 12. Several statistical analyses were employed to examine these relationships. First, multivariate analysis of variance (MANOVA) was used to test Hypotheses H1a-H1d to determine if MMs with analytic or holistic cognitive styles differed in their strategic role enactment profiles. Second, an independent sample t-test (H2) was used to examine whether cognitive style was associated with different levels of perceived role conflict. Third, a series of simple linear regressions (H3a-H3d) tested whether role conflict predicted the extent of

enactment of each strategic role. Lastly, mediation analyses (H4a-H4d) were conducted to determine whether role conflict serves as a mediator between cognitive style and strategic role enactment. All analyses were conducted using JASP (version 0.19), with statistical significance set at $p < 0.05$.

Figure 12 Behavioural Pathway Linking Cognitive Style, Role Conflict, and Strategic Role Enactment



Note. Pathway in which cognitive style influences strategic role enactment via role conflict

5.2.2 Descriptive Results and Sample Characteristics

A total of 157 middle managers participated in Phase 1, representing a diverse range of ages, educational backgrounds, managerial experience, disciplinary areas, and organisational levels. This sample exceeded the minimum thresholds established through a G*Power analysis reported in Chapter 4. Full demographic distributions are presented in Appendix 9.7. Cognitive style was nearly evenly distributed, with 53.5% classified as analytic and 46.5 as holistic based on performance in the Framed-Line Task. Table 11 presents descriptive statistics for the five

key study variables. All variables demonstrated approximately normal distributions, with skewness and kurtosis values within acceptable thresholds (-2 and +2) (Demir, 2022). The sample size and robustness of statistical procedures supported continued analysis without data transformation (Shatz, 2023; Tabachnick & Fidell, 2007). The average score for strategic role enactment suggests that MMs tended to execute and integrate strategic information. In contrast, role conflict was rated relatively high, indicating that most respondents frequently experienced tension in fulfilling their roles, supporting the proposition that MMs positioned between competing strategic directions and expectations faced a cognitive-behavioural challenge in their role performance.

Table 11 *Descriptive Statistics for Strategic Role Enactment and Role Conflict (Phase 1)*

Variable	Mean	SD	Skewness	Kurtosis
Championing	3.69	0.56	-0.15	0.29
Facilitating	3.27	0.69	-0.13	-0.58
Synthesising	3.78	0.69	-0.16	-0.56
Implementing	3.97	0.62	-0.31	-1.87
Role Conflict	2.88	0.67	-0.18	-0.33

Note. Scores represent composite means calculated from five-point Likert scales (*1 = Never, 5 = Always*). Skewness and kurtosis values are within acceptable normality for parametric testing.

5.2.3 Preliminary Correlational Analysis Phase 1

Table 12 presents the Pearson correlation analysis to examine the relationships among strategic role enactment, role conflict, and demographic factors before proceeding to regression analyses. Among strategic role variables, strong intercorrelations were observed, suggesting that MMs who enact one strategic role also tend to perform in other roles. This finding aligns with the conceptual framework and the typology of MMs' strategic role (Floyd & Wooldridge, 1997), which suggests that these roles cluster in managerial practice rather than occurring in

isolation. Role conflict also shows relationships Championing and Facilitating strategic roles, indicating that enacting these upward influence and people-oriented increases exposure to competing demands. Meanwhile, the Synthesising and Implementing roles show a weaker association with role conflict, suggesting lower interpersonal friction or ambiguity in these roles. Demographic variables demonstrated minimal associations with the key constructs; age, education, experience, and background showed no substantive relationships with role conflict or strategic roles. The strongest demographic association was observed for hierarchical level (Level Below CEO), which showed small but significant negative correlations with several strategic roles and with role conflict, justifying its inclusion as a covariate in subsequent regression analyses.

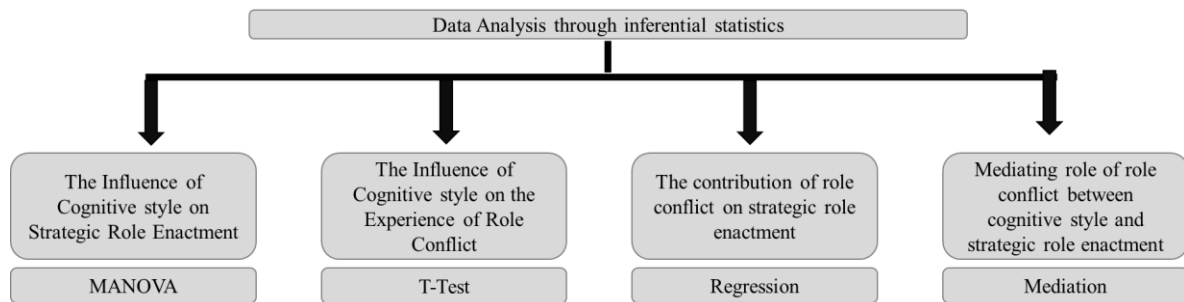
Table 12 *Correlations Phase I*

Variable	1	2	3	4	5	6	7	8	9	10
1. Championing	—									
2. Facilitating	0.509***	—								
3. Synthesising	0.561***	0.457***	—							
4. Implementing	0.485***	0.330***	0.462***	—						
5. Role Conflict	0.262***	0.253**	0.098	0.136	—					
6. Age	-0.110	-0.146	-0.063	0.051	0.009	—				
7. Education	0.100	0.132	-0.082	0.005	-0.049	0.017	—			
8. Experience	-0.052	-0.057	-0.144	0.117	0.095	0.639***	0.005	—		
9. Background	0.008	-0.015	0.071	-0.084	-0.139	0.008	0.004	-0.096	—	
10. Level Below CEO	-0.238**	-0.170*	-0.148	-0.251**	-0.196*	0.134	-0.202*	0.039	0.015	—

5.2.4 Hypotheses Testing and Results of Phase 1

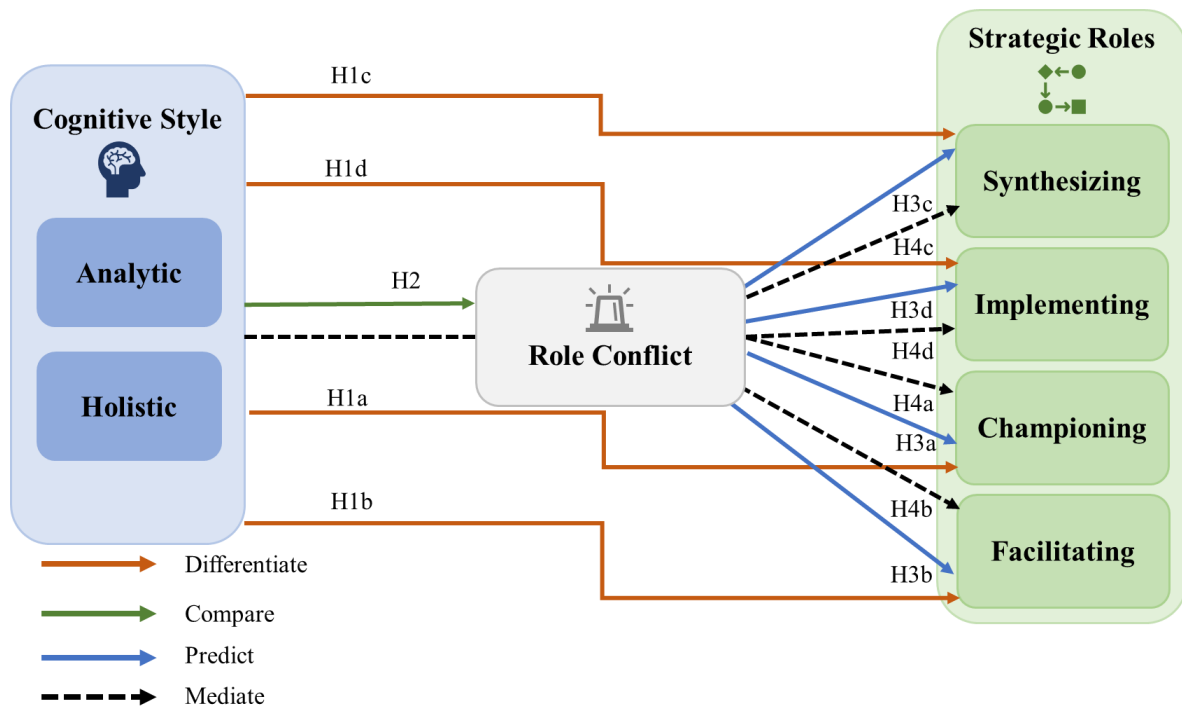
This section presents the results of the hypothesis testing for Phase 1 ($n = 157$), examining the behavioural pathway connecting cognitive style, role conflict, and strategic role enactment among MMs. Hypotheses H1a-H4d were tested using MANOVA, t-test, multiple regression, and mediation analysis as illustrated in Figure 13. Mediation analyses were conducted regardless of whether individual regression paths reached significance, following the product-of-coefficients approach recommended by Hayes (2009) and Zhao et al. (2010), which does not require a significant total effect as a prerequisite for testing indirect effects.

Figure 13 *Inferential Analysis Process Phase 1*



Note. The sequence of inferential statistical analyses conducted in Phase 1 to test the behavioural pathway is through MANOVA, which examined the influence of cognitive style on strategic role enactment; T-test assessed differences in experienced role conflict by cognitive style; regression analyses evaluated the contribution of role conflict to strategic role enactment; and mediation analyses tested whether role conflict mediated the relationship between cognitive style and strategic role enactment.

Figure 14 *Hypotheses Testing Overview of Phase 1*



Note. Phase 1 examines the behavioural pathway with direct paths, representing the expected influence of cognitive style (analytic vs. holistic) on strategic role enactment and role conflict, and the role conflict on the four strategic roles. Indirect paths examine the mediating role of role conflict in the relationship between cognitive style and strategic role enactment. Arrows represent hypothesised directional relationships tested using MANOVA, T-test, regression, and mediation.

Table 13 presents the items measuring each construct included in this study based on the previous phase of the literature review and adapted for empirical testing. Cognitive style served as the independent variable in MANOVA, t-test, and Mediation analyses, while role conflict was tested as an independent variable to predict strategic role enactment, as a mediator, and as the outcome in the t-test. The four strategic role constructs served as dependent variables, with direct and indirect paths.

Table 13 *Role of Constructs in Phase 1*

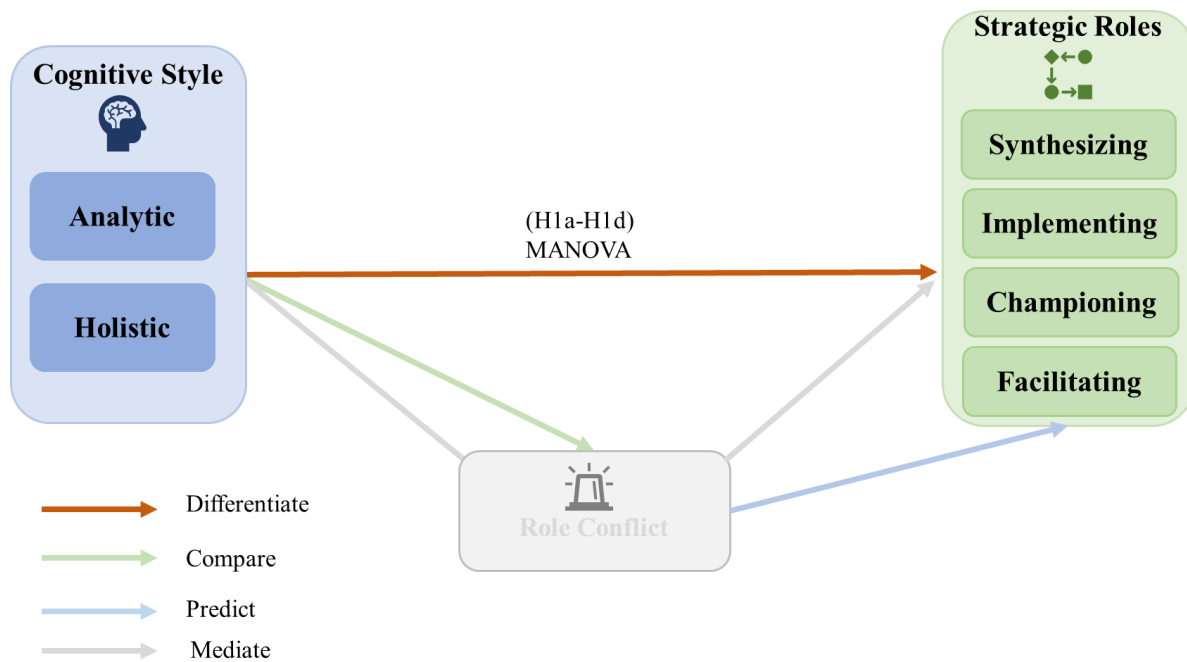
Construct	Type of Variable	Role in Analysis
Cognitive Style	Categorical (Analytic / Holistic)	Grouping variable, IV in MANOVA, T-test & Mediation Analyses
Strategic Roles (Championing)	Likert-scale composite (5 items)	DV in MANOVA, Regression, and Mediation Analyses
Strategic Roles (Facilitating)	Likert-scale composite (7 items)	DV in MANOVA, Regression, and Mediation Analyses
Strategic Roles (Synthesising)	Likert-scale composite (4 items)	DV in MANOVA, Regression, and Mediation Analyses
Strategic Roles (Implementing)	Likert-scale composite (4 items)	DV in MANOVA, Regression, and Mediation Analyses
Role Conflict	Likert-scale composite (8 items)	Mediator in Mediation, DV in T-test, IV in Regression Analyses

Note. Cognitive Style was treated as a categorical variable. Strategic role enactment and the experience of role conflict score were derived from Likert-scale items. Each construct's role is its function across the inferential analyses conducted in Phase 1.

5.2.4.1 Cognitive Style and Strategic Role Enactment: A Multivariate Analysis

To examine whether MMs' cognitive style (analytic vs holistic) was associated with differences in the extent to which they enacted strategic roles, a multivariate analysis of variance (MANOVA) was conducted (Figure 15). Cognitive style assessed through the Framed-Line Task and categorised as analytic or holistic, served as the independent variable. The four strategic roles (Championing, Facilitating, Synthesising, and Implementing) were treated as interrelated dependent variables.

Figure 15 *The Influence of Cognitive Style on MMs' Strategic Roles*



Note. Cognitive Style is modelled as the independent variable, while the four strategic roles are treated as dependent variables in a multivariate analysis of variance. Solid arrows represent hypotheses' direct effects tested.

Prior descriptive analyses already confirmed that distributions were approximately normal, with skewness and kurtosis values within acceptable thresholds for parametric testing. Homogeneity of variances across groups was confirmed through Levene's test for each dependent variable ($p > .05$), while Box's M test for homogeneity of covariance matrices was also non-significant (Box's M = 15.78, $p = .085$), indicating that assumptions for MANOVA were met (see Tables 14 and 15).

Table 14 *Box's M Test*

Test	Statistics	df	p
Box's M	$\chi^2 = 5.596$	10	0.85

Note. Box's M test assesses the assumption of homogeneity of covariance matrices. A non-significant result indicates that covariance matrices are equal across cognitive style groups.

Table 15 *Levene Test*

DV	F	df1	df2	p
Championing	0.185	1	155	0.668
Facilitating	2.249	1	155	0.136
Synthesising	0.534	1	155	0.466
Implementing	0.041	1	155	0.841

Note. Levene's test assesses the equality of error variances across cognitive style groups for each dependent variable. Non-significant values ($p > 0.05$) indicate that the assumption of homogeneity of variances was met for all strategic roles.

The multivariate test using Pillai's Trace revealed a statistically significant overall effect: Pillai's Trace = 0.072, $F(4, 152) = 2.930$, $p = 0.023$, indicating that the overall pattern of role enactment differed significantly between cognitive style groups. Although the observed multivariate effect size ($\eta^2 = 0.072$) was small, it explains variation in how analytic and holistic style MMs enact their strategic roles. Further exploration was conducted through ANOVAs to determine which role contributed to the overall effect. A statistical significant difference emerge for Championing role, $F(1, 155) = 4.180$, $p = 0.043$, providing support Hypothesis H1a (Table 16). MMs with a holistic cognitive style demonstrated a greater extent of Championing role enactment, which involves advocating for new initiatives and promoting strategic change. In contrast, no statistically significant differences were found for the remaining three roles: Facilitating, Synthesising, and Implementing (all $ps > 0.10$). These results suggest partial support for the hypotheses that cognitive style influences strategic role enactment. Cognitive style predisposed influence-based role, yet did not influence different levels of enactment in roles that emphasise adaptation, integration, or execution. Consequently, Hypotheses H1b, H1c, and H1d were not supported.

Table 16 Follow up ANOVAs for MANOVA

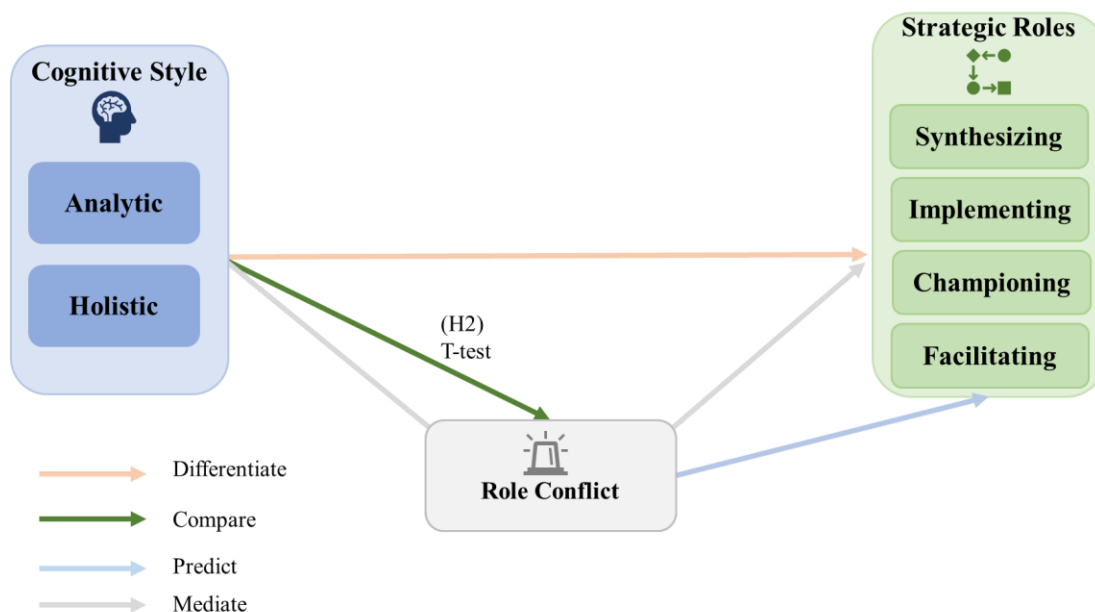
Dependent Variable	F statistic (1,55)	p	η^2p
Championing	4.18	0.043	0.026
Facilitating	2.54	0.113	0.016
Synthesising	0.42	0.519	0.003
Implementing	0.09	0.769	0.001

Note. Univariate ANOVAs were conducted following the significant multivariate effect to identify which strategic role differed between the analytic and holistic cognitive style groups ($p < 0.05$).

5.2.4.2 Cognitive Style Difference in Experience Role Conflict

To test hypothesis H2, that MMs with different cognitive styles experience significant differences level in role conflict, an independent-samples t-test was conducted comparing role conflict scores between analytic and holistic styles (Figure 16).

Figure 16 The influence of Cognitive Style to the experience of Role Conflict



Note. Mean differences in perceived role conflict between the analytic and holistic cognitive style groups were assessed through a t-test. Role conflict scores are based on a composite Likert scale, with higher values indicating greater experience of role conflict.

Assumption checks confirmed the data met the requirements for Student's t-test. Shapiro-Wilk tests indicated no significant departure from normality in either group (see Table 17). Levene's test confirmed homogeneity of variance, $F(1, 155) = 0.17, p = 0.679$, supporting the use of the Student t-test. T-test results revealed a statistically significant difference between groups (see Table 18). Holistic managers reported significantly higher role conflict than analytic managers, with a medium-to-large effect size. This finding supports the hypothesis (H2) that holistic managers who attend broadly and integrate information from multiple directions are exposed to conflicting demands across levels and stakeholders. Analytic managers, in contrast, tend to narrow their focus and prioritise, with less experience of cognitive strain arising from competing demands. Therefore, cognitive style shapes how managers think and influences the extent of role conflict experience.

Table 17 Assumption Checks for Independent-Sample t-test

Test	Statistic	df1	df2	p
Shapiro-Wilk	W = 0.99	-	-	0.352
Levene's test	F = 0.17	1	155	0.679

Note. Non-significant Shapiro-Wilk results indicate no departure from normality. Non-significant Levene's result confirms homogeneity of variance, supporting the use of Student's t-test.

Table 18 Independent-Sample t-test: Role Conflict by Cognitive Style

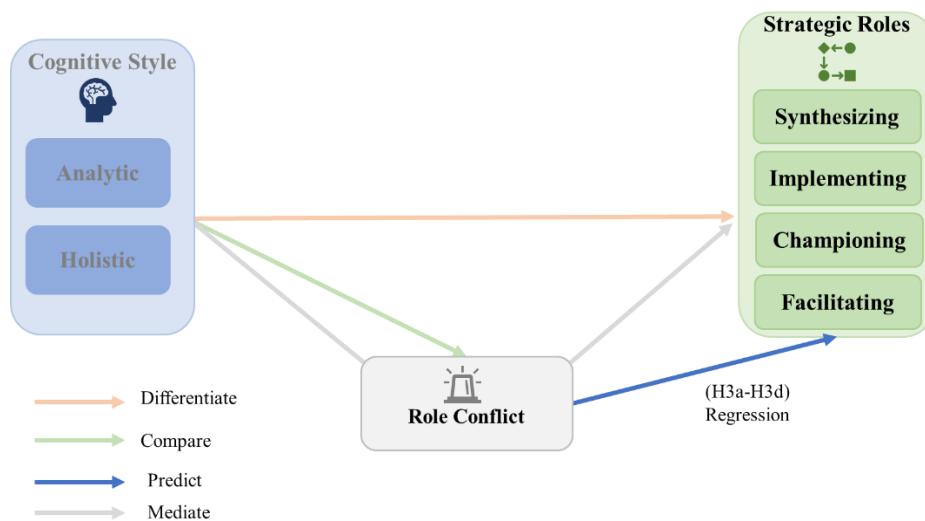
	Analytic (n = 84)		Holistic (n = 73)		t(155)	p	d	95% CI
	M	SD	M	SD				
Role Conflict	2.66	0.65	3.12	0.62	4.52	< 0.001	0.72	[0.4, 1.05]

Note. A positive t-value indicates higher role conflict in the holistic group. d = Cohen's d, indicating a medium-to-large effect.

5.2.4.3 Role Conflict as a Predictor of Strategic Role Enactment

To test hypotheses H3a–H3d, multiple regressions analyses were conducted with role conflict and hierarchical level (level below CEO) as the predictor variable and each of the four composite strategic roles (Championing, Facilitating, Synthesizing, and Implementing) as the outcome. Hierarchical level was included as covariate given evidence that structural position influences MMs’ strategic role demands and access to executive decision-making (Floyd & Wooldridge, 1997; L. Glaser et al., 2015). All models were estimated using Bca bootstrap with 5,000 resamples which provides more stable parameter estimates and confidence intervals in the datasets (Eck, 2018). Results are presented in Table 19 and 20.

Figure 17 *Role Conflict as a Predictor of Strategic Role Enactment*



Note. The figure represents the hypothesised regression pathways through which role conflict predicts strategic role enactment, and directional arrows indicate tested effects.

For Championing, the overall model was significant, with role conflict a significant positive predictor and hierarchical level a significant negative predictor, indicating that MMs closer to the executive level and experiencing higher role conflict reported greater Championing enactment. H3a is therefore supported. For the Facilitating role, the overall model was

significant, and role conflict was a significant positive predictor. Hierarchical level was not a significant predictor in this model. H3b is therefore supported. For Synthesising, the overall model was not significant, and the individual coefficients were not interpreted. H3c was not supported. For the Implementing role, the overall model was significant; however, role conflict was not a significant predictor. The only significant predictor was hierarchical level, which negatively predicted Implementing enactment. H3d therefore not supported, as role conflict did not independently predict Implementing role enactment once hierarchical position was controlled.

Table 19 Model Fit Statistics for Role Conflict and Hierarchical Level Predicting Strategic Roles

Outcome	R	R ²	Adjusted R ²	F (2,154)	p
Championing	0.324	0.105	0.093	9.00	<0.001
Facilitating	0.281	0.079	0.067	6.60	0.002
Synthesising	0.164	0.027	0.014	2.12	0.124
Implementing	0.266	0.071	0.059	5.87	0.003

Note. All models include the role conflict composite and hierarchical level (level below the CEO) as predictors. Models were estimated using the BCa bootstrap with 5,000 resamples. The Synthesising model was not significant; individual coefficients for this model are not interpreted.

Table 20 Regression Coefficients for Role Conflict and Hierarchical Level Predicting Strategic Roles

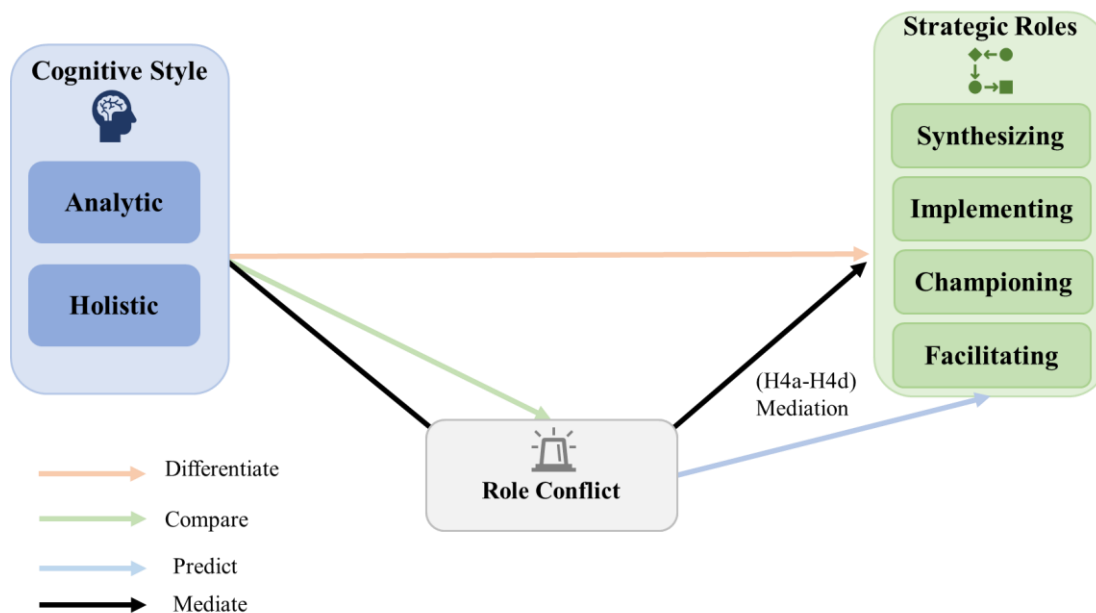
Outcome	Predictor	B	SE	β	p	95% CI
Championing	Role Conflict	0.189	0.067	0.224	0.013	[0.044, 0.309]
	Level Below CEO	-0.098	0.041	-0.194	0.012	[-0.181,-0.021]
Facilitating	Role Conflict	0.235	0.084	0.228	0.010	[0.058,0.389]
	Level Below CEO	-0.077	0.051	-0.125	0.114	[-0.179,0.017]
Synthesising	-	-	-	-	-	-
Implementing	Role Conflict	-	-	-	-	-
	Level Below CEO	-0.131	0.046	-0.233	0.010	[-0.216, -0.034]

Note. B = unstandardised coefficient; β = standardised coefficient. Confidence intervals are BCa bootstrap 95% intervals based on 5,000 resamples. The Synthesising model was not significant. Role conflict was a significant predictor of Implementing.

5.2.4.4 Role Conflict Mediates between Cognitive Style and Strategic Role Enactment

To test hypotheses H4a–H4d, a path model was estimated with cognitive style (Analytic = 1, Holistic = 2) as the independent variable, role conflict as the mediator, and the four strategic roles (championing, Facilitating, Synthesising, and Implementing) as the outcome variables (Figure 18). Indirect, direct, and total effects were estimated using maximum likelihood with 5,000 bias-corrected bootstraps; mediation was determined by whether the 95% Bca bootstrap CI for the indirect effect excluded zero (Hayes, 2015; 2009; Zhao et al., 2010).

Figure 18 *Mediating role of Role Conflict*



Note. Cognitive style predicts strategic role enactment indirectly through role conflict.

Across all models, cognitive style showed a positive association with role conflict, with holistic cognitive style managers reporting a higher level of role conflict than analytic managers. Role conflict, in turn, significantly predicted the Championing and Facilitating roles, but not the Synthesising or Implementing roles. This result suggests that the mediating influence of role conflict is likely to be concentrated in influence-and people-oriented roles (see Table 21). For Championing, the indirect effect of cognitive style via role conflict was significant (see Table

22), with a confidence interval that excludes zero. At the same time, the direct effect of cognitive style on Championing was not significant once role conflict was included in the model. In contrast, the total effect remained significant (0.324, $p = 0.040$), indicating that cognitive style was associated with Championing behaviour at the overall model level, with holistic cognitive style managers reporting higher Championing behaviour than analytic managers. Taken together, these results are consistent with full mediation (Zhao et al., 2010), that differences in Championing behaviour between analytic and holistic managers are transmitted through their differing levels of experienced role conflict. Hypothesis H4a is therefore supported.

Table 21 Path Coefficients for Mediation Model of Cognitive Style, Role Conflict, and Strategic Role Enactment

Panel A: Antecedent Paths					
Path	Estimate	SE	z	p	95% Bca CI
Cognitive Style → Role Conflict (<i>a</i> path)	0.341	0.068	5.03	<0.001	[0.198, 0.466]
Panel A: Antecedent Paths					
Path	Estimate	SE	z	p	95% Bca CI
Role Conflict → Championing (<i>b</i> path)	0.234	0.088	2.66	0.008	[0.053, 0.399]
Role Conflict → Facilitating (<i>b</i> path)	0.237	0.087	2.71	0.007	[0.059, 0.398]
Role Conflict → Synthesising (<i>b</i> path)	0.131	0.092	1.42	0.156	[-0.059, 0.303]
Role Conflict → Implementing (<i>b</i> path)	0.163	0.087	1.88	0.061	[-0.016, 0.323]

Note. All estimated are standardised. Estimator is maximum likelihood. CIs are BCa bootstrap intervals based on 5,000 resamples.

Second, the mediation of role conflict in the relationship between cognitive style and Facilitating role enactment was tested. The indirect effect of cognitive style via role conflict was significant, indicating that MMs with a holistic style, through their greater experience of role conflict, also demonstrated a greater extent of enacting the Facilitating role. Therefore, the result supports hypothesis H4b.

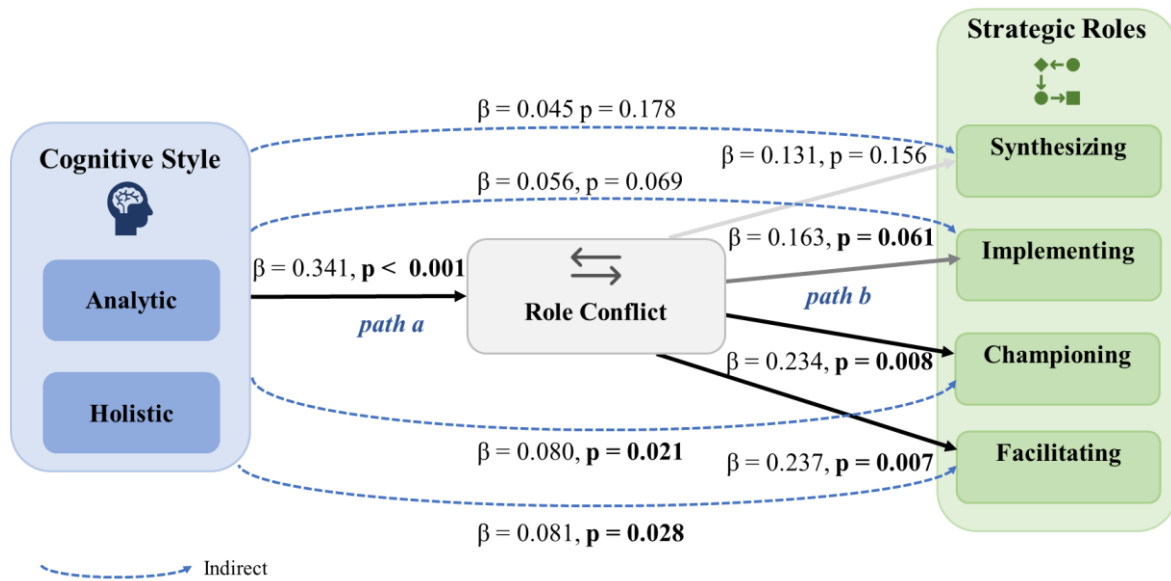
Table 22 *Indirect, direct and Total Effects of Cognitive Style on Strategic Role via Role Conflict*

Outcome	Indirect (β)	95% Bca CI	<i>p</i>	Direct (β)	<i>p</i>	Total (β)	<i>p</i>
Championing	0.080	[0.023, 0.163]	0.021	0.082	0.321	0.162	0.040
Facilitating	0.081	[0.020, 0.166]	0.028	0.046	0.593	0.127	0.111
Synthesising	0.045	[-0.015, 0.117]	0.178	-0.096	0.234	-0.052	0.515
Implementing	0.056	[0.002, 0.123]	0.069	-0.079	0.332	-0.024	0.769

Note. Indirect effects represent the product of the path from cognitive style to role conflict (a) and the path from role conflict to the strategic role outcome (b). Direct effect (c') represents the effects of cognitive style on the outcome, controlling for role conflict, and total effect (c) represents the combined direct and indirect effects. Confidence intervals are bias-corrected bootstrap intervals based on 5,000 resamples. Indirect effects are considered significant when the CIs do not include zero.

Third, the model tested whether role conflict mediated the relationship between cognitive style and Synthesising role enactment. The indirect, direct, and total effects were not significant. These findings suggest that differences in cognitive style do not relate to the Synthesising role through the mechanism of role conflict (no support for hypotheses H4c). Finally, the mediating role of role conflict in the relationship between cognitive style and the Implementing role enactment produced a CI that narrowly excluded zero. However, the p-value for the indirect effect was 0.069 and the b path from role conflict to Implementing was not significant ($\beta = 0.163$, $p = 0.061$). Following Zhao et al. (2010), a non-significant b path does not preclude a significant indirect effect, as a strong a path can inflate the standard error of b through multicollinearity. Nevertheless, given the narrow CI and borderline p-value, H4d is weak support at best and should be interpreted with caution. In conclusion, these findings indicate that role conflict serves as a bridge between MMs' cognitive style and strategic role enactment, but its influence varies across roles. As shown in Figure 19, mediation was evident for the Championing, Facilitating, and (weak) Implementing roles, in which cognitive style influences through role conflict, whereas no mediation was observed for the Synthesising role.

