Critically analysing the effects of locus of control in the commercial forensic interview

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With love,

THORISHO KGOMO

2025

DECLARATION

I, THORISHO KGOMO, hereby declare that this dissertation titled: *Critically analysing the effects of locus of control in the commercial forensic interview* is my own work.



Signed

15/11/2025

Date

PREFACE

This study follows an article format. Two separate articles (chapters 2 and 3) were compiled and submitted to journals.

The details, at the time of submission, are as follows:

- Article 1 was submitted to the Journal of Financial Crime.
- Article 2 was submitted to the Journal of Economic Criminology.

The articles included in this dissertation were co-authored by the study's supervisor (Dr Constant Van Graan) and co-supervisor (Dr Michelle Bach), who contributed research guidance and support. The supervisor is affiliated with the Faculty of Economic and Management Sciences, specifically within the School of Accounting, and the co-supervisor is affiliated with the Faculty of Health Sciences. These faculties are affiliated with the North-West University. The co-authors are informed that both articles constitute integral parts of this dissertation and are submitted to fulfil the requirements for the degree of Master of Commerce in Forensic Accountancy.

ABSTRACT

Global financial systems are constantly evolving and are significantly affected by economic crime. This necessitates the prevention, detection, and investigation of financial schemes by professionals such as commercial forensic practitioners (FPs). Functioning in a transdisciplinary field (i.e. an integration of law, accounting, human behaviour, and information technology [IT]), FPs employ various skills and tools to gather relevant and admissible evidence for legal purposes. These tools include investigative interviews such as commercial forensic interviews (CFIs).

Moreover, the person-centred approach (PCA), or an approach that recognises and highlights the importance of individuals' subjective experiences and circumstances, is fundamental to South African CFIs, hence its imperativeness in the implementation of the Interactional Pattern Analysis (IPA). From this foundation, this study investigates and expands into the effectiveness of the integration of essential psychological components (i.e. self-regulation, motivation, and locus of control) into the IPA. While extensive research on each of these components exists, research surrounding their contribution during PCA-based CFIs is inadequate.

Therefore, using two articles, recent research relating to these components is uncovered. Furthermore, a guideline on how the above psychological factors can be effective and useful to FPs during CFIs is provided. This equips FPs to conduct CFIs in accordance with legal requirements, thus combating economic crime. Additionally, findings reveal that, when applied by FPs during CFIs, self-regulation and motivation, as key concepts of locus of control, optimise CFI outcomes.

KEYWORDS: Commercial Forensic Interview; Commercial Forensic Practitioner; Economic crime; Emotions; External locus of control; Extrinsic motivation; Internal locus of control; Intrinsic motivation; Locus of control; Motivation; Self-regulation

LIST OF ABBREVIATIONS

CFI	Commercial Forensic Interview
CFP	Commercial Forensic Practitioner
ELOC	External locus of control
ILOC	Internal locus of control
IPA	Interactional Pattern Analysis
IT	Information technology
FP	Forensic Practitioners
LCS	Locus of Control Scale
LOC	Locus of control

TABLE OF CONTENTS

ACKNOWLEDGEMENTS ..... **I**

DECLARATION ..... **III**

PREFACE ..... **IV**

ABSTRACT ..... **V**

LIST OF ABBREVIATIONS ..... **VI**

CHAPTER 1 PURPOSE, SCOPE, AND PROGRESS OF STUDY **1**

1.1 Introduction and background **1**

1.2 The relationship between motivation, self-regulation, and locus of control **2**

1.3 The interface between the person-centred approach and locus of control **3**

1.4 Problem statement **5**

1.5 Research objectives **6**

1.5.1 Main Objective 6

1.5.2 Secondary Objectives 6

1.6 Research methodology **6**

1.6.1 Scope of work 9

1.7 Ethical considerations **9**

1.8 Chapter overview **10**

1.9 Conclusion **10**

CHAPTER 2 ARTICLE 1 ..... **11**

CHAPTER 3 ARTICLE 2 ..... **45**

CHAPTER 4 CONCLUSION **65**

4.1 Introduction **65**

4.2 Conclusion on objectives **65**

4.2.1 Conclusion on primary objective 65

4.2.2 Conclusion on the secondary objective 1 66

4.2.3 Conclusion on the secondary objective 2 67

4.3 Recommendations **67**

4.4 Limitations **68**

4.5 Overall conclusion **68**

REFERENCES (CHAPTER 1) **69**

APPENDIX A: PROOF OF LANGUAGE EDITING **74**

APPENDIX B: PROOF OF ARTICLE SUBMISSIONS **75**

APPENDIX C: ARTICLE 1 AUTHOR GUIDELINES **77**

APPENDIX D: ARTICLE 2 AUTHOR GUIDELINES. **90**

LIST OF TABLES

Table 1-1: Interactional Pattern Analysis 3

Article 1

Table 1: Components of emotional intelligence 17

Table 2: Locus of control scale 29

Article 2

Table 1: Application and effectiveness of psychological pillars 57

LIST OF FIGURES

Article 1

Figure 1: PRISMA diagram 15

Figure 2: Maslow's hierarchy of needs 20

Figure 3: McClelland's achievement motivation theory 21

Figure 4: Cognitive model 23

Figure 5: Social cognitive theory 24

Figure 6: Self-determination theory 25

Article 2

Figure 1: PRISMA diagram 49

CHAPTER 1 PURPOSE, SCOPE, AND PROGRESS OF STUDY

1.1 Introduction and background

Psychology plays a significant role in the world of a commercial forensic practitioner (FP) (Capraș & Achim, 2023). Operating in a transdisciplinary environment—that is, relating to more than one branch of knowledge and areas of study—the FP needs to exhibit a variety of skills, including law, accounting, investigation, information technology (IT), and knowledge of human behaviour to detect, investigate, and prevent economic crime (Wijerathna & Perera, 2020). The abovementioned skills and attributes equip FPs to, inter alia, conduct effective commercial forensic interviews (CFIs), which is the focus of this study. Knowledge of human behaviour is particularly important in the CFI context and supports the focus of this study because it helps facilitate FPs' conduct during CFIs (Dimitropoulos & Reading, 2025). Human behaviour refers to the manner of and reasons behind people's actions, decision-making, and patterns (Anderies & Folke, 2024). A CFI is a specific type of interview and entails gathering reliable and admissible information for legal purposes specifically associated with economic crime (Cleary & Warner, 2016). FPs use CFIs to obtain useful information from various parties to an investigation, such as suspects, witnesses, suppliers, and process owners (Van Graan *et al.*, 2023).

There are many theories and fields of knowledge used to understand human behaviour in the CFI context, including locus of control (LOC) (Spector, 1982), which falls under Interactional Pattern Analysis (IPA), and was developed by Julian B. Rotter in 1954. LOC can be integrated into, inter alia, educational, clinical, and health psychologies (Brooks, 2020). Spector (1982) refers to LOC as the extent to which individuals believe they can control events that affect them. It enables people to analyse whether their value is influenced internally or by their environment. There are two types of loci of control, namely, internal and external (Spector, 1982; Brooks, 2020; Samo, 2024). According to Lopez-Garrido (2023:1), "an individual's locus is conceptualized as internal (the ability to control their lives through actions) or external (their submission to external forces controlling their lives and destinies)". Internal locus of control (ILOC) is associated with individuals who are committed to making things 'happen', as opposed to external locus of control (ELOC), which is connected to passive individuals who believe that things happen to them (Lopez-Garrido, 2023). Moreover, ILOC fuels motivation (Caliendo *et al.*, 2024), which then encourages self-regulation (Werner & Milyavskaya, 2019). The relationship between motivation, self-regulation, and LOC is discussed next.

1.2 The relationship between motivation, self-regulation, and locus of control

Baumeister (2016:1) states that “motivation is wanting”. Motivation is the process of “wanting something specific to happen and wanting to do something specific to make it happen” (Baumeister 2016:2). It is an internal state of desiring change (i.e. change in self or the environment) (Baumeister, 2016; Reeve, 2024). This state is called a ‘drive’ (Bandhu *et al*., 2024), and, to this end, “motivation is the driving force behind human actions” (Cherry, 2023:1). Unlike LOC, which refers to internal and external, motivation refers to intrinsic (an internal drive that leads to certain behaviour, i.e. core values and interests) and extrinsic (external drives that lead to external rewards, i.e. employee evaluations, awards, and validation from others) (Ackerman, 2018). To achieve the desired change, self-regulation is essential (Werner & Milyavskaya, 2019). Psychology defines self-regulation as standards, systems, processes, and actions that help guide people’s behaviour to achieve specified goals (Inzlicht *et al*., 2021). Herndon (2024:10-15) defines self-regulation as “the ability to control your behaviour and manage your thoughts and emotions in appropriate ways” and gives a practical example that self-regulation is what makes people go to work even when they do not feel like it.

There is an interplay between motivation, self-regulation, and LOC (Werner & Milyavskaya, 2019; Caliendo *et al*., 2024). An individual’s level of motivation and ability to self-regulate are directly affected by their belief in controlling events that affect them (LOC) (Popovych *et al.*, 2024). Kamdron (2015) explains that LOC has a direct impact on motivation and that individuals with ILOC believe that their actions contribute to the outcome of their lives; hence, they are motivated to take initiative. Subsequently, self-regulation is fundamental in controlling the motivation required to initiate change (Panadero & Alonso-Tapia, 2014). To this end, FPs require self-awareness to self-regulate. Self-awareness is the ability to identify, recognise, and understand your emotions, strengths, and weaknesses, and how your actions affect others (Eurich, 2018). Therefore, the absence of self-awareness hinders the application of self-regulation.

LOC also links with humanistic psychology, which studies and emphasises that each human being is unique and should be treated as such (McLeod, 2023). Moreover, person-centred theory, which falls under humanistic psychology, refers to Carl Rogers’ (1959) therapeutic approach to intentionally focus on a person’s subjective view of the world (Yao & Kabir, 2023). Initially applied in a therapeutic context, it has since been extended to the commercial forensic investigative context (Van Graan *et al.*, 2023) in the form of the person-centred approach (PCA). Given to the use of the PCA as an interviewing technique in the CFI context in South Africa (Van Graan *et al.*, 2023), this study focuses on the PCA and its related forms, and on how LOC may influence them. The PCA and its relation to LOC are shown below.

1.3 The interface between the person-centred approach and locus of control

The PCA focuses on three main relational qualities—empathy, congruence (genuineness), and unconditional positive regard (Quinn, 2015). These relational qualities are applied in a CFI to create an optimal interpersonal context when interacting with a person, ensuring rapport and trust and enabling information to flow between the parties involved (McLeod, 2023). Drawing on PCA, IPA identifies specific relational qualities as observable behaviour (verbal and non-verbal) between the FP and the interviewee (i.e. the party being interviewed) (Vorster *et al*., 2013). IPA is a diagnostic psychotherapy tool that was developed by Charl Vorster (Du Plooy, 2019) and is used to understand human behaviour. It emphasises and analyses the difference between an actual occurrence and the individual's perception of the same event (Du Plooy, 2014). The IPA has 16 relational qualities:

Table 1-1: Interactional Pattern Analysis

IPA relational qualities	Description
Empathy (derived from PCA)	Empathy refers to the understanding and reflecting of the interviewee's feelings back to them to make them feel understood (Du Plooy, 2019).
Congruence (derived from PCA)	In the context of CFIs, congruence refers to the alignment of verbal and non-verbal communication by the FP (Sutanti, 2020).
Unconditional Positive Regard (derived from PCA)	Unconditional positive regard involves accepting the interviewee and their experiences without judgment.
Context	A clearly defined CFI purpose creates context. It is the interpersonal environment in which an interview occurs.
Presenting complaints	The interviewer is required to create a safe environment for the interviewee to express complaints about relationships and workplace challenges.
Defining the relationship between the interviewer and interviewee	The following three relational definitions exist: (a) complementary relationships allow one person to take the leadership role while the other follows; (b) parallel relationships in which control alternates between parties; and (c) symmetrical relationships occur when there is a constant struggle for control between the two parties. For CFIs, complementary relationships are more applicable and allow the FP to take the leadership role.
Clarity of self-presentation	Ensuring that the presentation of self (i.e. verbal and non-verbal cues) is clear and understood by the interviewee.

IPA relational qualities	Description
Emotional distance	Depending on the context, emotional distance can fluctuate during the interaction. Inappropriate closeness and extreme distance affect the interview. The interviewer (FP) is required to establish a safe distance that helps to elicit relevant information from the interviewee.
Confirmation	The interviewee is given confirmation of their importance to the CFI.
Effective expression of needs	When presented appropriately, an expressed need allows the interviewee to comprehend what is being asked of them.
Circular or linear approach to the CFI	Individuals who apply a linear approach only recognise their own point of view and ignore its influence on other people. Conversely, applying a circular approach allows one to accommodate the other party's viewpoints and perspectives during interactions. A circular approach is used to gather relevant information from the interviewee's perspective.
Degree of interpersonal flexibility/rigidity	This refers to the FP's ability to elicit appropriate behaviour from the interviewee.
Skill to meta-communicate	Meta-communication refers to communication about communication. This is necessary for conflict management during interactions.
Adequacy of problem-solving skills	Skilful problem-solving is fundamental in eliminating any problems that are detrimental to the process of obtaining relevant information for the investigation.
Potential to elicit rejection (hostility) or acceptance of the interviewee	The FP's interpersonal style can either elicit rejection or acceptance from the interviewee. It is imperative that the FP communicates in a manner that elicits acceptance for the success of the CFI.
Control	Psychology distinguishes between internal vs external locus of control. External locus of control is when an individual is guided by external factors, whereas individuals with an internal locus of control are influenced by internal factors such as personal aspirations.

Sources: (Vorster *et al*., 2013; Du Plooy, 2019; Van Graan *et al*., 2024)

Although the 16 relational qualities of the IPA have been studied in detail in their therapeutic context (Du Plooy, 2014, 2019; Vorster *et al*., 2013), research in their application in the CFI context has been limited (Van Graan, 2018; Van Graan *et al*., 2024), including the link between 'control' and LOC. The effect of control and LOC may significantly influence CFIs and therefore drive this study. Control refers to the extent of control an individual has over his or her circumstances and how they position themselves in the environment (Du Plooy, 2019; Vorster *et al*., 2013) and therefore links directly with LOC. Whereas South African FPs' professional conduct is governed by forensic regulatory bodies, such as the Institute of Commercial Forensic

Practitioners (ICFP) and Association of Certified Fraud Examiners (ACFE)(ACFE, 2024; ICFP, 2024), self-regulation and awareness that must be applied by FPs individually to conduct CFIs effectively are governed by LOC (Inzlicht *et al.*, 2021).