Figure 19 Mediation Result of Cognitive Style, Role Conflict, and Strategic Role Enactment



Note. Solid bold arrows represent statistically significant results.

5.2.5 Summary Findings of Phase 1

Phase 1 tested the behavioural pathway linking MMs’ cognitive style, role conflict, and strategic role enactment, drawing on data from 157 middle managers. Guided by Hypotheses H1 – H4, various statistical analyses were conducted through JASP 0.19. Multivariate analysis of variance (MANOVA) provided a test of the relationship between cognitive style and strategic role enactment. The results indicated that cognitive style influences overall strategic role enactment. Follow-up univariate tests identified a significant difference for Championing only, and no significant differences emerged for Facilitating, Synthesising, or Implementing roles. For the second objective, holistic MMs reported higher levels of role conflict than analytic MMs, indicating that the holistic style, which is typically broader, integrative, and context-attentive, is associated with greater exposure to competing demands.

Regression models addressing the third objective showed that role conflict predicts role enactment patterns, particularly in people-and-influence-oriented work. A higher level of role

conflict was associated with greater Championing and Facilitating, but not with Synthesising and Implementing. Thus, MMs who report higher role conflict tend to enact influence-oriented roles (Championing and Facilitating), more than lateral sensemaking (Synthesising) or executional (Implementing) roles. Hierarchical level emerged as a significant negative predictor for Championing and Implementing, indicating MMs further from the executive level reported lower enactment of these roles. Lastly, mediation tests provided the evidence for the proposed framework. Role conflict mediated the effect of cognitive style on Championing and Facilitating roles, but not on Synthesising, and was weaker for the Implementing role. Table 23 presents the summary of the results of the hypothesis test within the inferential data analysis.

Table 23 *Summary Result of Hypotheses Test of Phase 1*

Objective	Hypothesis	Statement	Result
Cognitive Style and Strategic Role Enactment	H1a	Holistic > Analytic on Championing	Supported
	H1b	Holistic > Analytic on Facilitating	Not Supported
	H1c	Analytic > Holistic on Synthesising	Not Supported
	H1d	Analytic > Holistic on Implementing	Not Supported
Cognitive Style and Role Conflict	H2	Holistic experience higher role conflict than Analytic	Supported
Role Conflict and Strategic Roles	H3a	Role Conflict → Championing	Supported
	H3b	Role Conflict → Facilitating	Supported
	H3c	Role Conflict → Synthesising	Not Supported
	H3d	Role Conflict → Implementing	Not Supported
Mediation of Role Conflict	H4a	Role conflict mediates between Cognitive Style and Championing	Supported
	H4b	Role conflict mediates between Cognitive Style and Facilitating	Supported
	H4c	Role conflict mediates between Cognitive Style and Synthesising	Not Supported
	H4d	Role conflict mediates between Cognitive Style and Implementing	Weak Support

Together, the results of Phase 1 provide partial support for the behavioural pathway proposed in the conceptual framework. They demonstrate that cognitive style serves as an antecedent to role conflict and that this psychological tension, in turn, shapes how MMs enact influence-oriented, relational, and execution-oriented roles. However, Phase 1 also found an important boundary, that while cognitive style predicts behavioural tendencies, it does not capture how these tendencies translate into cognitive processes, such as the ability to sustain attention as a gate for information processing (Huestegge & Koch, 2012), manage complexity, or filter competing stimuli, as capabilities that are critical in managerial responsibilities. Moreover, the behavioural findings suggest that role conflict can function as a behavioural mediator and as a potential source of cognitive strain, potentially impairing attentional performance. These insights lead to the need to examine the cognitive consequences of cognitive style and strategic role enactment more directly. Phase 2, therefore, extends the investigation by shifting from self-report behaviour to performance-based cognitive measures to support tests of cognitive and behavioural-to-attention pathways, thereby extending the findings of Phase 1.

5.3 Result and Analysis Phase 2

5.3.1 Overview of Phase 2

Phase 2 included 105 middle managers, all of whom had previously completed Phase 1, therefore, ensuring continuity of cognitive style, strategic role enactment, and role conflict while providing attention performance data. Cognitive style was approximately evenly distributed. Full demographic distributions are presented in Appendix 9.7. Phase 2 extends the investigation by shifting focus from middle managers' behavioural outcomes to their cognitive performance. While the Framed-Line Task (FLT) used in Phase 1 offers classification of cognitive style, it does not measure how attentional tendencies manifest in moment-to-moment processing under different cognitive demands (Tominaga et al., 2017). Phase 2 was designed

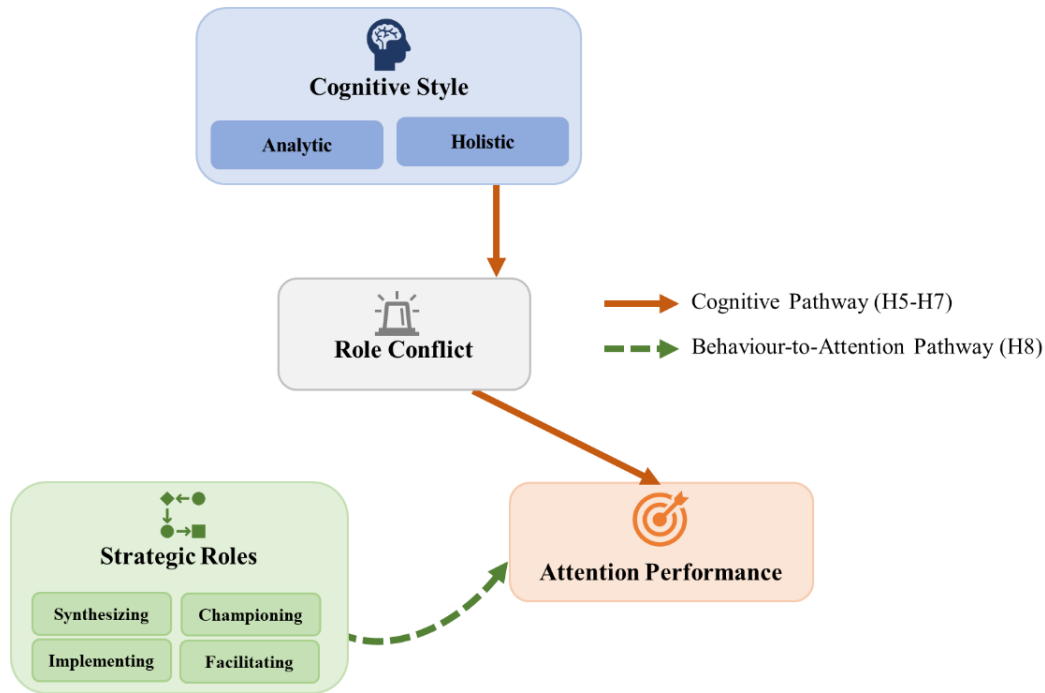
to move beyond style classification and examine attentional performance using a visual search experiment.

Phase 2 examined two pathways illustrated in Figure 20. The cognitive pathway examines whether cognitive style and role conflict predict attention performance, and whether role conflict mediates the relationship between cognitive style and attentional performance. The behaviour-to-attention pathway examines whether strategic role enactment predicts attentional performance. Attentional performance was operationalised through three visual search indices: mean reaction times (RTs) as a measure of processing speed, set-size slope as an indicator of attentional efficiency under increasing cognitive load (set size 6, 12, and 24 items), and the attention efficiency index as the proportional gap between single feature (easy) versus conjunction (difficult) tasks. Before hypotheses, a mixed ANOVA was conducted to validate the visual search outcome by confirming standard search patterns: increased RTs with set size, slower RTs for difficult than easy tasks, and a widening gap between conditions as set size increased. These validation results are presented in 5.3.2. The validated attentional indices then served as outcome variables in hypothesis testing (H5-H8).

To examine H5, a mixed ANOVA with Task (single-feature vs conjunction) and set size (6, 12, 24) as within-subjects factors and cognitive style as the between-subjects factor tested whether analytic and holistic managers differed in search efficiency as indicated by set-size slopes (H5a). An independent-samples t-test then compared the groups on the proportional efficiency index (H5b) and total mean reaction time (H5c). Multiple regression analyses tested whether role conflict predicted attentional outcomes (H6). Mediation analyses examined whether role conflict mediated the relationship between cognitive style and attention

performance (H7a-H7c). Finally, multiple regression analyses explained whether strategic role enactment predicted attentional performance (H8a-H8d).

Figure 20 *Cognitive pathway and Behaviour-to-Attention pathway*



Note. The cognitive pathway examines the relationship between cognitive style and attention performance via role conflict, and the behaviour-to-attention pathway examines the relationship between strategic role and attention performance.

5.3.2 Visual Search Task Validation

Prior to hypothesis testing, a mixed ANOVA (see Table 24) was conducted to establish the validity of the visual search experiment. This analysis examined the effects of task type (single-feature vs conjunction) and set size (6, 12, 24) as within-subject factors, with cognitive style (analytic vs holistic) as the between-subjects factor. The aim was to confirm standard visual search patterns: slower RTs in conjunction tasks than in single-feature tasks, steeper slopes in conjunction tasks than in single-feature tasks, and increased RTs with set size. Assumption checks indicated that the sphericity assumption was violated for set size and for the task x set

size interaction. Greenhouse-Geisser corrections are therefore reported, with Huynh-Feldt estimates also inspected to confirm stability.

The analysis confirmed a robust main effect of set size, $F(1.82, 189.50) = 617.10, p < 0.001, \eta^2p = 0.856$, with reaction times increasing as the number of distractors increased; thus, it confirmed the well-established set-size cost in visual search. A strong main effect of task was also observed, $F(1, 104) = 385.20, p < 0.001, \eta^2p = 0.787$, with conjunction searches being consistently slower than single-feature searches; thus, greater attentional control is required when targets are defined by a combination of features rather than a single salient attribute. Further, a significant task \times set size interaction was also found, $F(1.77, 184.30) = 148.10, p < 0.001, \eta^2p = 0.587$, indicating that the performance gap between single-feature and conjunction searches widened with increasing set size. Post-hoc contrasts confirmed that conjunction searches were slower than single-feature searches at all set sizes (all p s < 0.001), with the mean difference modest at set size 6 (-58.24 ms) and substantially larger at set size 12 (-126.80 ms) and 24 (-231.90 ms). These results confirm the validity of the visual search paradigm and are consistent with established visual search patterns reported in prior research (Ajana et al., 2023; Eckstein et al., 2000; Humphrey & Kramer, 1997; Mavritsaki et al., 2025). At the between-subjects level, a main effect of cognitive style was observed, $F(1, 103) = 4.01, p = 0.048, \eta^2p = 0.037$, indicating that holistic managers responded more slowly than analytic managers across all conditions. However, neither the set-size \times cognitive-style interaction, $F(1.82, 187.00) = 0.62, p = 0.522, \eta^2p = 0.006$, nor the task \times set-size \times cognitive-style interaction $F(1.77, 182.20) = 0.36, p = 0.672, \eta^2p = 0.003$ reached significance; thus, the set-size function was similar across styles. In other words, both analytic and holistic managers showed the expected RT increase with set size and a steeper cost under conjunction search, but holistic managers were consistently slower overall (see Figure 21).

Table 24 *Mixed ANOVA Result: Visual Search Validation*

Effect	<i>F</i>	<i>df</i>	<i>p</i>	η^2p
Within Subject				
Task	385.20	1, 104	< 0.001	0.787
Set size	617.10	1.82, 189.50	< 0.001	0.856
Tasks x Set size	148.10	1.77, 184.30	< 0.001	0.587
Task x Cognitive style	0.62	182, 187.00	0.522	0.006
Task Set size x Cognitive style	0.36	1.77, 182.20	0.672	0.003
Between Subject				
Cognitive Style	4.01	1, 103	0.048	0.037

Note. η^2p = partial eta square.

Table 25 presents descriptive statistics of mean RTs and RTs per set size for analytic and holistic managers across conditions.

Table 25 *Mean Reaction Times by Taks Condition and Analytic and Holistic*

Condition	Analytic		Holistic	
	Mean	SD	Mean	SD
Single-Feature				
Set size 6	671.90	123.69	689.77	93.82
Set size 12	733.12	120.82	770.60	96.45
Set size 24	753.92	135.72	784.78	115.97
Conjunction				
Set size 6	713.48	114.82	769.36	105.18
Set size 12	850.64	143.07	909.31	109.80
Set size 24	974.69	147.59	1031.07	127.62

Note. RTs are reported in milliseconds and are based on correct trials only.

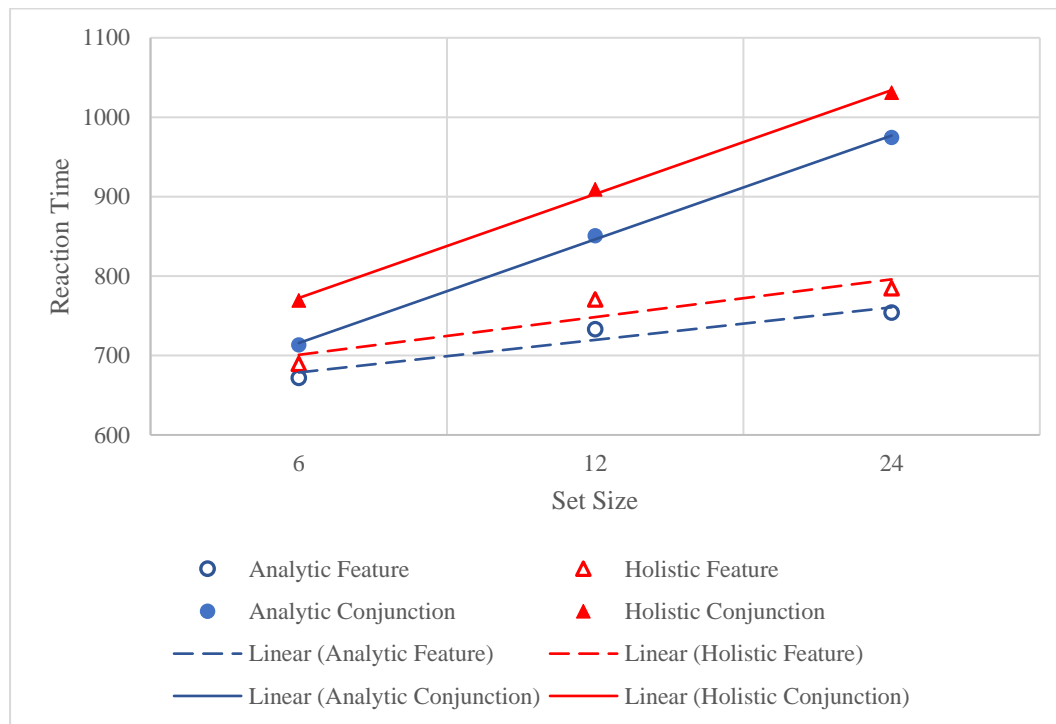
Accuracy rates were checked to ensure that speed-accuracy trade-offs did not confound group-level RT effects. Participants maintained an accuracy level above 90%, with only minor variation across set sizes. Table 26 shows the corresponding mean accuracy rates for analytic and holistic managers. To complement RTs' analyses, an efficiency index (RT/accuracy) was also considered, integrating response speed and accuracy into a single measure. However, given the consistently high accuracy levels observed, the efficiency index produced a pattern of results that closely mirrored the mean RTs; thus, accuracy differences did not meaningfully affect the interpretation of attention efficiency and are not discussed further here.

Table 26 Mean Accuracy for Analytic and Holistic

Condition	Analytic		Holistic	
	Mean	SD	Mean	SD
Single-feature				
Set size 6	94.76	10.66	94.50	11.46
Set size 12	90.92	11.81	90.46	13.88
Set size 24	93.63	13.30	94.26	11.74
Conjunction				
Set size 6	92.55	11.94	92.06	12.13
Set size 12	91.36	11.97	90.61	12.70
Set size 24	90.65	14.06	92.47	14.39

Note. Accuracy values are as percentages of correct responses.

Figure 21 Mean RTs for Analytic and Holistic Cognitive Style in Single-feature (easy tasks) and Conjunction (difficult tasks)



Note. Mean reaction times (RTs, in milliseconds) are plotted as a function of set size (6, 12, 24) for analytic and holistic cognitive styles. Dashed lines represent single-feature search, and solid lines represent conjunction search. Linear trend lines illustrate the increase in RTs with set size.

5.3.3 Hypotheses Testing and Results of Phase 2

This section presents the results of the hypothesis testing for Phase 2 ($n = 105$), which examined the cognitive and behavioural-to-attention pathways. Hypotheses H5-H8 were tested using a Mixed ANOVA, t-test, regression analyses, and mediation analyses. As in Phase 1, mediation analyses were conducted regardless of whether individual regression paths reached significance, consistent with Hayes (2009) and Zhao et al. (2010), which do not require a significant total effect as a prerequisite for testing indirect effects. Figure 22 illustrates the inferential analysis, and Figure 23 summarises the hypothesised pathways tested.

Figure 22 *Inferential Analysis Process Phase 2*

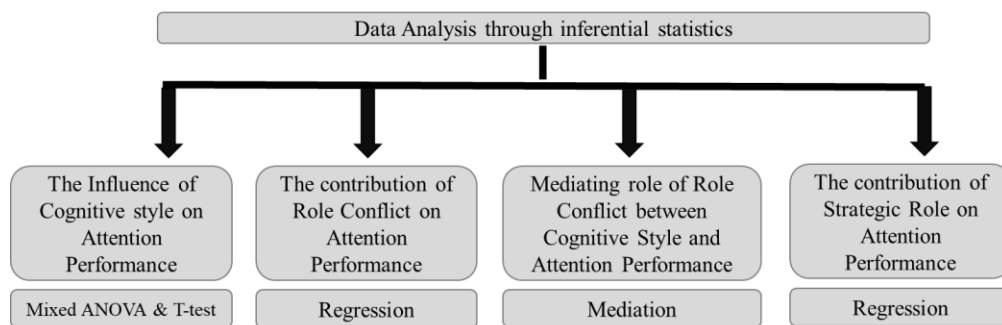


Figure 23 *Hypotheses Testing Overview of Phase 2*

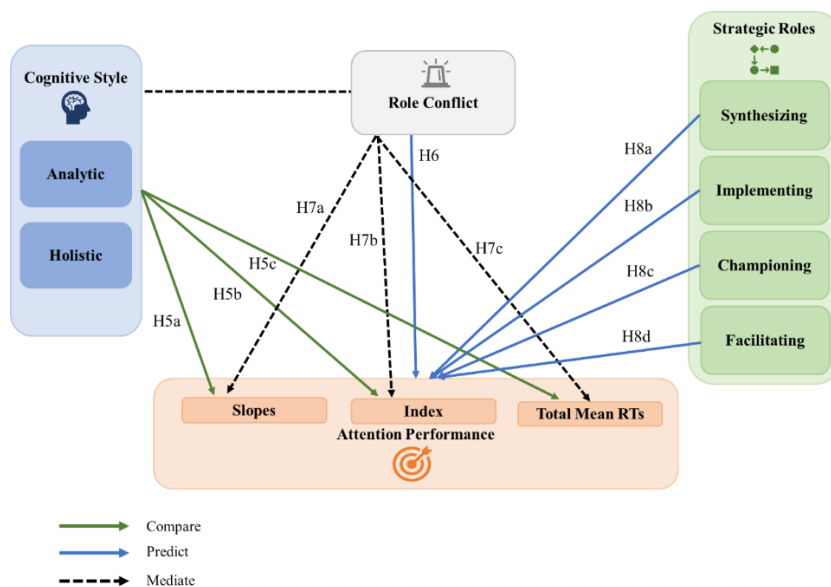


Table 27 presents the operationalisation of all variables. Cognitive style was treated as a categorical variable (analytic vs. holistic) and as the independent grouping factor in Mixed ANOVA and mediation analyses. Role conflict was assessed as a continuous composite score and served as both a predictor and a mediator in the model. Strategic role enactment composites (championing, facilitating, synthesising, and implementing) were included as predictors in regression and mediation models. Attention performance was operationalised through three computed indices: (1) search slopes for single-feature and conjunction tasks, (b) the proportional efficiency index (single-feature vs conjunction), and (c) total mean RTs collapsed across set sizes within each task condition.

Table 27 *Role of Constructs Phase 2*

Construct	Type of Variable	Role in Analysis
Cognitive Style	Categorical (Analytic / Holistic)	Grouping variable, IV in mixed-ANOVA & Mediation Analyses
Role Conflict	Likert-scale composite (8 items)	IV in Regression Analyses and Mediator in Mediation
Strategic Roles (Championing)	Likert-scale composite (5 items)	IV in Regression, Mediation Analyses
Strategic Roles (Facilitating)	Likert-scale composite (7 items)	IV in Regression, Mediation Analyses
Strategic Roles (Synthesising)	Likert-scale composite (4 items)	IV in Regression, Mediation Analyses
Strategic Roles (Implementing)	Likert-scale composite (4 items)	IV in Regression, Mediation Analyses
Attention Efficiency in easy tasks (slope single-feature)	Continuous (ms/item)	DV in mixed-ANOVA, Regression, Mediation
Attention Efficiency in difficult tasks (slope conjunction)	Continuous (ms/item)	DV in mixed-ANOVA, Regression, Mediation
Attention Performance (Index)	Continuous (proportional efficiency gap)	DV in mixed-ANOVA, Regression, Mediation

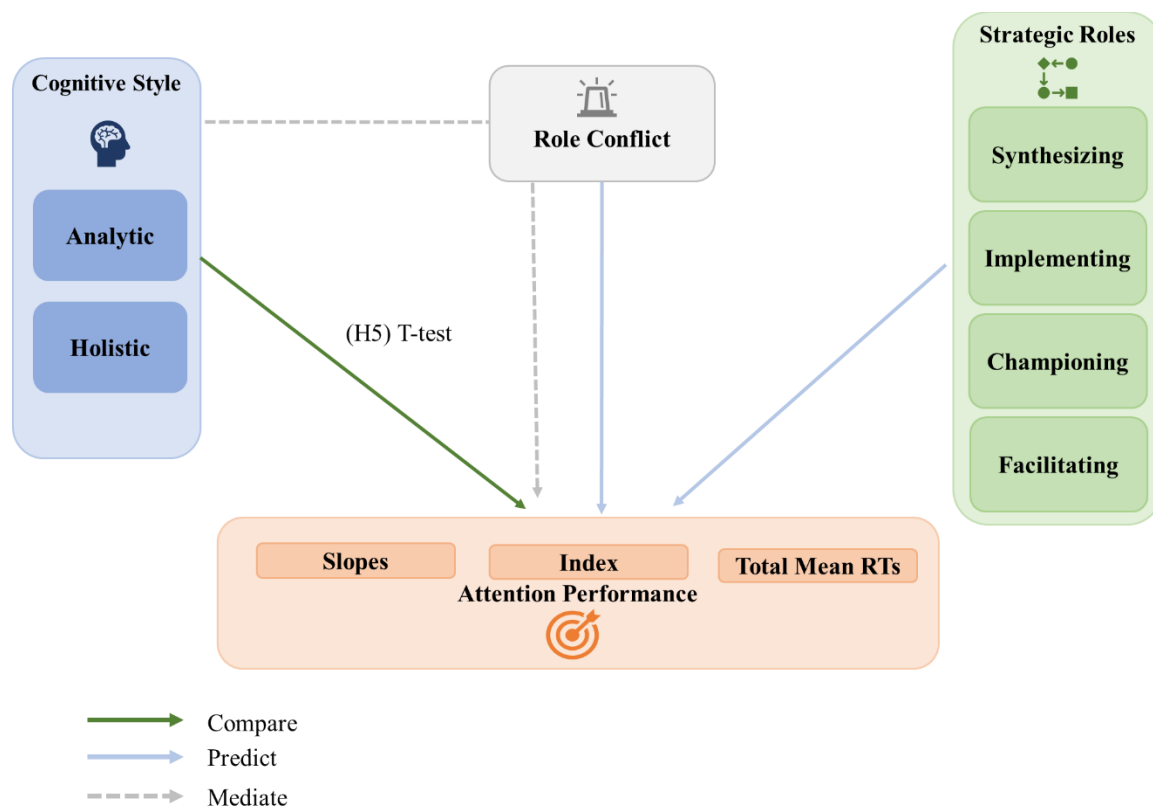
Easy Attention Task (total mean RTs single-feature)	Continuous (ms)	DV in mixed ANOVA, Regression, Mediation
Difficult Attention Task (total Mean RTs conjunction)	Continuous (ms)	DV in mixed ANOVA, Regression, Mediation

Note. ms = millisecond, IV = Independent Variable, DV = Dependent Variable

5.3.3.1 Cognitive Style and Attention Performance

To examine H5, the between-subjects cognitive style effect from Mixed ANOVA was inspected for H5a. Independent-samples t-tests were then conducted to compare analytic and holistic managers on the proportional efficiency index (H5b) and total mean reaction times for single-feature and conjunction tasks (H5c). Figure 24 illustrates the hypothesised pathway.

Figure 24 *Cognitive Style Differences in Attention Performance*



Prior to analysis, raw data from the visual search experiment were cleaned to ensure accuracy and reliability before inferential testing. Only correct trials were retained for analysis, as incorrect responses do not reflect attentional processing speed. Outliers exceeding ± 3 standard deviations from each participant's condition mean were removed. After these checks, usable data were obtained from 105 participants (three were excluded due to errors/ incomplete results).

H5a: Search Slopes. Search slopes were calculated by regressing reaction times (RTs) on set size for the single-feature and conjunction conditions, in milliseconds per item. This approach follows the standard linear model of visual search (Horowitz & Wolfe, 2003; Michaelson et al., 2024):

$$RT(n) = a + b \times n,$$

where $RT(n)$ is the mean response time at set size n , a is the intercept reflecting baseline non-search components, and b is the slope capturing the additional cost of processing each distractor item. Steeper slopes indicate less efficient selective attention, as each added distractor increases search time. For example, a participant had RTs of 676 ms, 710 ms, and 756 ms in the single-feature condition. Using the regression approach, the slope was approximately 4.32 ms/item; thus, each additional distractor increased search time by about 4 ms. In the conjunction condition, the same participant showed RTs of 713 ms, 928 ms, and 1032ms, producing a slope of 16.65 ms/item, reflecting a much higher incremental cost of an additional distractor in complex search than in simple tasks. Table 28 presents the slope statistics for analytic and holistic managers. As expected, slopes were steeper in conjunction than in single-feature search, showing an efficiency gap between simple and complex tasks. However, efficiency differences between cognitive styles were similar for analytic and holistic managers, despite holistic style participants being slower overall in baseline RTs.

Table 28 Slope statistics for Analytic and Holistic

Metric	Analytic	Holistic
Single-Feature RTs (ms)		
Set size 6	671.90 (123.69)	689.77 (93.82)
Set size 12	733.12 (120.82)	770.60 (96.45)
Set size 24	753.92 (135.72)	784.78 (115.97)
Conjunction RTs (ms)		
Set size 6	713.48 (114.82)	769.36 (105.18)
Set size 12	850.64 (143.07)	909.31 (109.80)
Set size 24	974.69 (147.59)	1031.07 (127.62)
Search Slopes (ms/ item)		
Feature Slope	4.16 (4.41)	4.70 (4.70)
Conjunction Slope	13.92 (4.60)	13.92 (5.26)
Intercepts (ms)		
Single-Feature	661.49 (126.25)	682.68 (94.80)
Conjunction	651.46 (124.50)	708.48 (113.21)
Linearity (%)		
Single-Feature	58.88 (36.10)	55.76 (34.43)
Conjunction	90.80 (15.31)	89.81 (13.13)

Notes: RT = Reaction Time. Values represent Mean (SD). Slopes indicate the incremental RT cost per additional distractor; intercepts represent estimated baseline RT. Linearity refers to the percentage of RT variance explained by the linear set-size model. Analytic $n = 59$; Holistic $n = 46$.

H5b: Efficiency Index. A proportional index was calculated to quantify the efficiency gap between Single-feature and conjunction visual search. The purpose here was to derive a metric that expresses how much more demanding conjunction search is relative to single-feature search. The index was calculated for each participant as:

$$\text{Index} = \frac{\text{Slope Conjunction} - \text{Slope Single-feature}}{\text{Slope Conjunction}}$$

Where slope single-feature and slope conjunction are the search slopes in milliseconds per item, by construction, values closer to 0 indicate that two tasks show similar efficiency (a minimal gap between single-feature and conjunction search), whereas values closer to 1 indicate that conjunction search is more demanding. For example, one participant showed a single-feature slope of 4.27 ms/item and a conjunction search slope of 18.80 ms/item. Applying the formula, the index is approximately 0.77, indicating that 77% of the conjunction cost was

attributable to the efficiency gap between simple and complex search. Table 29 presents the index values for analytic and holistic managers based on the t-test results. As expected, both groups showed positive indices, indicating higher proportional costs during conjunction search than during single-feature search. The mean index was slightly higher in holistic managers than in analytic managers, but the broad overlap in standard deviations meant the efficiency gap was similar across groups.

Table 29 *Index values for analytic and holistic managers*

Group	Mean	SD
Analytic	0.64	0.534
Holistic	0.70	0.574

Note. The efficiency index represents the proportional increase in processing cost from single-feature to conjunction search, calculated using search slopes. Higher values indicate a larger efficiency gap between simple and complex search.

H5c: Total Mean Reaction Times. Mean RTs were collapsed across set sizes within each task condition to yield a total measure of baseline processing speed for single-feature and conjunction searches, providing a complementary perspective that while slopes and indices capture efficiency as set size increases, total RTs capture overall differences in speed between simple and complex tasks. Although visual search studies often emphasise set-size slopes, prior work demonstrates that overall mean RTs are also a valid indicator of attentional performance (Bueichekú et al., 2019). The results are consistent with the mixed ANOVA findings: holistic managers were slower overall than analytic managers; however, both groups showed longer response times in conjunction than in single-feature search. Based on the t-test, Table 30 presents these total RTs for analytic and holistic style managers.

Table 30 Total Mean RTs for Analytic and Holistic Managers - Descriptives

Measure	Analytic	Holistic
N	59	46
Single -Feature		
Total Mean RTs	719.64	748.39
SD	119.71	94
Conjunction		
Total Mean RTs	846.26	903.25
SD	129.63	105.25

Note. Mean RTs collapsed across set sizes (6, 12, and 24) for each condition.

Assumption checks for the t-test are presented in Table 31.

Table 31 Assumption Checks for t-test: Index and Total Mean RTs

Measure	Analytic <i>W</i> (<i>p</i>)	Holistic <i>W</i> (<i>p</i>)	Levene's <i>F</i>	(<i>df1</i> , <i>df2</i> , <i>p</i>)
Index	0.612 (<0.001)	0.746 (<0.001)	0.09	(1, 103, 0.759)
Total Mean RT Feature	0.956 (<0.032)	0.970 (0.272)	2.73	(1, 103, 0.102)
Total Mean RT Conjunction	0.979 (<0.411)	0.959(0.103)	1.56	(1, 103, 0.214)

Note. Shapiro-Wilk tests assess normality within each group. Significant results indicate departure from normality. Non-significant Levene's results confirm homogeneity of variances across cognitive style groups. The t-test is robust to non-normality at this sample size (Field, 2024).

Table 32 presents the t-test result for the index and total Mean RTs.

Table 32 Independent-Sample t-tests: Attentional Performance Measures by Cognitive Style

Measure	Analytic <i>M</i> (<i>SD</i>)	Holistic <i>M</i> (<i>SD</i>)	<i>t</i> (103)	<i>p</i>	<i>d</i>	95% CI [<i>d</i>]
Index	0.64 (0.53)	0.70 (0.57)	-0.48	0.636	-0.09	[-0.48, 0.29]
Total Mean RT Feature	719.6 (119.7)	748.4 (94.0)	-1.34	0.184	-0.26	[-0.65, 0.13]
Total Mean RT Conjunction	846.3 (129.6)	903.3(105.2)	-2.42	0.017*	-0.48	[-0.87,-0.08]

Note. Negative values indicate higher scores in the holistic group. *d* = Cohen's *d* with 95% CI.* *p* < 0.05

In summary, cognitive style was not associated with differences in search slope (H5a not supported) or proportional efficiency index (H5b not supported), indicating both analytic and holistic managers showed the same pattern of increasing attentional cost with set size. A

significant group difference emerged for total mean RT in conjunction task only, with holistic managers responding more slowly than analytic managers. H5c is therefore partially supported in conjunction. These results indicate that cognitive style influences overall processing speed under high attentional load but does not affect the rate of efficiency decline with increasing distractor set size.

5.3.3.2 Preliminary Correlation Analysis Phase 2

Table 33 presents the Pearson correlation between strategic roles, role conflict, and the attentional outcome of Phase 2. Correlations are reported to contextualise the hypothesis tests for H6 and H8. Role conflict showed no significant associations with any attentional performance outcome. This result provides a preliminary indication that role conflict is unlikely to predict attention performance in the regression analyses for H6. Among strategic roles, facilitating showed a small but significant positive correlation with single-feature slope. No other strategic role showed significant associations with any attention outcome. However, as the four strategic roles were intercorrelated, the bivariate pattern may not fully reflect each role's predictive contribution once others are controlled. Discrepancies between bivariate correlations and subsequent regression results, therefore, reflect suppression or shared variance effects, and the regression results are the primary basis for testing hypotheses (MacKinnon et al., 2000; Zhao et al., 2010).

Table 33 *Correlation Phase 2*

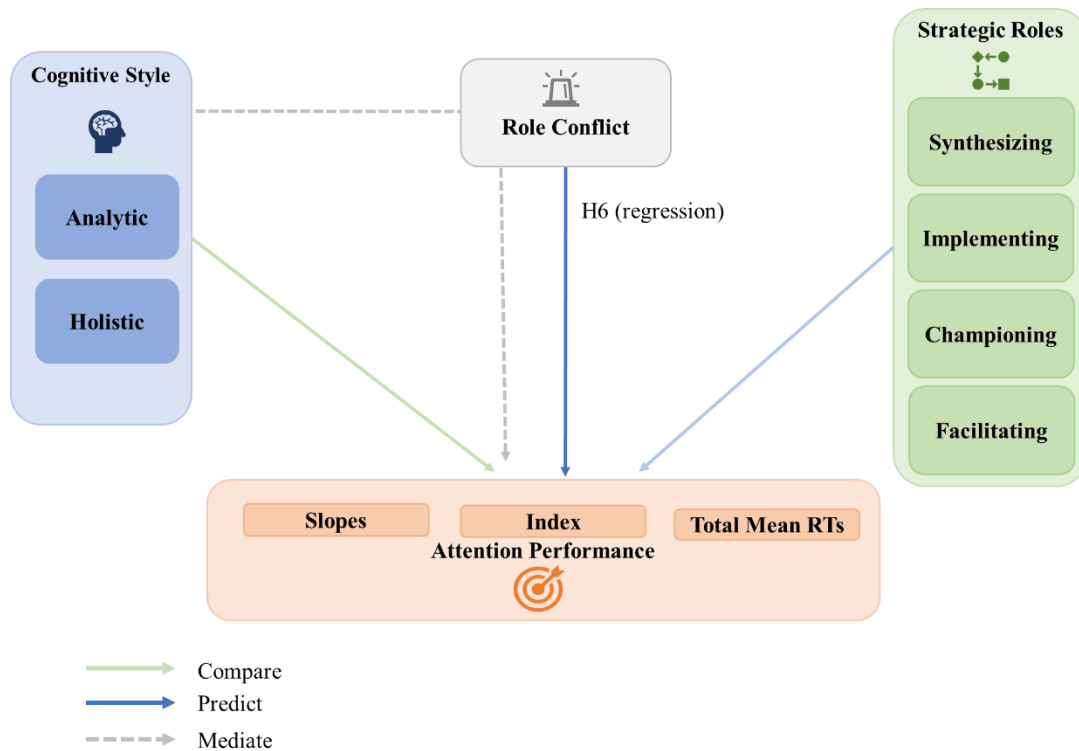
Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Single-feature Slope	4.40	4.54	-									
Conjunction Slope	13.92	4.88	-0.04	-								
Index	0.67	0.55	-0.54***	0.11	-							
Total Mean RT Single-feature	732.2	109.6	0.21*	0.05	0.07	-						
Total Mean RT Conjunction	871	122.4	0.08	0.28**	0.08	0.81***	-					
Championing	3.62	0.52	-0.05	-0.04	0.08	-0.02	0.06	-				
Facilitating	3.12	0.68	0.20*	0.03	-0.06	0.16	0.07	0.49***	-			
Synthesising	3.73	0.7	-0.03	-0.11	0.01	0.09	0.01	0.53***	0.46***	-		
Implementing	3.86	0.6	-0.14	0.13	0.10	-0.04	-0.04	0.42***	0.26**	0.46***	-	
Role Conflict	2.76	0.7	0.02	0.03	-0.09	-0.01	-0.09	0.23*	0.13	0.06	0.04	-

Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0$.

5.3.3.3 Role Conflict as a Predictor of Attention Performance

To test hypothesis H6, five simple linear regressions were run, with role conflict as the sole predictor, for each attention measure (single-feature slope, conjunction slope, index, total mean RT single-feature, and total mean RT conjunction). A single-predictor was adopted to obtain an uncontaminated estimate of the direct relationship between role conflict and attentional outcome, free from inter-predictor distortion (Crutzen & Peters, 2023). All models were also fitted using bias-corrected and accelerated (BCa) bootstrapping with 5,000 resamples, which provides more stable parameter estimates and confidence intervals in the datasets (Eck, 2018). Model diagnostics were acceptable, with Durbin-Watson values close to 2.0 in all models (indicating acceptable independence of residuals).

Figure 25 *Role Conflict as a Predictor of Attention Performance*



The results show that none of the five regression models reached significance (all $F_s < 1.00$, all $p_s > 0.375$), as shown in the regression Tables 34 and 35. H6 is therefore not supported, as role conflict did not significantly predict attention performance on any outcome measure. This null finding is consistent with the preliminary correlational analysis, in which role conflict showed no significant bivariate associations with any attention outcome.

Table 34 *Model Fit Statistics for Role Conflict Predicting Attention Performance*

Model	R	R ²	Adjusted R ²	RMSE	F (1, 103)	Durbin-Watson	p
Slope (SF)	0.020	0.000	-0.009	4.33	0.04	1.97	0.839
Slope (C)	0.030	0.001	-0.009	4.90	0.09	1.43	0.760
Index	0.087	0.008	-0.002	0.551	0.78	2.01	0.379
Total Mean RT (SF)	0.014	0.000	-0.010	110.20	0.02	1.92	0.889
Total Mean RT (C)	0.087	0.008	-0.008	122.48	0.79	1.95	0.375

Note. SF = Single-feature search, C = conjunction search. The R² value shows the variance explained by role conflict. RMSE = root mean square error. Durbin-Watson statistics indicate no substantial autocorrelation. Negative adjusted R² values indicate minimal explanatory power. All models were estimated using BCa bootstrap with 5,000 resamples.

Table 35 *Regression Coefficients for Role Conflict Predicting Attention Performance*

Model	B (Unstd)	SE	β	p	95% CI
Slope (SF)	0.10	0.71	0.020	0.847	[-1.08, 1.85]
Slope (C)	0.22	0.74	0.030	0.791	[-1.34, 1.58]
Index	-0.07	0.08	-0.087	0.321	[-0.24, 0.06]
Total Mean RT (SF)	-2.00	17.22	-0.014	0.886	[-36.75, 31.22]
Total Mean RT (C)	-15.68	19.63	-0.087	0.443	[-53.76, 23.73]

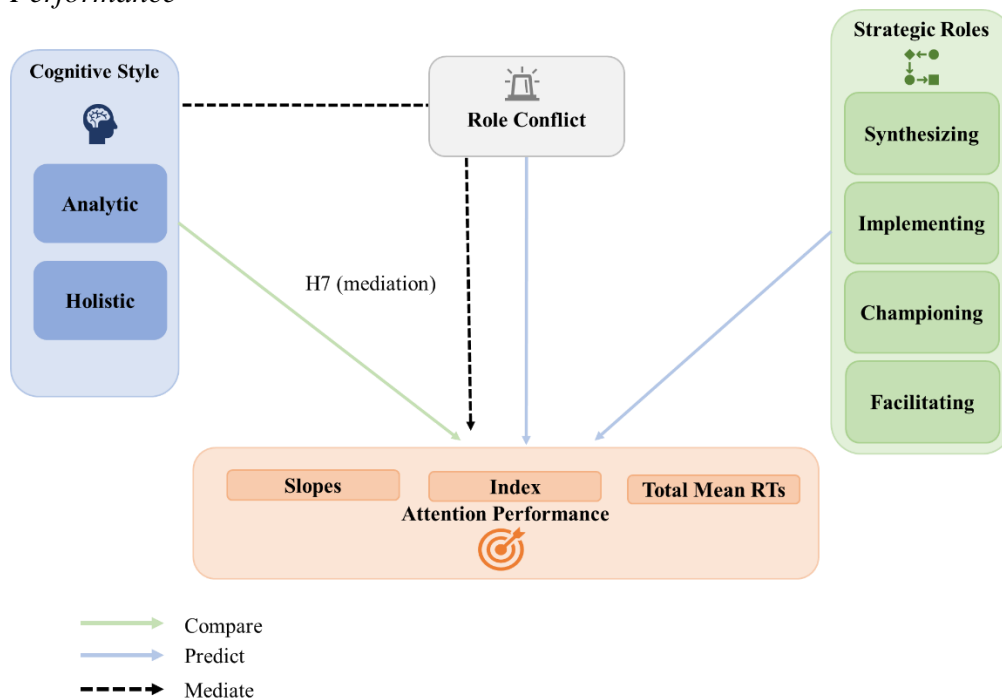
Note. Unstandardized (B) and standardised (β) regression coefficients are reported. SF = single-feature search; C = conjunction search. Confident Intervals are bias-corrected. No regression coefficients were statistically significant at $p < 0.05$.

5.3.3.4 Role Conflict Mediates between Cognitive Style and Attention Performance

To test hypotheses H7a-H7c, a path model was estimated using maximum likelihood estimation with 5,000 bootstrap resamples. Cognitive style (Analytic = 1, Holistic = 2) served as the

independent variable, role conflict as mediator, and the five attentional measures as the outcome variables. The path from cognitive style to role conflict was positive and significant, replicating the Phase 1 finding that holistic managers experience higher role conflict. Mediation was determined by whether the 95% bootstrap CI for the indirect effect excludes zero, following Hayes (2009) and Zhao (2010). Tables 36 and 37 present the path coefficients and indirect effects, respectively.

Figure 26 *Mediating role of Role Conflict between Cognitive Style and Attention Performance*



For H7a, the indirect effects of cognitive style on both search slopes via role conflict were not significant, with CIs that included zero. Direct and total effects were also non-significant. H7a is not supported. For H7b, the indirect, direct, and total effects of cognitive style on the efficiency index via role conflict were non-significant. H7b is not supported. For H7c, the pattern of results for total mean RT conjunction warrants careful interpretation. The direct effect of cognitive style on conjunction RT was significant, with holistic managers responding

more slowly, and the total effect was also significant. The indirect effect via role conflict was negative, indicating that role conflict partially offset the holistic style's slowing effect. The 95% bootstrap CI for the indirect effect narrowly excluded zero. However, the p-value for the indirect effect was 0.071, and the b path (role conflict to conjunction RT) showed a CI that included zero. H7c therefore receives weak support.

Table 36 Path Coefficients for Mediation Model of Cognitive Style, Role Conflict, and Attention Performance

Path	<i>B</i>	<i>SE</i>	<i>z</i>	<i>p</i>	95% <i>CI</i>
Cognitive Style → Role Conflict (<i>a</i> path)	0.746	0.182	4.11	< .001	[0.385, 1.093]
Role Conflict → Single-Feature Slope (<i>b</i> path)	-0.004	0.105	-0.03	0.973	[-0.231, 0.317]
Role Conflict → Conjunction Slope (<i>b</i> path)	0.035	0.105	0.33	0.740	[-0.204, 0.271]
Role Conflict → Index (<i>b</i> path)	-0.121	0.104	-1.16	0.246	[-0.421, 0.098]
Role Conflict → Total mean RT (SF) (<i>b</i> path)	-0.072	0.104	-0.7	0.486	[-0.286, 0.160]
Role Conflict → Total mean RT (Conj.) (<i>b</i> path)	-0.202	0.100	-2.1	0.044	[-0.409, -0.002]
Cognitive Style → Single-Feature Slope (<i>c'</i>)	0.128	0.210	0.61	0.544	[-0.410, 0.559]
Cognitive Style → Conjunction Slope (<i>c'</i>)	-0.026	0.211	-0.12	0.902	[-0.486, 0.420]
Cognitive Style → Index (<i>c'</i>)	0.184	0.209	0.88	0.379	[-0.262, 0.805]
Cognitive Style → Total mean RT (SF) (<i>c'</i>)	0.316	0.209	1.52	0.129	[-0.100, 0.696]
Cognitive Style → Total mean RT (Conj.) (<i>c'</i>)	0.616	0.201	3.06	0.002	[0.223, 0.997]

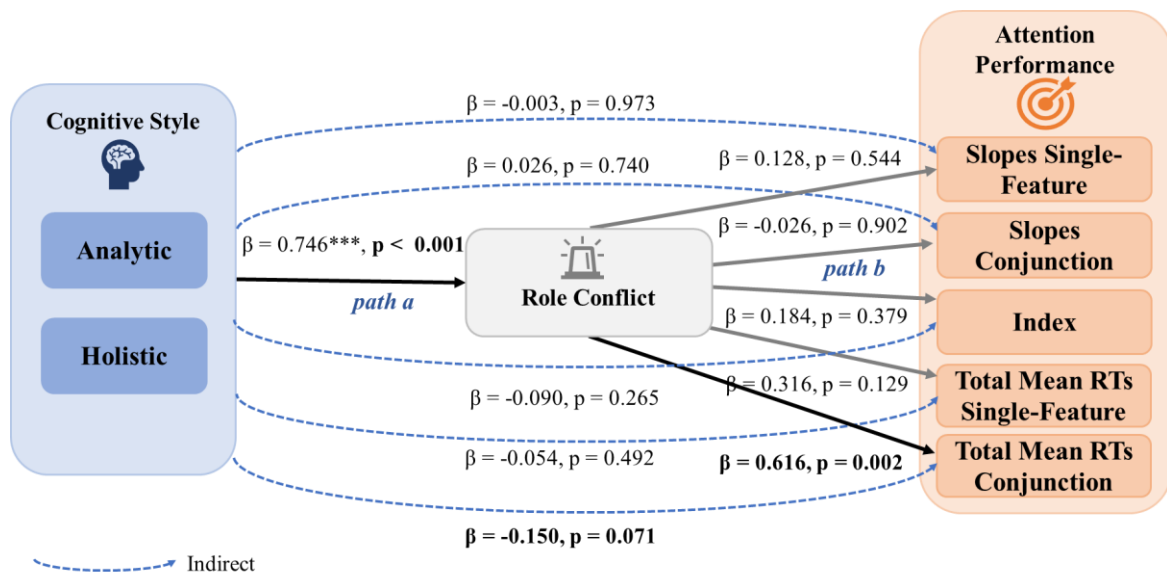
Note. Cognitive style was coded as Analytic = 1 and Holistic = 2. Estimates are unstandardized path coefficients. SF = Single-feature search; Conj. = Conjunction search. Indirect and direct paths were estimated using maximum likelihood with 5,000 bootstrap samples. Confidence intervals are bias-corrected.

Table 37 Indirect, direct and Total Effects of Cognitive Style on Attention Performance via Role Conflict

Outcome	Indirect (<i>B</i>)	95% <i>CI</i>	<i>p</i>	Direct (<i>B</i>)	<i>p</i>	Total (<i>c</i>)	<i>p</i>
Single-feature Slope	-0.003	[-0.178, 0.248]	0.973	0.128	0.544	0.125	0.522
Conjunction Slope	0.026	[-0.164, 0.209]	0.740	-0.026	0.902	≈ 0.000	1.000
Index	-0.090	[-0.358, 0.067]	0.265	0.184	0.379	0.094	0.632
Total mean RT (SF)	-0.054	[-0.212, 0.127]	0.492	0.316	0.129	0.262	0.177
Total mean RT (Conj.)	-0.150	[-0.335, -0.006]	0.071	0.616	0.002	0.466	0.014

Note. Indirect effects represent the product of paths *a* (cognitive style to role conflict) and *b* (role conflict to outcome). Direct effect (*c'*) represents the effect of cognitive style on controlling role conflict. The total effect (*c*) represents the combined direct and indirect effects. Confidence intervals are bias-corrected and based on 5,000 bootstrap samples. SF = Single feature search; Conj. = conjunction search.

Figure 27 Mediation Result of Cognitive Style, Role Conflict, and Attention Performance

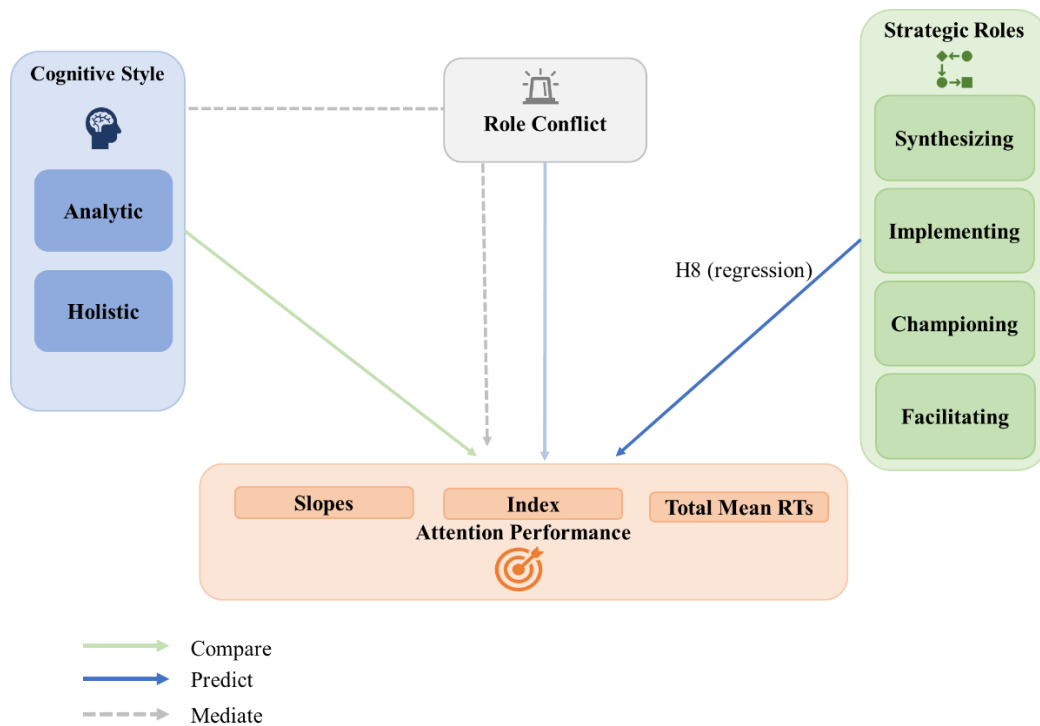


Note. Solid bold arrows represent statistically significant results.

5.3.3.5 Strategic Role Enactment as a Predictor of Attention Performance

To test H8a-H8d, five multiple regression analyses were conducted with all four strategic role composites as predictors, and each attentional performance measure as the outcome. All models use BCa bootstrap with 5,000 resamples (Eck, 2018). Collinearity diagnostics were inspected via Durbin-Watson statistics; most models showed values close to 2.0. The conjunction slope model showed a Durbin-Watson statistic of 1.45 ($p = 0.004$), indicating positive autocorrelation; therefore, the BCa bootstrap CIs provide the primary basis for inference for this outcome. Tables 38 and 39 present model fit statistics and regression coefficients.

Figure 28 *Strategic Role Enactment as a Predictor of Attention Performance*



Only the Single-feature slope model reached overall significance, $F(4,100) = 2.55, p = 0,044, R^2 = 0.093$. The remaining four models were not significant overall. However, for the Conjunction slope model, BCa bootstrap CIs are the primary basis for inference. Two predictors (Synthesising and Implementing) showed CIs that excluded zero. For H8a, the Synthesising role showed a significant negative association with Conjunction slope, indicating that greater Synthesising role enactment was associated with shallower conjunction search slopes and more efficient in complex visual search. No significant associations were found for Synthesising on any other attention outcome. H8a receives partial support for the conjunction slope only. For H8b, Implementing showed a significant positive association with conjunctive slope, indicating a steeper slope and reduced efficiency as visual load increased. This is the opposite direction to that hypothesised. No significant effects were found for other outcomes. H8b is not supported; the observed effect is contrary to the prediction. For H8c, no significant associations were found between Championing and any attention outcome. H8c is not supported. Finally, for H8d, Facilitating was the only significant predictor in the Feature slope

model, showing a positive association with Single-feature slope, indicating steeper slopes and reduced search efficiency as set size increases in simple tasks. No significant effects were found for other outcomes. H8d receives partial support for the single-feature slope only. Appendix 9.8 shows that the scatterplots present the relationships between four strategic role enactments and the five attentional performances.

Table 38 *Model Fit Statistics for the Strategic Roles Enactment Predicting Attention Performance*

Model	R	R ²	Adjusted R ²	RMSE	F (4, 100)	p	DW
Slope (SF)	0.304	0.093	0.056	4.189	2.55	0.044	2.030
Slope (C)	0.258	0.066	0.029	4.806	1.78	0.139	1.447
Index	0.161	0.026	-0.013	0.554	0.67	0.615	2.004
Total Mean RT (SF)	0.222	0.049	0.011	109.019	1.3	0.276	1.827
Total Mean RT (C)	0.129	0.017	-0.023	123.738	0.42	0.792	1.924

Note. All models include Championing, Facilitating, Synthesising, and Implementing composite as predictors. RMSE = root mean square error. DW = Durbin-Watson. SF = single-feature search; C = Conjunction search. Models are estimated using BCa bootstrap with 5,000 resamples.

Table 39 *Regression Coefficients for Strategic Role Enactment Predicting Attention Performance*

Model	Predictor	B	SE	β	p	95% CI
Single-feature Slope	Championing	-0.877	0.966	-0.105	0.393	[-2.662, 1.189]
	Facilitating	1.953	0.943	0.316	0.008	[0.459, 4.355]
	Synthesising	-0.300	0.781	-0.051	0.650	[-2.133, 1.039]
	Implementing	-1.171	0.773	-0.157	0.170	[-2.573, 0.480]
Conjunction Slope	Championing	-0.618	0.938	-0.069	0.444	[-2.634, 1.036]
	Facilitating	0.854	0.733	0.117	0.291	[-0.688, 2.166]
	Synthesising	-1.706	0.696	-0.243	0.015	[-3.059, -0.365]
	Implementing	2.012	0.816	0.245	0.009	[0.557, 3.823]

Note: B = unstandardised BCa bootstrap median coefficient; β = standardised coefficient. P and 95% CI are from BCa bootstrap output based on 5,000 resamples. Positive slope coefficients indicate steeper search slopes and less efficient visual search.

5.3.4 Summary of the Findings

Phase 2 examined the cognitive and behaviour-to-attention pathways, testing how cognitive style, role conflict, and strategic role enactment predict attention performance. Data were collected from 105 MMs who completed Phase 1. The analysis began with validation of the visual search experiment using a mixed ANOVA, which confirmed the expected effects of task complexity and set size. Derives indices, including search slopes, index, and total mean reaction times, which were then used as outcome variables in hypothesis testing.

H5 examined whether cognitive style predicts attention performance. No significant differences in search efficiency between analytic and holistic managers, and the efficiency index did not differ significantly. A significant difference emerged for total mean conjunctive RT: only holistic managers showed slower RT than analytic managers under high attentional load. H5a and H5b were not supported; H5c received partial support for conjunction search. H6 tested whether role conflict predicts attentional performance. None of the five regression models reached significance, and role conflict did not significantly predict attentional measure. H6 is not supported. H7 examined whether role conflict mediates the relationship between cognitive style and attention performance. Role conflict did not mediate the relationship between cognitive style and search slopes (H7a, not supported) or efficiency index (H7b, not supported). For total mean conjunction RT, a negative indirect effect of cognitive style via role conflict yielded a bootstrap CI that narrowly excludes zero, while the direct effect of cognitive style remained significant. This result showed an inconsistent mediation. H7c receives weak support with the narrow CI and $p = 0.071$, warranting careful interpretation. Finally, H8 tested whether strategic role enactment predicts attentional performance. The Single-feature slope model was the only overall significant model. Within this model, facilitating was the only significant predictor, showing a positive association with single-feature slope; H8d received

partial support. For the conjunction slope, the OLS model was not significant; however, due to autocorrelation ($DW = 1.45$, $p = 0.04$), the BCa bootstrap is the primary basis for inference. Under bootstrap, Synthesising showed a significant negative association with conjunction slope, and Implementing showed a significant positive association. H8a therefore receives partial support for the conjunction slope, and H8b is not supported, as the direction of the Implementing role effect was the opposite of the prediction. Championing showed no significant associations with any attention outcome, and H8c is not supported.

Table 40 *Summary Result of Hypotheses Test of Phase 2*

Objective	Hypothesis	Statement	Result
Cognitive Style and Attention Performance	H5a	Analytic is more efficient in visual search than Holistic	Not Supported
	H5b	Analytic has a lower index on visual search than Holistic	Not Supported
	H5c	Analytic is faster on visual search than Holistic	Partial Support (Conjunction RT Only)
Role Conflict and Attention Performance	H6a	Higher Role Conflict predicts poorer visual search performance	Not Supported
Role Conflict Mediates: Cognitive Style and Attention	H7a	Role conflict mediates the relationship between cognitive style and Slopes	Not Supported
	H7b	Role conflict mediates the relationship between cognitive style and Index	Not Supported
	H7c	Role conflict mediates the relationship between cognitive style and total mean RTs	Weak Support (Conjunction RTs)
Strategic Role Enactment and Attention Performance	H8a	Synthesising role → shallower slopes, lower index score, shorter total mean RTs	Partial Support (Conjunction Slope)
	H8b	Implementing role → shallower slopes, lower index score, shorter total mean RTs	Not Supported (opposite direction)
	H8c	Championing role → steeper slopes, higher index score, longer total mean RTs	Not Supported
	H8d	Facilitating role → steeper slopes, higher index score, longer total mean RTs	Partial Support (Single-Feature Slope)

6 CHAPTER 6: DISCUSSION

6.1 Overview

This chapter integrates the insights from three components of this research: Systematic Literature Review (SLR), Phase 1, and Phase 2, to provide a comprehensive interpretation of how middle managers' cognitive style influences strategic role enactment and attention performance, and the role of role conflict in these relationships. The overall answer emerging from this thesis is that cognitive style influences strategic role enactment and attention performance, with role conflict serving as an important associative mechanism. The main question guiding this thesis is: *How do MMs' cognitive styles, as a way of processing information, influence strategic role enactment as a behavioural outcome and attention performance within an ambiguous environment?* Phase 1 addressed three research questions: how cognitive style influences strategic role enactment and the experience of role conflict; how role conflict contributes to the enactment of strategic roles; and the extent to which role conflict mediates the relationship between cognitive style and strategic role enactment. Phase 2 extended this inquiry to the cognitive domain by examining the relationship between cognitive style and attention performance, the role of role conflict in shaping this relationship, and the extent to which patterns of role enactment relate to attentional efficiency.

Across two phases, holistic managers consistently experience a higher level of role conflict than analytic managers, and this difference in role conflict was associated with greater enactment of the Championing and Facilitating roles. Holistic managers also responded more slowly than analytic managers on conjunction search tasks, indicating a difference in attentional processing speed under high cognitive load. Role conflict mediated the relationship

between cognitive style and strategic role enactment for Championing and Facilitating, showing a weak indirect effect on conjunction reaction time. Role conflict did not predict attentional performance, and strategic role enactment showed selective associations with attentional efficiency, most notably for Facilitating in simple search, Synthesising and Implementing in complex search. These findings provide partial support for the three pathways proposed in the conceptual framework, while also identifying boundary conditions and null results that contribute to a more refined understanding of MMs' cognitive and behavioural processes. Section 6.2 revisits the literature gaps identified in the SLR and explains how they lead to the development of the cognitive-behavioural framework. Section 6.3 interprets Phase 1, and the behavioural pathway; Sections 6.4 and 6.5 examine Phase 2 and the cognitive and behaviour-to-attention pathways.

To explain these interdependencies, this research developed and tested three pathways: cognitive, behavioural, and behavioural-to-attention grounded in Organisational Role Theory (ORT) and the Attention-Based View (ABV). ORT conceptualises managerial behaviour as expectations attached to formal and hierarchical systems. Within such systems, managers enact multiple roles that reflect organisational norms and objectives, yet these roles generate incompatible expectations, leading to role conflict (Biddle, 1986; Rizzo et al., 1970; Wickham & Parker, 2007). Extending ORT, this thesis incorporates cognitive style as a manager's way of perceiving and interpreting these competing expectations. This extension is supported by research showing that cognitive style influences how people attend to information, perceive ambiguity, and make sense of contextual cues (Choi et al., 2007; Kozhevnikov et al., 2014; Nisbett et al., 2001). Integrating ORT with the ABV situates these processes within the domain of managerial attention, emphasising that organisational action depends on how decision-makers distribute and focus their limited attention resources (Ocasio, 1997, 2011). While ORT

and ABV agree that structural and informational demands constrain managerial behaviour, they stem from different theoretical viewpoints. ORT is rooted in sociological role theory and emphasises normative expectations and behavioural obligations (Harnisch, 2011), whereas ABV is grounded in cognitive and information-processing perspectives that foreground attention as a bottleneck in organisational action (Brielmaier & Friesl, 2023; Joseph et al., 2024; Ocasio, 1997). Their integration in this thesis is justified because both frameworks converge on the idea that managers' behaviour is shaped by how they process competing demands, whether framed as role expectations (ORT) or attentional priorities (ABV). This combination provides a more comprehensive account of how structural role pressures interact with individual cognitive tendencies to influence behaviour and attention.

The first pathway, the behavioural pathway, examines how cognitive style influences strategic role enactment through role conflict (Cognitive style → Role Conflict → Strategic role enactment). Here, role conflict, as a behavioural mediator, channelling cognitive tendencies into strategic behaviours such as Championing, Facilitating, Synthesising, and Implementing. The second pathway (cognitive pathway) explores how cognitive style and role conflict influence attention performance (Cognitive style → Role Conflict → Attention Performance). In this view, role conflict operates either as a cognitive stressor that fragments attention (Gilboa et al., 2008; Plessow et al., 2011; Vuori, 2024; Vuori & Huy, 2016) or as an arousal mechanism that sharpens it (Aston-Jones et al., 1999; Caestecker et al., 2025), depending on the manager's style and the type of task demands. The third, the behaviour-to-attention pathway, investigates whether strategic role enactment shapes attentional efficiency (Strategic role enactment → Attention Performance), linking everyday strategic behaviour with cognitive control. Through these pathways, the thesis integrates middle managers' roles (Floyd & Wooldridge, 1992, 1997) with psychological constructs of cognitive style (analytic vs holistic; Nisbett et al., 2001)

with attention (Mavritsaki et al., 2025; Wolfe, 1998, 2020b). This integration explains how individual differences in information processing interact with role conflict to influence strategic behaviour and attentional outcomes. The research also makes a methodological contribution by operationalising attention performance using experimental indicators from cognitive psychology, such as reaction times, set-size slopes, and indices (Wolfe & Horowitz, 2017), which reflect how efficiency and speed vary across different cognitive and behavioural conditions.

6.2 From Literature Gaps to Cognitive-Behavioural Integration

The systematic literature review (SLR) conducted in this thesis provided the conceptual foundation for the empirical study by mapping the existing knowledge on how cognitive styles influence managerial roles and identifying where theoretical and empirical gaps persist. Synthesising evidence from 71 empirical studies, the review revealed that although cognitive style has served as an explanatory construct in organisational behaviour for 3 decades, its application to strategic and middle managerial contexts remains underdeveloped. Most studies have explored the effects of cognitive styles on decision-making, problem-solving, and leadership effectiveness. Across reviewed studies, the literature identified a range of cognitive style dimensions that explain distinct approaches to scanning the environment, integrating information, and making strategic judgements; and it is recognised as a stable and influential individual difference (Chen et al., 2015; Wang et al., 2023; Yu et al., 2021). The SLR developed one of the first interdisciplinary conceptual frameworks that integrates direct, mediating, and moderating pathways linking cognitive style to managerial roles. This synthesis was essential for situating the present research within a cross-disciplinary landscape, justifying the introduction of cognitive psychology methods into management research, and identifying the link between strategic role enactment, role conflict, and attention performance that required

empirical examination. Therefore, SLR goes beyond summarising existing knowledge; it establishes the conceptual and methodological foundations upon which the empirical studies in this thesis were intentionally designed. Despite these insights, no prior studies have examined these mechanisms within the structural ambiguity of middle management (the four strategic roles), where competing expectations and limited attentional resources make these cognitive-behavioural processes critical.

A further gap identified by the SLR concerned the mediating mechanism through which cognitive style affects managerial outcomes. While several studies proposed constructs such as organisational culture, type of work, or leader-member exchange as mediators (Krupskiy & Grynko, 2018; Mcdonough, 1990; Qi & Armstrong, 2019), the idea that role conflict could serve as a cognitive-behavioural bridge was absent. Another finding was the absence of attention performance as an outcome variable. Although cognitive style inherently explains differences in attentional control (Boduroglu et al., 2009), prior research did not operationalise these differences. Most studies relied on cognitive style dimensions using self-report (MBTI or CoSI), which are prone to distortion from self-assessment and social desirability effects. Consequently, SLR called for incorporating methods from cognitive psychology (such as Framed-Line Tasks and visual search experiments) to assess cognitive style and quantify attentional performance in managerial research. Thus, this thesis addresses these limitations by being the first to advance and empirically test a cognitive-behavioural model in which role conflict functions as a mediating process through which cognitive style influences strategic behaviour and attention performance. This integrative model offers a novel theoretical contribution to management research by examining middle managers' cognitive orientations translate into differential behavioural tension and attentional outcome under strategic demands, thus, providing a cohesive explanation that have previously remained disconnected.

6.3 Behavioural Pathway: Cognitive Style, Role Conflict, and Strategic Role Enactment

6.3.1 The Influence of Cognitive Style on Strategic Role Enactment

The first set of hypotheses examined whether cognitive style differentiates the extent to which middle managers (MMs) enact the four strategic roles: Championing, Facilitating, Synthesising, and Implementing (Floyd & Wooldridge, 1992, 1997; Tarakci et al., 2023). The results provided partial support for these hypotheses: holistic cognitive style managers reported significantly higher levels of Championing behaviour than analytic managers, while no significant differences were observed for the Facilitating, Synthesising, or Implementing roles. These findings reveal that cognitive style is not a general predictor of strategic behaviour but a role-sensitive one, whose influence appears contingent on the degree of interpretative discretion (the extent to which a role allows personal judgement) and attentional breadth (the range of contextual cues a role requires the managers to attend to) that a given role demands. These role-sensitive patterns align with prior theorising that strategic roles are interrelated. Floyd and Wooldridge (1992, 1997) argue that strategic role enactment forms an integrative behaviour. Holistic roles appear to facilitate demand advocacy, sensemaking, and upward influence, characterised by ambiguity, boundary spanning, and relational complexity; while other roles are centred on procedural control and information integration, where expectations are clearly defined. This interpretation is consistent with prior research linking holistic style to contextual integration and relational awareness (de Oliveira & Nisbett, 2017; Santos et al., 2021), and the present study extends this literature into the middle management context by showing that holistic thinkers are more likely to report enacting in advocacy and issue-selling behaviours. In this sense, cognitive style, as patterns in information processing, perception, and related to others (Kozhevnikov, 2007), determines how MMs respond to role ambiguity, influencing their propensity to act as champions of new initiatives.

The Championing finding warrants particular attention because it can be understood through both the nature of the role and the specific cognitive mechanism captured by the Framed-Line Task (9FLT). Championing activities, such as identifying and framing opportunities, challenging existing practices, and persuading senior managers, are dominated by ambiguity, persuasion, and contextual framing (Dutton & Ashford, 1993; Floyd & Wooldridge, 1992); these demands align with attentional breadth, associated with a holistic style (Choi et al., 2007; Nisbett et al., 2001). However, beyond the general attentional breadth argument, the FLT specifically operationalises cognitive style as the tendency to either separate focal information from its context (analytic/field-independent) or integrate focal information with its contextual background (holistic/field-dependent) (Tominaga et al., 2017). Holistic managers' tendency to incorporate surrounding contextual information when processing perceptual stimuli (Nisbett et al., 2001) may translate into organisations as interconnected systems, attending to broader environmental and social cues, and recognising opportunities that others embedded in narrower attentional frames may overlook. This broader perceptual orientation facilitates the core demands of Championing, which require framing new ideas for senior managers who hold formal authority and demand persuasive, contextually rich communication (Dutton et al., 1997, 2001). Holistic thinkers, attending to social context and relational dynamics, are well-positioned to read the broader strategic landscape and translate bottom-up insights into language that aligns with executive priorities. The present findings therefore suggest that attentional breadth and contextual sensitivity facilitate issue-selling and upward influence, allowing holistic managers to translate their contextual awareness into advocacy and strategic voice. This connection between perceptual style as measured by the FLT and strategic role behaviour at the organisational level represents a novel contribution of the present study and extending cognitive style research from a laboratory measures of perception into managerial strategic behaviour.