The assessment of LOC acts as an initiative to assess how well FPs know themselves, their capacities (i.e. their ability to self-regulate during interactions), what influences them psychologically and emotionally, and how grounded they are internally (Sutton, 2021). FPs can use different LOC scales and tests to help gauge whether they have ILOC or ELOC. An FP's LOC affects the way they function as well as the quality of work they produce (Wang *et al*., 2020). This study solely focuses on the LOC of FPs (interviewers) and not interviewees, such as suspects and witnesses. Since there is little to no knowledge about LOC in the CFI context, this study serves as a scoping endeavour to create the foundation for knowledge about LOC in CFIs. Focusing only on the FPs initially is logical, since, according to General Systems Theory, CFIs operate in a closed system in which there are relational dynamics between the interviewer (FP) and the interviewee (Stols, 2016). Once the LOC in the FP is established, it will naturally create context in this closed system for future studies of the LOC in interviewees.

1.4 Problem statement

Understanding human behaviour is of utmost importance to commercial forensic practitioners (FPs) because it assists them to effectively conduct commercial forensic interviews (CFIs) (Dimitropoulos & Reading, 2025). A CFI, in turn, is a critical tool in obtaining reliable and admissible information for investigative purposes. The person-centred approach (PCA) is a technique that is used broadly in the CFI context in South Africa, and together with Interactional Pattern Analysis (IPA), forms the focus of this study due to their mutually applied relational qualities. Locus of control (LOC)—one's belief about the degree to which they have control over events that affect their lives—may influence the PCA/IPA, and therefore it is important to further explore its effects on the CFI. LOC helps FPs become aware of their own behaviour and challenges them to abide by PCA standards by 'moving' from their subjective worlds into that of the interviewee.

With regard to personal behaviour, the FP can gauge their level of LOC and how it affects interviews. LOC is widely studied as an IPA relational quality in the therapeutic setting; however, a lacuna exists regarding its effect in the CFI context. To help assess the influence of LOC in CFIs, the importance of motivation and self-regulation, and their relation to the theoretical foundation of IPA, after PCA, is examined from the interviewer's perspective. Therefore, this study aims to critically analyse the effect of locus of control on the commercial forensic interview from the perspective of the interviewer. From this problem statement, the following research question

can be derived: How can locus of control affect the commercial forensic interview from the interviewer's perspective?

1.5 Research objectives

1.5.1 Main Objective

The primary objective of this study is to critically analyse, from the interviewer's perspective, the effects of locus of control in the commercial forensic interview.

1.5.2 Secondary Objectives

As part of meeting the primary objective of this study, two secondary objectives can be derived:

- To critically analyse the interlinks between motivation, self-regulation, and locus of control from the interviewer's perspective (Chapter 2 [Article 1])
- To critically analyse self-regulation and motivation in terms of the Interactional Pattern Analysis (IPA) (Chapter 3 [Article 2])

1.6 Research methodology

Various research approaches are used to examine and explain a study (Taherdoost, 2022). These approaches include qualitative, quantitative, and mixed methods (Kandel, 2020). Qualitative research refers to the collection, analysis, and interpretation of data through an observation of individuals' behaviour (Kandel, 2020). This approach is subjective and focuses on experiences, concepts, and behaviours which cannot be defined by numbers (Aspers & Corte, 2019). On the other hand, quantitative research uses numerical data objectively to quantify variations of specific issues or phenomena (Ahmad *et al*., 2019; Ghanad, 2023). Mixed methods employ an integration of qualitative and quantitative approaches to provide a better understanding of complex topics (Dawadi *et al*., 2021). Therefore, due to the purpose of this study—to understand human behaviour and apply LOC in CFIs—a qualitative research approach is adopted. In particular, the research onion will be applied to structurally explain the methodology followed in this study. The research onion is a model designed by Saunders that provides a structured framework to assist researchers in thinking systematically about research designs (Melnikovas, 2018). It uses six layers to organise the research: research philosophy, research approach, research strategy, choices, time horizon, techniques, and procedures (Melnikovas, 2018).

Research philosophy refers to a set of fundamental beliefs a study is built on and comprises ontological and epistemological perspectives (Phair & Warren, 2021). Epistemology is the study

of the nature of knowledge and beliefs, particularly how knowledge is generated (Pretorius, 2024). Conversely, ontology provides an understanding and examination of the nature of reality through realist and relativist ontologies. Realist ontology suggests that "reality is objective, external and independent of human perception" (Al-Saadi, 2014:2699). However, relativist ontology proposes that reality is shaped by individual and collective perceptions, thus not a fixed entity. Relativist ontology means that individuals' understanding of reality is based on their interactions and experiences with the world and may vary across individuals (O'Grady, 2002; Pretorius, 2024). As a result, it emphasises how LOC levels vary among FPs and helps the FP to understand the investigative interviewing context based on interactions with the interviewee. The three main research philosophies are pragmatism, positivism, and interpretivism. Interpretivism focuses on conducting research among individuals, thus aiming to understand the meanings and contributions these individuals give from their point of view (Saunders & Tosey, 2012). Therefore, the application of interpretivism is relevant to this study as it assists in conducting research among FPs and their perspective regarding the effects of LOC on CFIs.

The second layer, research approach, is the overall plan used by the researcher to investigate a specific topic and informs one's decision-making with regard to data collection and analysis (Melnikovas, 2018). This layer consists of two approaches: inductive vs deductive. The latter, also referred to as the top-down approach, moves from generalisation to specification, while inductive reasoning, known as bottom-up approach, moves from the specific to the general (Lanese *et al*., 2024). Deductive reasoning uses arguments based on rules, laws, and accepted principles, whereas inductive reasoning tends to use observations (Burney & Saleem, 2008; Sahay, 2016). To give effect to a new perspective on LOC with regard to CFIs, inductive reasoning is adopted.

Third, a research strategy outlines how the researcher will address research questions and achieve research objectives (Saunders & Tosey, 2012). Various research strategies include surveys, experiments, interviews, case studies, ethnography, archival research, grounded theory, etc. "Grounded theory is very useful for research into issues that are completely new or under-researched" (Phair & Warren, 2021:1). Therefore, it is used in this study because it supports the aim to probe into the uncovered areas of the effects of LOC on FPs in relation to CFIs.

The fourth layer, choices, consists of different methods researchers can choose from. Several options, including qualitative, quantitative, and mixed-method approaches, are available (Sahay, 2016). Quantitative research aims to quantify specific issues using numerical data (Ahmad *et al*., 2019). Contrastingly, qualitative research focuses on issues that cannot be quantified numerically (Kandel, 2020). On the other hand, a mixed-method approach integrates both quantitative and qualitative methods to thoroughly explain complex issues (Taherdoost, 2022). In terms of context

and purpose, qualitative research is the best choice as it supports the study of human behaviour (LOC). To do this, assistance in understanding concepts and phenomena will take place through the collection of non-numerical data. This data includes a collection of IPA relational qualities, motivation and self-regulation studies, PCA interviews, LOC analysis, and how they can aid the FP during interviews.

The fifth layer, time horizon, simply refers to the timeframe over which a study is conducted, which may either be longitudinal or cross-sectional (Phair & Warren, 2021). Cross-sectional designs allow for data to be collected at one point in time, while longitudinal designs enable the collection of data to occur at predetermined intervals over time (Johnson, 2010). The aim of the collection is to specifically deepen the understanding of LOC as an IPA relational quality and its incorporation into PCA-based interviews for investigation purposes. So, since this research incorporates two articles and collects data over time, a longitudinal design is appropriate.

Last, the sixth layer consists of techniques and procedures followed to formulate a study (Phair & Warren, 2021). This study consists of a critical literature review (chapter 1) and scoping reviews (chapters 2 and 3). Snyder (2019) defines a literature review as the systematic collection and synthesis of previous research. A well-formulated review creates a firm foundation for theory development and knowledge advancement, "by integrating findings and perspectives from many empirical findings" (Snyder, 2019:333-339). As a result, Chapter 1 is fundamental for analysing knowledge advancement. Subsequently, a scoping review is a useful tool for identifying, analysing, and examining unclear emerging evidence and knowledge gaps (Munn *et al*., 2018) and will be useful for analysing the lacuna in understanding the effects of LOC on CFIs.

This study follows a format of two scoping-review articles. A scoping review is a type of review that takes on a broad perspective (Mak & Thomas, 2022). Its purpose is to identify areas yet to be explored on a particular topic. Through scoping reviews, researchers can understand the scope of available evidence and how it influences emerging information (Pham *et al*., 2014). It follows six steps (Mak & Thomas, 2022):

- **Step 1:** Identifying the research question
- **Step 2:** Identifying relevant studies
- **Step 3:** Selecting studies to be included in the review
- **Step 4:** Charting the data
- **Step 5:** Collating, summarising, and reporting

- **Step 6:** Consultation

This review will identify and analyse the latest research on motivation, self-regulation, and how they affect interactions from the interviewer's perspective (Munn *et al*., 2018) and will be done as outlined below.

Article 1:

This article broadly discusses motivation, self-regulation, and LOC. It aims to uncover the latest research regarding motivation and self-regulation and their importance to the FP (interviewer) during interviews.

Article 2:

The purpose of this article is to provide an in-depth study of the IPA, its variables and applicability to the CFI, and how the FP can use it to build rapport.

1.6.1 Scope of work

This study explores the effect of LOC among South African commercial FPs who are either registered or in training to register with the ICFP, or who operate in the commercial forensic investigative context without a specific professional designation. The focus of this study is only on the FPs' (interviewers') perspective in terms of the use of LOC in the investigative interviewing context of South Africa. While the study acknowledges the broader effects of LOC on CFIs, it will not explore the interviewee's perspective.

1.7 Ethical considerations

Since this study is based on the literature rather than empirical research, such as interviews or direct data from participants, the likelihood of ethical misconduct is minimal. However, ethical clearance has been obtained from the North-West University's Ethical Committee (ethical number: NWU-00769-25-A4) to ensure research integrity and compliance with academic standards. Ethical challenges may still arise in literature research, especially when all relevant sources are not included. To mitigate this, a rigorous and scoping selection process was followed, ensuring a comprehensive review of the existing literature.

1.8 Chapter overview

Chapter 1: Purpose, scope, and progress of study

This chapter introduces the study's content. It includes the introduction and background, scope of the study, problem statement, primary and secondary objectives, methodology, and chapter overview.

Chapter 2: A critical analysis of the interlinks between motivation, self-regulation, and locus of control in the commercial forensic interview context (Article 1)

Chapter two provides a broad discussion of motivation and self-regulation, and how these two concepts relate to LOC. It provides the latest research regarding how these two elements affect interactions, specifically in CFIs and from the interviewer's perspective.

Chapter 3: Self-regulation and motivation: A critical analysis of their effects on Interactional Pattern Analysis (Article 2)

This chapter provides an in-depth study of the IPA and how self-regulation and motivation, as key concepts of LOC, may affect the relevant relational qualities of the IPA. From this study, an overall assessment can be made as to how LOC may affect CFIs from the interviewer's perspective.

1.9 Conclusion

This chapter provides an overview of LOC, CFIs, and the lacuna that exists in understanding the effects of LOC on CFIs. Although LOC has been researched in therapeutic contexts, this is not the case for CFIs. Understanding LOC and its interlink with self-regulation and motivation, is crucial because interviewers who are not able to exhibit internal LOC (ILOC) may result in ineffective interviewing approaches and thus to the detriment of obtaining reliable and admissible information as part of the investigative process. Moreover, due to the extensive influence IPA has on the CFI, assessing LOC's effects on the relational qualities of IPA is central to this study and will be explored in subsequent chapters.

CHAPTER 2 ARTICLE 1

A critical analysis of the interlinks between motivation, self-regulation, and locus of control in the commercial forensic interview context

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A critical analysis of the interlinks between motivation, self-regulation, and locus of control in the commercial forensic interview context

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Abstract

Purpose - The intricacy of economic crime requires focused attention and effective investigative tools such as commercial forensic interviews (CFIs). The aim of this study is to explore how the interdependence between motivation, self-regulation, and locus of control (LOC) can assist commercial forensic practitioners (FPs) in attaining admissible evidence in the CFI context. It also purports to uncover and provide the FPs' (interviewers') perspective of how motivation and self-regulation affect interactions with the interviewee during CFIs.

Design/methodology/approach - A scoping review was conducted to investigate the interlinks between motivation, self-regulation, and LOC and their effectiveness to CFIs. This method provides an understanding of the scope of available evidence and its influence on emerging information.

Findings - This article outlines the importance for FPs to be motivated, self-regulated, and possess the relevant LOC required to address economic crime through CFIs.

Originality/value - It is evident that CFIs require FPs to take the leadership role in interacting with the interviewee. These elements—motivation, self-regulation, and LOC—assist FPs to, inter alia, effectively build rapport and obtain relevant information from the interviewee during CFIs.

Research limitations - The focus of this article is limited to the FPs' (interviewers') perspective on the use of motivation, self-regulation, and LOC in the investigative interviewing context of South Africa. While the study acknowledges the broader effects of these elements on CFIs, it will not explore the interviewees' perspectives.

Keywords: Commercial forensic interviewing, Commercial forensic practitioners, Emotions, Locus of control, Motivation, Self-awareness, Self-regulation

Paper type: Research paper

Introduction

The Commercial Forensic Practitioner (FP) plays a crucial role in detecting, investigating, and preventing economic crime (Capraș, 2023). This process requires FPs to use various skill sets, including commercial forensic interviews (CFIs) (Honigsberg, 2020). An interview is a conversation between individuals with the objective of obtaining information for specific purposes (Vorster, 2016). It occurs in a controlled environment with specified roles (Adams-Quackenbush *et al.*, 2022). A CFI is a specific type of interview and entails gathering relevant and admissible information for legal purposes, specifically associated with economic crime (Cleary and Warner, 2016). The FP occupies the role of the interviewer and interacts with the respondent/interviewee. These interactions are intricate due to the complex involvement of legal, ethical, and psychological factors in gathering information, hence the need for motivation, self-regulation, and locus of control (LOC) (Ackerman, 2018; Reeve, 2024). Motivation is the process of desiring some change in self or the environment and acting in ways that facilitate that change (Baumeister, 2016). Conversely, self-regulation is the function that enables the successful pursuit of the desired change (Inzlicht *et al*., 2021). Despite the distinction between motivation and self-regulation, their relationship is essential for the application of LOC (Werner and Milyavskaya, 2019). LOC refers to individuals' perceptions and beliefs about the extent of control they have over outcomes and events in their lives (Smith, 2021). The integration of motivation, self-regulation, and LOC into CFIs enhances optimal performance by FPs during CFIs (Vorster *et al*., 2013). These concepts equip FPs to, among other things, conduct CFIs in a way that enhances the obtaining of relevant and admissible information. Currently, there is a global lack of literature in the CFI context in this regard.

MATERIALS AND METHODS

A scoping review was conducted to collect and synthesise literature with the aim to identify available evidence and its influence on emerging information in relation to the topic of interest. Scoping reviews are useful for identifying and mapping available evidence on a particular topic within a defined context (Pollock *et al*., 2024)—in this case, the commercial forensic interviewing context. To ensure a structured approach, the review followed a six-step guideline outlined by Mak and Thomas (2022), which consists of the following: (a) identifying the research question; (b) identifying relevant studies; (c) selecting studies to be included in the review; (d) charting the data; (e) collating, summarising, and reporting; and (f) consultation. Moreover, throughout the review process, rigour and transparency were enhanced by applying the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) checklist (Page *et al*., 2021). The data collection methods and recording are discussed in the next section.

Data collection methods and recording

Relevant data was obtained through a twofold strategy. The first phase, which comprises inclusion criteria, was established prior to the literature search. It focuses on motivation, self-regulation, and LOC in the commercial forensic interviewing context between 2005 and 2025. The strategy follows five stages outlined by Booth *et al*. (2012): (a) Scoping search: searching for existing reviews and gaining familiarity with the topic, identifying keywords, developing and documenting a search strategy; (b) Conduct search: perform a grey literature search, searching for identified keywords on databases, document any modifications to searches, where applicable; (c) Bibliography search: perform a search on reference lists and bibliographies of included studies to identify additional relevant studies; (d) Verification: identifying any studies overlooked by keywords and search strategy, revising search strategies when necessary; and (e) Documentation: present a detailed record of keywords used, searches performed, search strategies applied, and number of sources identified. Relevant databases were used (e.g. EBSCOhost, Research Gate, and ProQuest) to conduct literature searches. These databases were used because they contain relevant forensic literature. The following Boolean phrases were used for titles and abstracts: ('motivation' OR 'work motivation' OR 'organisational motivation') AND ('self-regulation') AND ('locus of control' OR 'internal locus of control' OR 'external locus of control') AND ('commercial forensic interview' OR 'commercial forensic interviewing context' OR 'investigative interviewing'). Articles were included based on their relevance to theoretical assumptions and alignment with CFIs. Full-text articles were included; however, articles about interviews other than forensic interviews were excluded.

The second phase involved examining grey literature to gather information in relation to CFIs. During the search process, 4,572 articles were identified and screened for eligibility using titles, abstracts, and keyword criteria. Subsequent to the removal of duplicates and the application of inclusion and exclusion criteria, 546 relevant articles were identified. Upon removal of articles that did not address the phenomena of interest nor contain adequate information, only 93 articles were scrutinised. The PRISMA diagram is presented in **Figure 1** below.

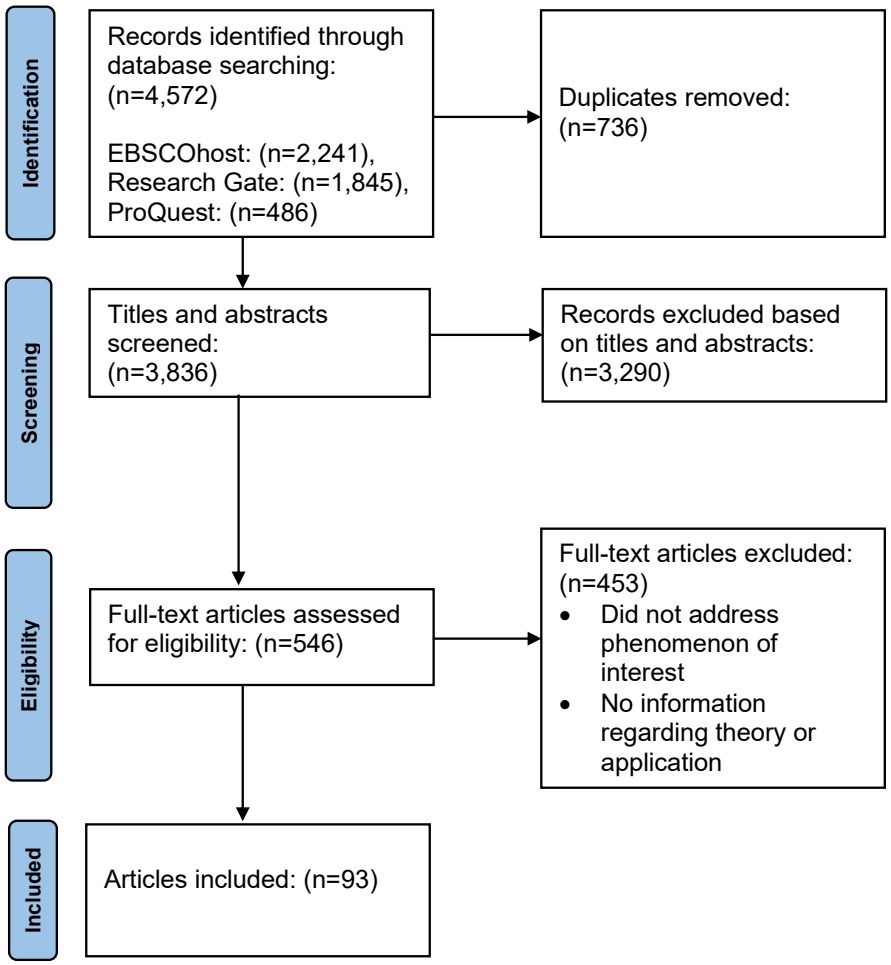

Figure 1: PRISMA diagram

Source: Authors

Data analysis

The data analysis strategy adopted the steps outlined by Peters *et al*. (2015). This was performed by chronicling the data according to the title of the article, journal sources, source type, year(s), database, background, inclusion criteria, context (investigative interviews), aim of the study, and the type of interview applicable (CFI). Contextual details comprised the theory and application of interviewing elements and techniques examined in the articles, performed manually by the researcher and reviewed by the research assistant. The results—that is, studies about investigative/commercial forensic interviews in relation to FPs—were captured in a spreadsheet. Regular meetings were held between the researchers to address questions and differing views that arose during the process.

Rigour

Trustworthiness is a fundamental element in the interpretation of qualitative research (Daniel *et al*., 2019). Four standards (credibility, dependability, confirmability, and transferability) were used to ensure the trustworthiness of this article, in accordance with Liao (2015). *Credibility*, or the established confidence that the results of this study are true and believable (Forero *et al*., 2018), was maintained through partnership with expert supervisors throughout information gathering, literature search, and analysis in the relevant fields of study, particularly CFIs, motivation, self-regulation, and LOC. *Dependability*, which ensures the repeatability and consistency of findings (Johnson *et al*., 2020), was underpinned by the detailed and documented audit trail that outlines proper research practices. *Confirmability*, or the confidence that the results would be confirmed by other researchers (Williams and Kimmons, 2022), was reinforced when the two co-researchers independently reviewed and agreed on the contents of the study. *Transferability*, the degree to which results can be applied in other settings (Forero *et al*., 2018), was supported by the detailed description of data collection, analysis, and reporting methods.

DISCUSSION

Motivation

"Motivation is the study of why individuals behave as they do" (Graham, 2020:1). It is a psychological process that causes an impulse to provide direction and stability to an individual's behaviour (Kamdron, 2015) and can be attributed to why people act or do not act in a certain way (Graham, 2020). Motivation is regarded as a vital element for success in both academic and professional contexts (McCoach and Flake, 2018: pp. 201-213). It fuels, harnesses, ignites, and transforms abilities into achievements (McCoach and Flake, 2018). Without motivation, people lack the drive to partake in meaningful thought patterns and actions that help them reach their full potential (Poopal, 2020). This attribute creates a bridge between planned goals and accomplished ones. Motivation is essential and beneficial in enabling and improving engagement, performance, resilience, deeper learning, positive well-being, and goal achievement (Sutton, 2024). It directs individuals to 'move towards' successful accomplishments (Poopal, 2020; Steinmayr *et al*., 2019).

Various factors drive motivation, including emotions (Neta and Haas, 2019). Emotions and motives often occur together, and although they are distinguishable, they have similarities that help to understand their relationship (Berridge, 2018). These similarities include their linguistic root and activation of behaviour. Emotion and motivation share a Latin linguistic core, 'motus', which means 'to move' (Neta and Haas, 2019). Emotions play an important role in how people are motivated and ultimately how they 'move' (Chiew and Braver, 2011). For example, the excitement from successfully achieving a goal motivates individuals to strive for better outcomes.

To help understand this relationship, Hwang and Matsumoto (2019) explain that whilst motivation is driven by emotions, motivation in turn generates emotions. Emotions refer to people's reactions in response to circumstances that trigger them (Cherry, 2023). The type of circumstance, event, or situation determines the type of emotion expressed and/or suppressed (Reeve, 2024). Emotions are mental states used by the body to direct behavioural reactions to stimuli (Dennison, 2024). Although these mental states are universally common, they are induced by varying factors throughout humanity (i.e. experiences, memories, places, and situations). Emotions are a precursor of an individual's behaviour (Dennison, 2024). When triggered, they initiate attention, learning, memory, goal choices, behavioural decision making, and motivational priorities (Hwang and Matsumoto, 2019). However, these processes require emotional intelligence (Chernis and Adler, 2023). Emotional intelligence is defined as an individual's ability to identify, evaluate, and manage their own emotions and those of others (Serrat, 2017). It is, among other things, the accurate identification and comprehension of one's own emotional reactions and those of other individuals that allows people to make decisions and act accordingly (Chernis and Adler, 2023). Emotional intelligence comprises five components, discussed in **Table 1** below.

Table 1: Components of emotional intelligence

Component	**Definition**
Self-awareness	The ability to comprehend one's emotions and actions and how they affect others.
Self-regulation	The skill to control one's own behaviour, emotions, and direct and/or redirect impulses.
Self-motivation	The readiness to take initiative and act on opportunities.
Empathy	An active interest in people's concerns, feelings, and viewpoints.
Social skill	An ability to send clear and understandable messages to others.

Sources: (Serrat, 2017; Issah, 2018)

When present, emotional intelligence enables the constructive and healthy expression of emotions (Bru-Luna *et al*., 2021). When expressed, emotions take two forms: verbal and/or non-verbal communication (Edwards, 2024). Verbal communication occurs when thoughts, feelings, and ideas are exchanged through spoken or written words (McDuffie, 2021). Non-verbal communication occurs when information is transferred without the use of spoken words (i.e. body

language and facial expressions). Despite the difficulties associated with interpreting non-verbal cues, non-verbal communication is important because it can, among other things, interpret emotions (Edwards, 2024). In addition to expression, emotions have intrapersonal and interpersonal functions (Hwang and Matsumoto, 2019). The former defines the important role emotions play within individuals, while interpersonal functions describe the value and meaning of emotions in interpersonal connections such as relationships with others (Hwang and Matsumoto, 2019).

Intrapersonal functions of emotions

Through intrapersonal functions of emotions, the body is prepared for action, thoughts are influenced, and future behaviours are motivated (Edwards, 2024). Emotions prepare the body for action through physiological responses such as fight, flight, or freeze (Holland, 2025). Moreover, they impact attention, decision-making, and learning processes by influencing the thought process (Tyng *et al*, 2017). The significance of emotions goes beyond feelings; emotions function as powerful motivators that shape how individuals behave in the future. This process occurs through positive (i.e. joy, peace, gratitude, love, and hope) and negative (i.e. sadness, fear, anger, guilt, and shame) emotions. Positive emotions drive positive behaviour, and negative emotions drive negative behaviour (Ackerman, 2019). For example, an FP who experiences fulfilment from gathering relevant evidence from an interviewee due to rapport building is more likely to build trust with a different interviewee in the future, thus he/she is chasing the positive emotion (fulfilment) experienced previously. Likewise, an FP who experiences disappointment or unfulfillment from failing to build rapport with an interviewee will avoid failure in the future, thus practising avoidance as a negative behaviour.

Interpersonal functions of emotions

On the other hand, interpersonal functions of emotions include communicating one's feelings, influencing and motivating the behaviours of others, and fostering relationships (Kavakli, 2019). Through verbal and non-verbal communication, feelings and intentions can be expressed and transferred from one person to another. Consequently, those expressed emotions may elicit responses from the perceiver and/or receiver (Hwang and Matsumoto, 2019). This expression can motivate people to behave in a manner desired by those who express their emotions. Emotions also play a vital role in assisting people to build and maintain relationships through trust and connection (Kavakli, 2019).

Work motivation

It is evident that both intrapersonal and interpersonal functions of emotions motivate behaviour, whether positive or negative. Notably, these functions of emotions can positively impact FPs' behaviour by influencing professional fulfilment (intrapersonal) and the maintenance of genuine connections with interviewees (interpersonal) during CFIs. This empowers FPs to utilise emotions positively, driving not only personal motivation but also work motivation (Neta and Haas, 2019).

While personal motivation is necessary for FPs to excel in the workplace, work motivation is equally important (Wang *et al*., 2010). Work motivation can be described as the desire to direct behaviour towards achieving job-related goals (Diefendorff *et al*., 2022; Vo *et al*., 2022). Through work motivation, employees are energised to bring commitment, enthusiasm, and determination to the organisation (Song, 2023). It is also used as an important predictor of work performance (Samo, 2024). According to Samo (2024), work motivation boosts short-term productivity while influencing long-term work performance and encourages employees to achieve job-related goals while impacting levels of job satisfaction (Aliyyah *et al.*, 2021). This type of motivation is driven by factors such as financial income, a peaceful working environment, recognition, and a sense of achievement (Aliyyah *et al.*, 2021). Moreover, there is a connection and interdependence between personal and work motivation. While personal motivation significantly influences work motivation, positive experiences stemming from work motivation can reinforce personal motivation (Vo *et al*., 2022). Consequently, a relationship loop is created between personal and work motivation. The type of personal motivation (intrinsic vs. extrinsic) an FP possesses influences the type of work motivation they apply in the workspace. The following section discusses this aspect.

Intrinsic vs Extrinsic motivation

Two types of motivation exist: intrinsic and extrinsic (Lai, 2011; Kamdron, 2015). Intrinsic motivation is influenced by personal interest, pleasure, or enjoyment while reinforcement contingencies such as money, fame, and praise influence extrinsic motivation (Lai, 2011). Intrinsic motivation emerges from within an individual (Vo *et al*., 2022) and fuels the inherent habit of seeking "experiences that generate feelings of interest and enjoyment through task novelty, challenges and mastery" (Cromwell *et al*., 2020: p. 211). In contrast, outside rewards are the primary focus of extrinsic motivation (McCormack, 2013). Extrinsic motivation stimulates behaviour driven by external rewards that are either tangible (financial incentives) or intangible (fame) (Smith, 2021). However, psychology refers to intrinsic motivation as the most optimal and beneficial form of motivation as it aids with psychological well-being, persistence, and enjoyment (Legault, 2016). Unlike extrinsic motivation, which is regulated by behaviour that is mainly controlled by external factors, intrinsic motivation is present and harnessed within individuals yet supported by environments that enable and enhance autonomy (the ability to govern oneself) and

competence (the ability to successfully perform and complete a task) (Hennessey *et al*., 2014). Motivation models are useful in illustrating motivation and its different forms (intrinsic vs extrinsic).