Facilitating, by contrast, is a lateral coordination activity that involves managing relationships across peers and units; therefore, it may depend less on attentional breadth and more on emotional regulation capacities. Although the Facilitating role did not reach statistical significance, its directional trend was consistent with theoretical expectations. Facilitating, like Championing, involves managing ambiguity, reconciling different perspectives, and fostering cross-unit coordination (Huy et al., 2002; Vaz et al., 2022). This role requires MMs to encourage informal discussion, coordinate resources, navigate social dynamics, and use emotional intelligence, trust building and political skill to sustain collaboration (Bader, 2016; Lüscher & Lewis, 2008). The non-significant finding for Facilitating may indicate that capacities beyond information processing style drive this role. Facilitating requires sustained emotional labour and interpersonal skills that may be more closely linked to emotional intelligence than to cognitive style, as measured by the FLT.

Furthermore, our findings suggest that structural expectations and procedural demands shape the absence of significant style effects for Synthesising and Implementing more than individual cognitive preferences do. This interpretation is consistent with organisational role theory, which argues that in highly structured organisations with formal roles, limited interpretative discretion constrains the influence of individual dispositions (Wickham & Parker, 2007). Synthesising information, by gathering and assessing environmental change and integrating top-down strategies with bottom-up insight, requires analytical precision and contextual awareness. Prior studies show that different cognitive styles can engage in effective sensemaking through different but functionally equivalent routes, where analytic managers decompose complex information into structured categories, and holistic managers by integrating diverse cues into coherent directions (Hodgkinson & Healey, 2011), aligning with

the non-significant effects observed in this study, suggesting that both styles can accomplish the Synthesising role through different cognitive approaches.

Implementing a deliberate strategy, as a high-procedural, rule-based approach, requires compliance with established plans, translating strategic objectives into operational actions, and monitoring performance against formal metrics (Jansen Van Rensburg et al., 2014; Tawse et al., 2024). Because these activities leave little room for interpretative direction, cognitive style shows minimal influence, consistent with the null findings in this study. In such routine contexts, organisational systems and norms dictate behaviour and overshadow individual differences. At the same time, prior research suggests that managers can experience a cognitive misfit (a mismatch between their preferred style and the cognitive demands of their role), and that they adopt coping behaviours to manage this incongruence (Brigham et al., 2010). For example, a holistic manager in a high-structured and implementation-focused role relies on procedural routines or delegation to maintain performance, while an analytic manager in a complex role demands expanding their information search to accommodate contextual complexity. Such adaptive strategies demonstrate an effort to reconcile internal cognitive preferences with external role expectations to maintain role performance under misalignment.

Through the lens of ORT, the current study's findings suggest that roles differ in the extent to which managers interpret and take initiative (Anglin et al., 2022; Rizzo et al., 1970). In a predetermined role such as Implementing, behaviour adheres to formal expectations, thereby minimising the influence of individual cognitive differences; consistent with ORT's view of constrained roles (Biddle, 1986; Wickham & Parker, 2007). Conversely, in a loosely defined role such as Championing, where expectations must be negotiated and framed, cognitive style becomes a determinant of role enactment. Cognitive style, therefore, functions as a

sensemaking filter through which MMs interpret and act in ambiguous role demands. The present findings align with prior research by showing that holistic style managers provide a behavioural advantage in dynamic and relational contexts, such as the Championing role, which demands framing new ideas and persuasive advocacy for change. Managers who attend broader contextual cues and engage in intuitive processing are more effective in identifying business opportunities and driving innovation (Hodgkinson et al., 2009; Sadler-Smith, 2016). In summary, our findings suggest that cognitive style operates as a latent frame that becomes behaviourally visible, influencing the orientation and interpretation of roles. This result established the first empirical evidence in a behavioural pathway that cognitive style translates into strategic behaviour (partially), through roles that demand sensemaking, influence, and adaptive communication rather than compliance or control. This finding refines the understanding of how individual cognitive tendencies interface with organisational role structures to shape MMs' strategic contributions.

6.3.2 The Influence of Cognitive Style on the Experience of Role Conflict

The second hypothesis (H2) tested whether holistic and analytic managers differ in their experience of role conflict. The results support this hypothesis. Managers with a holistic cognitive style reported higher levels of role conflict than those with an analytic style, with a medium-to-large effect size. This finding aligns with prior research showing that cognitive orientation shapes the experience of tension arising from ambiguity and incompatible role expectations. (Bouckennooghe et al., 2007; Sung et al., 2017), and extends this work by providing evidence through combining cognitive style assessment with FLT and self-reported role conflict measures. Theoretical implications of this finding are important and relate to the nature of role conflict itself. Although role conflict has been viewed as a structural condition embedded within hierarchical or inter-functional relationships, arising from incompatibility of

role expectations (Anicich & Hirsh, 2017), the present evidence suggests that the experience of role conflict may also be shaped by cognitive orientation, arising from how managers process, interpret, and prioritise competing demands, which influences how structural tensions are perceived and experienced.

A broad attention characterises holistic style, contextual integration, and sensitivity to relationships and contradictions within the environment (Choi et al., 2007; de Oliveira & Nisbett, 2017). These attributes may enhance sensemaking capacity but also increase exposure to cross-pressure. Because holistic thinkers attend to multiple cues simultaneously and perceive interdependence among the system, operational, and interpersonal domains (E & Zhang, 2017; Masuda & Nisbett, 2001), they may be more likely to detect inconsistencies between top management directives, subordinate expectations, and situational constraints. The current findings suggest that this heightened awareness may contribute to higher reported role conflict among holistic managers, which might be understood as the cognitive cost of contextual sensitivity. While holistic thinkers gain a broader understanding of their environment, they also become aware of contradictions among competing expectations (Choi et al., 2007); as a result, they experience greater role conflict when these demands cannot be reconciled. In contrast, analytic managers approach complexity through selective attention and rule-based reasoning. They narrow their focus to specific objectives and filter out contradictory cues (E & Zhang, 2017; Masuda & Nisbett, 2001). This cognitive narrowing allows them to separate demands and prioritise formal procedures, thereby maintaining clarity and coherence even in ambiguous environments (Allinson & Hayes, 2000; Priola et al., 2004). As a result, analytic managers might perceive less role conflict even in a complex environment.

From an ORT perspective, these findings reaffirm that role conflict can arise from a dynamic of psychological state shaped by individuals' internalising their role expectations (Biddle, 1986; Rizzo et al., 1970; Wickham & Parker, 2007). Our findings suggest that cognitive style may shape this internalisation process, influencing which expectations managers attend to and how they interpret the role demands. Holistic managers who are more responsive to a broader attentional field may internalise a wider array of expectations, thereby increasing the likelihood of perceiving misalignment and amplifying the sense of conflict when these demands cannot be met. Conversely, analytic style managers, with their structured and categorical processing, may reduce cognitive dissonance by simplifying the role into structures, thereby minimising perceived conflict. This interpretation aligns with more recent discussions of role stress as the outcome of an interaction between structural complexity and individual sensemaking tendencies (Karkkola et al., 2019; Van den Broeck & Parker, 2017). Moreover, the current finding extends earlier empirical work that linked role conflict to external antecedents such as organisational structure, job stress, leadership style, or role ambiguity (Dodanwala et al., 2023; Pishgooie et al., 2019; Teh et al., 2014). While those studies treated conflict as a reaction to environmental or relational conditions, the present study suggests that individual cognitive characteristics may determine whether and how such conflict is experienced. In doing so, it supports recent arguments that managerial role stress should be understood as an interaction between structural complexity and individual sensemaking capacity. In particular, holistic style managers increase the possibility of role stress not because of inefficiency or weakness.

This interpretation aligns with and refines prior theory on cognitive style in managerial decision-making, which argues that intuitive/holistic thinking fosters creativity and opportunity recognition, and contextual sensemaking (Hodgkinson et al., 2009; Sadler-Smith, 2016). The present findings suggest that these same strengths carry a psychological cost when managers

operate across boundaries and hierarchies, generating incompatible expectations; the contextual sensitivity that supports Championing and advocacy increases exposure to role conflict. This dynamic is consistent with cognitive-affective system theory (Mischel & Shoda, 1995), which conceptualises stable individual tendencies as contextual dynamics that are adaptive in one domain and challenging in another. In summary, the results suggest that cognitive style plays an important role in shaping how MMs experience role conflict. Holistic type managers with broader contextual awareness perceive and internalise likely more cross-pressures, whereas analytic type managers, with their structured and focused approach, experience less conflict. Consequently, role conflict emerges as a cognitive-behavioural bridge, a psychological outcome of interpretation that subsequently links to strategic action.

6.3.3 The Influence of Role Conflict on Strategic Role Enactment

The third set of hypotheses (H3) examined whether MMs' experience of role conflict predicts the enactment of the four strategic roles. The results provided partial support: the experience of role conflict emerged as a significant positive predictor of the Championing and Facilitating roles, whereas its relationship with the Synthesising and Implementing roles was not significant. These findings suggest that the experience of role conflict might be more closely tied to roles characterised by interpersonal engagement, ambiguity management, and complex social influence and negotiation processes than with roles involving analytical integration or procedural execution. It is important to note that the regression analyses treated role conflict as a predictor and strategic role enactment as the outcome, consistent with the framework developed in this thesis. However, a cross-sectional design cannot establish causal direction. Two theoretically plausible interpretations exist. First, role conflict motivates greater enactment of Championing and Facilitating as coping or resolution strategies, which managers experiencing incompatible demands may intensify advocacy to resolve tensions or escalate

coordination efforts to reconcile competing stakeholder priorities. Second, enacting Championing and Facilitating generates role conflict because these roles expose managers to resistance, competing stakeholder expectations, and interpersonal friction that produce the experience of role conflict. Both interpretations align with role conflict theory, which defines role conflict as the psychological strain arising when an individual faces incompatible expectations from multiple role senders or identities (Rizzo et al., 1970).

The present findings suggest that this strain may be especially relevant in roles where negotiation, framing, and managing divergent stakeholder demands are central. Championing demands advocacy, persuasion, and negotiation to sell the issue to upper management and gain legitimacy for new ideas and projects, and exposes them to divergent expectations from multiple directions (Dutton & Ashford, 1993; Splitter et al., 2023). In this politically sensitive work, MMs must align innovative ideas with organisational priorities and secure legitimacy for proposals that can be perceived as disruptive. Prior research links this change-oriented role to tension, since it challenges existing routines and power structures (De Clercq & Pereira, 2023). Championing enactment may be co-occurs with higher conflict, not because of incompetence, but because these MMs occupy a position of contradiction between exploration and conformity.

Similarly, higher reported role conflict among MMs in enacting the Facilitating role represents the interpersonal challenges inherent in this function. Facilitating involves managing horizontal collaboration and team coordination amid resource constraints, changes, and competing agendas (Herzig & Jimmieson, 2006; Lüscher & Lewis, 2008). When managers perceive greater tension across stakeholders or priorities, they may respond by intensifying facilitating behaviours to restore clarity, cohesion, or consensus. This interpretation aligns with studies

emphasising the emotional and relational labour inherent in coordination roles (Bryant & Stensaker, 2011; Shepherd et al., 2017). In this context, MMs at the centre of negotiation and relationship management are exposed to interpersonal and communication frictions. As facilitators, they need to navigate and mediate employees' emotions, facilitate compromise, and build trust. These processes may amplify role tension and cognitive load, particularly under time pressure or resource scarcity. In this sense, the experience of role conflict does not reflect the motivational failure but the inevitable cost of relational responsibility in maintaining organisational alignment. Due to the characteristics of both roles, if unmanaged, they may escalate into stress or reduce well-being (Bowling et al., 2017; Dijkstra et al., 2005).

By contrast, the non-significant relationship between role conflict and the other two roles suggests that these behaviours are less influenced by psychological challenge. The Synthesising role, which involves integrating insights from internal and external environmental signals, relies on cognitive integration rather than interpersonal negotiation, whereas formal procedures and clear indicators guide the Implementing role and are therefore less ambiguous (Floyd & Lane, 2000; Wooldridge et al., 2008). The non-significant effect for the Implementing role is consistent with the literature, which describes implementation as a structured, procedurally guided activity (Psychogios et al., 2008; Salih & Doll, 2013), in which clarity of routines and expectations may buffer against the influence of psychological strain.

In addition to these pathways, the findings also showed a structural effect. MMs located farther from the executive level reported lower levels of Championing and Implementing, consistent with research suggesting that hierarchical distance can restrict MMs' strategic visibility, influence, and understanding of top-level intentions (Mantere, 2008b). Our results, therefore, suggest that structural position may moderate how role conflict translates into behaviour; even

when managers perceive misalignment or tension, their opportunity to act on these perceptions may be constrained by organisational hierarchy.

Taken together, these results suggest that role conflict may be more behaviourally consequential in roles requiring ambiguity navigation and influence, whereas roles grounded in structured procedures or analytical work appear less affected. The findings of this study further enrich our understanding of role conflict as a multidimensional construct encompassing interpersonal, inter-sender, and inter-role dimensions. Championing and Facilitating roles may expose MM to tension arising from inter-sender expectations, expectations from superiors and subordinates, and inter-role conflict when multiple demands, such as strategic, operational, and relational, cannot be simultaneously satisfied. While the Synthesising and Implementing roles are structurally defined, this might limit exposure to such conflicting pressures. These patterns align with recent updates that emphasise that role conflict is not evenly distributed across roles but rather depends on people's cognitive and relational complexity (Karkkola et al., 2019; Van den Broeck & Parker, 2017). It also indicates that not all strategic roles are conflict-prone. In summary, our findings suggest that the experience of role conflict predicts greater enactment in specific strategic roles, particularly those that demand upward advocacy and cross-functional coordination. Conflict here may represent the consequence of enacting complex, relational, intensive roles.

6.3.4 The Influence of Cognitive Style on Strategic Role Enactment Mediated by Role Conflict

The final set of hypotheses to the behavioural pathway (H4) examined whether the experience of role conflict mediates the relationship between cognitive style and the enactment of middle managers' strategic roles. The results showed a differentiated mediation pattern: significant

mediation for Championing and Facilitating, a weak and cautiously interpreted indirect effect for the Implementing role, and no mediation for the Synthesising role. The direction of the effect was consistently positive, suggesting that a holistic cognitive style was associated with a higher experience of role conflict, which in turn was associated with higher enactment of Championing and Facilitating (a small effect on Implementing role). This pattern suggests that a holistic cognitive style may exert an indirect influence on strategic behaviour through the psychological experience of tension arising from managing competing role expectations. The finding extends previous evidence on how cognitive style translates into behavioural outcomes by showing that this translation may occur through the interpretative strain captured by role conflict. Managers with a holistic cognitive style, characterised by contextual sensitivity and broad attention scope (Choi et al., 2007; Kozhevnikov et al., 2014; Nisbett et al., 2001), are inclined to detect inconsistencies between strategic directives, operational realities, and interpersonal demands. Such sensitivity increases the likelihood of perceiving incompatibility, thereby heightening the experience of tension (Wickham & Parker, 2007). Rather than passively enduring this tension, prior research suggests that managers often respond through behavioural strategies that seek to recreate coherence across the organisational network (Dutton & Ashford, 1993; Lüscher & Lewis, 2008). The present findings are consistent with this view that when holistic cognitive style managers experience greater role conflict, they appear to respond by intensifying behaviours that span boundaries, reconcile perspectives, or influence upward. Therefore, the experience of role conflict may be positioned as a behavioural activation that links cognitive strain to boundary-spanning action, particularly in roles requiring upward influence and cross-coordination.

The mediation observed for the Championing role confirms that the link between cognition and advocacy behaviour may operate through the experience of conflict. MMs with a holistic

cognitive style who are sensitive to competing demands might be more aware of organisational misalignments, such as gaps between strategic direction from upper levels and organisational feasibility, and be motivated to act as advocates for change (Dutton & Ashford, 1993; Wooldridge et al., 2008). The present findings suggest that this interpretative tension could activate Championing behaviour. By their personal initiatives (Mustafa et al., 2023), MMs promote new initiatives, reframe priorities, or lobby for resources, attempting to reconcile these contradictions and challenging existing standards and practices (Çekmecelioğlu & Özbağ, 2016). These findings align with organisational role theory (Anclin et al., 2022; Wickham & Parker, 2007) and support prior research that role expectations shape individual and behaviour and psychological experience of cognitive and emotional complexity (such as role conflict) in issue selling and change promotion (Ashford et al., 1998; Splitter et al., 2023).

Mediation was also observed for the Facilitating role, where role conflict explains the relationship between cognitive style and facilitating behaviour. Facilitating involves managing collaboration, resolving disagreements, and relaxing regulation, and the pressure to deliver results and maintain harmony can lead to role conflict and stress (Bowling et al., 2017; Herzig & Jimmieson, 2006; Lüscher & Lewis, 2008). The present findings suggest that when holistic managers experience greater tension, it may trigger adaptive, facilitative behaviour, prompting them to invest more effort in restoring coherence and building trust (Lleo et al., 2020). However, the direct effect of cognitive style remained even after accounting for role conflict, suggesting that facilitating behaviour might also be inherent to cognitive tendencies. Their ability to integrate context and empathise with others may help them foster collaboration even when conflict is not present (Hodgkinson & Healey, 2011; Sadler-Smith, 2016).

For the Implementing role, the mediation analysis revealed a weak and cautious indirect effect of cognitive style via role conflict, with competitive mediation, in which the indirect effect (Holistic style → higher role conflict → slightly higher Implementing, operates in the opposite direction to the non-significant negative direct effect (holistic style to Implementing role). The most plausible interpretation is a compensatory mechanism, that the tension associated with role conflict may activate Implementing behaviour among holistic managers as a means of reducing perceived misalignment between expectations and practice, partially counteracting their tendency to prioritise contextual over procedural processing (Matthews et al., 2015; Zhao et al., 2010)

By contrast, the Synthesising role showed no mediation; as this role involves assessing, gathering, and integrating information from internal and external organisations, it relies on analytical and reflective processes but is limited to interpersonal relationships. Consequently, this result suggests that cognitive differences in style do not translate into behaviour through emotional tension, since this role's primary demand lies in data integration rather than relational engagement (Floyd & Lane, 2000). Instead, the Synthesising role may depend more on stable information-processing routines and organisational information flow (Wooldridge et al., 2008).

Overall patterns of mediation enrich the theoretical understanding of role conflict as a mediating construct. Rather than functioning as a uniform stressor, conflict operates as a selective cognitive-behavioural channel, translating cognitive sensitivity into action only when structural ambiguity and interpretative flexibility are high. In ambiguous roles (such as Championing and Facilitating), conflict stimulates adaptive behaviour because MMs possess the agency to renegotiate boundaries. Importantly, role conflict can sometimes prompt more

consistent implementation and procedural effort when managers experience misalignment between strategic directives and operational realities. These findings align with Biddle's (1986) theory of role conflict as a dynamic negotiation process, in which people try to compromise to accommodate the norms within their roles (Khawaldeh, 2023), and extend this theory by demonstrating that cognitive style might act as an antecedent that shapes how conflict is perceived and translated into behaviour.

In summary, our findings suggest that cognitive style may partly influence MMs' strategic role enactment through experience of role conflict, though the strength of this influence varies according to role characteristics. This mediation also clarifies why holistic-type managers often emerge as key change agents despite reporting higher psychological strain. Far from dysfunction, this discomfort might be a bridge that connects cognitive diversity to adaptive organisational behaviour. Therefore, managerial development should focus on cognitive adaptability and on building psychological resilience and structural support for those occupying influence-intensive roles.

6.4 Cognitive Pathway: Cognitive Style, Role Conflict, and Attention Performance

6.4.1 The Influence of Cognitive Style on Attention Performance

The cognitive pathway begins by asking whether MMs with analytic and holistic cognitive styles differ in the efficiency of their search (slopes and indices) and in how fast they respond (total mean reaction times/RTs). The findings revealed that analytic and holistic managers exhibit high accuracy and comparable attentional efficiency, with both groups' slopes steepening to a similar extent, yet they diverge in overall processing speed when the task is more demanding. Thus, both styles showed similar declines in efficiency as task complexity increased, suggesting that cognitive style does not affect how efficiently MMs manage

increasing amounts of information. Both styles show a similar ability to maintain focus and efficiency. However, holistic style managers responded more slowly than analytic managers, particularly in the more demanding or complex search condition that requires integrating multiple features, indicating that cognitive style determines overall information-processing speed rather than how efficiency changes as tasks become more complex. This distinction aligns with attention research Feature Integration Theory (Treisman & Gelade, 1980) and subsequent visual-search evidence that conjunction search taxes selective attention more than single-feature search (Horowitz & Wolfe, 2003); and also with style theory showing that analytic managers tend to narrow attention, rule-based action that enables rapid responses when multiple cues must be integrated, whereas holistic managers adopt broader attention, integrating contextual and relational information before committing to response (Boduroglu et al., 2009; Nisbett et al., 2001). The slower responses among holistic MMs may therefore trade speed for contextual coherence; analytic managers trade breadth for faster responses. The current study suggests that these style-related tendencies are also observable among middle managers performing demanding visual search tasks.

Two implications follow. First, efficiency and speed are separable components of attention. Slopes and the efficiency index capture how performance changes as distractors increase, that is, how well the attentional system maintains efficiency as task demands increase. Total mean reaction times, by contrast, capture the overall processing speed across conditions (easy and difficult tasks). The absence of statistically significant differences in slope or index, alongside significant differences in reaction times across difficult tasks, suggests that cognitive style influences response speed rather than the efficiency (capacity or resilience) of attention as tasks become difficult. Second, this dissociation maps onto the managerial role. A situation that demands rapid, feature-focused discrimination, such as compliance verification, aligns with the

analytic profile and fits the holistic profile, even if decisions take longer. Rather than a deficit, slower, holistic-style managers respond with deliberate integration and tolerance for ambiguity, tendencies linked to innovation and the seeking of opportunities (Dutton & Ashford, 1993).

The results partially support the H5 set, confirming the predicted speed difference under complex load (holistic style slower), but not differences in efficiency (slopes or index), aligns with the earlier behavioural pathway that the same holistic managers who are more active in sensemaking, influence-oriented roles such as Championing, and taking time to consider and integrate multiple cues (Choi et al., 2007); conversely, analytic managers respond faster under complex tasks with their focus on structured, execution-oriented contexts. Finally, the conjunction (difficult tasks) drove the style difference, implying that these effects emerge when attention must integrate multiple features; meanwhile, speed effects are moderate, consistent with the view that cognitive style is one of several (experience, motivation, and practice) that shape moment-to-moment attention (Evans & Stanovich, 2013).

Taken together, the cognitive pathway proposes a view that cognitive style shapes the temporal dynamics of attention rather than its capacity. Analytic managers emphasise fast, selective responses; holistic managers emphasise broader, integrative responses; thus, neither style is superior. These results also help clarify how this thesis conceptualises attention within managerial cognition. Rather than treating attention as a fixed resource to be depleted, the present findings support the view of attention as a selective gatekeeper (Huynh Cong & Kerzel, 2021; Roberts et al., 2022) that reflects cognitive style in its processing strategies. The speed at which this gatekeeper operates appears to vary by cognitive style, whereas its capacity to maintain efficiency under increasing load remains similar across styles. In subsequent sections, this perspective provides the basis for examining how the experience of role conflict interacts

with cognitive style and strategic role enactment, influencing how middle managers perceive, prioritise, and respond to complex organisational demands.

6.4.2 The Influence of Role Conflict on Attention Performance

The second stage of the cognitive pathway examined whether the experience of role conflict predicts attentional performance across simple and complex visual search tasks. Contrary to the hypothesis that higher role conflict will impair attentional efficiency by consuming cognitive resources, the analyses revealed no significant relationship between role conflict and any attentional indices (total mean RTs, slopes, index). MMs reporting higher or lower experience of role conflict demonstrated comparable attentional efficiency and speed when performing simple and complex visual search tasks. This finding suggests that, while role conflict is a behavioural consequence as shown in Phase 1, it does not translate into measurable differences in attentional control in a visual search experiment. These results challenge the studies that claim that people who frequently experience tension will drain their attentional resources (Davies et al., 2013). While visual search tasks themselves are robust (Wolfe, 2021), emotion and social interaction shape how people express themselves (Pasqualette & Kulke, 2025), and in the computer-based experiment settings (visual search tasks), attention is isolated from the social and emotional context in which role conflict appears (Maran et al., 2021; Risko et al., 2016). These findings are also interpretable within the context of the Attention-Based View (Ocasio, 1997, 2011), which conceptualises managerial attention as an individual cognitive process embedded within organisational structures and strategic contexts. Role conflict, as experienced in managerial work, arises from competing expectations from superiors, colleagues, or subordinates. In a computer-based visual search task, such cues are absent. Thus, the absence of significant performance decline (on managers who report the experience of higher role conflict) suggests that role conflict may influence where attention is

allocated in managerial settings (for example, prioritising urgent or relational demands) rather than affecting the efficiency of attentional processing when attention is measured in isolation from organisational context.

Theoretical implications from these insights, when considering the contextual dependency of attention, are that the ABV and organisational cognition frameworks emphasise that managers' attention is not a fixed capacity but is influenced by emotion, hierarchy, and social interaction (Ocasio, 1997; Rerup, 2009; Vuori & Huy, 2016). These frameworks argue that, despite high individual capability, attention becomes fragmented under pressure from role expectations, directing cognitive resources toward certain issues at the expense of others. However, the present findings suggest that such patterns may not manifest in laboratory conditions where emotional, relational, and hierarchical cues are absent. The absence of significant influence effects suggests an important boundary condition, that role conflict appears to influence attentional processes when embedded within the relational and evaluative dynamics of managerial work. When these contextual features are removed (as in a visual search experiment), the attentional consequences of role conflict might be absent. This interpretation also aligns with role theory, which distinguishes between the cognitive aspects of incompatible expectations and the behavioural effects of conflict (Wickham & Parker, 2007). Role conflict first appears as a cognitive awareness of incompatible expectations, which later translates into behavioural reactions, such as coping mechanisms. Consistent with this view, the current findings suggest that this cognitive strain, although it influences behaviour in real situations (as shown in Phase 1), does not impair attentional processing in isolated tasks. MMs appear to maintain attentional control during visual search tasks, even when they report greater experience of role conflict. This interpretation reflects the relative robustness of executive control mechanisms, which can sustain performance in non-emotional, task-focused settings

(Petersen & Posner, 2012). Therefore, attention functions as a resilient cognitive system, able to operate even when MMs experience social and psychological tension, unless that tension becomes emotional or task-relevant.

However, this stability of attention should not be misinterpreted as immunity. Cognitive-affective studies of work stress (Robert J. Hockey, 1997) suggest that sustained conflict can gradually weaken executive control by causing fatigue and emotional distraction. The cross-sectional nature of this study meant it captured participants before such a reduction appeared. Moreover, the small negative coefficients for mean reaction times may also indicate a compensatory response, when under pressure, managers narrow their attention to only essential cues, sacrificing broader awareness for speed. This compensatory pattern can be described as attention narrowing under threat, where perceived evaluation or competing demands constrain cognitive scope (Lee et al., 2023; Reyt & Wiesenfeld, 2015).

From a managerial cognition perspective, these findings help clarify how role conflict relates to attention. Instead of directly lowering attentional efficiency, conflict might redirect attentional priorities. In an organisational setting, this can manifest as selective neglect, focusing on urgent or evaluative cues while overlooking other (Beal et al., 2005; Lee et al., 2023; Sampson & Shi, 2023). Such a shift might not reduce laboratory task performance, but it could have consequences in real decision-making environments, where broad attention is essential for integrating complex signals. Therefore, although the statistical results suggest stable cognitive performance, they also reveal a potential weakness, that when role conflict persists over time, it can gradually influence MMs' attention and reduce their ability to make sense of complex strategic situations. In summary, the results suggest that the absence of a significant association between role conflict and attentional performance might indicate that

MMs' attention functions adaptively, embedded in a social context rather than as an internal conflict. Attention remains stable when isolated from context but vulnerable to distortion in emotional challenges. Therefore, behavioural and cognitive pathways identified in Phases 1 and 2 indicate that role conflict influences behaviour through tension and coping, but its cognitive effects emerge only when contextual, relational, and emotional factors influence attention.

6.4.3 The Influence of Cognitive Style on Attention Performance Mediated by Role Conflict

The final stage of the cognitive pathway tested whether role conflict mediated the relationship between cognitive style and attention performance. Across most attention measures, the indirect effects were non-significant, with confidence intervals that included zero, suggesting no mediation. An exception emerged for the total mean reaction time in the conjunction condition, where a small negative indirect effect was detected. The bootstrap confidence interval narrowly excludes zero, providing weak support for the hypothesis that higher role conflict slightly mitigated slower responses among MMs with a holistic cognitive style in difficult visual search tasks. In other words, when holistic managers experienced greater role conflict, they tended to respond more quickly during complex attentional tasks, suggesting that tension may trigger compensatory focus or intensify attentional engagement. However, this finding requires careful interpretation.

This finding reflects a competitive mediation, in which the direct and indirect effects (via role conflict) operate in opposite directions to the direct effect of cognitive style (MacKinnon et al., 2000). This result might signal an activation response whereby tension intensifies attentional focus. MMs with a holistic cognitive style who take longer to respond under complex visual conditions also reported higher levels of role conflict. Yet, those higher role conflicts were

associated with faster responses, producing a modest counteract to the slowing effect. This paradox aligns with cognitive-energetic theories suggesting that psychological strain can, in the short term, mobilise attentional resources (Matthews et al., 2010), creating an urgency-under-strain effect in which cognitive tension narrows attentional focus and accelerates decision-making speed. For example, a manager experiencing competing expectations from different stakeholders may respond more rapidly to an urgent request, such as a time-sensitive operational decision; this is not because their attentional capacity has improved, but because strain heightens the perceived urgency of the cue. Within the ABV framework (Ocasio, 1997, 2011), this finding illustrates the principle of dynamic attentional redistribution. When faced with competing cognitive and emotional pressures, holistic-style managers reallocate their limited attentional resources to the most salient goals. This reallocation can sharpen task enactment in the moment while overlooking peripheral or long-term information, such as early signals of team dissatisfaction or emerging strategic risk. Similar mechanisms have been observed in organisational studies, where emotional tension and hierarchical pressure redirect focus toward operational issues (Beal et al., 2005; Ren & Guo, 2011); this aligns with attentional control theory (Eysenck et al., 2007), which suggests that stressors reduce efficiency but increase speed. Role conflict in this context may activate the perceived urgency of task performance and lead to a temporary increase in attentional effort. Specific stressors, when perceived as controllable, can therefore enhance motivation and effort allocation (Lepine et al., 2005). For MMs, this can represent an adaptive response to conflicting roles, in which they respond more quickly and narrow their focus to immediate cues to maintain functional performance. In conclusion, cognitive style influences attention through a direct cognitive pathway, while role conflict contributes indirectly as a situational amplifier that improves attention under manageable strain.

6.5 Behavioural-to-Attention Pathway: Strategic Role Enactment and Attention Performance

The behavioural-to-attention pathway examined whether MMs' enactment of strategic roles predicts differences in attention performance. The results showed a differentiated effect consistent with distinct cognitive demands embedded within each role. Frequently enacting the Synthesising role predicted greater efficiency under complex visual search conditions; the Implementing role predicted reduced efficiency; the Facilitating role predicted impaired attention under simple conditions; and Championing showed no effects. These findings confirm that strategic behaviours are reflected in a characteristic attentional performance profile, with some sharpening selective attention control, while others diffuse or constrain it. These patterns complement theories proposing that repeated engagement in specific behavioural tasks influences cognitive habits over time (Haith & Krakauer, 2018; Rerup, 2009)

The finding that Synthesising behaviour predicts efficiency under complex search conditions (shallower conjunction slopes) aligns with established models of visual and cognitive attention. Research in visual neuroscience shows that attention performance is enhanced by increasing signal strength and spatial resolution, allowing people to distinguish details amid distraction (Carrasco, 2011; Yeshurun & Carrasco, 1998). This mechanism aligns with the demands of the Synthesising role activities, where MMs integrate top-down strategic directives with bottom-up information (Floyd & Lane, 2000). This process trains the cognitive system to sharpen relevant signals while suppressing noise, thereby improving the precision and coherence of information processing. Computational modelling of attention similarly proposes that selective focus operates by creating saliency maps and weighting task-relevant features (Itti & Koch, 2001). MMs who enact the Synthesising role, prioritising salient strategic cues amid competing stimuli. Over time, repeated engagement in these tasks strengthens the executive attention

network (Posner et al., 2015), enhancing the control and flexibility of attention. Thus, Synthesising behaviour may promote cognitive integration and cultivate attentional refinement, thereby developing a form of trained precision that enables MMs to navigate complex information environments with greater efficiency.

Contrary to expectations, the Implementing role did not predict better attention performance; instead, it predicted steeper conjunction slopes, indicating poorer efficiency during complex visual search tasks. Implementing behaviour centred on procedural execution, control, and established routines (Salih & Doll, 2013) might condition attentional rigidity. When MMs habitually operate in a rule-bound context, attention becomes anchored to predicted patterns and standard procedures, reducing flexibility when competing stimuli arise. This interpretation aligns with cognitive-entrenchment arguments, which suggest that repeated reliance on well-learned schemas enhances speed and consistency but undermines adaptability in dynamic settings (Dane, 2010). As cognitive complexity increases, such behavioural conditioning may impair attentional switching, keeping attention fixated on familiar cues even when they are no longer relevant (Corbetta & Shulman, 2002), leading to slower adaptation and steeper efficiency. These findings align with managerial research linking routine-oriented behaviour to a bounded attentional scope and reduced cognitive agility (Rerup, 2009).

Implementing role involves convergent thinking and focused-attention orientation, functions that depend on narrowing attentional scope and maintaining clarity of execution (Dimes & De Villiers, 2023; Gökce & Arıcıoğlu, 2023). These same strengths, however, might become liabilities when attentional demands shift from stability to complexity. In challenging environments, where information is ambiguous and multi-feature processing is required, convergent/linear attention (Akbari Chermahini & Hommel, 2012) limits cognitive functions

for adaptive sensemaking, requiring a series of divergent searches before convergent search (Hommel, 2012). Thus, the findings suggest that focused, controlled support attention is stable in stable situations but restricts flexibility when conditions change. Moreover, the classical model of automaticity supports this conditional interpretation. Practice and routine free attentional resources by transferring well-learned operations to procedural memory, improving efficiency in stable environments (Logan, 1992). Organisational routines similarly streamline decision-making by creating predictable structures that reduce cognitive load (Han et al., 2025). Yet, as task complexity increases, automation can produce over-stabilised control settings that hinder the reallocation of attention to novel cues (Rerup, 2009). In summary, the role embodies a cognitive paradox; the very precision and convergent focus that sustain procedural reliability may undermine attentional adaptability in complex, changing conditions. In strategic contexts, it is suggested that overemphasis on implementation may stabilise performance at the expense of agility.