Motivation models

Various models, including humanistic theory, the acquired needs theory, the cognitive model, the social cognitive model, and the self-determination theory, illustrate motivation (Kamdron, 2015). Developed by Abraham Maslow, the humanistic theory emphasises the ultimate goal of self-actualisation (McLeod, 2007). Self-actualisation (an individual's motivation to reach their full potential) is essential in assisting individuals to become their true selves (Ivtzan *et al*., 2013). Maslow's theory emphasises the importance of self-awareness in the process of reaching self-actualisation (Stephens, 1972). Maslow (1943) utilises the needs hierarchy as part of the humanistic model to illustrate how self-actualisation can be attained and the necessary steps required to achieve it. The various categories of the needs hierarchy dictate and/or motivate how individuals behave. The following figure demonstrates how the needs lower down in the hierarchy (physiological, safety, belonging, and esteem) must be satisfied before individuals can attend to the need above (self-actualisation) (King, 2024). Simply put, to reach the top of the hierarchy (self-actualisation), people must first have their basic needs met.

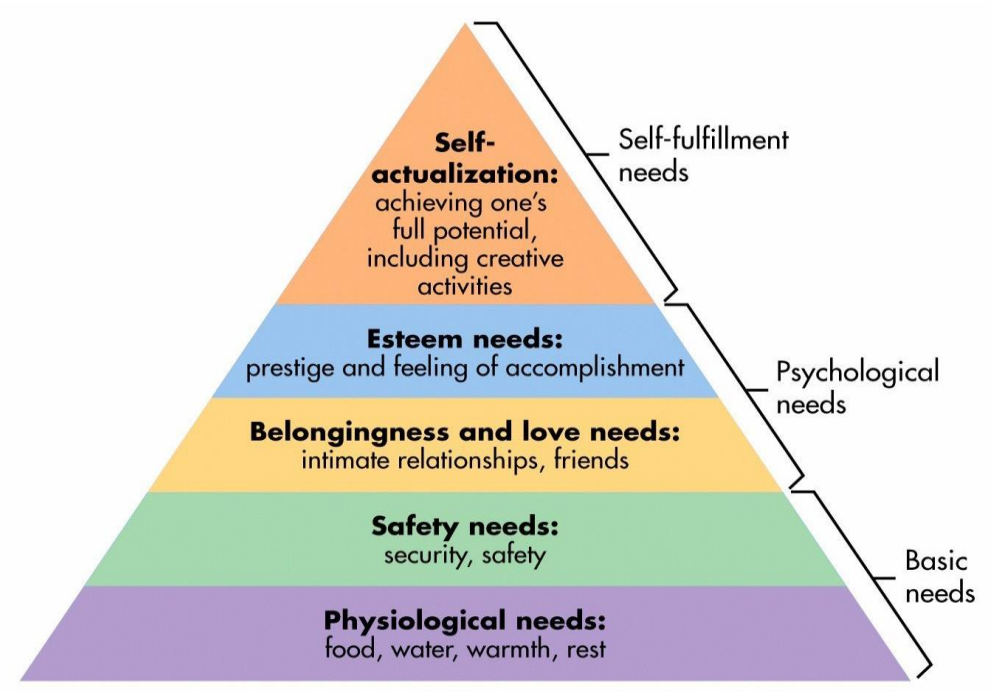

Figure 2: Maslow's hierarchy of needs

Sources: (King, 2024; McLeod, 2007)

On the other hand, McClelland's acquired needs theory, also known as the achievement motivation theory, consists of three pillars (Kurt, 2021):

- **The need for power:** This need presents itself as a drive towards authority, influence, or control. Individuals are motivated to seek positions that demonstrate their leadership and enable them to be the primary decision-maker.
- **The need for achievement:** Individuals with this need are driven by the desire to excel and successfully achieve set goals.
- **The need for affiliation:** This need is reflected by the desire to foster relationships and build community. Individuals in this category desire belonging and social acceptance.



Figure 3: McClelland's achievement motivation theory

Sources: (Miller, 2022; Kurt, 2021)

The above theory expands Maslow's hierarchy by delving deeper into specific needs that help individuals reach self-actualisation. In essence, McClelland explains that understanding an individual's dominant need reveals their approach to motivation (Onoja, 2020; De Andrade Baptista *et al*., 2021). Therefore, individuals are driven towards self-actualisation by their most dominant need.

The cognitive model is a psychological approach that aims to understand human behaviour by understanding an individual's thought process. Fritscher (2024: p. 1) states it as follows: "The assumption of the cognitive theory is that thoughts are the primary determinants of emotions and behaviour." It is better explained through Piaget's cognitive development theory, which is divided into four stages: sensorimotor (0-2 years), pre-operational (2-7 years), concrete operational (7-11 years), and formal operational (12 years and above). The sensorimotor stage begins at birth and lasts for two years. The name of the stage stems from the involvement of senses in the thought process (e.g. seeing, moving, hearing, and testing) (Pakpahan and Saragih, 2022). During the pre-operational stage, thinking patterns are governed by what is seen, rather than logical principles. As a result, the mastery of performing mental operations has not yet taken place. The concrete operational stage allows the development of rational thinking tied to concrete objects (Pakpahan and Saragih, 2022). The last stage, the formal operational stage, involves the emergence of logical thinking and reasoning, as well as the ability to think about hypothetical possibilities and problem-solving (Malik and Marwaha, 2023).

Moreover, based on Albert Ellis' work (Ellis, 1991), individuals' core beliefs are formed between the ages of 7 and 12 and form the basis of thought patterns thereafter. Core beliefs are central, fundamental beliefs that individuals use to view and interpret themselves, others, and the world (Hakim, 2023). Subsequently, people develop intermediate beliefs, which in turn cause their automatic thoughts. Intermediate beliefs refer to attitudes, assumptions, and rules that individuals develop based on their deeper core beliefs such as "If I make a mistake, I can learn from it and grow", whereas automatic thoughts are people's immediate and unpremeditated interpretations of events that shape their responses (Chand *et al*., 2023: p. 1). Examples of automatic thoughts include statements such as "I am proud of how far I have come" or "I should have done better". Automatic thoughts may be maladaptive and create cognitive distortions (Wirga and DeBernardi, 2002; Chand *et al*., 2023). A cognitive distortion is a negative automatic thought based on a destructive/irrational intermediate and core belief (Chand *et al*., 2023), such as "If I do not succeed in this investigative interview, I am a failure".

The cognitive model is used to modify individuals' thinking patterns to influence their behaviour and improve their way of life. Cognitive processes occur in the following steps:

1. the reception, mental representation, and storage of information
2. how individuals process information
3. how the cognitive process affects individuals' emotions and behaviours

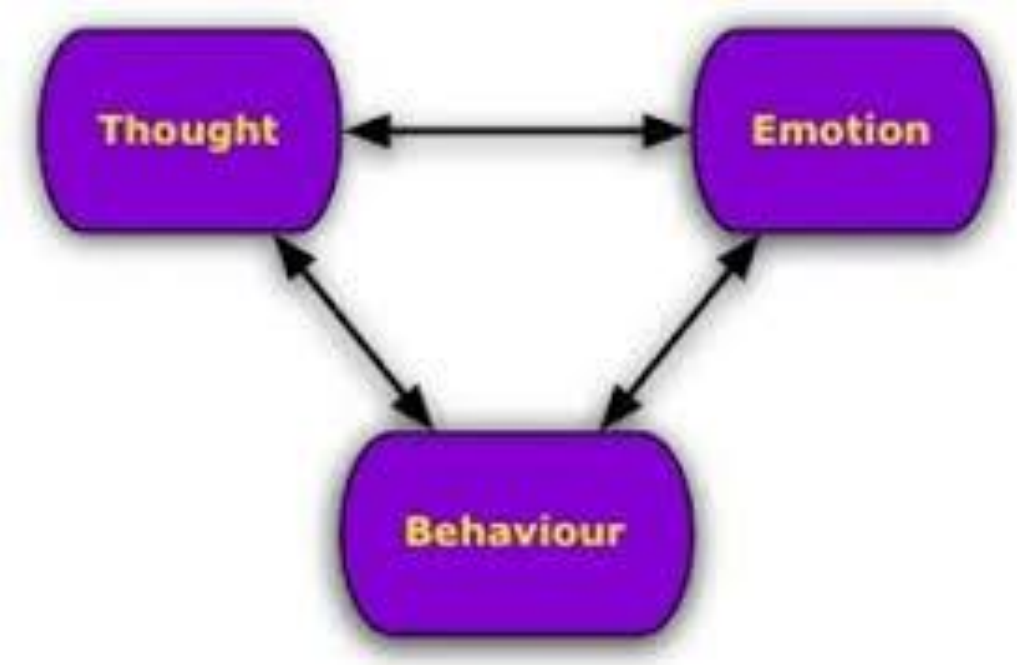

Figure 4: Cognitive model

Sources: (Chand *et al*., 2023; Fritscher, 2024)

On the other hand, the social cognitive theory, developed by Albert Bandura, utilises reciprocal determinism as the foundational building block to explain how people learn through observation (Schunk and DiBenedetto, 2023). Psychology defines reciprocal determinism as a core concept that describes the continuous interaction between individuals, their behaviour, and their environment (Nickerson, 2025).

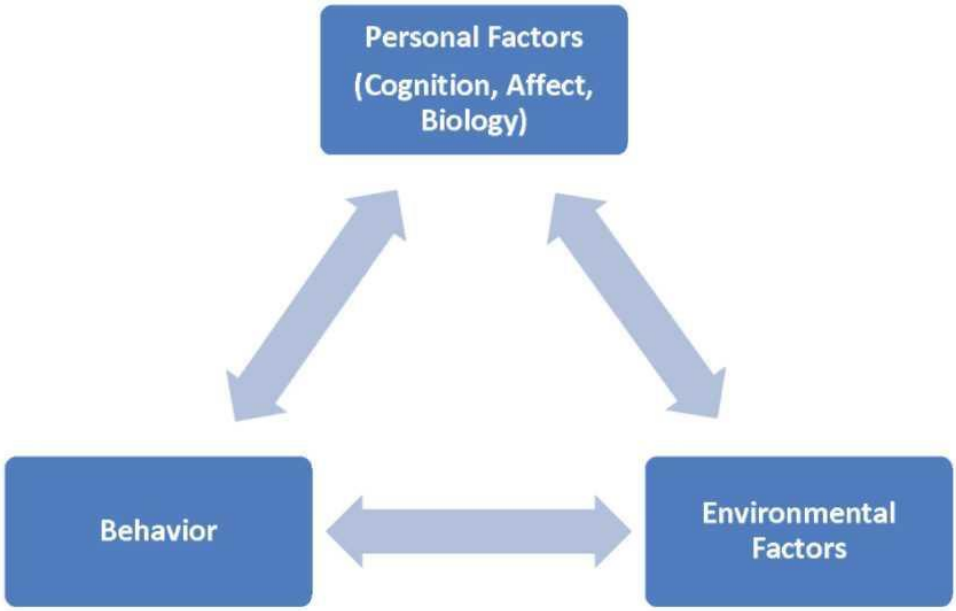

Figure 5: Social cognitive theory

Sources: (Bandura, 1973; Nickerson, 2025)

This building block demonstrates how three factors (individuals, environment, and behaviour) influence and are influenced by each other (Nickerson, 2025; Schunk and DiBenedetto, 2023). Through this influence, people are then motivated to act in a certain manner, either to replicate behaviours modelled for them or avoid said behaviours (Luszczynska and Schwarzer, 2015). Essentially, the interaction between the three factors activates motivation.

In the last place, the self-determination theory (SDT), developed by Edward Deci and Richard Ryan, focuses on different types of motivation as predictors of performance, engagement, and well-being objectives (Deci and Ryan, 2008). The SDT, which drives the understanding of motivation in this study, focuses on three basic human psychological needs: autonomy (the need to make independent decisions), competence (the need for experience of mastery and effectively coping with challenges), and relatedness (the need for meaningful, mutually supportive, interpersonal connections) (Manninen *et al*., 2022). This theory suggests that these basic needs are essential for "individuals' adjustment, integrity and growth. Moreover, it postulates that supportive environments and interpersonal connections improve individuals' motivational sources and wellbeing" (Manninen *et al*., 2022: 2). Contrastingly, the thwarting and/or deprivation of these needs impact the quality of motivation and leads to ill-being (Manninen *et al*., 2022). The SDT concludes that the most self-determined type of motivation is intrinsic and represented by participation in behaviours due to interest and satisfaction (Caranfil *et al.*, 2024). Moreover, the expansion of this theory's research has moved into other domains of life, including the work

environment. Similar to personal motivation, the SDT postulates that all employees have three basic psychological needs (autonomy, competence, and relatedness) and organisations need to cultivate environments that satisfy these needs. Therefore, through this model, the "creation of work policies, practices and environments that promote both wellness and high-quality performance" is guided (Deci *et al*., 2017:19-43).

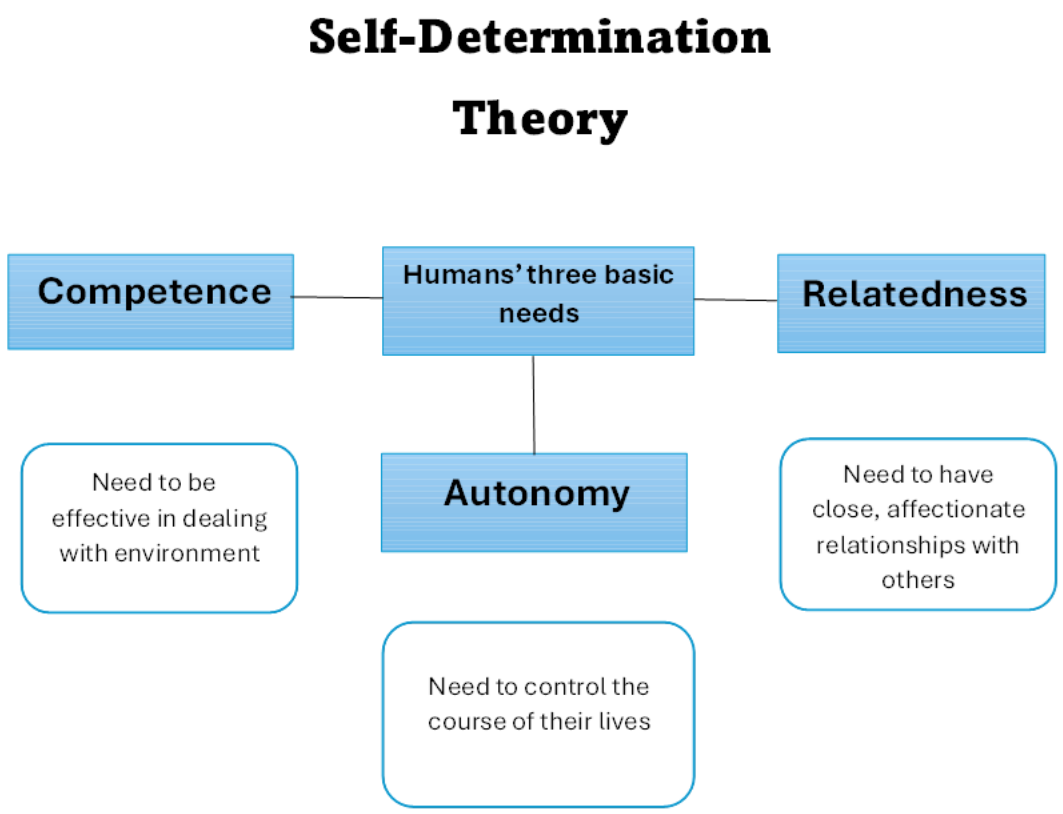

Figure 6: Self-determination theory

Sources: (Ackerman, 2018; Legault, 2016)

Furthermore, through intrinsic motivation, which is a key part of the SDT, self-regulation is enhanced (Guay, 2022). Additionally, as motivation becomes more self-determined, long-term self-regulation is supported and improved (Guay, 2022). This effect is discussed below.

Self-regulation

Various factors, including self-awareness, enable individuals to self-regulate (Borbely, 2021). Self-awareness is the ability to identify, recognise, and understand one's own emotions and actions and forms the basis from which an FP can self-regulate (Inzlicht *et al.,* 2021). Eurich (2018) defines self-awareness as a representation of how clearly people see their own values, passions, aspirations, fit with the environment, reactions, and impact on others. According to Perry (2022), self-awareness is the conscious knowledge of one's own character and the ability

to recognise and understand one's own thoughts, emotions, motivations, and behaviours. Moreover, Cherry (2024: 2-4) describes self-awareness as "a psychological state in which the self becomes the focus of attention and explains that it is the ability to understand and perceive the things that make you who you are as an individual". Drawing from the above definitions, it is safe to conclude that one's level of self-awareness rests upon how well an individual is cognisant of their own behaviour and elements that influence it (i.e. values, beliefs, emotions, thoughts). Although self-awareness is central to one's identity, it is not something that one acutely focuses on every moment (Cherry, 2024).

While a relationship exists between self-awareness and self-regulation, the two concepts are distinctive (McNally, 2023). Self-awareness involves being conscious of one's own behaviour, while self-regulation involves controlling that behaviour (Carden *et al.*, 2022). Self-regulation enables individuals to adjust their behaviour to meet their personal goals and refers to ways people steer their behaviour to achieve a particular goal (e.g. eating more fruits and vegetables to achieve the goal of better health) (Herndon, 2024). FPs who self-regulate also possess the ability to assess whether their behaviour is appropriate and redirect themselves as needed during their interactions with interviewees (Carden *et al.*, 2022; Herndon, 2024). Moreover, self-regulation is important in cultivating a LOC mindset because it helps to strengthen relationships (Carden *et al*., 2022); this is an essential part of building rapport during CFIs (Angelo, 2012).

To better explain the difference between the above two concepts, McNally (2023) argues that many people are good at self-awareness and that they know their symptoms and triggers, and understand their emotions. However, the question remains: can they self-regulate? When individuals have too much self-awareness and inadequate self-regulation, they end up ruminating (McNally, 2023) without taking action; hence, the goal is to develop and/or improve both. The direct result of this goal leads to the objective of this study, which is to aid FPs in discovering and gauging their level of LOC and integrating it into their respective CFIs.

Locus of control (LOC)

LOC stems from Albert Bandura's (1977) social learning theory (SLT) of personality (Lopez-Garrido, 2023). This theory focuses on the integration of mental factors and learning of behaviour through observation (Rumjaun, 2020). It emphasises that behaviour is learned through interactions with others in one's social environment and found outside an individual (Rumjaun, 2020). However, LOC is often referred to in humanistic psychology and forms a part of Interactional Pattern Analysis (IPA) relational qualities. Humanistic psychology states that humans are unique and should be treated as such (McLeod, 2023). This branch of psychology strives to help people maximise their well-being and reach their full potential (Sartre, 2022).

Through its integration with LOC, individuals are enabled to reach and/or improve their self-actualisation (the full realisation and fulfilment of one's potential) (Maslow, 1943; Selva, 2017; Fabian, 2020).

There are two types of LOC: internal (ILOC) and external (ELOC) (Reiss, 2012; Francis, 2020). Individuals who possess ILOC perceive themselves as having extensive personal control over their behaviour (Francis, 2020). They are more likely to take accountability for their actions and attribute the outcome of their lives to personal effort and decisions (Buddelmeyer and Powdthavee, 2016). "I did well on my exams because I studied hard" is an example of such a mindset. They assume that their initiative and ability are the product of the consequences of their actions (Davis, 2020). In contrast, individuals with an ELOC perceive external factors as the foundation of their behaviour and focus on things outside of their control (Venugopal, 2022). ELOC individuals tend to blame external factors such as circumstances, people, and the environment for their wrongdoing, and when good things happen in their lives, they give credit to luck and fate (Francis, 2020; Morris *et al*., 2022). An example of their mindset is, "I did well on my exam because it was easy". These individuals are often referred to as people with a victim mindset (Venugopal, 2022).

External and internal loci of control can be applied generally or professionally (work LOC) (Wang *et al.,* 2010). General application refers to how an individual functions outside work parameters, while professional application is relative to job satisfaction and productivity existing within the parameters of a working environment. Job satisfaction can be defined as an optimistic emotional state that results from an assessment of one's work experiences (Padmanabhan, 2021). The positive feeling stems from perceiving one's work as fulfilling. Research shows that job satisfaction correlates with ILOC and ELOC with job dissatisfaction (Vijayashree and Jagdischchandra, 2011; Venugopal, 2022; Yuwono *et al*., 2020; Padmanabhan, 2021). Moreover, having a general ILOC does not always equate to having a work ILOC (Wang et al., 2010). People who have a higher work ILOC have higher levels of job commitment, satisfaction, performance, leadership initiative and less burnout and absenteeism than people who have a general ILOC (Wang *et al.*, 2010). Although general and work LOC are different concepts, they can influence each other, and an individual with an ILOC is more likely to have an ILOC at work (Davis, 2020). The level of LOC, work or personal, in FPs is influenced by several factors (Kesavayuth, 2020). These are discussed next.

Factors that affect locus of control

LOC can be influenced by various factors, including the following (Kesavayuth *et al.*, 2020):

- **Childhood experiences:** The behaviours and attitudes modelled by early caregivers can significantly influence an individual's LOC: a better developed ILOC can be influenced by parents who encourage independence and teach kids to associate actions with consequences.
- **Personal beliefs and perceptions:** Individuals' method of processing occurrences shapes their perception of their ability to master their destiny (ILOC) or succumb to external forces like fate or luck (ELOC).
- **Behavioural learning:** LOC forms part of SLT. This theory suggests that individuals act according to a belief that they are in control of their outcomes or that external forces dictate what happens.
- **Previous trauma:** FPs deal with trauma associated with their personal lives and complex, high-stakes cases involving embezzlement, fraud, and corruption, which can exacerbate their emotional and psychological stress and potentially lead to depression and anxiety.

The integration of FPs' uniqueness according to humanistic psychology and their learned behaviour through SLT forms a foundational understanding of how their personal and work LOC can be influenced (Farnier *et al.*, 2021). FPs who come from ELOC childhood experiences, personal beliefs, and behaviours are more likely to apply them in the workplace, as are FPs with ILOC backgrounds. There are different tools to help assess and gauge one's level of LOC. This study specifically focuses on Julian B. Rotter's Locus of Control Scale (LCS) of 1966 because it is the most widely used scale in various fields such as human behaviour and education (Wang *et al.*, 2020). Rotter's assessment of LOC was made practical by developing this tool to measure the level and type of LOC being applied by individuals (Kesavayuth *et al.*, 2020).

Locus of control scale

The LCS measures the extent to which people believe external and internal forces determine their lives (Farnier *et al.*, 2021). The 29 items listed on the scale can be used to measure the level of LOC among FPs. Each item has two statements, and FPs are required to transparently and honestly select the statement with which they agree (Sutton, 2021). Upon completion, a clear explanation is given to determine whether they function from an ILOC or an ELOC (see **Table 2** below) (Wang *et al.,* 2020; Farnier *et al.*, 2021).

Table 2: Locus of control scale

LOCUS OF CONTROL SCALE		
INSTRUCTION: **For each question select the statement that you agree with the most (between A and B)**		
	STATEMENT A	**STATEMENT B**
1	Too much punishment from parents gets children into trouble	Nowadays parents are too easy on children and that causes problems
2	Bad luck causes a lot of unhappy things in people's lives	People's mistakes lead to their misfortunes
3	Lack of interest in politics is one of the major reasons behind wars	People can try to prevent wars; however, wars are inevitable
4	In the long run people get the respect they deserve in this world	Unfortunately, despite an individual's efforts, their worth often goes unnoticed
5	It is absurd to think that teachers are unfair to students	Most students are unaware of how coincidences often influence their grades
6	An effective leader is one that recognises a need for right breaks and implements them	Individuals who fail to take advantage of opportunities cannot become leaders
7	No matter how much effort you place in becoming likeable, some people will still not like you	People who fail to become likeable are people who do not understand the importance of getting along with others and creating interpersonal relationships

	STATEMENT A	STATEMENT B
8	One's personality is significantly influenced by heredity	One's experiences determine their outlook on life
9	I believe that what is meant to be will be	Acting in accordance with the decisions I've made has always turned out better for me than allowing fate to take its course
10	A well-prepared student rarely believes in unfair tests	Studying is useless because tests and exams are often unrelated to course work
11	Success can be attributed to hard work, determination and consistency. Luck is rarely a factor	Getting a good job is dependent on knowing the right people and being at the right place at the right time
12	Government decisions are influenced by citizens	Powerful people run the world; there isn't much the rest of the world can do to change that
13	I am confident that I can execute the plans I make	I avoid planning too far ahead because I understand that many things depend on good or bad fortune
14	There are certain people who are just no good	There is some good in everybody
15	In my case luck has little to no influence on my ability to get what I want	Often times, flipping a coin helps us decide what step to take next
16	Those who are lucky enough to be in the right place become bosses	Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it
17	In relation to world affairs, most of us are the victims of forces we can neither understand nor control	World events are understood and controlled by individuals who partake in social and political affairs

	STATEMENT A	STATEMENT B
18	Many people are unaware of the degree to which accidental happenings control their lives	Luck does not exist
19	One should always be willing to take accountability of mistakes	Mistakes are better off avoided or covered up
20	It is difficult to determine whether a person really likes you	The nicer you are the more friends you will have
21	In the long run the purpose of good things is to balance the bad things we've experienced	Lack of ability, laziness, and ignorance are the leading causes of most misfortunes
22	Political corruption can be eliminated through effort	It is difficult for people to have much control over the things politicians do in the office
23	It is sometimes tricky to understand how teachers allocate marks to students	The grades I receive are a direct result of how hard I study
24	Great leadership encourages followers to make their own decisions	A good leader clearly defines duties for his/her followers
25	Often times, I feel that I cannot influence the things that happen to me	I find it impossible to believe that chance or luck play an important role in my life
26	Unfriendly people turn out to be the loneliest	People-pleasing is really useless, if people genuinely like you, they like you

	STATEMENT A	STATEMENT B
27	High schools place too much focus on athletics	One of the best ways to build character is through team sports
28	What happens to me is my own doing	I often feel like I am not in control of the direction of my life
29	I struggle to understand why politicians behave a certain way	Both national and local officials are responsible for bad governance

SCORING INSTRUCTION:

Score one point for each of the following:

2.a; 3.b; 4.b; 5.b; 6.a; 7.a; 9.a; 10.b; 11.b; 12.b; 13.b; 15.b; 16.a; 17.a; 18.a; 20.a; 21.a; 22.b; 23.a; 25.a; 28.b; 29.a

A high score= ELOC

A low score= ILOC

Sources: (Wang *et al*, 2020; Farnier *et al.*, 2021)

The above scale helps FPs to gauge their level of LOC (internal or external) and allows them to assess how they can develop and/or improve the relevant LOC applicable during CFIs (Yan, 2024). For the successful completion of this gauging exercise, self-awareness, a requirement for self-regulation, is essential (Borbely, 2021). An FP's level of self-awareness aids the effectiveness of the LCS (i.e. self-awareness assists the FP to undoubtedly identify and select the statement they agree with). Moreover, understanding one's LOC in the workplace is instrumental in shaping one's career trajectory, job satisfaction, and overall work performance (Wang *et al*, 2010 ; Wang *et al*., 2024). Wang *et al*. (2010) further explain that LOC has a significant impact on FPs' motivation, decision-making, and interactions with others, including interviewees. Furthermore, a greater comprehension of LOC and "its impact on work behaviour is crucial for personal and professional development" (Wang *et al.*, 2010: p. 761). Therefore, it is imperative that FPs understand the importance of LOC during CFIs and how it can be incorporated into the forensic working environment.

The application of loci of control in the commercial forensic practitioner's (FP's) working environment

The presence and sole reliance on ELOC leave FPs powerless and hopeless, as they believe that external factors determine the outcome of their lives (Davis, 2020). Subsequently, this leads to a downplay of success through attributing it to luck rather than their own efforts. According to Farnier *et al.* (2021), FPs with ELOC lack motivation to set goals. Based on their belief that they are unable to control things, they see no point in setting goals and working towards attaining them (Venugopal, 2022). They feel less motivated to take initiative or go beyond the basic requirements of their role because they believe that the outcomes are beyond their control (Davis, 2020; Venugopal, 2022). FPs with ELOC struggle more to adapt to changes to technologies, regulations, and methodologies, which are constantly evolving and form a significant part of their transdisciplinary field (Farnier *et al.*, 2021; Honigsberg, 2020; Kesavayuth *et al.*, 2020). Due to their reliance on external factors, they are more susceptible to external pressures, such as from clients or superiors, which could compromise their ethical standards and potentially lead to weakened ethical decision-making processes and outcomes. Furthermore, their inability to take accountability for their actions causes them to struggle with interpersonal relationships both at work and at home (Wang *et al.,* 2010). Eventually, the impact of ELOC leads to emotional and behavioural consequences (anxiety, aggression, fight/flight/freeze) which will affect the FP's ability to conduct an interview and their interpretation of the answers gathered from the interviewee (i.e. if the FP's belief is that people will always lie and cannot be trusted he/she may discredit/doubt any information obtained from the interviewee). Moreover, if the FP's view of him-/herself is to prove themselves to their family (i.e. I must be the best and earn good money to look

after everyone; I want status), they may become aggressive in interviews to obtain information, to become the best FP at their workplace, and to gain respect from family.