The significant association between the Facilitating role and steeper slopes in a simple visual search task indicates that this role diffuses attentional focus even under low cognitive load. Facilitating behaviours require MMs to balance multiple interpersonal cues, such as mediating conflicts, coordinating the team, and maintaining harmony (Austin et al., 2020). These activities promote a broad, distributed attentional attitude across several social and emotional targets, enhance situational awareness, but weaken the capacity for sustained and selective focus. However, when transferred to non-social contexts, such as visual search, this attentional habit becomes a cognitive liability, with attention dispersed to potential cues rather than concentrated on the specific target, leading to less efficient search performance. Interestingly, this diffusion effect emerges only in simple search tasks, not in complex ones. This result suggests that attentional diffusion associated with facilitating behaviours manifests under low-

load conditions, where task demands do not constrain attention. In these conditions, habitual tendencies toward interpersonal monitoring or multitasking are free to operate, allowing social-conditioned attentional breadth to interfere with selectivity. In contrast, under high-load or complex conditions, task difficulty itself demands concentrated cognitive control. Even MMs who distribute attention across multiple social cues are compelled to focus on task-relevant features, thereby suppressing individual differences in attentional broadness. This interpretation aligns with the load theory of attention (Lavie, 2005; Lavie et al., 2014), which argues that distractibility and attentional spillover are more pronounced under low load and diminish as cognitive demand increases.

From a cognitive managerial perspective, the findings illustrate how attentional habits developed in one domain can spill over into others. A tendency of broad, distributed attention, once reinforced through repeated social or managerial activities, tends to persist even when contextual demands change (Giménez-Fernández et al., 2023). In organisational settings, this is described as attentional inertia, the tendency for attention to remain anchored in established routines and role expectations (Ocasio, 1997; Rerup, 2009). Moreover, while attentional inertia expresses over-stability or fixation on familiar cues, a form of rigidity has been observed in a multitasking context. The pattern resembles findings that people engaged in chronic social coordination exhibit slower filtering and reduced efficiency in a low-load visual task (Ophir et al., 2009). Based on these cases, attention may become unstable when task demands shift, in one case, attention becomes too narrow and inflexible; in the other, too broad and diffuse. Within this framework, a Facilitating role that centred on social and managerial challenges (Huy et al., 2002) might, over time, lead to slower or less efficient responses even to simple changes. However, this diffusion might not indicate a cognitive deficiency but rather a functional trade-off, where the same breadth focus that supports interpersonal coordination

may undermine task precision when selective focus is required. From the cognitive-control perspective, Facilitating behaviours also tax the attention network through continuous switching among cues, increase fatigue, and reduce response selection (Marois & Ivanoff, 2005; Posner & Rothbart, 2007). In conclusion, the Facilitating role leads to a habitual tendency to distribute attention more widely rather than prioritise and focus, which may produce attentional misfit when transferred to a non-social context, where task performance benefits from focused rather than relational monitoring. While facilitation enhances interpersonal responsiveness and team cohesion, it entails trade-offs in attention between breadth and depth (Pluut et al., 2024).

Finally, the absence of significant effects for the Championing role across all attentional measures suggests that this role exerts minimal influence on attentional processes. Championing, as an influence-oriented behaviour, involves advocacy, persuasion, and issue selling to higher management levels (Dutton & Ashford, 1993; Floyd & Wooldridge, 1992; Splitter et al., 2023), functions that rely on motivation, rhetorical framing, and relational timing rather than on information filtering. Its attentional demands are thus conceptual rather than sensory details, engaging higher-order cognitive and affective systems, such as organisational narratives, power dynamics, emotional intelligence, self-regulation, and impression management, rather than the executive network responsible for selective control (Ashkanasy & Dorris, 2017; Dutton et al., 1997; Ocasio, 2011). Moreover, the Championing role requires managing meaning and persuasion, activities that rely on semantic framing and relational awareness (Fisher, 2022; Gioia & Chittipeddi, 1991; Kulkarni et al., 2024; Logemann et al., 2019; Maitlis & Lawrence, 2007). Taken together, this attentional neutrality reinforces the specificity of the behavioural-cognitive link; roles repeatedly train a selective focus of integration, manifesting transfer effects in attentional performance.

6.6 Chapter Summary

This chapter interpreted the behavioural, cognitive, and behavioural-to-attention pathways linking cognitive style, role conflict, strategic role enactment, and attention performance. The findings reveal a pattern in which cognitive styles influence how MMs interpret and prioritise organisational demands, how they process visual information under easy and difficult tasks, and how repeated enactment of strategic roles predicts attentional performance.

First, the behavioural pathway showed that cognitive style influences strategic role enactment indirectly via role conflict. Phase 1 showed that MMs with a holistic cognitive style, who process information by considering contextual attributes and attend to multiple cues (Choi et al., 2007; Nisbett et al., 2001), reported higher levels of role conflict than analytic managers. Rather than being entirely negative, this tension appeared as a behavioural motivator, encouraging these MMs to engage more in influence- and coordination-oriented roles such as Championing and Facilitating. In these roles, the need to manage ambiguity, persuade others, and integrate divergent perspectives activates sensemaking and relational skills (Floyd & Wooldridge, 1992), associated with a holistic cognitive style. This finding reframes role conflict not as a stressor, but as a productive behavioural mechanism that converts cognitive sensitivity into adaptive strategic action. It also shows that psychological strain, when experienced as manageable tension, can prompt MMs to think more flexibly and learn from challenging situations; this finding aligns with contemporary studies of flexibility and adaptability, which view tension as a source of learning in organisations (Nachbagauer & Schirl-Boeck, 2019; Wiewiora, 2023).

Second, from the cognitive pathway, it has been demonstrated that cognitive style also directly influences attentional performance. Phase 2 revealed that analytic and holistic managers display similar attentional efficiency (their ability to maintain focus as complexity increased), but differ in processing speed under difficult conditions. The result is consistent with selective attention theories, in which holistic managers responded more slowly during complex tasks because they tend to integrate broader contextual information before acting, while analytic managers responded faster and engaged in more selective processing (Boduroglu et al., 2009; Carrasco, 2011). The findings indicate that cognitive style determines the speed and focus of attention, but not the overall capacity. Moreover, the a weak result of the ‘urgency under strain’ effect supports the cognitive energetic model (Matthews et al., 2010), where moderate tension can improve speed for holistic thinkers, suggests that role conflict might sharpen rather than distract attention when pressure is perceived as manageable, reframing the idea that attention is not purely a fixed trait but can change under the influence of cognitive and psychological factors.

Third, the behavioural-to-attention pathway showed that how MMs enact their strategic roles influences attentional performance. Each role contains its own attention characteristics that condition how information is processed. MMs who frequently enact the Synthesising role by integrating strategic direction with operational insights (Floyd & Lane, 2000) demonstrated higher efficiency in complex visual tasks, indicating the development of trained selective and cognitive integration. By contrast, the Implementing role, which relies on procedural control and repetition, was associated with attention rigidity, reflecting the cognitive entrenchment seen in routine-driven activities (Dane, 2010; Rerup, 2009). A facilitating role, which requires attention to multiple social cues, led to attentional diffusion under simple information search conditions, where the overextension of focus trades off precision in relational awareness

(Lavie, 2005). Championing showed no direct influence on attention because it relies on conceptual, persuasion, and framing (Dutton & Ashford, 1993).

These pathways show that cognitive style, behaviour, and attention form an interconnected system. Cognitive style influences how MMs interpret and prioritise information (Kozhevnikov, 2007); those interpretations generate behavioural responses that are filtered through role expectations and organisational structures (Biddle, 1986; Floyd & Wooldridge, 1992); and, through repeated enactment, these behaviours expose the cognitive mechanisms that determine how attention is allocated (Ocasio, 1997; Posner et al., 2015). In this system, cognitive guides behaviour, behaviour refines attention, and conflict acts as a selective mediator. Conflict influences behaviour only when it originates from a mismatch between cognitive tendencies and role demands, but it does not influence attentional performance. This insight means cognitive style influences what MMs do, and through doing, they refine how they think (interpret complex information) and attend (how they direct and control attention).

This integration refines organisational role theory (ORT) and the attention-based view (ABV). From an ORT perspective (Anglin et al., 2022; Rizzo et al., 1970), the findings show that role conflict operates differently across cognitive and behavioural levels; it transforms cognitive sensitivity into behavioural adjustment, but not into attentional performance. From the ABV (Ocasio, 1997), attention in organisations is determined less by emotional states than by the structural configuration of roles, tasks, and informational flows. Each strategic role embeds a distinct attention tendency: Championing directs attention upward toward advocacy and persuasion; Synthesising channels it toward integration and filtering; Facilitating circulates it across interpersonal boundaries; and Implementing narrows it toward execution and control. In conclusion, the cognitive styles of MMs, behaviour, and attention form an interdependent

system in which cognitive diversity drives behavioural adaptation, and behavioural actions, in turn, train and reshape cognitive control. Role conflict contribute selectively in this process, acting as a bridge that connects cognition to behaviour when incongruence arises, while leaving attentional processing unaffected in isolated task condition. The findings demonstrate that MMs' cognitive and behavioural systems are adaptive than static traits, which evolve through interaction with role structures and strategic demands.

7 CHAPTER 7: CONCLUSION

7.1 Overview

This thesis advances understanding of managerial cognition by examining how cognitive style, role conflict, and organisational role demands influence the strategic and attentional performance of middle managers (MMs). In doing so, it addressed a gap at the intersection of managerial cognition and organisational behaviour. While existing studies have separately examined cognitive style, role conflict, and strategic role enactment, little is known about how these variables interact within a broader system of cognitive-behavioural adaptation. MMs occupy ambiguous structural positions that require reconciling competing demands from top and bottom levels of the organisation, which demand a high level of cognitive flexibility and attentional control. Yet, most prior research has focused either on their behavioural contributions to strategy (Christie & Tippmann, 2024; Mamburu et al., 2024) or their psychological experiences of tension (Huy, 2011; Huy et al., 2002), leaving the cognitive mechanism underexplored.

Rather than treating cognitive, behavioural, and attentional domains as separate, this thesis integrates them through a three-pathway framework that shows when and how managers' cognitive differences translate into strategic action and attentional performance. Drawing on two phases of quantitative studies, the findings suggest that cognitive style influences strategic behaviour partly through the experience of role conflict, that attention is directly predicted by cognitive style rather than by the experience of role conflict, and that the repeated enactment of strategic roles predicts attentional outcomes. Moreover, role conflict emerged as a selective mediator, linking cognitive patterns to behaviour and attention. By combining objective

cognitive tasks with organisational constructs, this thesis bridges psychology and management research and offers an integrated model of MMs as adaptive cognitive-behavioural actors operating under structural ambiguity. The findings reposition role conflict from a uniform stressor to a contingent mechanism that activates behaviour in ambiguous contexts. These findings provide empirical support for the core doctoral contribution articulated in section 1.5, confirming the value of a cognitive-behavioural perspective in middle management.

7.2 Theoretical Contributions

By integrating constructs that have commonly been examined in isolation, this thesis establishes a unified framework for understanding how cognitive style, strategic role enactment, and attention performance interact at the middle managerial level. The model reframes MMs' position as intermediaries between strategic and operational levels, and as cognitive-behavioural agents whose thinking styles, actions, and attentional capacities co-evolve. This reconceptualisation advances theory in three domains: (1) the role of conflict as cognitive-behaviour linkages; (2) the integration of cognitive style and attention within organisational context; and (3) the understanding of how behavioural actions shape cognitive control.

The first contribution is related to the behavioural pathway, which explains how managers' cognitive style translates into observable strategic behaviour. While prior theory has predominantly conceptualised role conflict as a dysfunctional outcome of incompatible expectations (Biddle, 1986; Rizzo et al., 1970), this thesis demonstrates that role conflict can function as a productive cognitive-behavioural bridge that selectively translates cognitive tendency into strategic action. Rather than uniformly impairing performance, role conflict here emerges as a conditional activator of behaviour, particularly in roles that require interpretative

responsibilities. The results demonstrate that MMs with a holistic cognitive style who perceive contextual relationships and interdependencies experience a higher level of role conflict than analytic-type managers. However, experiencing this tension does not lead to dysfunction; instead, it stimulates adaptive behaviour. Holistic managers channel contradictions into productive forms of action, particularly within the Championing (selling ideas to an upward level) and Facilitating (boundary coordination) roles. These findings challenge the traditional perspective on role conflict, such as that suggested in organisational role theory (Biddle, 1986), which has often treated conflict as a negative tension arising from incompatible expectations. The present research reframes role conflict as a sensemaking process, a productive tension that converts cognitive sensitivity into strategic action, suggesting that MMs' ability to recognise and reconcile contradictory expectations can serve as a resource, revealing how cognitive diversity underpins adaptive role performance within complex and ambiguous environments. In summary, the key theoretical advance lies in identifying role conflict not as a uniform stressor, but as a contingent behavioural bridge that links managers' cognitive style to strategic action when role expectations are ambiguous, thereby extending organisational role theory beyond static role-compliance models.

The second contribution arises from the cognitive pathway, which links cognitive style to attentional control. Existing research on cognitive style has largely examined decision preferences and outcomes (Gallen, 1997; Hough & Ogilvie, 2005), while attention research in management has focused on how organisational structures and issues influence attentional allocation (Ocasio, 1997). This thesis advances both streams by integrating managers' cognitive style with objective measures of attentional performance, showing that cognitive style influences the dynamics of attention (processing speed rather than efficiency) under complexity. Using the Framed-Line task (FLT) to assess analytic and holistic cognitive style

and a visual search experiment to measure attention, the thesis demonstrates that these cognitive orientations produce distinct attentional dynamics under complexity. Analytic and holistic managers showed comparable efficiency under increasing task load but differed in processing speed, with holistic managers responding more slowly to complex conditions. This finding supports existing findings on the analytic-holistic cognitive style (Masuda & Nisbett, 2001; Mavritsaki et al., 2025) by showing that differences in style manifest as differences in speed and attentional scope rather than in cognitive capacity or accuracy. Introducing role conflict as a mediator produced only a weak ‘urgency under strain’ effect, showing that moderate tension can mobilise attentional focus (Eysenck et al., 2007; Matthews et al., 2010), but does not change the stable attentional processing. Crucially, the limited mediating role of role conflict introduces an important boundary condition, suggesting that attentional capacity remains stable in decontextual tasks even when behavioural strain is present.

A third theoretical contribution emerges from the behavioural-to-attention pathway, which shows that attention is an outcome of behaviour rather than a precondition for action. A central theoretical contribution of this thesis is the demonstration that attention is not only an antecedent of managerial action but also an outcome of sustained strategic role enactment. Strategic role enactment influences the attentional characteristics of managers’ cognition. Frequent enactment in the Synthesising role may lead to better attention efficiency under complex conditions; this role refines selective focus gained through continuous integration of multiple information sources. In contrast, the Implementing role is associated with attentional rigidity and procedural control, whereas the Facilitating role may diffuse attention due to its emphasis on social multitasking. The Championing role did not affect attention because it requires persuasion and framing ideas. Whereas prior work has largely treated attention as a scarce cognitive resource that managers allocate (Ocasio, 1997), the present findings show that

attention is behaviourally trained through repeated enactment in specific strategic roles, extending the ABV toward a developmental account of attentional capability. In summary, over time, cognitive style becomes embedded in attentional routines, reinforcing a stable yet adaptive pattern of cognition and action. This sequential system extends dual-process models of decision-making (Evans & Stanovich, 2013) by showing how intuitive (holistic) and deliberate (analytic) modes of processing co-evolve within the enacted realities of managerial work.

Beyond these pathways, the thesis contributes to three broader theoretical domains. First, it extends the Attention-Based View by showing that attention is also cultivated through behavioural enactment and structural priorities, where the attentional system is refined through practice and feedback. Second, it reframes Organisational Role Theory by conceptualising role conflict as a situational adaptive process rather than a uniform stressor. Conflict becomes functional when managers interpret contradictions and act upon them; therefore, role expectations are cognitively negotiated rather than strictly obeyed. Third, it advances cognitive style theory by linking FLT assessment to behavioural and attentional outcomes, providing evidence that analytic and holistic styles are not hierarchical or ordered; rather, they are context- and function-specific, each offering advantages under specific role demands and attentional conditions. The distinction between speed and efficiency clarifies how cognitive style operates as a difference in processing pace and suggests that the fit between a manager's cognitive orientation and their role demands may shape performance outcomes.

In conclusion, these contributions reposition the managerial mind as an adaptive cognitive-behavioural system, where thinking, acting, and attending evolve through continuous interaction with role conflict as a mediator. This thesis bridges the behavioural and cognitive

in management research, showing how cognitive diversity fuels behavioural adaptation and how practice, in turn, defines cognitive control. This integrated framework advances theory in psychology and management by portraying managerial cognition as a directional, learning-based system that connects individual differences to organisational adaptability. Middle managers thus present as intermediaries, sense-making agents, translating what they think into what they do, and, through doing, refining how they attend to the world around them.

7.3 Methodological Contributions

This thesis also provides methodological contributions by combining organisational survey data with experimental performance measures of cognitive style and attention, and by capturing strategic role enactment and the experience of role conflict. This cross-sectional approach extends methodological practice in management research by linking how managers think and act to the efficiency with which they process information. In doing so, it moves beyond self-report and provides an objective, performance-based assessment of attentional processing. This method enabled the thesis to connect cognitive function to behavioural role for studying cognition in organisational contexts. Moreover, rather than relying on subjective self-assessment questionnaires, the measurement and operationalisation of cognitive style employed an objective cognitive psychology assessment, the Framed-Line Task (FLT), to classify MMs as analytic or holistic thinkers. The FLT provided two advantages: first, it captured visual information processing rather than self-perceived tendencies, yielding a measure of cognitive orientation resistant to social desirability bias; second, it enabled quantifiable comparisons between visual attention tasks and behavioural outcomes, since both were grounded in visual information processing. The use of FLT in a managerial research context is an innovative methodological approach, representing one of the few attempts to apply the cognitive paradigm to study middle managers. This approach bridges the conceptual

gap between cognitive style as an abstract construct and its concrete behavioural and attentional manifestations.

Another contribution is the experimental assessment of attention using a visual search adapted for an organisational population. Through this approach, attention was operationalised as an objective measurable construct, indexed by reaction times and efficiency scores. Calculating slopes and efficiency indices under simple and difficult conditions allowed distinguishing between attentional speed and attentional efficiency. Thus, these multiple indicators enhance construct validity and enable a richer interpretation of attentional mechanisms within managerial roles. Furthermore, this thesis employs a hierarchical testing strategy, examining relationships at progressively refined levels before the mediation analysis. The first sequence identified broad patterns, then refined directional relationships, and finally assessed the mechanism of mediation. This approach ensured that each analytical stage built on the previous one, providing a clearer understanding of where the effect emerged and where proposed mechanisms were absent. In this way, the methodology validated the conceptual model through a combination of behavioural data, cognitive performance measures, and mediation testing. It also provides an adaptable framework for future researchers seeking to integrate experimental cognition methods with managerial constructs.

7.4 Practical and Managerial Implications

The findings of this thesis hold several implications for managerial practice, managerial development, and organisational design. The performance of middle managers is also shaped by the alignment between their cognitive style, role structure, and attentional demands. The evidence suggests that managerial effectiveness depends on how well a thinking style fits the cognitive nature of their roles. Analytic managers, who prefer precision and structure, excel in

environments that demand focus, execution, and procedural discipline, such as implementation or compliance-oriented tasks. Holistic managers, by contrast, thrive in ambiguous contexts that require sensemaking and advocacy, such as championing or facilitating cross-functional functions. Organisations therefore benefit from deliberately matching managers' cognitive styles to the strategic roles that best align with their attentional strengths, rather than assuming that all managers can perform equally well across diverse functions.

A second implication is related to the development and management of role conflict. The findings show that, at manageable levels, role conflict may mobilise adaptive behaviour and stimulate strategic enactment. For MMs, moderate tension between competing expectations, such as balancing strategic direction from above with operational realities, may enhance upward influence and cross-boundary collaboration. However, excessive conflict risks depleting attentional resources and emotional resilience (Eysenck et al., 2007). Organisations should recognise conflict as a dynamic signal rather than pathology; it shows that MMs are thinking through complex challenges, but it may also reveal where managerial capacity is reaching its limits. Managerial development programmes can incorporate structured reflection and conflict management training to help MMs transform cognitive tension into constructive problem-solving rather than burnout. This approach reframes role conflict from an obstacle to be eliminated into a psychological resource that supports learning and adaptation when properly managed.

A further practical contribution is the promotion of cognitive adaptability and attentional training within managerial development. The behavioural-to-attention pathway demonstrated that repeated enactment in certain strategic roles may shape attentional efficiency, which means that cognitive performance may be refined through behavioural practice (Posner et al., 2015).

Development programmes could incorporate attentional awareness exercises, strategic task rotation, and simulation-based learning to train flexibility between focused and distributed attention modes. For instance, MMs accustomed to routine execution can benefit from exposure to more open-ended strategic synthesis tasks to expand their attentional range and flexibility, while those in influence-focused or facilitative roles need exercises that strengthen selective focus. Embedding attentional literacy into managerial development would enable MMs to consciously adjust their cognitive stance according to task complexity and improve precision and adaptability under changing conditions. Finally, this thesis offers implications for organisational systems and talent strategy. The integrated three-pathway model indicates that cognitive diversity within managerial teams is a strategic asset when properly balanced. Organisations should design managerial pipelines that recognise and cultivate analytic and holistic cognitive orientations. Teams composed exclusively of either type risk becoming rigid or diffuse in focus. Instead, combining both styles enhances collective attention, ensuring that some members drive disciplined execution while others maintain contextual awareness and integrative insight. Human resource management, including selection, succession planning, and performance evaluation, can be redesigned to acknowledge cognitive and attentional diversity as a dimension of strategic capability. In summary, by aligning roles, responsibilities, and developmental planning with MMs' cognitive characteristics, organisations can foster adaptive, resilient, and attentive managerial cultures.

7.5 Limitations and Future Directions

While the thesis provides an integrated account of how cognitive style, role conflict, and attention interact within managerial roles, this thesis has several limitations that should be recognised when interpreting the findings. The first limitation concerns the cross-sectional design used in both phases. Although mediation and pathway models were used to test

directional relationships, the analyses cannot establish causality because all variables were measured at a single point in time. The behavioural, cognitive, and behaviour-to-attention pathways describe plausible theoretical sequences of association, but these links can also operate in complementary ways. For instance, frequent enactment in strategic roles may shape cognitive preferences or perceptions of conflict. A particularly promising direction for future research is longitudinal and mixed-method designs that can capture how cognitive style, role conflict, and attention relate across time. Longitudinal studies would allow researchers to examine whether sustained exposure to specific roles is associated with changes in attentional capacity, improvements in processing speed-efficiency trade-offs, or changes in how managers perceive and experience interline role conflict. In addition, mixed-method approaches combining experimental tasks with qualitative sensemaking interviews or ethnographic observation would enable researchers to link objective cognitive indicators. These designs would strengthen causal inference by linking attentional performance data with managers' lived experiences of ambiguity, pressure, and relational demand.

A second limitation concerns the several indirect effects in this study, which produced confidence intervals that narrowly exclude zero. (Götz et al., 2021) have demonstrated that CIs of this kind are disproportionately common in mediation research, reflecting sampling variability rather than reliable population effects. These findings were treated with caution throughout (classified as weak support only), and future research with larger samples would provide more precise estimates regarding these relationships.

A third limitation relates to the sample and context. Both phases were conducted with managers drawn from organisations with a similar organisational structure. While this focus strengthens internal validity, it narrows the applicability of findings to other levels of management or non-

corporate settings. Senior executives face strategic complexity at a higher level of abstraction and can experience different forms of cognitive challenge and attentional fragmentation, while frontline supervisors operate at the operational level and can exhibit more automatic behavioural tendencies. Replicating the three-pathway framework across hierarchical levels, sectors, and national cultures would help determine how universal the observed mechanisms are. Comparative research could, for example, explore whether collectivist cultures, where a holistic cognitive style is more dominant, display the same positive link between holistic style, conflict, and influence-oriented behaviour.

Methodologically, the thesis relied on the Framed-Line Task (FLT) to assess cognitive style and computer-based visual search tasks to measure attention performance. These tools capture cognitive operations with precision and objectivity but simplify the embedded social nature of managerial cognition. Real-world managerial attention involves reading social cues, processing verbal and emotional information, and prioritising under uncertainty. To extend validity, future research can integrate eye-tracking, neurophysiological indicators such as EEG or fNIRS, or immersive decision-simulation platforms that produce authentic organisational conditions (Xu et al., 2019). A mixed-methods approach combining experimental precision with narrative or ethnographic insight would enrich our understanding of how objective cognitive structures translate into lived managerial sensemaking. Such a method could also test whether the attentional effects observed in visual search tasks predict real decision quality or situational awareness in managerial practice.

Moreover, because Phase 2 data collection was administered remotely, session timing was not controlled, and potential unsystematic variance due to circadian variation in arousal and alertness might occur (Ritchie et al., 2017). Visual search experiments are designed with

controlled trial structures, practice blocks, and outlier exclusion procedures that minimise the influence of momentary state variation on performance indices. Research on visual simple reaction time has found no significant differences across morning, midday, and afternoon testing windows (Hanumantha et al., 2021), though the effect may be more pronounced for complex cognitive tasks and depend on individual chronotype (Lara et al., 2014; Rey-Mermet & Rothen, 2023). Future research should record session timing as a covariate to examine these effects.

Another limitation relates to the absence of emotional context in the experimental component. Role conflict in organisations is rarely a neutral cognitive phenomenon; it is often accompanied by affective reactions such as anxiety, frustration, or motivation (Mohr & Puck, 2007). While the experiment design ensures internal control, it can underestimate the impact of stress and emotion on attention. Future research could reintroduce this relationship by embedding emotional feedback, time pressure, or hierarchical evaluation cues within attention tasks. Integrating frameworks from affective event theory and attentional control theory could help identify the threshold at which conflict shifts from motivation to performance impairment (Christensen et al., 2023). Finally, there is an opportunity to extend this thesis into the emergence of AI-managerial cognition (Chen et al., 2025). Artificial intelligence and data-driven systems increasingly shape how managers attend to information, allocate cognitive effort, and experience role conflict. The three-pathway provides a foundation for exploring how human cognition interacts with algorithms. For example, analytic managers can be comfortable with AI-generated dashboards and rule-based insights, while holistic managers can interpret AI outputs through contextual and relational frames. Likewise, AI tools that automate implementation tasks can reduce procedural load but simultaneously introduce new forms of cognitive tension, such as overreliance or interpretive dissonance between human

intuition and algorithmic advice. Future studies could examine human-AI complementarity within behavioural and cognitive pathways, assessing how digital augmentation affects role identity, attention distribution, and strategic sensemaking.

In conclusion, this thesis advances a cognitive-behavioural perspective on middle management by integrating psychological measures of cognitive and attentional processes with organisational theories of role enactment and conflict. By presenting that cognitive style influences behaviour through selective tension, that attention is refined through role practice, and that role conflict operates across cognitive and behavioural pathways, this research moves beyond static models of managerial cognition. The findings position middle managers as adaptive agents whose thinking, acting, and attending co-evolve within organisational structures. Therefore, this thesis bridges psychology and management research and opens new opportunities to study managerial cognition as a dynamic, learning-based system relevant in the complex, data-rich, AI era within organisational environments.

8 References

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9 Appendices

9.1 Appendix A Participant Information Sheet

Participant Information Sheet

Study title	The Influence of Middle Managers’ Cognitive Styles on Their Strategic Roles Enactment
Aims of your study	<p>This research project fills the gap regarding the relationship between middle managers’ (MMs) cognitive style and attention behaviour in enacting strategic roles. MMs’ strategic roles involve managerial and cognitive aspects (S. W. Floyd & Wooldridge, 1992; Rydland, 2020). Consequently, their involvement in strategy has become an essential organisational performance. However, role conflict emerges due to the distinctive nature and the opposite expectations of these roles and differences in MMs’ cognitive styles.</p> <p>Furthermore, MMs with different cognitive styles (holistic and analytic styles) will present different approaches to their daily management. Thus, our understanding must be not only around their strategic roles but also investigate how their cognitive styles influence the execution of these roles since individual preferences are an essential contribution to role performance (Stevens & Ash, 2001). In this respect, this study aims to explore whether MMs’ strategic roles are associated with their cognitive since, as middle-man, they deal with an enormous amount of information which leads to their actions (Cho & Hambrick, 2006; Ocasio, 2011).</p>
Research questions	<ol style="list-style-type: none"> 1. Do MMs’ holistic and analytic cognitive styles influence the way they enact their strategic roles? 2. Can MMs’ cognitive style predict the frequency of enacting specific strategic roles? 3. Can MMs’ cognitive style predict the potential strategic role conflict?
An invitation to participate	<p>This study project, titled <i>The Influence of Middle Managers’ Cognitive Styles on Their Strategic Roles Enactment</i>, invites you to participate. You have been invited as a result of your formal position as a middle manager in your organisation. Your contact information was acquired from a database of our research centre, “Centre for Enterprise, Innovation & Growth” (https://www.bcu.ac.uk/business-school/research/centre-for-enterprise-innovation-and-growth), indicating that you were involved in the Birmingham City University s studies previously.</p>

	<p>Please spend a few minutes reading this information. If any topic interests you or that you don't fully understand, please ask questions about it. You might wish to discuss it with your superior. You can decide whether or not you wish to participate in the research by understanding what is entailed.</p> <p>It is voluntary to take part in this study. If you don't wish to take part, you don't have to.</p> <p>You will be required to sign the permission section if you choose to participate in the study experiment. By signing it, you agree to the following:</p> <p>Understand what you just read Consent to participate in the study Consent is the way in which your information will be used. This participant information sheet will be handed to you to keep.</p>
<p>An explanation of why the participant(s) has been invited</p>	<p>Because of your formal position as a middle manager in the organisation, you have expertise and experience in this topic. Your position within the organisation is a minimum one-line upper supervisor and proficient in English.</p> <p>Further, you will involve in a task to assess your cognitive style. However, the nature of this task expects sustained attention, and people with formal or informal diagnoses of neurodevelopmental disorders (e.g., ADHD) or neurological disorders (e.g., epilepsy) will have difficulty with this session.</p>
<p>Whether participation is voluntary</p>	<p>This involves voluntary participation. You are not required to participate if you choose not to. You are permitted to quit the process at any point if you change your mind.</p> <p>If you choose to participate, you will be provided with this Participant Information, a Consent Form to sign (thick box digitally), and a copy to keep.</p> <p>Your decision to participate or not to participate, or to participate and then withdraw, won't have an impact on how you receive routine care, how you interact with professionals, or how you interact with the Birmingham City University</p>
<p>What you expect of participants if they consent</p>	<p>You will be invited to one-on-one MS Teams meeting with the researcher who is present to provide guidance and answer questions throughout the study.</p> <p>Through your computer/ laptop, you will fill in the consent form and demographic question, then answer two questionnaires and take a</p>

	<p>simple cognitive task to assess your cognitive style. This process will take up to 15 minutes. The link to access those instruments will be shared right after the session begins.</p> <p>1. The two questionnaires:</p> <ul style="list-style-type: none"> a. Managers’ strategic roles: It will assess the tendency to enact specific strategic roles b. The role conflict: It will assess the experience of strategic role conflict <p>2. The framed-line task: To assess your cognitive styles.</p> <p>You will see a line within the frame. There are two types of tasks; you can practice three times for each task before starting the official one.</p> <p>First, you will have 6 trials (absolute tasks). You have 5 seconds to pay attention to the length of the line and 5 seconds to redraw the same absolute length as the line in the first frame, independent of the size of the new frame.</p> <p>Second, you will have 6 trials (relative tasks). You have 5 seconds to pay attention to the relative size of the box and 5 seconds to redraw the line with the same portion of the frame as the one you saw before.</p> <p>You can use the up and down arrow on your computer/ laptop keyboard to redraw the line.</p>
Potential benefits of participation	<p>Your involvement in this research will present a significant input to the modern organisation in terms of managing their middle managers by understanding the needs and uniqueness of their people. Further, the organisation will have a foundation for future policies regarding the middle manager’s roles and responsibilities.</p>
Potential risks of participation	<p>You may reflect on previous experiences in your professional life, such as role conflicts that might occur. However, instead of explaining the detail, you only need to choose the type of conflicts from the questionnaire.</p> <p>You also might feel ‘right’ or ‘wrong’ while doing the visual experiment. However, it is not the case. The experiments only identify your personal behaviour, and there is no right or wrong.</p>
Confidentiality arrangements	<p>You will generate an ID from your first three letters of your favourite colour and the last three letter of the street that you grew up on. This ID will allow you to be anonymous, and if you change your mind, you can withdraw during or after the study (no later than a week). In addition, we will identify through this ID to delete your response.</p> <p>This study will not collect any personal information about you except your age, last educational level, duration of working at the</p>

	management level, discipline background, and layer position within the organisation structure, which align with the study's aims.
Data protection	<p>Your data will be stored at the OneDrive BCU server by following the BCU GDPR guidelines. Your data will be anonymised and may be shared between the primary researcher and the supervisor, but it will not be possible to identify your data at any point. Your data will be kept on the University account for 10 (ten) years. If you decide to withdraw your data a maximum of one week after collection, you will need to provide the anonymous ID code you created at the start of the study and contact me by email.</p> <p>Your data will be presented and published in scholarly conferences, journals, and theses that will be aggregated and anonymised.</p>
Participants' rights	Without compromising your relationship with the researchers or Birmingham City University, either now or in the future, you are free to withdraw to participate in the survey or to withdraw from the study at any moment while completing the survey. You also have the right to withdraw no later than a week after the study (<i>a specific date will be written</i>). And your response will be deleted. However, after a week of study, you cannot be withdrawn since the data will be included in the analysis process.
Who the funders are	This study is funded by Birmingham City University Research PhD Grant
Details of anyone who has been responsible for reviewing the study	This research is reviewed by my supervisors: <ul style="list-style-type: none"> a. Prof. Alexandros Psychogios b. Prof. Eirini Mavrtsaki c. Dr Stephanie Chua
Details of Supervisors/senior academics	<ul style="list-style-type: none"> a. Prof. Eirini Mavrtsaki eirini.mavrtsaki@bcu.ac.uk b. Prof. Alexandros Psychogios a.psychogios@lboro.ac.uk c. Dr Stephanie Chua stephanie.chua@bcu.ac.uk
Details of who to contact if participants have a complaint	BLSSethics@bcu.ac.uk
Detail to contact of Information management	If you have any questions, comments or concerns about how we use or handle your information, please contact the Data Protection Officer at:

	Data Protection Officer, Information Management Team, Birmingham City University, University House, 15 Bartholomew Row, Birmingham B5 5JU, email informationmanagement@bcu.ac.uk or call +44 (0) 121 331 5288.
Your own contact details	Rahmi Salviviani <u>Rahmi.Salviviani@mail.bcu.ac.uk</u>
Details of providing informed consent	Your consent statement will be collected through <i>a Consent form</i> that will be shared in the earlier session of the study.