In contrast, FPs with ILOC are more likely to take accountability for their actions, learn from their mistakes, and pursue their goals despite setbacks (Sutton, 2021). They are self-motivated, self-reliant, and show more resilience and proactiveness than FPs with ELOC (Setyorini, 2024). These FPs are more achievement-oriented and successful in the workplace (Venugopal, 2022; Setyorini, 2024). Drawing from their belief that their efforts directly influence results, they can proactively address issues and persistently uncover fraud and discrepancies. Their positive outlook enhances their motivation and commitment to their roles, resulting in improved performance (Setyorini, 2024). Moreover, ILOC is associated with better stress management skills through effective coping strategies (Kesavayuth *et al.*, 2020). Furthermore, FPs who possess ILOC are empowered to change their circumstances, reach optimal growth, and become effective in their careers. They are more likely to adhere to ethical standards because they believe these have a direct impact on their professional integrity. Additionally, various character traits can help identify ILOC in FPs (i.e. taking responsibility, self-motivation, resilience, setting boundaries, independence, and goal orientation) (Gangai *et al*., 2016). Further to this, ILOC aids FPs to, among others, engage in improved, thoughtful, and ethical decision-making processes even in high-stakes environments (Gangai *et al*., 2016). Also, it enables FPs to remain resilient, composed, and proactive under emotionally charged, high-risk, and high-pressure situations (Buddelmeyer and Powdthavee, 2016). FPs can reduce burnout by using their ILOC as a buffer against stress and emotional exhaustion (Buddelmeyer and Powdthavee, 2016). As a result, FPs with ILOC build better rapport with interviewees during interactions, thus leading to successful CFI outcomes (Gangai *et al*., 2016).

Conclusion

FPs are individuals with diverse backgrounds that influence how they operate in both their personal and professional lives. These backgrounds have an impact on the type and level of LOC they draw from when in the workplace. Moreover, it is imperative for them to apply themselves in gauging their LOC; this will assist them in developing and/or improving the necessary LOC required for optimal results in CFIs. As specified above, motivation and self-regulation are essential for optimal performance by the FP in the workplace. This ensures that FPs are not only suited for their jobs but are also aware of themselves and their surroundings. The assessment of LOC helps FPs understand from which LOC they operate and how they can apply the relevant LOC in their workplaces. Furthermore, it is evident that organisations that heed SDT's guidance to cultivate environments that support employees' determination and self-motivation enhance the

overall well-being of FPs and enable high performance during CFIs. The above reasons concerning ELOC deem it inappropriate for investigative interviews; thus, the aim of this study is to analyse how ILOC, with the assistance of motivation and self-regulation, can be incorporated into CFIs.

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CHAPTER 3 ARTICLE 2

Self-regulation and motivation: A critical analysis of their effects on Interactional Pattern Analysis

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Self-regulation and motivation: A critical analysis of their effects on Interactional Pattern Analysis

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Abstract

The combat against economic crime urges commercial forensic practitioners (FPs) to employ effective investigative tools relevant to commercial forensic interviews (CFIs) such as the Interactional Pattern Analysis (IPA). This necessitates an exploration of the effectiveness of self-regulation and motivation, as key concepts of locus of control (LOC), in the implementation of the IPA during CFIs. These three psychological pillars—self-regulation, motivation, and LOC—play an important role in assisting FPs to facilitate CFIs. However, research regarding their dynamic relationship and effect on the IPA is limited. Therefore, this study aims to explore how this relationship can be useful to FPs in conducting successful CFIs. Through a scoping review, the FPs' (interviewers') perspective of the effectiveness of these psychological pillars and their contribution to the IPA's implementation in the CFI context was scrutinised. Moreover, this article outlines the importance of self-regulation and motivation as part of FPs' skills to address economic crime in the investigative interviewing context. Furthermore, the focus of this article is solely on the FPs' (interviewers') perspective in terms of the effects of self-regulation, motivation, and LOC on the IPA in the investigative interviewing context of South Africa. Although the study acknowledges the wider implications of these pillars on CFIs, it will not explore the interviewee's perspective. As a result, this work contributes to a deeper understanding of how these pillars can support the FP and underscores their significance as vital contributors to the IPA in facilitating successful CFIs.

Keywords: Commercial forensic interviewing, Commercial forensic practitioners, Locus of control, Motivation, Self-awareness, Self-regulation

Introduction

Economic crime remains a global concern that requires commercial forensic practitioners (FPs) to employ investigative techniques, including commercial forensic interviews (CFIs). During CFIs, it is crucial for the interviewer (FP) to interact with the interviewee in a manner that builds rapport (Dainty, 2025). Based on mutual trust and understanding, rapport is a harmonious relationship that enables communication to flow easily and effectively (Butt, 2021). Moreover, rapport plays a facilitating role in supporting the goals of a CFI (Abbe & Brandon, 2013) including obtaining reliable and admissible information by applying Interactional Pattern Analysis (IPA). IPA is a diagnostic psychotherapy tool that identifies and analyses interactional patterns between individuals whilst eliciting information from the source (interviewee) (Abbe & Brandon, 2013). Furthermore, to obtain information, the interviewer must possess interpersonal qualities relevant to CFIs (Van Graan et al., 2025) such as self-regulation and motivation. While motivation is a drive that causes someone to pursue a goal (McCoach & Flake, 2018), self-regulation is the process of manoeuvring one's behaviour toward a set goal (Inzlicht et al., 2021). While self-regulation and motivation have been extensively researched in the therapeutic context, it is unclear how these two qualities affect the CFI context. Therefore, this article aims to identify the effects of self-regulation and motivation, as key concepts of locus of control (LOC), on the relevant IPA relational qualities applicable in the CFI context.

MATERIALS AND METHODS

Data collection methods and recording

A twofold strategy was used to obtain relevant data. The initial phase, outlining the inclusion criteria, was defined prior to conducting the literature search. It focuses on self-regulation and intrinsic motivation as key concepts of internal locus of control (ILOC) and their effects on the IPA in the commercial forensic interviewing context between 2005 and 2025. The strategy outlines five phases detailed by Booth et al. (2012): (a) scoping search: a search for existing reviews and establishing an understanding of the topic, identifying keywords, establishing and documenting a search strategy; (b) conduct search: conducting a grey literature search, searching for identified keywords on databases, record any modifications to searches, where applicable; (c) bibliography search: identify additional relevant studies through a search on included reference lists and bibliographies; (d) verification: identifying any studies overlooked by keywords and search strategy, revising search strategies when necessary; and (e) documentation: present a detailed record of keywords used, searches performed, search strategies applied, and number of sources identified. Literature searches were conducted through relevant databases (e.g. EBSCOhost, ScienceDirect, Emerald, and ProQuest). Selection of these databases was based on their

relevance to commercial forensic interviewing literature in line with self-regulation, intrinsic motivation, and ILOC. The following Boolean phrases were used for titles and abstracts: ('interactional pattern analysis' OR 'interactional patterns') AND ('self-regulation' OR 'self-awareness') AND ('motivation' OR 'work motivation' OR 'intrinsic motivation') AND ('locus of control' OR 'internal locus of control' OR 'external locus of control') AND ('leadership') AND ('commercial forensic interview' OR 'commercial forensic interviewing context' OR 'investigative interviewing'). Articles were included based on their relevance to theoretical assumptions and alignment with CFIs. Full-text articles were included; however, articles about interviews other than forensic interviews were excluded.

The second phase focused on scrutinising grey literature to obtain information pertaining to CFIs. The search process identified 3,194 articles. These were screened for eligibility using titles, abstracts, and keywords. After the removal of duplicates and the application of inclusion and exclusion criteria, 351 relevant articles were identified. Upon removal of articles that did not address the phenomena of interest or did not contain adequate information, only 38 articles were scrutinised. The PRISMA diagram is presented in **Figure 1** below.

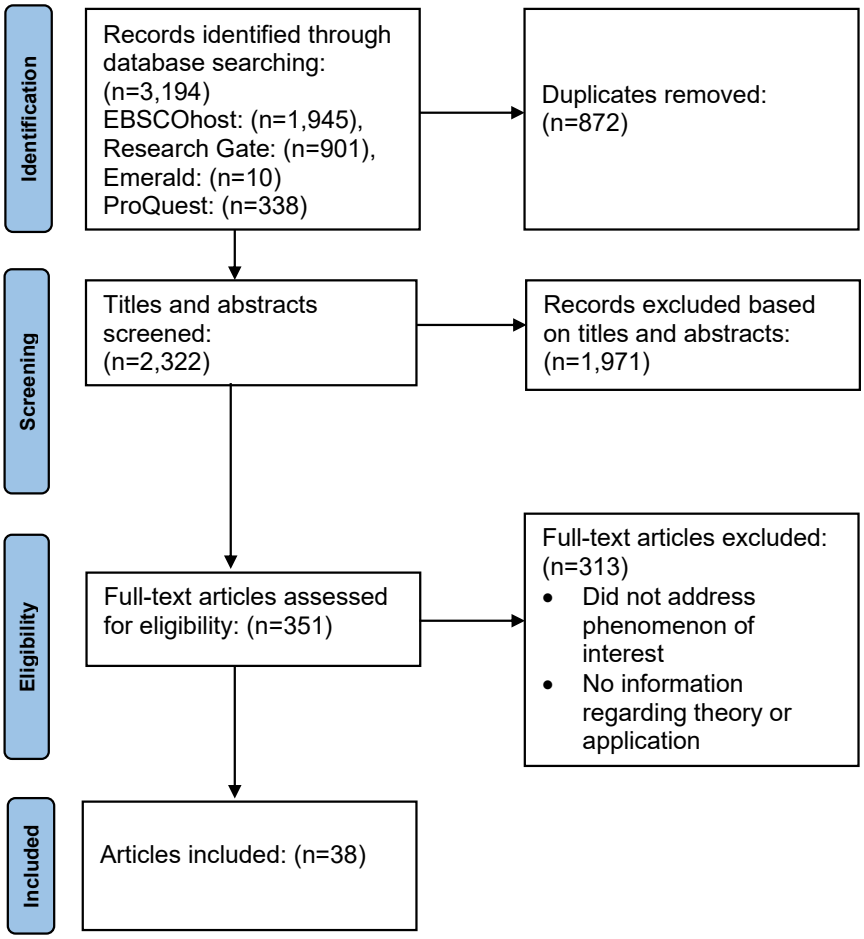

Figure 1: PRISMA diagram

Data analysis

The data analysis strategy used adopted steps as outlined by Peters et al. (2015). Data was organised according to the title of the article, journal sources, source type, year(s), database, background, inclusion criteria, context (investigative interviews), aim of the study, and the type of interview applicable (CFI). Contextual details encompassed the theoretical foundations and application of interviewing elements and techniques examined in the articles, performed manually by the researcher and reviewed by the research assistant. The results, that is, studies about investigative/commercial forensic interviews in relation to FPs, were captured in a spreadsheet. Researchers convened regularly to resolve queries and differing views during the process.

Rigour

Trustworthiness is foundational to the interpretation of qualitative research (Daniel et al., 2019). To ensure the trustworthiness of this article, four criteria (credibility, dependability, confirmability, and transferability) were applied, in accordance with Forero et al. (2018). *Credibility*, or an accurate interpretation of a phenomenon of interest with an established confidence that the results of this study are authentic and reliable (Liao, 2015), was maintained through partnership with expert supervisors throughout the process of obtaining information, searching and analysing literature in the relevant fields of study, particularly commercial forensic interviews, motivation, self-regulation, LOC, and the IPA. *Dependability*, defined as the repeatability and consistency of findings (Johnson et al., 2020), was supported through a detailed documentation of an audit trail that outlines proper research practices. To enhance *confirmability*, or the extent to which results are shaped and confirmed by other researchers (Williams & Kimmons, 2022), the study underwent independent reviewing by both co-researchers, who agreed on the contents. *Transferability*, defined as the extent to which results can be applied in other contexts and populations (Forero et al., 2018), was supported by detailing data collection, analysis, and reporting methods.

DISCUSSION

Self-awareness and self-regulation

Self-awareness and self-regulation are deeply interdependent (Miller & Verhaeghen, 2022). Self-awareness is the ability to notice one's own thoughts, emotions, and behaviours, whereas self-regulation is the ability to manage the noticed thoughts, emotions, and behaviours (Antonopoulou, 2024). As a result, self-regulation is built upon the foundation of self-awareness. This interdependence is better explained by emphasising that one can neither regulate nor manage (self-regulation) what they have not recognised (self-awareness) (Heatherton, 2011). To help with self-regulation, Baumeister (1998) outlines four psychological components: standards, monitoring, willpower, and motivation. *Standards* are internal and external guidelines for acceptable behaviour in a given situation, in this case CFIs; *monitoring* involves assessing one's behaviour to gauge whether it aligns with acceptable CFI standards; *willpower* refers to the resistance against impulses and the ability to stay on course during investigative interviews; and *motivation* refers to the drive to meet the desired standards of an interview (Dziak, 2025). These psychological components noticeably create a blueprint of how FPs can, through self-awareness, maintain self-regulation during CFIs. Therefore, with the help of clearly outlined CFI standards and goals, the FP can monitor whether his/her conduct is aligned with set standards and ensure that willpower is utilised to stay on course despite the uncertainties that may arise during

investigative interviews. Moreover, the best way to improve the effectiveness of self-regulation is for FPs to become more aware of what motivates them in their decision-making (Tjan, 2012).

Motivation

Motivation, or a psychological force that inspires individuals to chase their goals, comprises two types: intrinsic and extrinsic (Lai, 2011; Kamdron, 2015). Intrinsic motivation refers to internally driven actions, such as following one's personal aspirations, whereas extrinsic motivation involves externally driven actions like pursuing goals that bring about external rewards or punishment (Repovich, 2024). Research indicates that intrinsic motivation is the most beneficial type of motivation (Ryan and Deci, 2020; Van den Broeck et al., 2021; Fishbach and Woolley, 2022; Nwoko and Yazdani, 2023) as it is the main predictor of engagement and success in the workplace. Moreover, it carries with it psychological benefits such as positive experiences and improved performance (Fishbach and Woolley, 2022). Furthermore, to help cultivate intrinsic motivation, Deci and Ryan's (2008) self-determination theory (SDT) suggests the cultivation of autonomy (the ability to take initiative and make independent choices), competence (the ability to apply knowledge and skills to tasks and challenges), and relatedness (the need to belong and connect with others) (Pelikan et al., 2021). Therefore, it is understandable why individuals and organisations seek out tools and strategies to develop and/or improve intrinsic motivation in both their personal and professional lives as well as in those of their employees (Fishbach & Woolley, 2022). Drawing from above, and the understanding that CFIs require FPs to engage with interviewees, intrinsic motivation, along with LOC, have proven to be relevant to CFIs.