9.2 Appendix B Consent Form



Consent Forms

Study title	The Influence of Middle Managers' Cognitive Styles on Their Strategic Roles Enactment
Summary of the project	This research project fills the gap regarding the relationship between middle managers' cognitive style and attention in enacting strategic roles; their involvement in strategy has become essential to organisational performance. The strategic roles of MMs involve managerial and cognitive aspects (S. W. Floyd & Wooldridge, 1992; Rydland, 2020; Sukoco et al., 2022). Thus, it is essential to study MMs' strategic roles from a sociological and psychological perspective because individual preferences significantly influence role performance (Stevens & Ash, 2001). Moreover, role conflict emerges due to the distinctive nature of these roles and the opposite expectations of them. Furthermore, as middle-man, they deal with an enormous amount of information, which leads to their actions (Cho & Hambrick, 2006; Ocasio, 2011). Therefore, this study explores whether MMs' cognitive styles and underlying cognitive processes, particularly attention, relate to their strategic role enactment.
Statement about voluntary participation	<p>You will be required to sign the permission section if you choose to participate in the study experiment. By signing it, you agree to the following:</p> <p>Understand what you just read Consent to participate in the study Consent is the way in which your information will be used. This participant information sheet will be handed to you to keep.</p>
An invitation to participate	<p>This study project, which is titled <i>The Influence of Middle Managers' Cognitive Styles on Their Strategic Roles Enactment</i>, is inviting you to participate. You have been invited as a result of your formal position as a middle manager in your organisation. Your contact information was acquired from a database of our research centre, "Centre for Enterprise, Innovation & Growth" https://www.bcu.ac.uk/business-school/research/centre-for-enterprise-innovation-and-growth), indicating that you were involved</p>

	<p>in the Birmingham City University s studies previously or from the personal network of the researcher or the research supervisory team.</p> <p>You may learn more about the research study from the participant information sheet. It describes the steps necessary to participate. You can decide whether or not you wish to participate in the research by understanding what is entailed.</p> <p>Please spend a few minutes reading this information. If any topic interests you or that you don't fully understand, please ask questions about it. You might wish to discuss it with your superior.</p> <p>It is voluntary to take part in this study. If you don't wish to take part, you don't have to.</p>
<p>Whether participation is voluntary</p>	<p>This involves voluntary participation. You are not required to participate if you choose not to. You are permitted to quit the process at any point if you change your mind.</p> <p>If you choose to participate, you will be provided with this Participant Information, a Consent Form to sign (thick box digitally), and a copy to keep.</p> <p>Your decision to participate or not to participate, or to participate and then withdraw, won't have an impact on how you receive routine care, how you interact with professionals, or how you interact with the Birmingham City University</p>
<p>Space for participants to consent to participate in different ways</p>	<p><input type="checkbox"/> I agree to be part of this research as a participant, and I:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Understand what I read <input type="checkbox"/> Consent to participate in the study <input type="checkbox"/> Consent is the way in which your information will be used. <p><input type="checkbox"/> I understand that I have the right to withdraw before, during or after the process (no later than a week), without any sanction or discrimination.</p> <p><input type="checkbox"/> I understand that I have the right to ask questions related to the studies to the contact persons provided.</p> <p><input type="checkbox"/> I understand that my response will be anonymous and will be used for reports, thesis, and academic papers.</p>

9.3 Appendix C Access request Letter



Access Request Letter

To:

Dear

My name is Rahmi Salviviani, and I am a PhD student at Birmingham City University. I am conducting research on *the influence of Middle Managers' (MMs) cognitive styles on enacting their strategic roles*. Since the manager's cognitive style influences how they manage the tasks and people within the organisation, this study's findings can help MMs recognise their tendencies in enacting these four roles. Further, this understanding will be an early signal to maintain their balance. Finally, this research is also expected to generate recommendations for organisations to facilitate the need for MMs with different cognitive styles.

We would be very grateful if the middle managers from [organisation's name} participated in this research. We attached the participant's information sheet, which provided information about this study. The middle managers will create an anonymous ID to join the experiment about cognitive styles through framed-line task assessment and answer two questionnaires on strategic roles and role conflict. All these processes will be conducted 20 minutes through online meetings with me to facilitate the process.

If you approve this request, please contact me by email at Rahmi.Salviviani@mail.bcu.ac.uk. Thank you in advance for your interest in our study. We look forward to your participation.

Sincerely,

Rahmi Salviviani

Researcher

Prof. Alexandros Psychogios

Supervisor

Prof. Eirini Mavritsaki

Supervisor & Director of Study

Dr Stephanie Chua

Supervisor

9.4 Appendix D Ethical Approval Letters



Faculty of Business, Law & Social Sciences Research Office
Curzon Building, 4 Cardigan Street
Birmingham
B4 7BD

BLSSethics@bcu.ac.uk;

03/Apr/2023

Mrs Rahmi Salviviani
Rahmi.Salviviani@mail.bcu.ac.uk

Dear Rahmi,

Re: Salviviani /#11405 /sub3 /R(A) /2023 /Apr /BLSS FAEC - 1st Ethics (The Influence of Middle Managers' Cognitive Styles on Their Strategic Roles Enactment)

Thank you for your application and documentation regarding the above activity. I am pleased to take Chair's Action and approve this activity.

Provided that you are granted Permission of Access by relevant parties (meeting requirements as laid out by them), you may begin your activity.

I can also confirm that any person participating in the project is covered under the University's insurance arrangements.

Please note that ethics approval only covers your activity as it has been detailed in your ethics application. If you wish to make any changes to the activity, then you must submit an Amendment application for approval of the proposed changes.

Examples of changes include (but are not limited to) adding a new study site, a new method of participant recruitment, adding a new method of data collection and/or change of Project Lead.

Please also note that the Business, Law and Social Sciences Faculty Academic Ethics Committee should be notified of any serious adverse effects arising as a result of this activity.

If for any reason the Committee feels that the activity is no longer ethically sound, it reserves the right to withdraw its approval. In the unlikely event of issues arising which would lead to this, you will be consulted.

Keep a copy of this letter along with the corresponding application for your records as evidence of approval.

If you have any queries, please contact BLSSethics@bcu.ac.uk.

If you would like to provide feedback on the ethics process, please complete the feedback form using this link.

I wish you every success with your activity.

Yours Sincerely,

Dr. Angela Hewett

On behalf of the Business, Law and Social Sciences Faculty Academic Ethics Committee



Faculty of Business, Law & Social Sciences Research Office
Curzon Building, 4 Cardigan Street
Birmingham
B4 7BD

BLSSethics@bcu.ac.uk;
20/Mar/2024

Mrs Rahmi Salviviani
Rahmi.Salviviani@mail.bcu.ac.uk

Dear Rahmi,

Re: Salviviani /#11405 /sub1 /Am /2024 /Mar /BLSS FAEC - 1st Ethics (The Influence of Middle Managers' Cognitive Styles on Their Strategic Roles Enactment)

Thank you for your application for approval of amendments regarding the above study. I am happy to take Chair's Action and approve these amendments.

Provided that you are granted Permission of Access by relevant parties (meeting requirements as laid out by them), you may continue your activity.

I can also confirm that any person participating in the project is covered under the University's insurance arrangements.

Please note that ethics approval only covers your activity as it has been detailed in your ethics application. If you wish to make any changes to the activity, then you must submit an Amendment application for approval of the proposed changes.

Examples of changes include (but are not limited to) adding a new study site, a new method of participant recruitment, adding a new method of data collection and/or change of Project Lead.

Please also note that the Committee should be notified of any serious adverse effects arising as a result of this activity.

If for any reason the Committee feels that the activity is no longer ethically sound, it reserves the right to withdraw its approval. In the unlikely event of issues arising which would lead to this, you will be consulted.

Keep a copy of this letter along with the corresponding application for your records as evidence of approval.

If you have any queries, please contact BLSSethics@bcu.ac.uk.

If you would like to provide feedback on the ethics process, please complete the feedback form using this link.

I wish you every success with your activity.

Yours Sincerely,

Dr. Angela Hewett

On behalf of the Business, Law and Social Sciences Faculty Academic Ethics Committee

Debriefing Form

Thank you for contributing to our research. Your involvement is greatly appreciated.

Purpose of the Study:

In modern organisations, middle managers (MMs) play essential strategic roles, namely synthesising information, championing new initiatives, facilitating adaptability, and implementing deliberate strategy. Through these roles, MMs contribute to excel the organisation's performance. However, role conflict emerges due to the distinctive nature and the opposite expectations of these roles and differences in MMs' cognitive styles. This conflict may stress MMs since they may not achieve the targets equally well. Thus, as we previously informed you, the purpose of the study is to explore whether middle managers' (MMs) strategic roles are associated with their cognitive. Our research aims to understand the relationship between cognitive style and how MMs enact their strategic roles.

Withdrawn:

If you decide not to let your information be used in this study, you send an email to the contact below.

Please do not disclose research procedures and/or hypotheses to anyone who might participate in this study in the future, as this could affect the study's results.

Final Report:

When the study is finished, do not hesitate to contact us if you would like a copy of the study result summary.

Useful Contact Information:

If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researcher, Rahmi Salviviani (Rahmi.Salviviani@mail.bcu.ac.uk)

Thank you for taking part in this research!

9.6 Appendix F SLR Descriptive Findings

Interpersonal Role

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
The influence of leader-follower cognitive style congruence on organizational citizenship behaviors and the mediating role of trust	Wang et.al., 2023	Cognitive Styles Congruence	Leader Role	Cognitive Style Index (Analytic-Intuitive)	China - Manufacture	Quantitative research approach	Dyads with more intuitive exhibited higher levels of OCBs than analytical cognitive styles.
The Influence of Leader-Follower Cognitive Style Similarity on Followers Organizational Citizenship Behaviours	Armstrong & Qi, 2020	Cognitive Styles Congruence	Leader Role	Cognitive Style Index (Analytic-Intuitive)	China - Manufacture	Quantitative research approach	An intuitive leader finds challenge in a detailed-oriented follower; thus, this dyad shows the lowest OCB
An examination of leadership and employee creativity: The relevance of traits and relationship	Tierney et.al., 1999	Cognitive Styles Congruence	Leader Role	KAI (Adaptation-Innovation)	USA - Chemical corporation	Quantitative research approach	Congruence between leader and follower with similar innovative cognitive styles does not receive additional benefit for the employee's creativity.
Do Birds of a Feather Communicate Better? The Cognitive Style Congruence Between Managers and Their Employees and Communication Satisfaction	Erdil & Tanova, 2015	Cognitive Styles Congruence	Leader Role	Cognitive Style Index (Analytic-Intuitive)	Turkiye (dominant) – Banking	Quantitative research approach	Higher communication satisfaction is observed when managers and employees share congruent cognitive styles in intuitive dyads rather than analytical.
The influence of cognitive style diversity on intra-group relationship conflict, individual-level organizational citizenship behaviors and the moderating role of leader-member-exchange	Qi and Armstrong, 2019	Cognitive Styles on LMX	Leader Role	Cognitive Style Index (Analytic-Intuitive)	China - Manufacture	Quantitative research approach	Cognitive style diversity within groups can lead to increased intra-group relationship conflict. High-quality LMX mitigates the negative effects of cognitive style diversity on relationship conflict.

Effects of team knowledge management on the creativity and financial performance of organizational teams	Sung & Choi, 2012	Cognitive Styles on LMX	Leader Role	Modified KAI (Systematic-Intuitive)	Korea - Insurance	Quantitative research approach	Systematic leaders boost creativity by leveraging team knowledge management in uncertain environments. Meanwhile, intuitive leaders foster creativity when the team possesses high knowledge.
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Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Not Threats, but Resources: An Investigation of How Leaders React to Employee Constructive Voice	Xu et.al., 2023	Cognitive Styles on LMX	Leader Role	Cognitive style scale (Originality & Rule Governance)	China – Hotel	Mixed method approach	Leaders with an originality cognitive style value employee constructive voice develop higher-quality LMX than role-governance leaders who prefer established methods and are less open to new inputs.
The effects of cognitive style on leader-member exchange: A study of manager-subordinate dyads.	Allinson et.al., 2001	Cognitive Styles on LMX	Leader Role	Cognitive Style Index (Analytic-Intuitive)	UK - Manufacture	Quantitative research approach	Leaders are perceived as more nurturing and respected, particularly when they are more intuitive than their analytic counterparts.
Counselling to resolve a clash of cognitive styles	Lindsay, 1985	Cognitive Styles on LMX	Leader Role	KAI (Adaptation-Innovation) and MBTI	UK - Banking	Qualitative research approach	Differences in cognitive styles can lead to conflict. An adaptive leader who prefers a conservative approach perceives their member ideas with an Innovative style as impractical.
Good and bad simultaneously. Leaders using dialectical thinking foster positive conflict and employee performance	Bai et.al., 2015	Cognitive Styles on LMX	Leader Role	Dialectical Self Scale (High - Low Dialectical thinking)	China – Tech manufacture	Quantitative research approach	Dialectical thinking leaders promote cooperative over competitive conflict management, positively influencing employee creativity and in-role performance.
Leaders can facilitate creativity: the moderating roles of leader dialectical thinking and LMX on employee creative self-efficacy and creativity	Han et.al., 2020	Cognitive Styles on LMX	Leader Role	Dialectical Self Scale (High - Low Dialectical thinking)	China – Tech company	Quantitative research approach	Leaders with a dialectical thinking style enhance employee creativity, especially for those with high creative self-efficacy and creativity in the workplace.
Team role preference and cognitive styles a convergent validity study	Aritzeta et.al., 2005	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	KAI (Adaptation-Innovation)	UK – various industries	Quantitative research approach	An adaptive cognitive style manager is effective in the roles of Implementer, Completer Finisher, Team Worker, and Specialist. On the other hand, managers with an innovative cognitive style are suited for the Plant, Shaper, and Resource Investigator roles.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Creative leadership and its relationship to thinking styles among Saudi University leaders	Alshammri & Alenezi, 2021	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	Thinking Styles (Pragmatists and realists - synthesis and analyst)	Riyadh – Public and private universities	Quantitative research approach	Synthesis and analyst-style leaders show a significant positive correlation with creative leadership qualities while having a negative correlation to Pragmatist and realist thinking styles.
Re-examining the Relationship between Thinking Styles and Transformational Leadership: What is the Contribution of Imagination and emotionality?	Curtis et.al., 2017	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	Rational - Behavioral coping - imagination - intuition	Australia - School	Quantitative research approach	Leaders with rational, behavioural coping and imagination styles influence transformational leadership more than intuition and emotionality styles.
Examining the relationship between leadership, emotional intelligence and intuition in senior female managers	Downey et.al., 2006	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	Cognitive Style Index (Analytic-Intuitive)	Australia – various industries	Quantitative research approach	Managers with intuitive cognitive styles are linked to more transformational. In contrast, analytical cognitive style was found to correlate positively with transactional leadership.
Dancing in the white spaces: Exploring gendered assumptions in successful project managers' discourse about their work	Thomas & Buckle-Henning, 2007	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	Carl Jung (masculine and feminine)	Canada & USA - various industries	Qualitative research approach	Successful project managers employ both 'masculine' and 'feminine' cognitive styles, adapting their approach based on project needs.
Examining managerial thinking style, EQ, and organizational commitment	Groves et.al., 2009	Cognitive Styles on Managerial/ Leadership Effectiveness	Leader Role	Linear/ Nonlinear Thinking	USA – Marketing company	Quantitative research approach	A balance between linear and nonlinear thinking increases organisational commitment levels and positively impacts innovation and productivity. Managers with linear thinking styles are better at regulating emotion, while nonlinear thinkers excel at using emotions to facilitate thought.

Informational Role

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
The effect of external reporting on managerial decision making: Some antecedent conditions	Dirsmith & Lewis, 1982	Cognitive Styles on Information Acquisition	Monitor Role	Tolerance/intolerance of ambiguity	USA – Accounting firms	Quantitative research approach	Ambiguity-intolerant managers prefer concrete and quantitative information, potentially narrowing their focus and performing data-driven decisions. Conversely, managers who are tolerant of ambiguity better cope with dynamic environments, seeking, acquiring, processing, and communicating complex and qualitative information.
The Joint and Moderating Role of Personality and Cognitive Style on Decision Making	Gul, 1984	Cognitive Styles on Information Acquisition	Monitor Role	GEFT (field-dependent, field-independent)	Malaysia - electronic companies	Quantitative research approach	A combination of field-dependent style and tolerance of ambiguity enhances managers' confidence in ambiguous situations compared to field-independent
Individual Characteristics as Sources of Perceived Uncertainty Variability	Downey et.al., 1977	Cognitive Styles on Information Acquisition	Monitor Role	Cognitive complexity	USA - various industries	Qualitative research approach	Cognitive style impact on how managers perceive environmental uncertainty. Cognitive complexity managers are better at managing uncertainty due to having more comprehensive consideration.
The Richness Imperative and Cognitive Style: The Role of Individual Differences in Media Choice Behavior	Trevino et.al., 1990	Cognitive Styles on communication	Disseminator, spokesperson Role	MBTI	USA - various industries	Quantitative research approach	Judging types of managers prefer leaner media, while perceiving cognitive style managers prefer richer media such as face-to-face. However, in high-equivocality situations, both types prefer richer media.
A Path Analytic Study of Individual Characteristics, Computer Anxiety and Attitudes toward Microcomputers	Igbaria & Parasuraman, 1989	Cognitive Styles on Technology adoption	Monitor Role	MBTI	USA - various industries	Quantitative research approach	Managers with feeling-thinking cognitive styles who are more systematic and analytical are more likely to be comfortable with microcomputers. In comparison, intuition-sensing cognitive style was unrelated to computer anxiety and attitudes toward microcomputers.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
An examination of gender differences in the determinants of computer anxiety and attitudes toward microcomputers among managers	Parasuraman & Igarria, 1990	Cognitive Styles on Technology adoption	Monitor Role	MBTI	USA - various industries	Qualitative research approach	Females with lower scores on the feeling-thinking cognitive style exhibit more anxiety and tend to have a negative attitude towards microcomputers than male managers.
Senior managers and executive information systems: Examining linkages among individual characteristics, attitudes, computer use, and intentions	Fisher, 1995	Cognitive Styles on Technology adoption	Monitor Role	MBTI	Canada - various industries	Mixed method approach	Different from previous studies, gender and cognitive style did not significantly influence the attitude towards technology, suggesting that familiarity and formal training are more related to the positive attitude toward technology adoption
Cognitive Style and Extent of Computer Use in Organization Relevance of Sufficiency of Originality, Efficiency and Rule Conformity	Foxall & Hackett, 1992	Cognitive Styles on Technology adoption	Monitor Role	KAI (Adaptation-Innovation)	UK - Government organisation	Quantitative research approach	Managers with a more innovative cognitive style use a broader range of software applications. In contrast, managers with a more adaptive cognitive style use fewer software applications.
An Experimental Investigation of the use of Computer-based Graphics in Decision Making	Lucas & Henry, 1981	Cognitive Styles on Technology adoption	Monitor Role	Barkin's test: heuristic and analytic decision styles	USA - various industries	Quantitative research approach	Analytic decision-makers benefit from detailed tabular data to validate or adjust prior hypotheses or models. Meanwhile, heuristic decision-makers benefit more from graphics, which provide an overall picture of data.
The Effects of Display Formats on Information Systems Design	Liberatore et.al., 1988	Cognitive Styles on Technology adoption	Monitor Role	GEFT (field-dependent, independent)	USA - manufacture	Quantitative research approach	When dealing with financial data, field-dependents tend to rate the utility of tabular formats higher than field-independents.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
The influence of data-presentation mode on strategic decision-making	Garceau et.al., 1988	Cognitive Styles on Technology adoption	Monitor Role	Intuitive - Logical Style	Quebec – Civil service	Quantitative research approach	Intuitive managers perform better and show higher confidence in their results when using graphical data presentations. Meanwhile, managers with a logical cognitive style perform better and faster when using tabular data presentations.
Looking for a Few Good Sources: Exploring the Intra-organizational Communication Linkages of First Line Managers.	Wilson & Malik, 1995	Cognitive Styles on Information acquisition and processes	Monitor Role	Propensity to differentiate (Higher- lower differentiators)	USA – Government organisation	Quantitative research approach	High differentiator managers are better for environments with high task uncertainty, where they can utilise complex information and dynamic decision-making. Conversely, low differentiators prefer structured scenarios with lower uncertainty and may rely on leaner information for problem-solving.
Understanding sustainable development flexibility: An information perspective	Yu et.al., 2021	Cognitive Styles on Information processes	Monitor Role	(Systematic - Intuitive)	USA - various industries	Quantitative research approach	Managers with a systematic style show limited adaptability to changes and uncertainties., while managers with an intuitive style are more likely to be adaptable and responsive to uncertainties in sustainable development practices.
The interaction effect of quantity and characteristics of accounting measures on performance evaluation	Hioki et.al., 2020	Cognitive Styles on Information management	Monitor Role	Need for Cognition (High - Low Need for Cognition)	Japan – Utility company	Quantitative research approach	Managers with High NFC thoroughly evaluate complex information and use all provided information (financial and customer perspective measures) unless information overload occurs. However, managers with Low NFC tend to rely on financial information when there is no information overload.
Social networks and the cognitive motivation to realize network opportunities: A study of managers' information gathering behaviors	Anderson, 2008	Cognitive Styles on Information management	Monitor Role	Need for Cognition (High - Low Need for Cognition)	USA - various industries	Quantitative research approach	Compared to low-NFC, managers with a higher need for cognition are more proactive to information seeking, utilise their social networks, and are more effective in gathering more information.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Fraud Detection: The Effect of Client Integrity and Competence and Auditor Cognitive Style.	Benhardi 1994	Cognitive Styles on Technology adoption	Monitor Role	Moral Development (higher-lower moral development)	USA – Auditing firms	Mixed method approach	Managers with high moral development detected fraud more than managers with low moral development and all seniors.
Knowledge management practices in a public sector organisation: The role of leaders' cognitive styles	Jain & Jeppesen, 2013	Cognitive Styles on Technology adoption	Disseminator Role	KAI (Adaptation-Innovation)	India – Public sector	Quantitative research approach	Leaders with an adaptor style tend to conform to rules, regulations, and established procedures. Innovative and radical-style leaders negatively impact the management of knowledge practices.

Decisional Role

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Cognitive styles and managerial behaviour: A qualitative study	Cools & Broeck, 2008	Cognitive Styles on Strategic Decision	General Decisional Role	Cognitive Style Indicator (CoSI) (Knowing, Planning, Creating)	Western Europe - various industries	Mixed method approach	Knowing style tends to be a logical approach in handling conflict, fact-based oriented in decision-making and straightforward feedback. Managers with a planning style also favour analytical approaches, but are more diplomatic, emphasising structure and quick decision-making. In contrast, managers with a creating style make decisions based on intuition, incorporate objective information and data, and give feedback directly, focusing on positive and constructive aspects.
Effects of Decision Support Systems Training and Cognitive Style on Decision Process Attributes	Green et al., 1986	Cognitive Styles on Decision Process	General Decisional Role	Analytic vs Heuristic	USA - various industries	Quantitative research approach	Analytic-type managers who seek causal relationships and require a broader range of alternatives and various data benefit from hands-on workshops and training. In contrast, heuristic-type managers consider qualitative factors such as experience, intuition, and feelings to show less sensitivity in the training format because of their flexibility in the decision-making process.
An empirical test of cognitive style and strategic decision outcomes	Hough & Ogilvie, 2005	Cognitive Styles on Decision Process	General Decisional Role	MBTI (SF, ST, NF, NT)	USA - manufacture	Quantitative research approach	NT managers make higher-quality decisions using intuition to take cognitive leaps based on objective information. While ST found that they made the lowest quality of decision due to operational focus, with the level of decisiveness similar to NF and SF
Managers and strategic decisions: Does the cognitive style matter?	Gallen, 2006	Cognitive Styles on Strategic Decision	Entrepreneur Role	MBTI (SF, ST, NF, NT)	Finland – Wellness industry	Mixed method approach	Sensing managers tend to prefer a 'defender' strategy. On the other hand, intuitive managers are more prone to prefer 'prospector'. However, there are common preferences for an analyzer strategy as a blend of defender and prospector strategies.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Top management team composition and views of viable strategies	Gallen, 2009	Cognitive Styles on Strategic Decision	Entrepreneur Role	MBTI (SF, ST, NF, NT)	Finland – Wellness industry	Mixed method approach	At the group level, the management team with various cognitive styles is more likely to adopt the prospector strategy, suggesting that this diversity encourages more innovative and risk-taking behaviours.
Leadership in Innovators and Defenders: The Role of Cognitive Personality Styles	Chatterjee, 2014	Cognitive Styles on Strategic Decision	Entrepreneur Role	MBTI (SF, ST, NF, NT)	India – various industries	Quantitative research approach	Group cohesion in cognitive styles supporting innovation within the organisation. NF managers promote innovators, while ST is ideal for a 'defender' strategic orientation.
An investigation of the relationship between project performance and characteristics of project leaders	Mcdonough, 1990	Cognitive Styles and project performance	Entrepreneur Role	(Bisociative, Associative Style)	UK – various industries	Mixed method approach	The bisociative style pursuing novel solutions and driving the creation of breakthrough products. Conversely, an associative cognitive style prefers established procedures and is effective in application projects or improvement-oriented projects.
Determinants of employee creativity: A survey of Lithuanian nonprofit organizations	Jaskyte & Kisieliene, 2006	Cognitive Styles on Creativity	Entrepreneur Role	KAI (Adaptation-Innovation)	Lithuania – Non-profit organisation	Quantitative research approach	An innovative cognitive style manager promotes an adaptable work environment conducive to creativity. On the other hand, those with adaptive cognitive styles might focus on improving existing systems, adhering to rules, and maintaining stability.
Cognitive style, creativity framing and effects	Dew, 2009	Cognitive Styles on Creativity	Entrepreneur Role	KAI (Adaptation-Innovation)	Australia – various industries	Quantitative research approach	The study challenges the traditional view, which is an adaptor inclined to creative options when beneficial. Yet, both adaptors and innovators are influenced by risk-based framing and context in rule-breaking preferences.
Exploring individual-work context fit in affecting employee creativity in technology-based companies	Chen et.al., 2015	Cognitive Styles on Creativity	Entrepreneur Role	Innovative cognitive style (KAI)	Taiwan – manufacture	Quantitative research approach	An innovative style manager is more likely to enhance their problem-solving and decision-making in a conducive environment that minimises the time pressure.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Cognitive Frames, Learning Mechanisms, and Innovation Ambidexterity.	Lin & McDonough, 2014	Cognitive Styles on Innovation management	Entrepreneur Role	Independent & Reflection Cognitive Style	Taiwan – various industries	Quantitative research approach	An independent cognitive style manager is associated with intra-SBU learning, and a reflection cognitive style fosters inter-SBU learning. Ambidextrous cognitive frames may need to tactfully balance both types of learning and promote a culture that values exploitation and exploration.
Exploration and exploitation within firms: The impact of CEOs' cognitive style on incremental and radical innovation performance	Visser & Faems, 2015	Cognitive Styles on Innovation management	Entrepreneur Role	Cognitive Style Index (Analytic-Intuitive)	Dutch – SMEs	Quantitative research approach	CEOs with analytic cognitive styles are more likely to focus on exploitative activities. Conversely, the intuitive cognitive styles engage more in explorative activities.
Exploring the linkages of cognitive style and individual innovativeness	Batra & Vohra, 2016	Cognitive Styles on Innovation management	Entrepreneur Role	Kolb's Learning Style Inventory (Divergers, Convergents, Assimilators, Accommodators)	India – various industries	Quantitative research approach	A converger manager who prefers abstract conceptual and active experimentation show higher level of innovativeness than divergers who prefer concrete experiences and reflective observation.
Do or do not. Cognitive configurations affecting open innovation adoption in SMEs	Marzi et.al., 2023	Cognitive Styles on Innovation management	Entrepreneur Role	Intuitive & Rational Cognitive Style	UK – various industries (SMEs)	Quantitative research approach	Managers with a more rational cognitive style are seen as likely to be more willing to adopt OI, while an intuitive style did not directly influence the willingness to adopt OI.
The adaptive-innovative cognitive styles of male and female project managers: Some implications for the management of change	Tullet, 1995	Cognitive Styles on Change management	Entrepreneur Role	KAI (Adaptation-Innovation)	UK – various industries	Quantitative research approach	Managers leading change projects tend to have a more innovative cognitive style than their counterparts, with females showing higher innovation than males.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Role of Cognitive Style of Manager in the Development of Tourism Companies' Dynamic Capabilities	Krupskyi & Grynko, 2018	Cognitive Styles on Organisational adaptability	Entrepreneur Role	MBTI (ENTJ, INFJ)	Ukraine – Tourism companies	Quantitative research approach	Managers with ENTJ present solutions for organisations that need innovation, while INFJ managers are preferable for organisations that need transformation.
Middle Managers' Cognitive Styles, Capacity for Change, and Organizational Performance	Sukoco et.al., 2022	Cognitive Styles on Organisational adaptability	Entrepreneur Role	Cognitive Style Indicator (CoSI) (Knowing, Planning, Creating)	Indonesia – Public Organisation	Quantitative research approach	Managers with Creating styles are posited to positively impact an organisation's capacity for change, compared to planning and knowing styles managers.
The Pattern of Executive Professionals Thinking Styles in Relation to cognitive Styles and Metacognition Skills	Saini et.al., 2022	Cognitive Styles on Organisational adaptability	Entrepreneur Role	Cognitive-style inventory (Systematic & Intuitive)	India – Public & private companies	Quantitative research approach	Systematic managers handle tasks and problem-solving in a highly structured, logical, and rule-following manner. Intuitive excels in dynamic environments where quick and innovative decision-making
Owner-Manager Adaption-Innovation Preference and Employment Performance - A Comparison of Founders and Non-founders in the Irish Small Firm Sector	Walsh & Anderson, 1995	Cognitive Styles on Decision-Making Preferences	Entrepreneur Role	KAI (Adaptation-Innovation)	Ireland – Various industries	Quantitative research approach	Compared to non-entrepreneurs, who are more adaptive, the owner-manager shows more innovation in the decision-making approach and aligns with the classical entrepreneur profile.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Cognitive Style and the Management of Small and Medium-Sized Enterprises	Sadler-Smith, 2004	Cognitive Styles on Decision-Making Preferences	Entrepreneur Role	General Decision-Making Style (Rational & Intuitive)	USA – Various industries	Quantitative research approach	Managers with intuitive cognitive styles positively influence the financial and non-financial performance of the SME in a dynamic and uncertainty environment.
Cognitive misfit and firm growth in technology-oriented SMEs	Brigham et.al., 2010	Cognitive Styles on Decision-Making Preferences	Entrepreneur Role	Cognitive Style Index (Analytic-Intuitive)	USA – Tech Companies (SMEs)	Quantitative research approach	Intuitive managers are more inclined to promote business growth, even tolerating personal dissatisfaction from formalisation, while analytic managers potentially hinder growth by over-formalising their firms.
Exploring new product portfolio management decisions: The role of managers' dispositional traits	McNally et.al., 2009	Cognitive Styles on Decision-Making Preferences	Entrepreneur Role	Cognitive-style (High vs Low Analytic)	USA – Building material company	Mixed research approach	The study found that high-analytic cognitive style managers are associated with effectively managing the balance dimension in NPPM.
Antecedents and Consequences of Reflexivity in New Product Idea Screening	Hammedi et.al., 2011	Cognitive Styles on Decision-Making Preferences	Entrepreneur Role	Procedural rationality cognitive style	Europe – Tech services companies	Quantitative research approach	Mediated by reflexivity, managers with a higher tendency for procedural rationality promote systematic reflection to ensure the continual improvement of decision-making.
The impact of leaders' cognitive style and creativity on organizational problem-solving	Saha & Sharma, 2020	Cognitive Styles on Problem-Solving	Disturbance Handler Role	MBTI (SF, ST, NF, NT)	India – Various industries	Quantitative research approach	Managers with NF and NT cognitive types who have proactive creativity are suits for open problem-solving.
The relationship of thinking style and motivation features of sales and advertising managers	Belousova & Mochalova, 2010	Cognitive Styles on Problem-Solving	Disturbance Handler Role	Styles of thinking (Initiative, Critical, Managerial, Practical)	Russia – Various industries	Quantitative research approach	critical and practical managers excel in environments where outcomes are crucial, such as sales area, while initiatives and managerial types align with the environment where creative ideas and collective solutions are essential.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Linking linear/nonlinear thinking style balance and managerial ethical decision-making	Groves et.al., 2008	Cognitive Styles on Problem-Solving	Disturbance Handler Role	Linear, Nonlinear, Balance Thinking Styles	USA – Various industries	Quantitative research approach	Managers with a balanced cognitive style, which incorporates linear and nonlinear thinking, are willing to make ethical decisions compared to those with a predominantly linear or nonlinear thinking style.
Convergence in International Business Ethics. A Comparative Study of Ethical Philosophies, Thinking Style, and Ethical Decision-Making Between US and Korean Managers	Paik et.al., 2019	Cognitive Styles on Problem-Solving	Disturbance Handler Role	Linear, Nonlinear, Balance Thinking Styles	Korea – Various industries	Quantitative research approach	Different from the previous study, the intervention of training and integration into the global ethical standard influence managerial ethical decision-making more than thinking styles.
To behave or not to behave ethically: A question of style?	Berisha et.al., 2020	Cognitive Styles on Problem Solving	Disturbance Handler Role	General Decision-Making Style (Rational, Intuitive, Dependent, Avoidant, Spontaneous)	Kosovo – Various industries	Quantitative research approach	Managers with rational thinking styles are found to behave more ethically. Further, even though associated with impulsivity, the spontaneous style also shows ethical behaviour driven by instinctive moral actions.
The Effect of Personality Type on Choice Made in Strategic Decision Situations	Stumpf & Dunbar, 1991	Cognitive Styles on Strategic Decision	Disturbance Handler Role	MBTI (ST, SF, NT, NF)	USA – Various industries	Quantitative research approach	ST-type managers tend to show selective bias by ignoring new information that doesn't align with their current frame of reference. NT managers tend to look for patterns in information and focus more on positive elements. ST managers show a tendency towards social acceptance and act to gain social approval. NF managers show reasoning analogies bias, possibly leading to oversimplified reasoning.

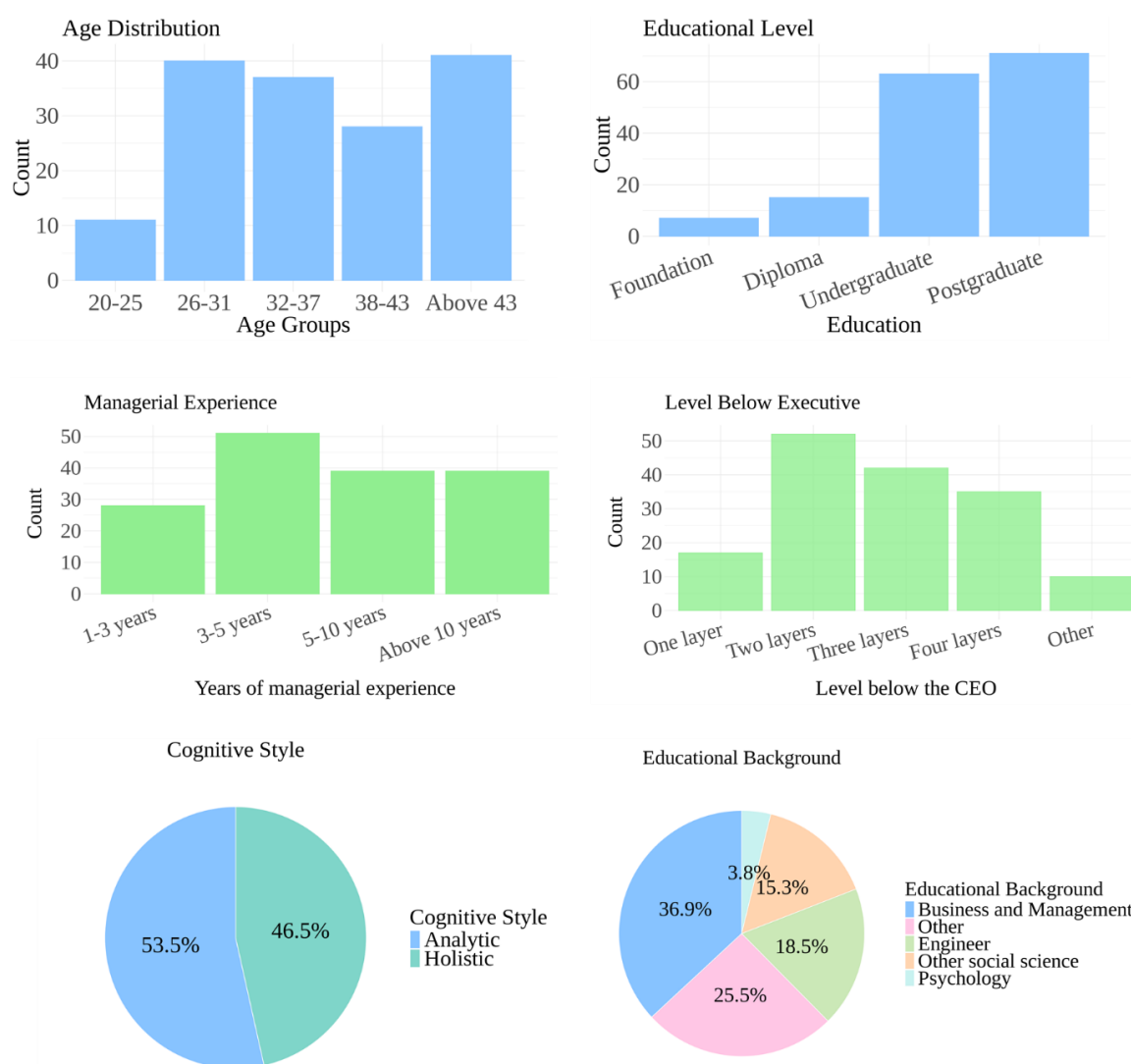
Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Reducing biases of decision-making processes in complex organizations	Cristofaro, 2017	Cognitive Styles on Strategic Decision	Disturbance Handler Role	MBTI (ESTP, ESTJ)	Italy – Com Tech company	Mixed method approach.	Even though a balanced composition of cognitive styles can reduce biases, particular styles favour specific decision-making approaches. Managers with ESTP style tend to be action-oriented yet prone to overconfidence and rapid decision; ESTJ tends to be structured yet overly controlling.
Cognitive biases and organizational correctives: Do both disease and cure depend on the politics of the beholder?	Tetlock, 2000	Cognitive Styles on Strategic Decision	Disturbance Handler Role	Need for closure (Hi-Low)	USA – Various industries	Quantitative research approach	Managers with a high preference for cognitive closure adopt direct and decisive methods to avoid ambiguity and complexity in their decision-making processes. These managers, driven by conservative ideologies, rely on straightforward, rule-based strategies.
The effect of cognitive style and sponsorship bias on the treatment of opportunity costs in resource allocation decisions	Chenhall & Morris, 1991	Cognitive Styles on Resources allocation	Resources allocator Role	Jungian typology (Sensation vs Intuition)	Australia – Various industries	Quantitative research approach	Managers with a sensation cognitive style tend to focus on details, including past expenditures on assets tied to the project. On the other hand, intuitive managers often show flexibility and are more likely to perceive alternatives.
Market situation interpretation and response: The role of cognitive style, organizational culture, and information use	White et.al., 2003	Cognitive Styles on Resources allocation	Resources allocator Role	Keirsey Temperament Sorter (Extrovert-Introvert, Judging-Perceiving, Sensing-Intuiting, Thinking-Feeling)	USA – General medical surgical hospitals	Mixed method approach	Extroverted, judging, intuiting and thinking managers perceive a market situation as controllable. On the other hand, managers with introverted, perceiving, sensing, and feeling cognitive styles tend to postpone decisions as they are cautious about missing important information, making them perceive a situation as less controllable.

Title	Author(s) & Year	Cluster	Managerial Role	Cognitive Styles	Geographical & Industry	Method	The Influence of Cognitive Styles on Managerial Role
Comparing public and private sector decision-making practices	Nutt, 2006	Cognitive Styles on Resources allocation	Resources allocator Role	Jungian concepts. (ST, NT, SF, NF)	USA – Various industries	Quantitative research approach	Managers with ST and SF types are more suited to the public sector. In contrast, NT and NF-type managers tend to be more speculative, perceive risks, and suit them in the private sector.
Exploring risk perception and degree of internationalization of Brazilian Small-and-Medium enterprises	Bonfim et.al., 2018	Cognitive Styles on Resources allocation	Resources allocator Role	Deliberative & Intuitive cognitive styles	Brazil – Various industries (SMEs)	Quantitative research approach	Managers with a deliberative cognitive style engage in detailed analysis and systematic reasoning and perceive higher levels of risk in international operations. Intuitive managers make faster decisions based on past experiences, instincts, and 'gut-feeling', thus leading to bolder internationalisation strategies.
Intuition in Investment Decision-Making Across Cultures	Wu, 2022	Cognitive Styles on Resources allocation	Resources allocator Role	Cognitive Style Index (Analytic-Intuitive)	UK (western), Hongkong (eastern) – Investment industries	Mixed method approach	Easter 'holistic' managers exhibit analytical decisions due to advanced economic education. In contrast, Western 'analytic' managers tend to make intuitive decisions due to dynamics and a less structured environment.
Thinking styles and financial characteristics of selected Canadian farm managers	Howard et.al., 1997	Cognitive Styles on Resources allocation	Resources allocator Role	Life Styles Inventory (Task Oriented, Security Oriented, Aggressive/Defensive, Passive/Defensive, Dependent Style, Oppositional Style)	Canada – Farming	Quantitative research approach	Farm managers' thinking styles influence their financial characteristics and management methods. Farmers tend to be more task- and security-oriented, aggressive/defensive and passive/defensive styles. This type hinders their financial success, which requires interpersonal skills.

9.7 Appendix G Demographic Distribution Phase 1 and 2

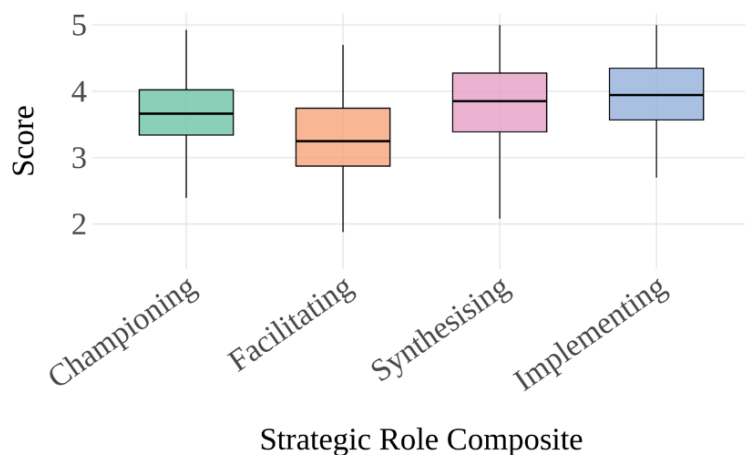
This appendix presents the full demographic profile of phase 1 participants and frequency distributions for the study variables

Figure 29 Distribution of Demographic Variables, Phase 1 Participants



Note. Distribution of participants by age, educational level, managerial experience, organisational level below the executive, disciplinary background, and cognitive style classification.

Figure 30 Distribution of the Four Strategic Roles of Middle Managers



Note. Boxplots of composite scores for the four strategic roles enactment measures on five-point Likert scales represent interquartile ranges, with median values indicated by central lines.

Figure 31 *Frequency in Experience of Role Conflict among Middle Managers*



Note. The distribution of composite role conflict scores was measured on a five-point Likert scale.

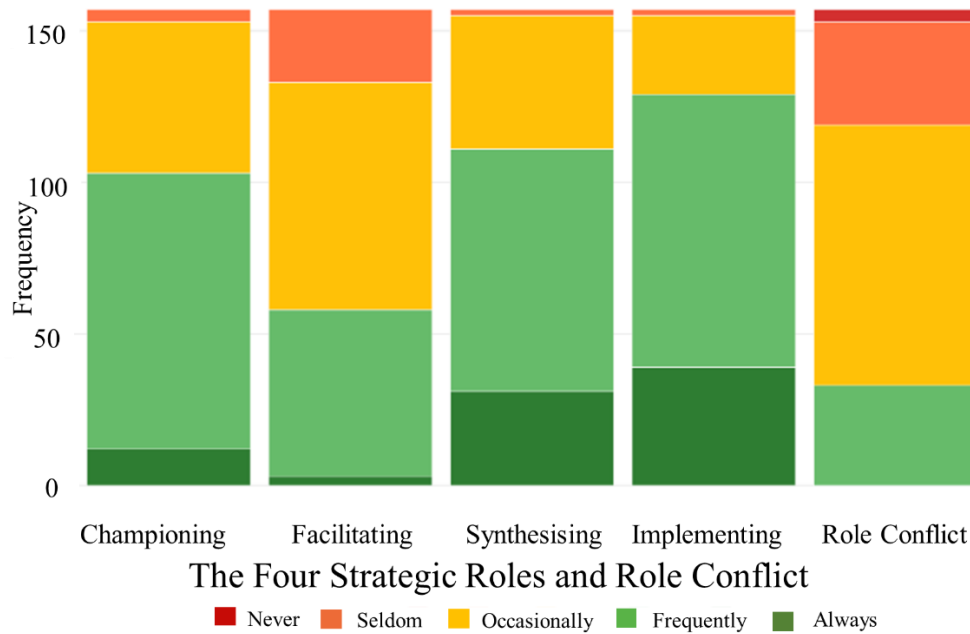
Frequency analyses for each variable were conducted to examine the pattern of participants' survey responses. Middle managers mostly enact the Implementing and Synthesising roles. Items relating to monitoring activities, translating objectives into plans, gathering information, and communicating implications received the highest score. This result shows MMs as

operational integrators who bridge strategy and execution, and affirms that the day-to-day managerial role relies on translating strategy into coordinated action (Jansen Van Rensburg et al., 2014; Salih & Doll, 2013). Even the least enacted item in the Implementing role still accounted for higher enactment. These results confirm that the Implementing deliberate strategy is a classical administrative role of MMs (Psychogios et al., 2008). The Synthesising role was also the most enacted, as MMs spend cognitive effort scanning, evaluating, and combining information from multiple sources. These patterns show that MMs, as knowledge engineers, have a high capacity to gather information from internal and external organisations (AL-Hakim & Hassan, 2011; Nonaka, 1994).

Meanwhile, the Championing role showed moderate-to-high enactment, with MMs searching for opportunities and evaluating proposals, yet being more cautious when defending past initiatives, reflecting that while MMs are willing to support new ideas, there appears to be some hesitance to challenge decisions when legitimacy or political risk is involved (Rouleau & Balogun, 2011). Facilitating was the most inconsistent role at the item level of responses. Some behaviours, such as encouraging informal dialogue and resource sharing, were common, while risk-taking behaviours, such as relaxing rules or initiating unofficial projects, occurred less frequently. This finding suggests that while certain facilitating adaptations are well-supported, others involving informal authority and risk-taking are less frequently enacted, due to the need for trust from upper levels to manage unexpected failures (Mantere, 2008b; Vaz et al., 2022). Finally, role conflict was moderate, with tension emerging primarily when MMs interacted with groups operating under different norms or demands. This result is consistent with role conflict as a product of incompatible expectations from multiple senders and the structural ambiguity, positioning MMs to reconcile competing directions from different groups within

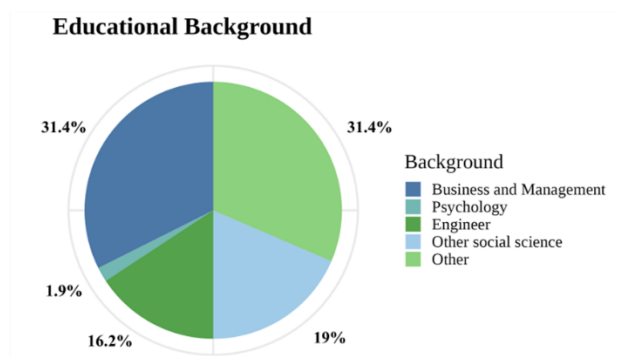
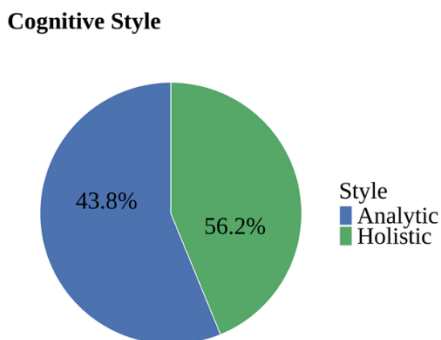
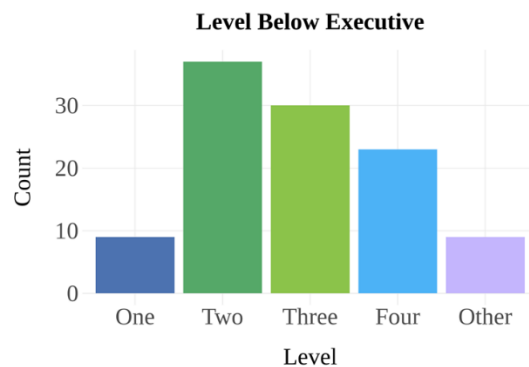
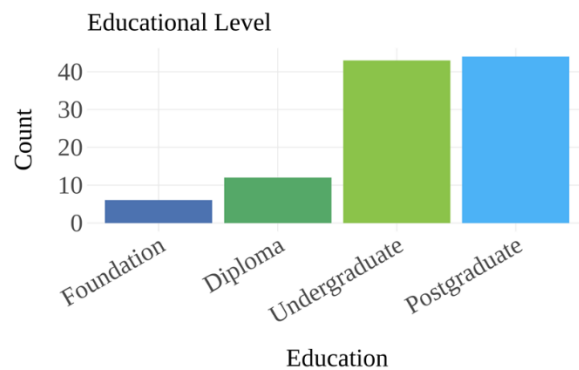
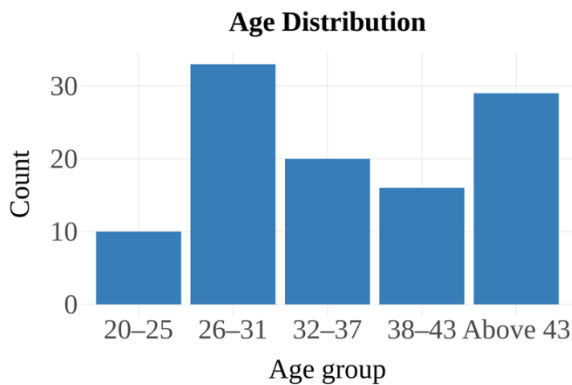
organisations (Currie & Procter, 2005). Figure 32 presents bar charts visualising the frequency distributions across Likert scale categories for each variable: strategic roles and role conflict.

Figure 32 *Frequency of Distribution of Strategic Roles and Role Conflict*



Note. Colour segments indicate the proportion of respondents reporting each frequency level.

Figure 33 *Distribution of Demographic Variables Phase 2*



The average score for strategic role enactment in Phase 2, similar to Phase 1, shows that MMs tended to execute strategic objectives and integrate information flows, followed by Synthesising, Championing, and Facilitating. The four role composites are presented in Figure 26. Role conflict was rated at a moderate level (Figure 27), consistent with theoretical expectations of the structural ambiguity of the middle management position, in which MMs must reconcile upward and downward pressure while managing role demands that are often misaligned.

Figure 34 *Distribution of the four strategic roles of middle managers*

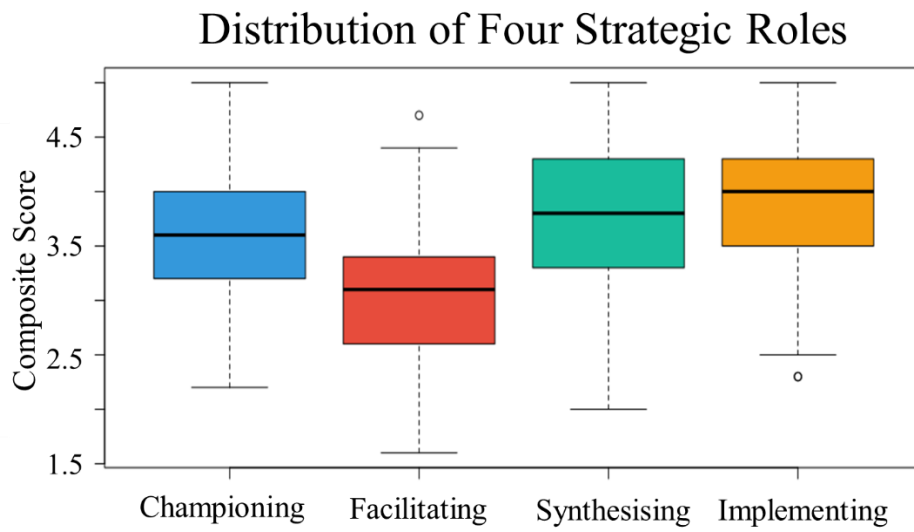
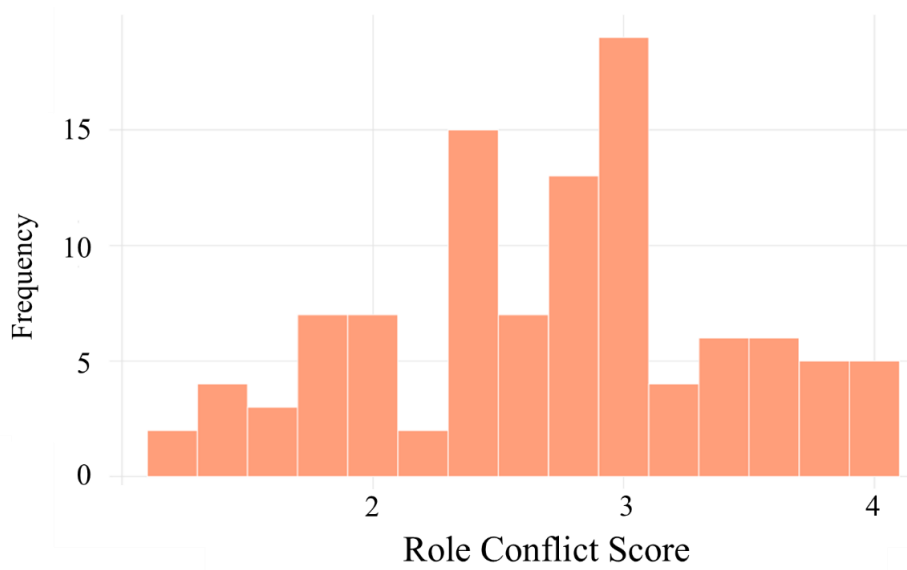
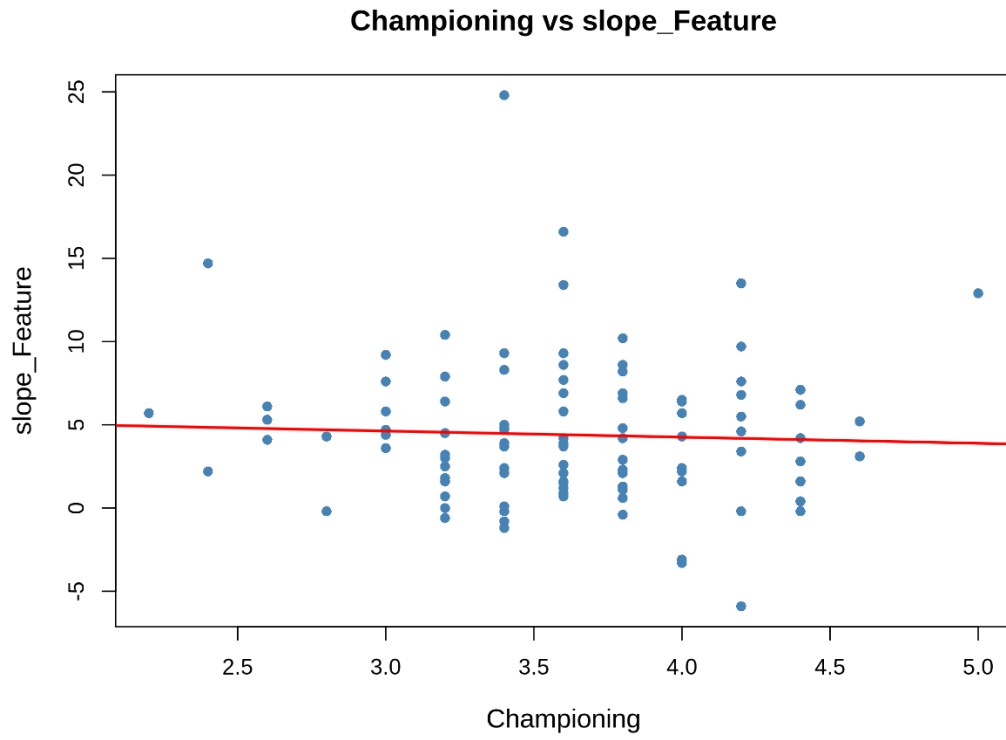
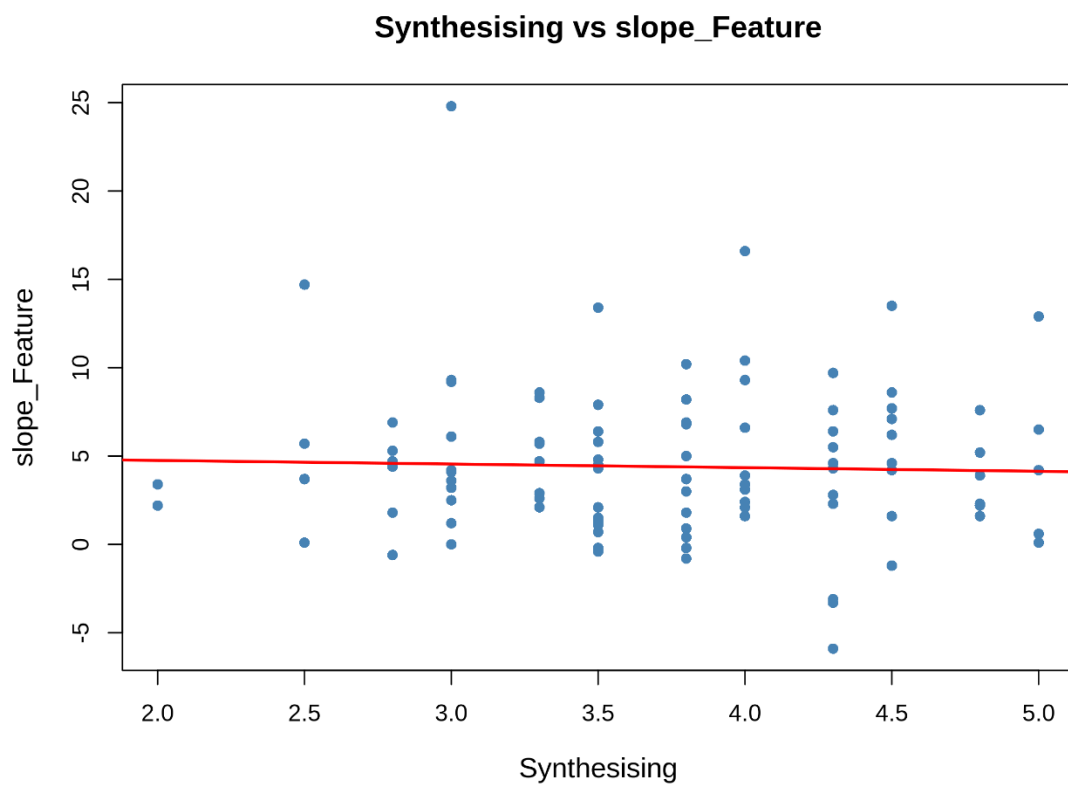
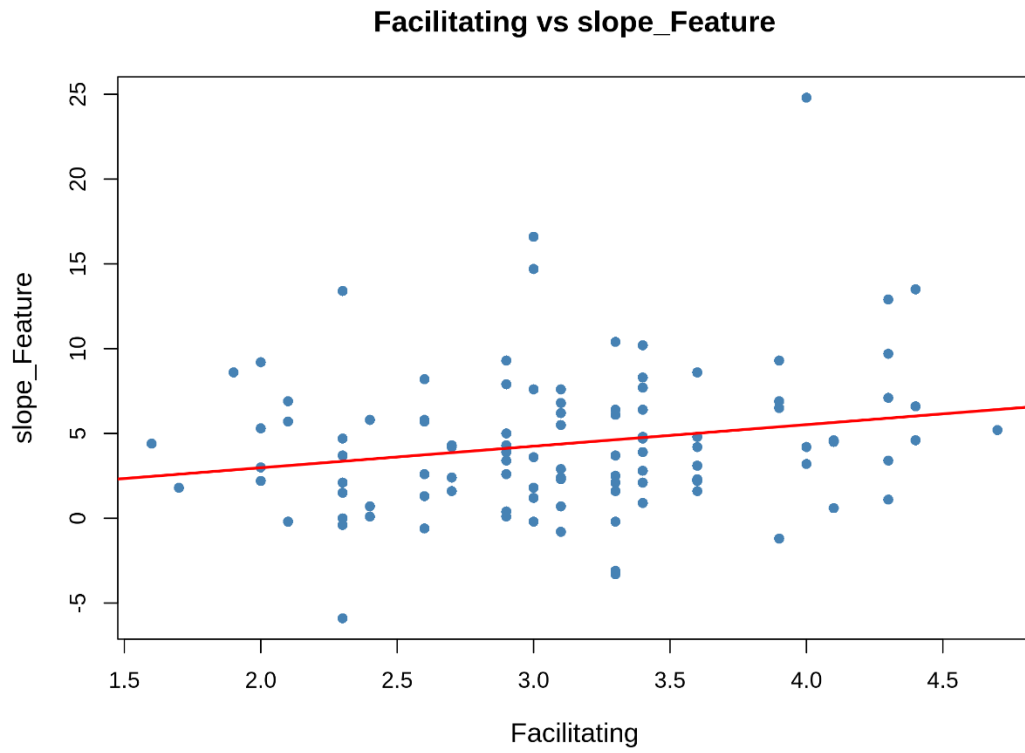


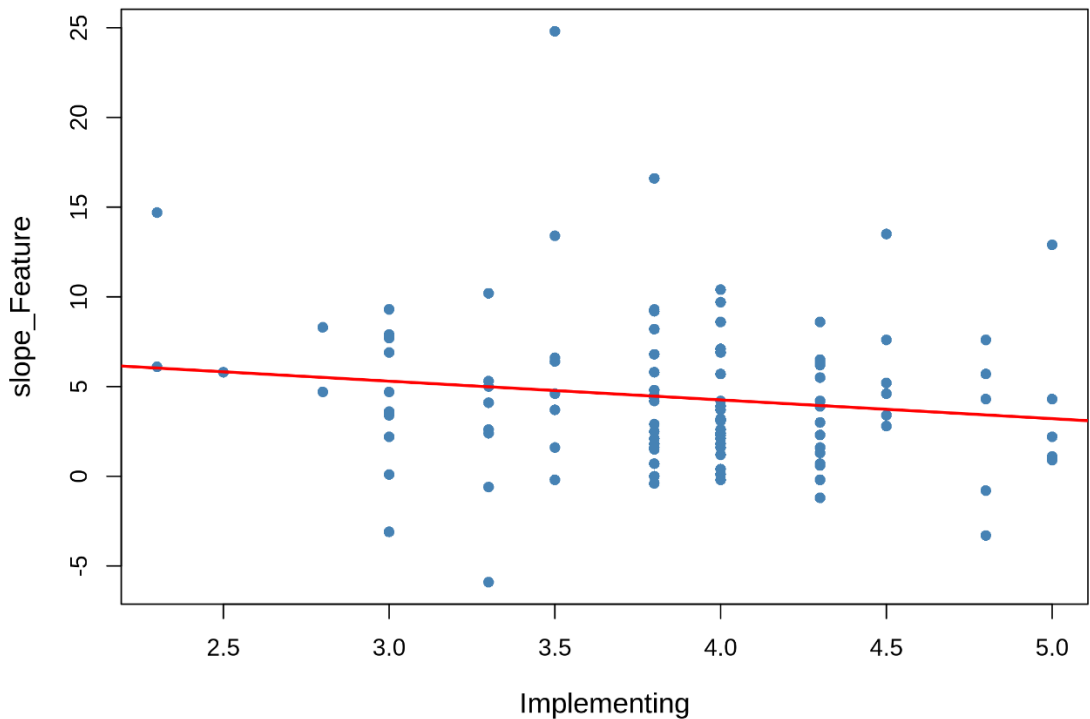
Figure 35 *Frequency in the experience of role conflict among middle managers*



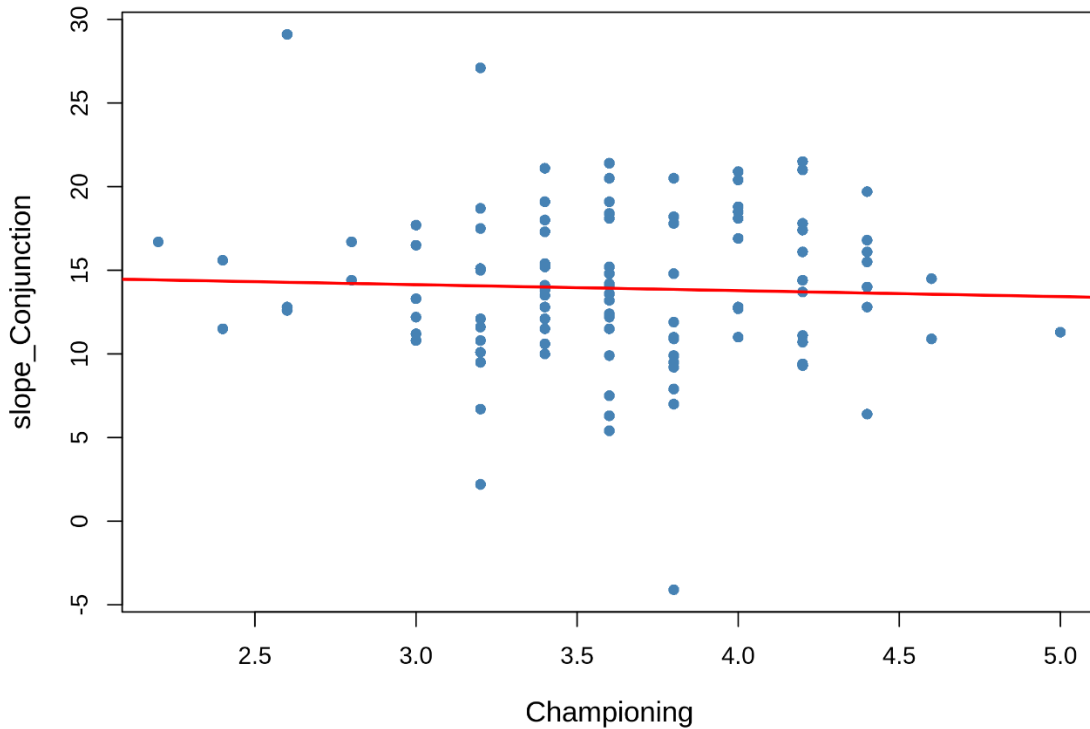
9.8 **Appendix H** *Scatterplots of Strategic Role on Attention*