Locus of control (LOC)

Similar to motivation, LOC comprises two types: internal (ILOC) and external (ELOC) (Sidola et al., 2020). These types are measured by the perception of how one's life outcomes are controlled by one's own actions (internal) or by other forces (external) (Micheletto et al., 2022). Individuals with ILOC believe that the outcomes of their lives are dependent on their own actions, efforts, and decisions. Those with ELOC, contrastingly, believe that outcomes are determined by external factors such as luck, fate, and circumstances beyond their control (Guay, 2022). Unlike ELOC, which often correlates with health risks, lower motivation, reduced resilience, and the inability to set and successfully pursue goals, ILOC links closely with better stress management and ultimately ensures successful completion of tasks and improved performance in the workplace (Micheletto et al., 2022), making it the most appropriate in relation to investigative interviews. Moreover, fostering ILOC in the workplace can significantly enhance motivation and job satisfaction (Padmanabhan, 2021), which is why there is an initiative to discover strategies that help cultivate an ILOC mindset in FPs. Mindset can be defined as a set of beliefs that shape how

individuals make sense of the world and themselves (APA, 2023; Casey-Woodcock, 2025). It influences how people feel, think, and behave in different situations and ultimately impacting their success or failure. According to Padmanabhan (2021), cultivating an ILOC mindset involves a combination of self-awareness, self-regulation, intentional actions, and consistent practice. To cultivate this mindset among FPs in the workplace, Fitzgerald (2023) suggests the following strategies:

1. **Educational workshops and training:** Organising workshops, training sessions, and conferences to educate FPs about the concept of LOC beyond what they already know will help them understand how it can be an aiding tool during CFIs.
2. **Onboarding:** The inclusion of LOC into onboarding (a process in which new FPs are integrated into the organisation) will assist FPs in understanding it from the outset and how it can influence their career growth and job satisfaction.
3. **Growth mindset:** Emphasises that abilities and skills can be developed and polished through dedication and hard work, which aligns with LOC.
4. **Recognition and rewards:** To reinforce the value of having ILOC, FPs who demonstrate a proactive approach and take responsibility for their work can be recognised and rewarded.
5. **Mentorship programmes:** This allows experienced FPs to guide others in developing a stronger ILOC and taking control of their careers and leadership roles during CFIs.
6. **Stress management programmes:** Such programmes can lead to FPs focusing on mindfulness and resilience to manage stress better and become more in control of their emotions and reactions during CFIs.

The above initiatives have a direct impact on FPs' level of self-awareness and regulation in the workplace (Fitzgerald, 2023). As a result, it is essential for the interlinks between self-regulation, intrinsic motivation, and ILOC to be explored in relation to their incorporation into the IPA.

Integration of self-regulation, motivation, and locus of control

Self-regulation and motivation

While motivation provides the desire to achieve set goals, self-regulation is required to direct one's behaviour towards the achievement of desired goals (Stabila, 2024). This proves that motivation, too, requires regulation. As motivation provides the 'why', self-regulation provides the 'how' (Stabila, 2024). Simply put, motivation is the reason to pursue a goal, and self-regulation consists of strategies to stay on course during the pursuit. Moreover, self-regulation sustains motivation through strategies like habit formation, progress monitoring, strategic adjustments,

self-talk, and reflection (Stabila, 2024; Pereles et al., 2024). Habit formation, or regular practices like goal setting and planning, allows individuals to structure their approach toward goal achievement (Gardner and Rebar, 2019; Gardner and Lally, 2023). Progress monitoring consists of constant growth tracking and outcome examination to boost motivation and commitment (Chang et al., 2017). Strategic adjustments enable individuals to modify and redirect strategies during challenges (Chang et al., 2017), while self-talk and reflection allow individuals to engage in positive self-talk to review goals and reignite drive (motivation) when enthusiasm deteriorates (Latinjak et al., 2023). As a result, an FP can sustain motivation through self-regulation strategies and ensure that those strategies are applied during CFIs. This allows a flow from self-regulation to motivation and ultimately into LOC.

Motivation and locus of control

Although distinct, motivation and LOC are intertwined through their types. For example, an individual who is intrinsically motivated is more likely to have ILOC, and those who are extrinsically motivated are more likely to possess ELOC (Kamdron, 2015). This relationship reveals that individuals with ILOC tend to have higher intrinsic motivation because they believe their actions contribute to life's outcomes (Kamdron, 2015; Ryan and Deci, 2020; Fishbach and Woolley, 2022). Consequently, they apply effort in chasing their goals and take responsibility for the results thereof. Moreover, intrinsic motivation drives individuals to engage in self-directed tasks, such as goal setting and problem-solving (Micheletto et al., 2022), which are attributes associated with ILOC (Fishbach and Woolley, 2022; Micheletto et al., 2022). Therefore, it is evident that these elements reinforce each other through a positive relationship loop. This reinforcement is sustained by self-regulation (Villar et al., 2024).

Self-regulation and locus of control

LOC is a "strong predictor of various personality traits and one of them is self-regulation" (Sidola et al., 2020: 116). There is a close correlation between LOC and self-regulation (a self-directive tool through which individuals can transform their capacities into accomplishments) (Sidola et al., 2020). An individual's self-regulation is facilitated by their ILOC (McGregor, 2018). This is done through various steps, including the belief that one's own actions can influence the recovery process post-adversity, the initiative to solve adversity, and the act of exercising self-monitoring throughout the recovery process (McGregor, 2018). Subsequently, self-regulation mediates between ILOC and resilience. Resilience is an adaptive attribute that enables individuals to recover from difficult circumstances (Walker, 2020). According to McGregor (2018), it encompasses adaptive processes such as information-seeking and engaging in preventative behaviours to either prevent or recover from adverse situations. Given that CFIs are complex

interactions (Honigsberg, 2020), it is undeniable that FPs must use their ILOC to facilitate self-regulation, build resilience, and better manage adversity arising from conducting CFIs.

Against this background, the three psychological pillars—self-regulation, motivation, and LOC—play an important role in assisting FPs to facilitate CFIs. It is noticeable that FPs' ILOC leads to higher intrinsic motivation which then leads to better self-regulation. Likewise, better self-regulation reinforces intrinsic motivation and ILOC, thus positively influencing the implementation of the IPA.

Interactional Pattern Analysis (IPA)

Various theories inform the IPA, including humanistic theory, General Systems Theory (GST), and the person-centred approach (PCA) (Vorster et al., 2013). Humanistic theory, also known as humanistic psychology, studies an individual as a whole and emphasises their inherent drive towards personal growth and self-actualisation while also focusing on an individual's subjective perspective (Vorster et al., 2013). Conversely, GST views individuals as part of interconnected systems (i.e. families and social groups) that function circularly through recurring patterns of action and reaction (Issitt, 2024; Vorster et al., 2013). The PCA, on the other hand, is foundational to the IPA as it uses its core relational qualities: empathy, congruence, and unconditional positive regard (Du Plooy, 2014; Vorster et al., 2013). The IPA, a diagnostic psychotherapy tool used to understand human behaviour in an interpersonal context, was developed by Charl Vorster (Du Plooy, 2019). Drawing on PCA, Vorster (2011) uses the IPA to elicit key relational qualities as observable behaviour (verbal and non-verbal) between the FP and the interviewee (i.e. the party being interviewed) (Vorster et al., 2013). The IPA builds on PCA by using relational qualities to add structure.

Moreover, derived from PCA, empathy, congruence, and unconditional positive regard form part of the relational qualities of the IPA and are relevant in the CFI context. Empathy refers to the ability to assess and verbally reflect an interviewee's feelings and experiences back to them. Congruence (also known as genuineness) occurs when the FP's verbal and non-verbal communication complement each other, ensuring that no variance exists between the two. Unconditional positive regard is the non-judgemental acceptance of an interviewee's experience accompanied by sincere and warm responses (Van Graan et al., 2025; Vorster et al., 2013). The following additional relational qualities support the implementation of the IPA: (a) context: the interpersonal environment in which the interview occurs; (b) defining the relationship between the interviewer (FP) and interviewee: this quality entails three forms of relationships, namely, parallel, symmetrical, or complementary. Parallel relationships occur when parties alternate the leadership role. In a symmetrical relationship, there is a struggle for power, while a complementary

relationship constitutes one person being the leader and the other being a follower. In the case of CFIs, complementary relationships are ideal because they allow the FP to lead the interviewee (Vorster et al., 2019); (c) clarity of self-presentation: this occurs when the FP presents his/her intentions and thoughts in a clear and comprehensible manner, (d) confirmation: this quality enables the FP to validate the interviewee as they share their experiences (Van Graan et al., 2025); (e) circular or linear approach to CFIs: this emphasises that individuals with a linear approach do not accommodate other people's perspectives, whereas those who do, employ a circular approach. During CFIs, FPs apply a circular approach to accommodate the interviewee's point of view (Du Plooy, 2019); (f) degree of interpersonal flexibility or rigidity: the ability of the FP to elicit appropriate behaviour from the interviewee. FPs are required to employ flexible interactional styles when communicating with the interviewee; (g) distance: emotional distance fluctuates during CFIs. FPs must cultivate a safe emotional distance to ensure that the interviewee does not feel uncomfortable (Du Plooy, 2014); (h) The potential for rejection or acceptance from the interviewee: FPs who are judgmental and lack empathy have the potential to elicit rejection from the interviewee. To elicit acceptance, FPs must make interviewees feel seen and heard (Van Graan et al., 2025; and (i) adequacy of problem-solving: FPs are required to solve any problems arising during CFIs that may hinder the process of information gathering (Du Plooy, 2019; Vorster et al., 2019). Additionally, an understanding of the above qualities, along with the fundamental basis of self-regulation and motivation, assists FPs in instrumentally applying the relevant IPA relational qualities in the CFI context.

Effectiveness of self-regulation and motivation on the Interactional Pattern Analysis (IPA)

Through their intrinsic motivation, FPs, among other things, are expected to remain composed, consistent, and emotionally intelligent (Antonopoulou, 2024). Due to their complexity, CFIs can place FPs under great pressure, requiring FPs to remain calm, stable, and reliable, which builds trust with the interviewee (Antonopoulou, 2024). Drawing on self-awareness, self-regulation allows FPs to become interviewers who understand what triggers them and how to respond to others with sensitivity (empathy) (Caraig et al., 2020; Wibowo & Paramita, 2022). It assists them in managing stress and consistently demonstrates integrity in their decision-making process (Caraig et al., 2020). Moreover, ILOC empowers FPs to take initiative in engaging and persisting through adversity when dealing with difficult interviewees (Karya et al., 2022). From the foundation of self-regulation, FPs apply ILOC to restructure planned strategies when needed because an approach with one interviewee may not necessarily be useful with another (Butt, 2021).

Therefore, the integration of self-regulation and motivation into CFIs is integral to this study because it provides a better understanding of how these concepts can be applied by FPs during

interactions with interviewees. Subsequently, self-regulation and motivation can help FPs apply the relational qualities of the PCA and IPA more effectively, which, in turn, will improve the obtaining of reliable and admissible information as part of a CFI. The application and effectiveness of self-regulation and motivation to the IPA are discussed in **Table 1** below.

Table 1: Application and effectiveness of psychological pillars

	Relational quality	Application and effectiveness
1	Empathy	FPs with self-regulation and intrinsic motivation tend to be more self-aware. They understand their own emotions and actions; thus, they can relate to and understand interviewees' emotions and actions. Moreover, the belief that they can control their own actions and outcomes (ILOC) helps them be responsible. This sense of responsibility leads to more considerate and empathetic behaviour, which can be applied during CFIs. Furthermore, FPs with ILOC are more resilient, which allows them to remain calm and supportive during empathetic interactions with the interviewee. While self-regulation ensures that FPs facilitate interviews with a sense of active listening, motivation helps them understand the impact of their attentiveness on the interview, making them more attuned to the interviewee's emotions and perspectives.
2	Congruence	From the basis of self-awareness, a self-regulated and intrinsically motivated FP portrays no variance in his/her verbal and non-verbal communication. Their verbal and non-verbal communication is consistent and aligned, ensuring they remain honest without deception. Additionally, it allows the FP to remain genuine and maintain composure despite any uncertainties during the CFI.
3	Unconditional Positive Regard	An FP who is self-regulated and intrinsically motivated accepts the interviewee's experience without judgement, thus allowing the interviewee to feel safe and express themselves honestly. Exercising unconditional positive regard encourages openness and creates an environment that signals to the interviewee that it is safe to be vulnerable, thereby building trust between the FP and interviewee.

	Relational quality	Application and effectiveness
4	Context	A self-regulated FP sets the right boundaries within which the interview takes place. This allows the interviewee to understand the background, reason and setting of the interview. Through self-regulation, the FP can function, steer the interview, and lead the interviewee. As a result, both the FP and interviewee understand their role within the setting and responsibility to refocus when necessary.
5	Defining the relationship between interviewer and interviewee	A complementary relationship adopted by FPs allows them to lead the interview, whilst the interviewee follows. This relationship can be accomplished through intrinsic motivation and self-regulation. A self-regulated FP leads with an awareness of their actions and those of their followers, which greatly impacts the outcome of the interview. This leader (FP) exercises the responsibility to initiate and communicate the relationship with the follower (interviewee), whilst maintaining the leadership role.
6	Clarity of self-presentation	FPs who are intrinsically motivated are aware of what drives them, hence their ability to present their intentions and thoughts in a clear and understandable manner.
7	Confirmation	Similarly to the implementation of PCA variables (i.e. empathy, congruence, and unconditional positive regard), the FP attentively listens and fosters an environment that affirms the interviewee's perspective.
8	Circular or linear approach to CFI	As mentioned, self-regulation builds upon self-awareness, hence FPs' ability to apply a circular approach by becoming aware of and accommodating interviewees' perspectives. This creates a space for the interviewee to freely express their views, which can potentially lead to the gathering of admissible evidence.

	Relational quality	Application and effectiveness
9	Degree of interpersonal flexibility or rigidity	A self-regulated FP can elicit appropriate behaviour from the interviewee. When communicating with the interviewee, the FP's use of flexible interactional styles accommodates and evokes proper conduct from the interviewee—i.e. to cooperate in the interview.
10	Distance	An intrinsically motivated and self-regulated FP can gauge and maintain a safe emotional distance to ensure that the interviewee does not feel uncomfortable during the CFI.
11	The potential for rejection or acceptance from the interviewee	FPs who are judgemental and lack empathy have the potential to elicit rejection from the interviewee. However, an FP who is self-regulated can elicit acceptance by cultivating an environment where interviewees feel seen and heard.
12	Adequacy of problem-solving	During CFIs, FPs are required to solve various issues that may hinder the process of information gathering. When these issues and uncertainties arise, self-regulation becomes critical.

Source: Authors

Drawing from above, self-regulation and ILOC are influential in how FPs lead CFIs, and motivation is the driving force behind investigative interview successes. Over and above that, FPs who are intrinsically motivated ignite purpose and inspire action. This allows the interviewee to have a deeper sense of their importance to the investigation, ensuring willingness to participate in the interview and share information.