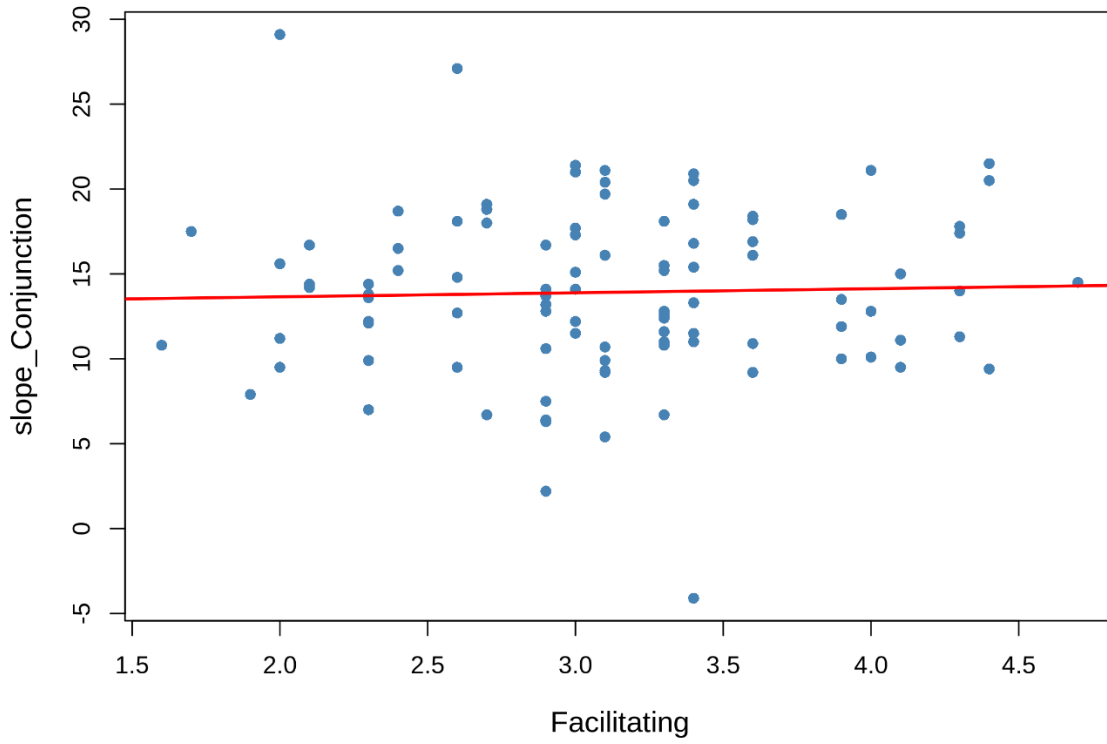
Implementing vs slope_Feature



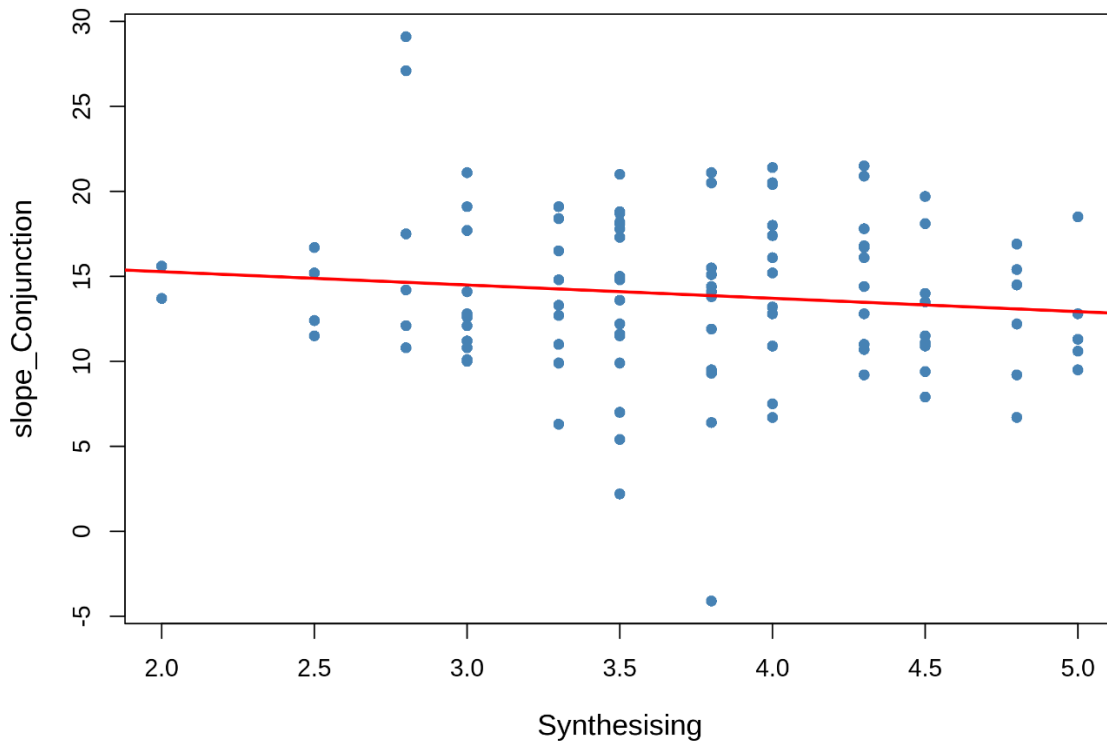
Championing vs slope_Conjunction



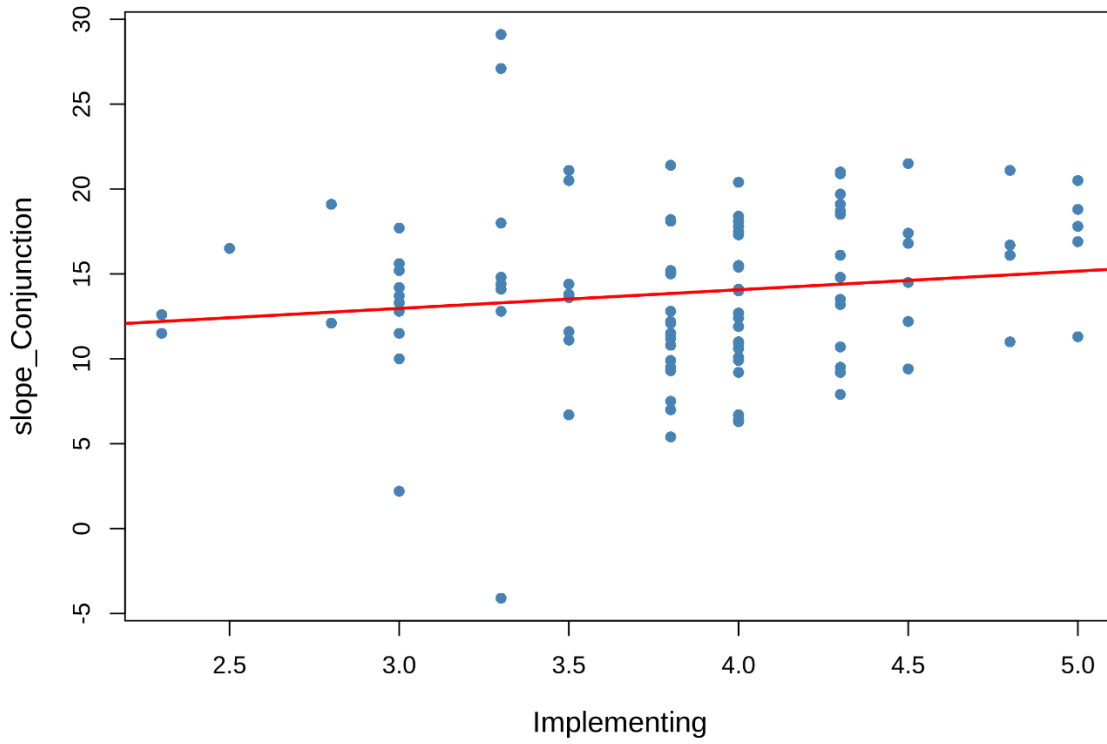
Facilitating vs slope_Conjunction



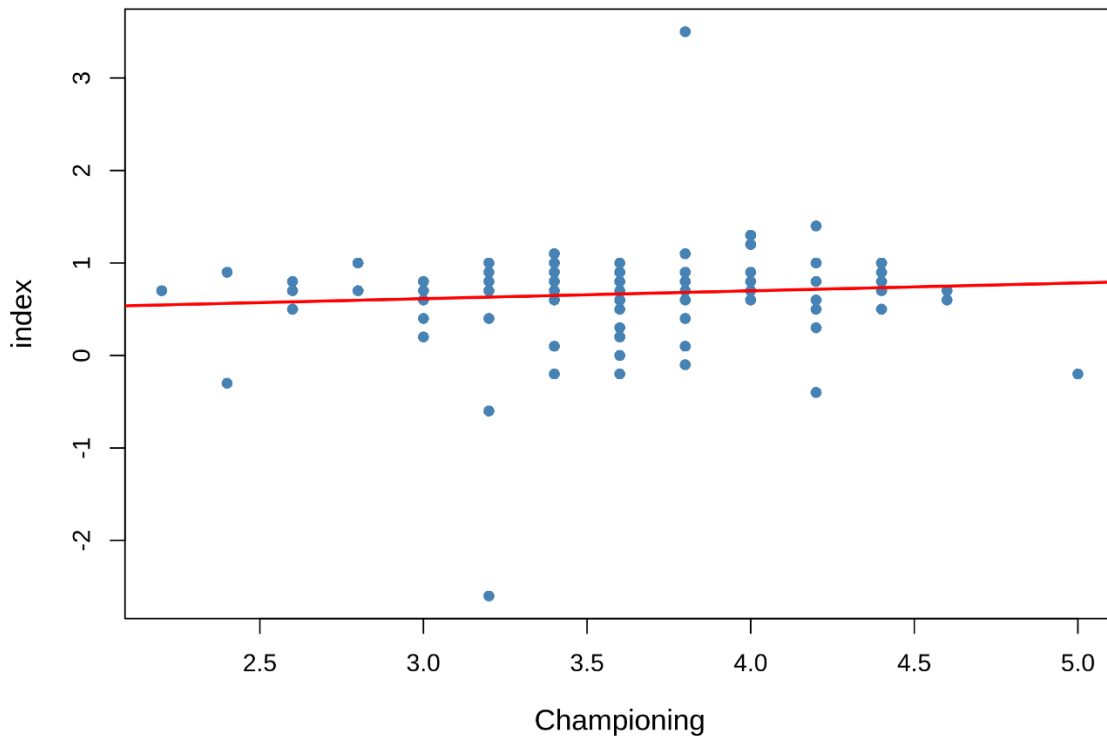
Synthesising vs slope_Conjunction



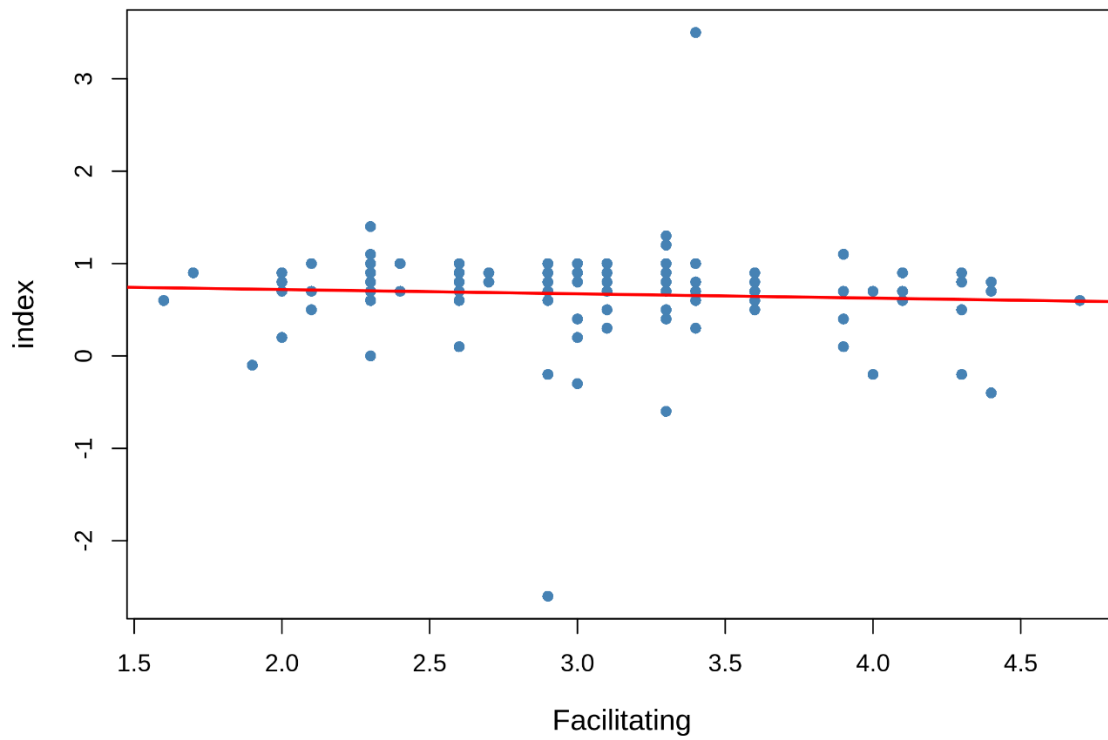
Implementing vs slope_Conjunction



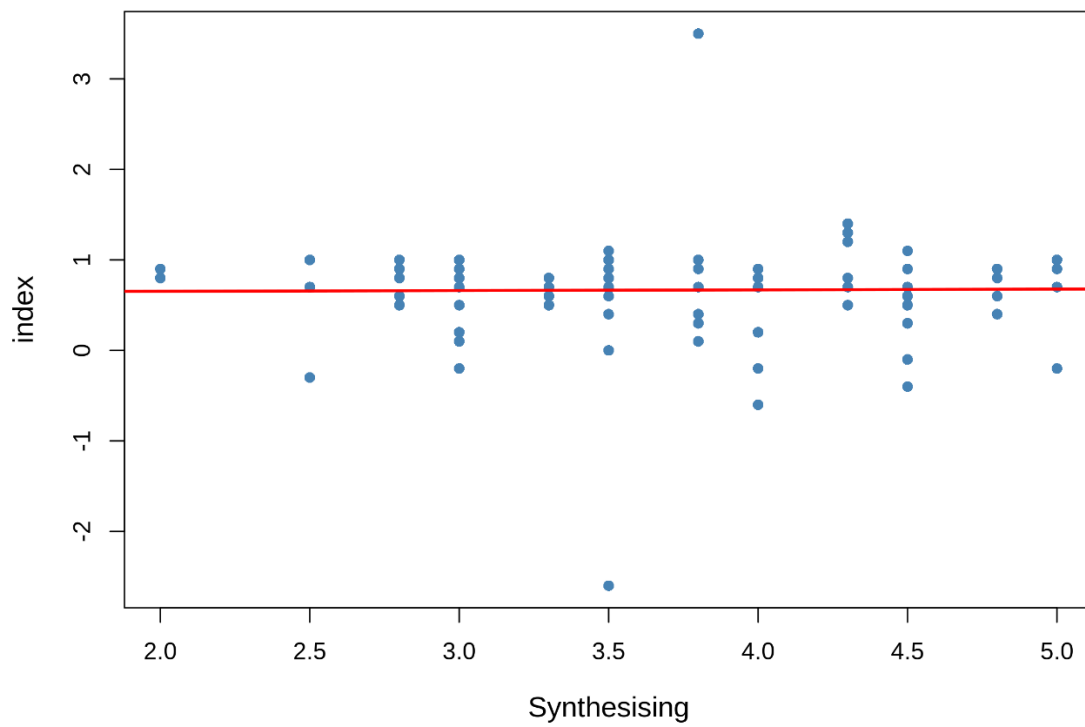
Championing vs index



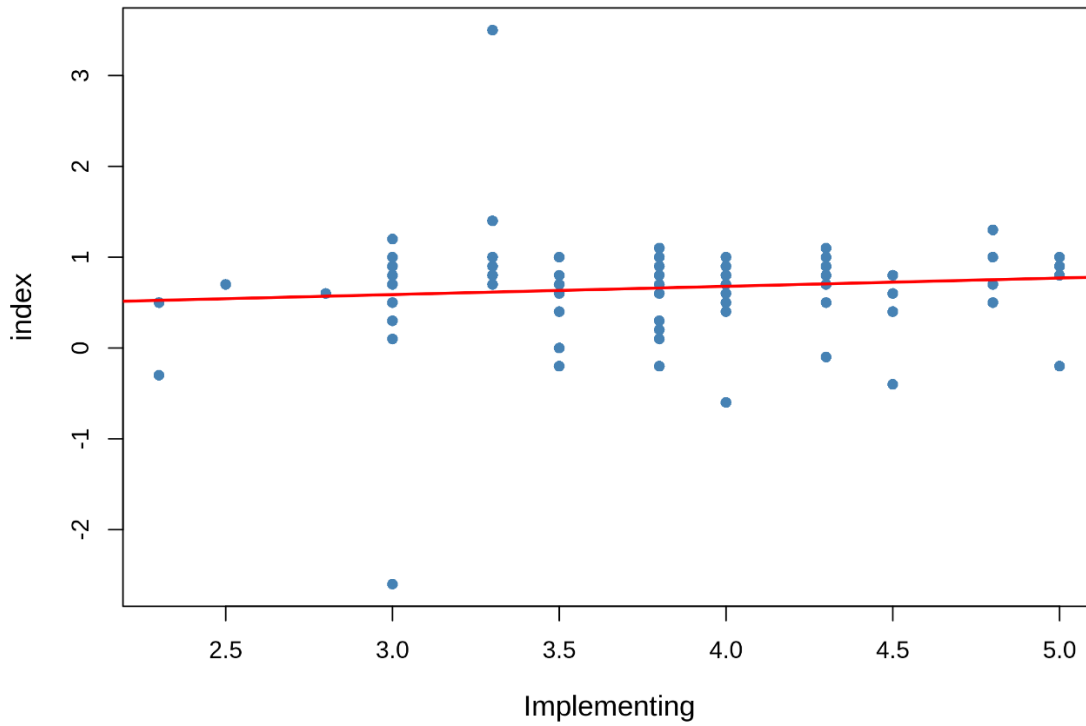
Facilitating vs index



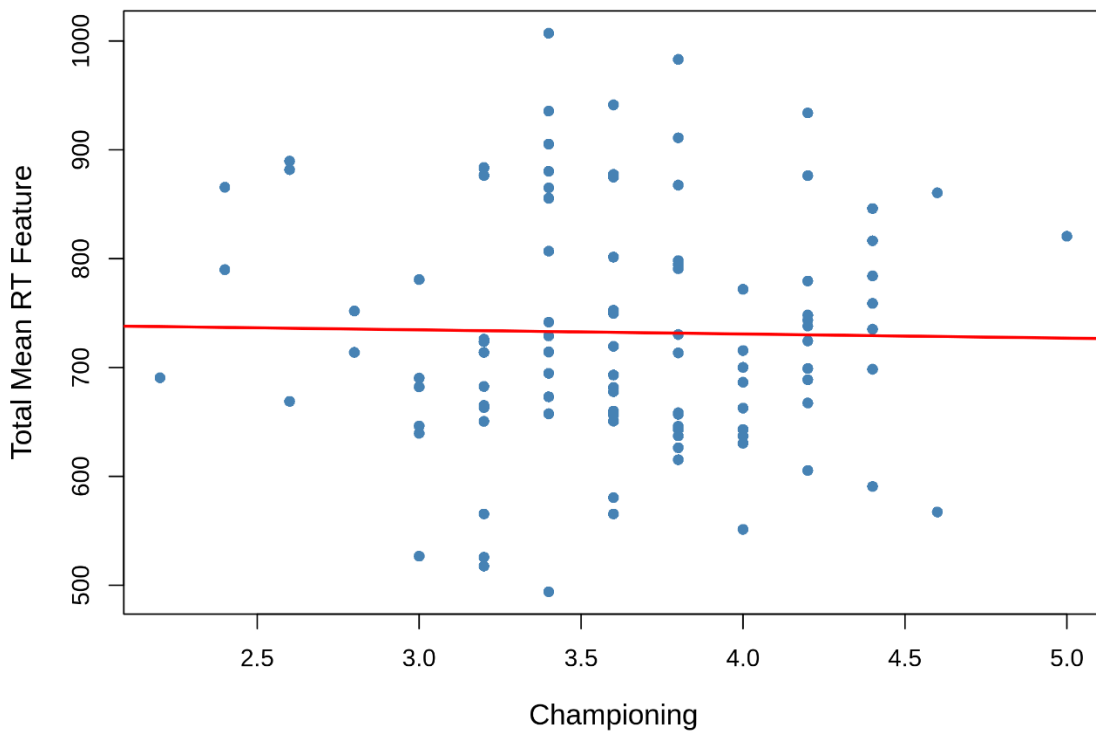
Synthesising vs index



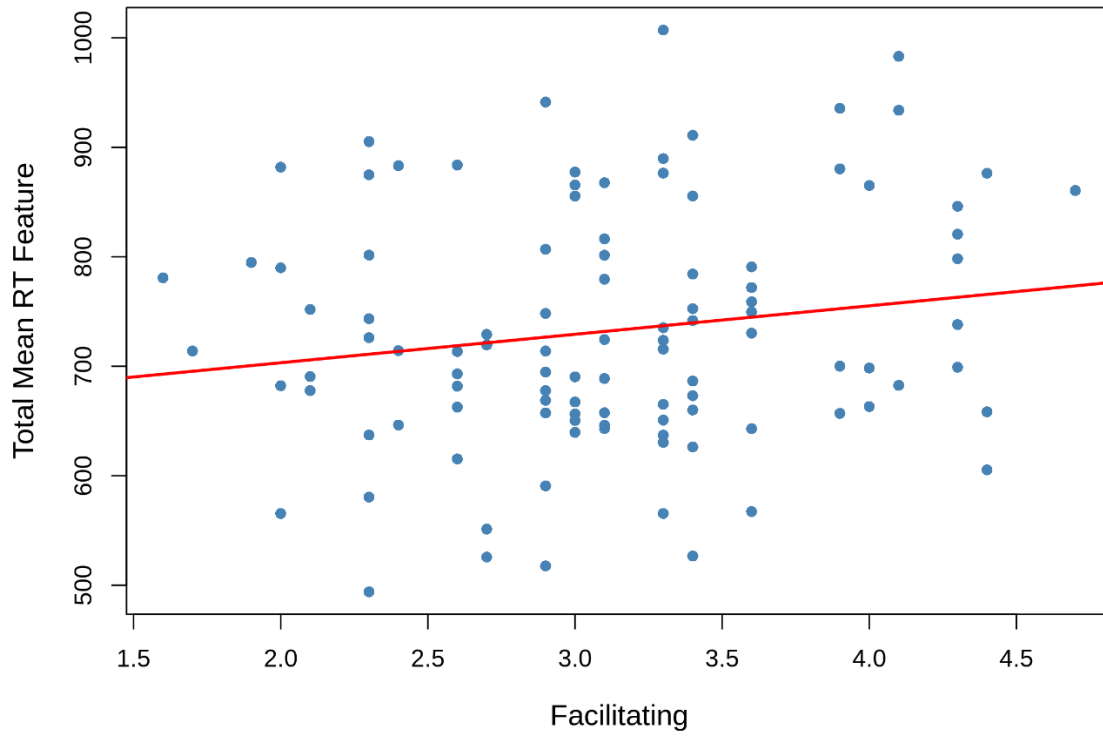
Implementing vs index



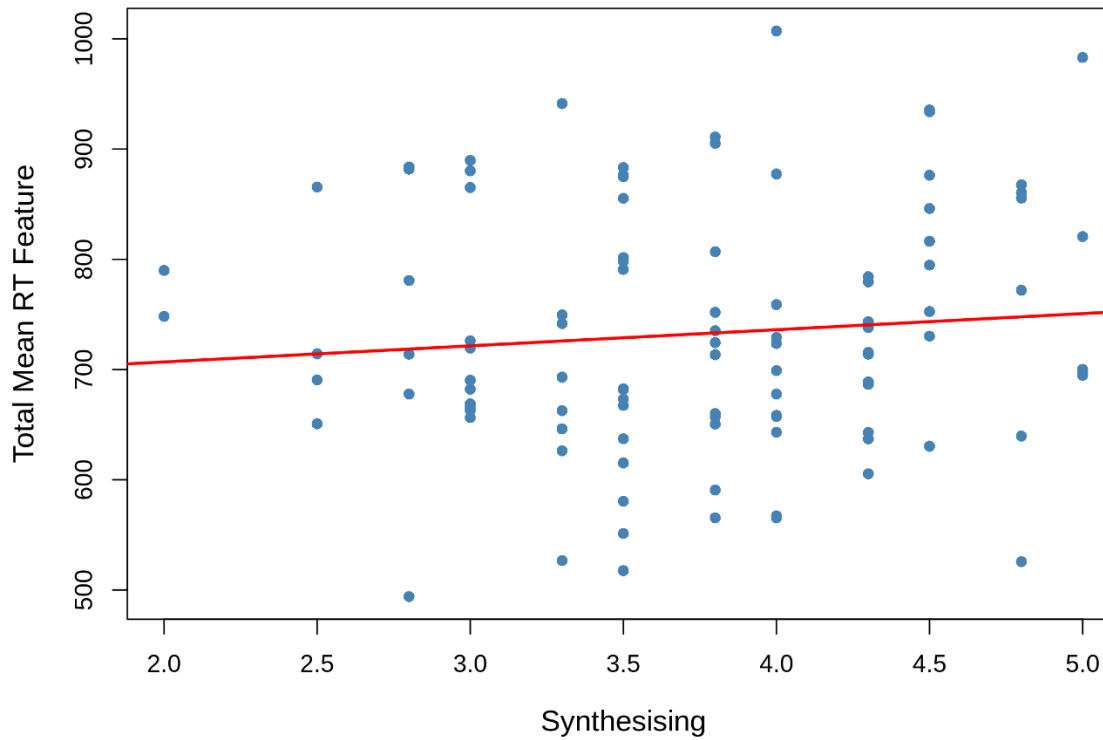
Championing vs Total Mean RT Feature



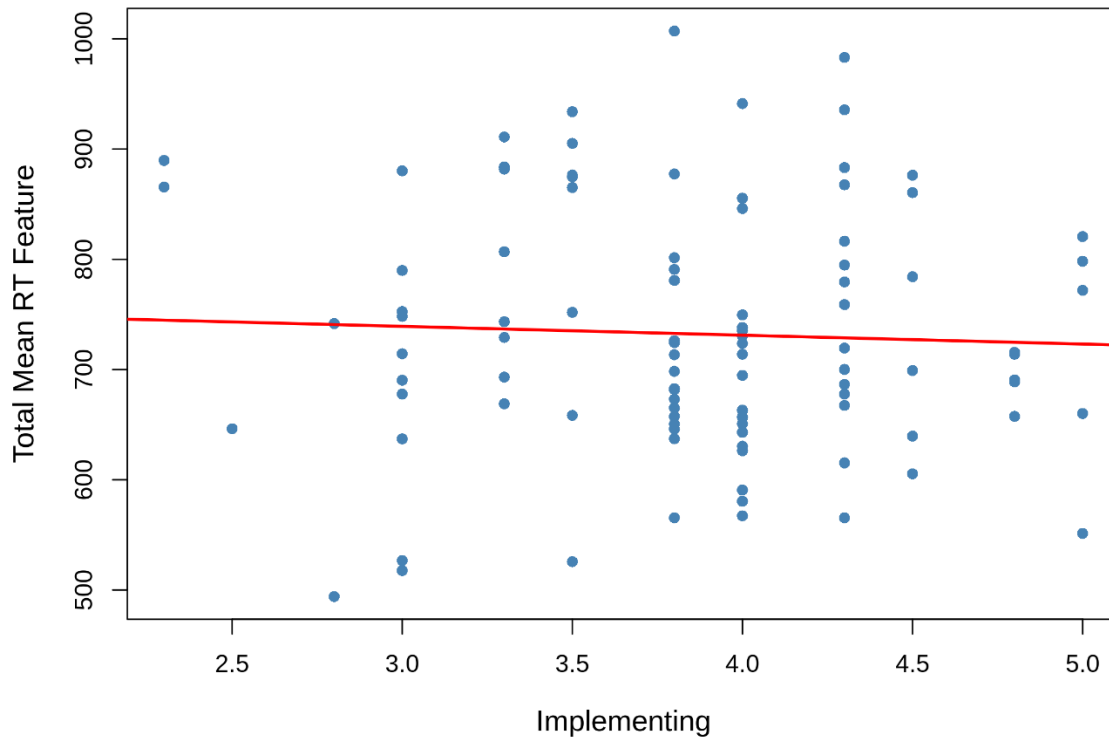
Facilitating vs Total Mean RT Feature



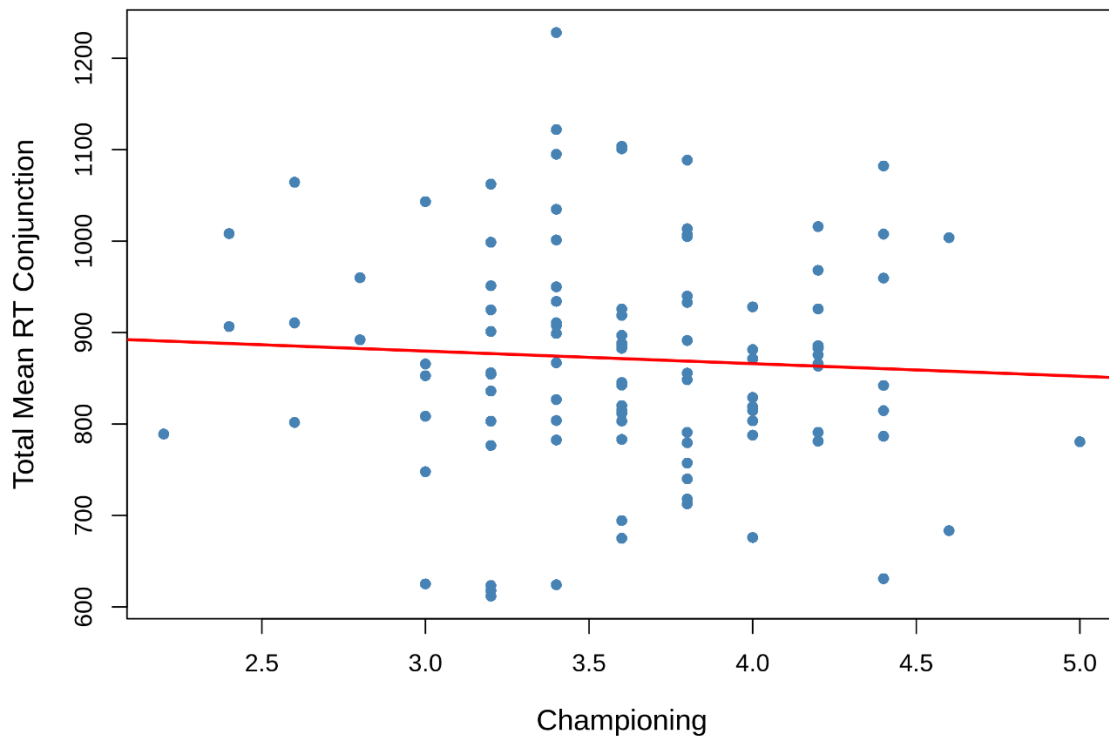
Synthesising vs Total Mean RT Feature

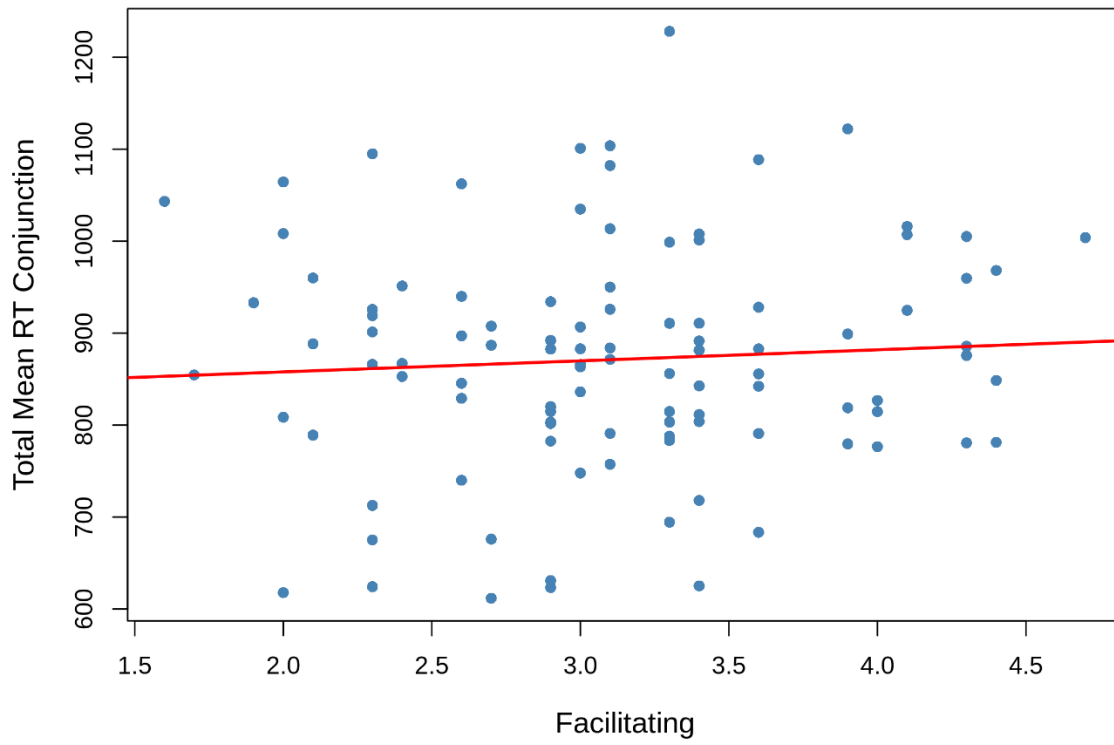
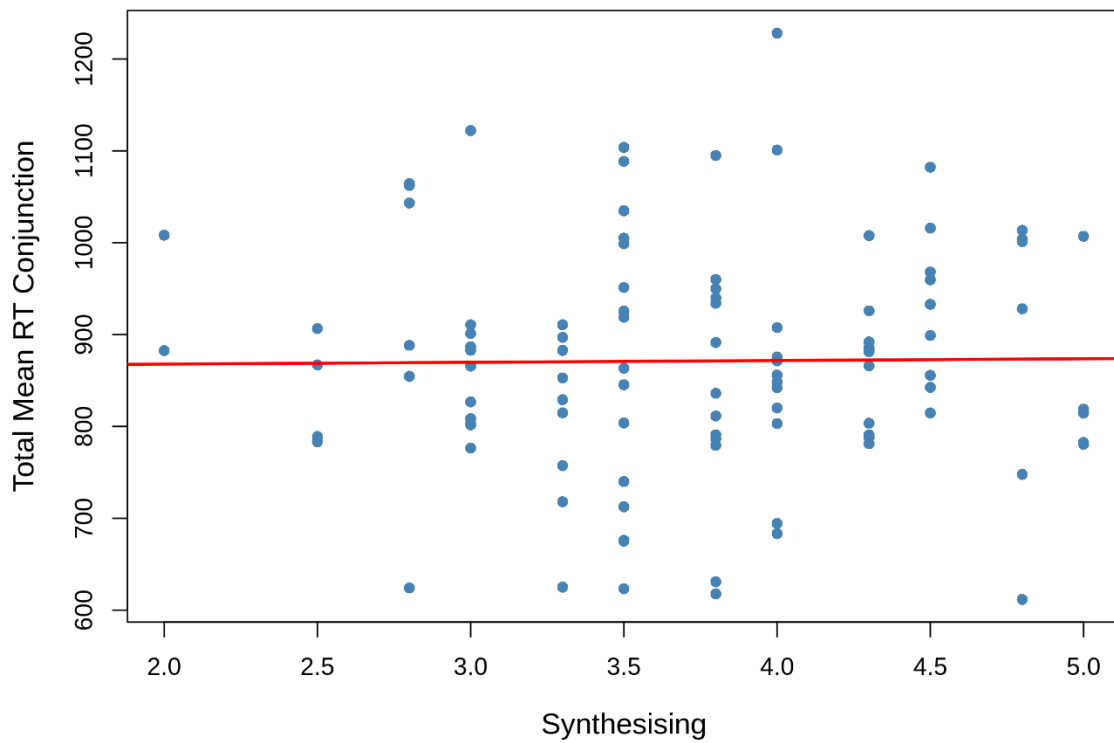


Implementing vs Total Mean RT Feature



Championing vs Total Mean RT Conjunction



Facilitating vs Total Mean RT Conjunction**Synthesising vs Total Mean RT Conjunction**

Implementing vs Total Mean RT Conjunction