Conclusion

Intrinsic motivation is of paramount importance for FPs as it serves as a driving force towards their commitment to combat economic crime. While ILOC assists with the belief that FPs are in control of CFI outcomes, self-regulation allows them to steer their behaviour towards set goals. Moreover, FPs who partake in initiatives that cultivate an ILOC mindset (i.e. educational workshops and trainings, mentorship, stress management programmes, and growth mindset strategies) become more self-regulated and motivated, which has a direct impact on their effectiveness during CFIs. Furthermore, since FPs employ the complementary relationship and assume the leadership role during CFIs, it is imperative that success is attributed to the relevant psychological factors (self-regulation, intrinsic motivation, and ILOC). Simultaneously, these factors remain useful when uncertainties and adversities arise during CFIs. Therefore, it is inevitable that the efficacy of self-regulation and intrinsic motivation, as essential elements of ILOC and effective contributors to the IPA, give rise to successful completions of CFIs.

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CHAPTER 4 CONCLUSION

4.1 Introduction

Commercial forensic interviews (CFIs) are an essential part of economic crime investigations and require interactions with different interviewees. These interactions highlight the importance of interpersonal and relational skills. Different tools, including rapport building, emotional intelligence, motivation models, self-regulation guidelines, LOC mindset, and the IPA, help equip FPs with the interpersonal and relational skills necessary for CFIs. Through these tools, FPs are empowered to achieve optimal functionality in the investigative interviewing context within their transdisciplinary field. Moreover, FPs operate in a knowledge diversity that integrates law, accounting, IT, investigation, and human behaviour, thereby enabling them to effectively identify potential issues and develop innovative solutions. Therefore, this study highlighted the importance of knowledge diversity in addressing complex global challenges, particularly economic crime. As a result, it aimed to address the primary research objective: to perform a critical analysis of the interviewer's perspective on the effects of LOC on CFIs.

As part of meeting the primary objective of this study, two secondary objectives were derived:

- To critically analyse the interlinks between motivation, self-regulation, and locus of control from the interviewer's perspective (Chapter 2 [Article 1])
- To critically analyse self-regulation and motivation in terms of the Interactional Pattern Analysis (IPA) (Chapter 3 [Article 2])

To address these objectives, a critical literature review (Chapter 1) and scoping reviews (Chapters 2 and 3 [i.e. Articles 1 and 2]) were conducted to examine how self-regulation, motivation, LOC, and the IPA can be effective tools for FPs in the CFI context. Through this, the study contributes to the ongoing development and enhancement of CFI mechanisms to help investigate economic crime within constantly evolving global financial systems.

4.2 Conclusion on objectives

4.2.1 Conclusion on primary objective

The primary objective stated in section 1.5.1 of this study was to critically analyse the interviewer's perspective of the effects of LOC on CFIs. This objective was achieved by examining various key concepts and their effectiveness in the context of investigative

interviewing. Findings indicated that self-regulation and motivation, as key concepts of LOC, positively impact the implementation of the IPA during CFIs. Chapter 2 (Article 1) broadly investigated the definitions of self-regulation, motivation, and LOC and uncovered the most recent research regarding their importance to FPs in the CFI context. These elements shape how FPs interact with interviewees by helping them navigate interpersonal dynamics effectively. Chapter 3 (Article 2) explored and illustrated how self-regulation, intrinsic motivation, and ILOC can be integrated into the IPA to help FPs better facilitate CFIs. It also highlighted the importance of rapport in building trust and competently eliciting relevant and admissible information from the interviewee. The analysis of these elements underpins how interpersonal skills enhance CFI effectiveness in achieving the primary objective of equipping FPs for investigative interviews.

4.2.2 Conclusion on the secondary objective 1

Chapter 2 (Article 1) intended to lay out a critical analysis of the interviewer's perspective in relation to the interlinks between motivation, self-regulation, and LOC. The analysis delved into various factors that drive these concepts and form the basis of their relationship with one another. This article explored this relationship and its importance in assisting FPs during CFIs. Moreover, it demonstrated that through their intrapersonal and interpersonal functions (pg. 18), emotions play a significant role in driving motivation. Consequently, these functions necessitate FPs to possess and apply emotional intelligence when facilitating CFIs (pg. 17). Furthermore, various motivation models were outlined to provide an understanding of how individuals are motivated (pg. 20). However, the SDT drove the understanding and implementation of motivation in this study due to its applicability to investigative interviews. Additionally, the relationship between self-awareness and self-regulation enables FPs to direct themselves appropriately when interacting with interviewees. On the other hand, an examination of LOC and the factors that affect it provides FPs with an understanding of its foundation and the relevant tools for gauging it. Using 29 items, the LCS assists FPs to gauge their level of LOC and subsequently improve it to ensure optimal fit for CFIs (pg. 28). Therefore, the findings of this study addressed the importance of emotional intelligence, personal and work motivation, self-regulation, and ILOC as effective and interdependent CFI components. Thus, this article successfully addressed the research question by illustrating an FP's perspective on the interrelationships between self-regulation, motivation, and LOC and its usefulness in the CFI context.

4.2.3 Conclusion on the secondary objective 2

Chapter 3 (Article 2) purported to provide a critical analysis of self-regulation and motivation in terms of the IPA. By examining the foundation of self-regulation, this article outlined how self-awareness is a critical component for FPs to learn to self-regulate during CFIs (pg. 50). Simultaneously, it indicated how, among the two types of motivation that exist, intrinsic is the most suitable in the CFI context (pg. 51). Moreover, it explored the importance of cultivating an ILOC mindset within and around FPs and investigated how the interlinks between self-regulation, intrinsic motivation, and ILOC can assist the FP in the facilitation of CFIs (pg. 52). Furthermore, this article examined the contribution of each pillar (i.e. self-regulation, intrinsic motivation, and ILOC) towards the implementation of the IPA, an effective tool used by FPs during investigative interviews (pg. 52). As a result, findings indicate that FPs who lack self-regulation, intrinsic motivation, and ILOC lack the ability to face uncertainties and adversities arising from CFIs. Therefore, based on the data, it becomes clear that the integration of these psychological pillars (self-regulation and intrinsic motivation), as key concepts of ILOC in the implementation of the IPA, is essential in guiding FPs' conduct in the fight against economic crime. Thus, the research question was answered by demonstrating that the use of relevant psychological pillars enables FPs to achieve optimal benefits of CFIs.

4.3 Recommendations

Constantly evolving financial systems demand that FPs embrace a range of various psychological tools when facilitating investigative interviews, particularly CFIs. These tools equip FPs with the relevant interpersonal skills required for investigative interviews. Moreover, the incorporation of these tools and skills (i.e. emotional intelligence, self-regulation, rapport, intrinsic motivation, and the LCS) into ILOC has become increasingly necessary due to the continuous rise in economic crime. Although the findings of this study are purely theoretical, armed with such knowledge, researchers and organisations can implement strategies to offer empirical evidence. Furthermore, this study provides a fundamental structure for organisations and FPs to utilise relevant psychological pillars to steer CFIs toward optimal outcomes. Additionally, based on this study's groundwork, further research is required to establish the extent to which these positive effects can, during CFIs, also assist the interviewee in providing relevant information. Over and above that, additional investigation into the development of a programme or training in motivation and self-regulation is crucial, since it may facilitate the FPs' effective application of the IPA relational qualities, and subsequently, the obtaining of reliable and admissible information during interviews.

4.4 Limitations

This study yields valuable findings, yet it is equally important to acknowledge its constraints. The methodological approach of a scoping review (chapters 2 and 3) was useful in identifying key concepts and knowledge gaps; however, its broadness could have led to scope creep. As a result, a proactive approach to defining a clear scope, progress monitoring, and addressing deviations was adopted to ensure the reliability of findings.

4.5 Overall conclusion

This study set out to provide a critical analysis of the effects of self-regulation and motivation, as key concepts of LOC, during IPA-based CFIs. It also gave an illustration of how FPs can develop, gauge, assess, and improve the application of these psychological factors when facilitating investigative interviews. Findings revealed that self-regulation, motivation, and LOC are interrelated concepts that assist FPs in developing the interpersonal skills needed during CFIs. Moreover, the results uncovered that intrinsic motivation and ILOC are more favourable to CFIs as opposed to extrinsic motivation and ELOC. Furthermore, emotional intelligence, self-awareness, and an ILOC mindset are fundamental in reinforcing the effectiveness of these psychological pillars. The results underscore the importance of integrating the interlinks between self-regulation, intrinsic motivation, and ILOC into CFIs. It is evident that FPs who are self-aware, emotionally intelligent, and intrinsically motivated, whilst functioning from their ILOC, elicit trust and information from the interviewee. While ILOC has been studied as a relational quality of the IPA, it has not been studied in relation to CFIs. Therefore, this study contributes to the field by equipping FPs with the relevant psychological factors to facilitate CFIs in a manner that gathers reliable and admissible information for legal purposes. Equipped with this insight, organisations and FPs can cultivate an ILOC mindset that successfully propels CFIs' purpose towards combating economic crime. Overall, findings indicate that a self-regulating, intrinsically motivated FP leverages the full potential of CFIs during investigations within constantly evolving systems susceptible to economic crime.

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APPENDIX A: PROOF OF LANGUAGE EDITING

DR PHILIP NOLTE

MA Classical Languages | PhD Practical Theory

Taalversorging | Language Editing

03 November 2025

I, Philip Nolte, hereby declare that I have completed the language editing of the Master's Dissertation of Ms Thorisho Kgomo (student number: 30097584), submitted in fulfilment of the requirements for the degree Master of Commerce in Forensic Accountancy in the Faculty of Economic and Management Sciences at the North-West University.

The title of the thesis is

Critically analysing the effects of locus of control in the commercial forensic interview.

Kind regards.



Dr S. Philip Nolte

Language editor, translator and researcher

ORCiD ID: 0000-0001-6169-1122

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APPENDIX B: PROOF OF ARTICLE SUBMISSIONS

Emerald Journal of Financial Crime

A critical analysis of the interlinks between motivation, self-regulation, and locus of control in the commercial forensic interview context

Journal:	*Journal of Financial Crime*
Manuscript ID	JFC-11-2025-0396
Manuscript Type:	Research Paper
Keywords:	Commercial forensic interviewing, Commercial forensic practitioners, Emotions, Locus of control, Motivation, Self-regulation

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Journal of Economic Criminology

Self-regulation and motivation: A critical analysis of their effects on Interactional Pattern Analysis

--Manuscript Draft--

Manuscript Number:	JECONC-D-25-00087
Full Title:	Self-regulation and motivation: A critical analysis of their effects on Interactional Pattern Analysis
Article Type:	Full Length Article
Keywords:	Commercial forensic interviewing; Commercial forensic practitioners; Locus of control; Motivation; Self-regulation
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Order of Authors:	Thorisho Kgomo, BCom Honours in Forensic Accountancy
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	Michelle Bach, PhD in Psychology
Order of Authors Secondary Information:	
Manuscript Region of Origin:	SOUTH AFRICA
Abstract:	The combat against economic crime urges commercial forensic practitioners (FPs) to employ effective investigative tools relevant to commercial forensic interviews (CFIs) such as the Interactional Pattern Analysis (IPA). This necessitates an exploration of the effectiveness of self-regulation and motivation, as key concepts of locus of control, in the implementation of the IPA during CFIs. These three psychological pillars—self-regulation, motivation, and locus of control—play an important role in assisting FPs to facilitate CFIs. However, research regarding their dynamic relationship and effect on the IPA is limited. Therefore, this study aims to explore how this relationship can be useful to FPs in conducting successful CFIs. Through a scoping review, the FPs' (interviewers') perspective of the effectiveness of these psychological pillars and their contribution to the IPA's implementation in the CFI context was scrutinised. Moreover, this article outlines the importance of self-regulation and motivation as part of FPs' skills to address economic crime in the investigative interviewing context. Furthermore, the focus of this article is solely on the FPs' (interviewers') perspective in terms of the effects of self-regulation, motivation, and locus of control on the IPA in the investigative interviewing context of South Africa. Although the study acknowledges the wider implications of these pillars on CFIs, it will not explore the interviewee's perspective. As a result, this work contributes to a deeper understanding of how these pillars can support the FP and underscores their significance as vital contributors to the IPA in facilitating successful CFIs.
Additional Information:	
Question	**Response**

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APPENDIX C: ARTICLE 1 AUTHOR GUIDELINES

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APPENDIX D: ARTICLE 2 AUTHOR GUIDELINES.



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Journal of Economic Criminology

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Guide for authors

About the Journal

- Aims and scope
- Article types
- Peer review
- Open access

Ethics and policies

- Ethics in publishing
- Submission declaration
- Authorship
- Changes to authorship
- Declaration of competing interests
- Funding sources
- Declaration of generative AI use
- Preprints
- Use of inclusive language
- Reporting sex- and gender-based analyses
- Jurisdictional claims

Writing and formatting

- File format
- Double anonymized peer review
- Title page
- Abstract
- Keywords
- Highlights
- Graphical abstract
- Math formulae
- Tables
- Figures, Images and artwork
- Generative AI and Figures, images and artwork
- Supplementary material
- Video
- Research data
- Data linking
- Co-submission of related data, methods or protocols
- Journal specific information: Writing and formatting
- Article structure
- References

Submitting your manuscript

- Submission checklist
- Submit online

After receiving a final decision

- Article Transfer Service
- Publishing agreement
- License options
- Open access
- Permission for copyrighted works
- Proof correction
- Share Link
- Responsible sharing

Resources for authors

- Elsevier Researcher Academy
- Language and editing services

Getting help and support

- Author support

About the journal

Aims and scope

Journal of Economic Criminology aims to be the premier outlet for peer-reviewed theoretical and empirical work on economic criminology. This interdisciplinary journal welcomes manuscript submissions on a broad array of topics, including various **types of economic crime, explanations of offending and victimisation, crime prevention, public and private policing, compliance, legal systems, justice**, among others. It encourages submissions that push theoretical boundaries for issues salient to economic criminologists and welcomes rigorous **quantitative, qualitative, and mixed-methods empirical** research.

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- Intellectual Property Crimes, Price-Fixing and Cartels
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- Illicit Financial Flow
- Financial Intelligence and Related Investigations
- Economic Crime Measurement
- Sanctions against economic crime criminals
- Victims of economic crime

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- Format Word files in a single-column layout. Double-column formatting is only permitted for LaTeX submissions.
- Remove any strikethrough and underlined text from your manuscript, unless it has scientific significance related to your article.

- Use spell-check and grammar-check functions to avoid errors.

We advise you to read our Step-by-step guide to publishing with Elsevier.

Double anonymized peer review

This journal follows a double anonymized review process which means author identities are concealed from reviewers and vice versa.To facilitate the double anonymized review process, we ask that you provide your title page (including author details) and anonymized manuscript (excluding author details) separately in your submission.

The title page should include:

- Article title
- Author name(s)
- Affiliation(s)
- Acknowledgements
- Declaration of Interest statement
- Corresponding author address (full address is required)
- Corresponding author email address

The anonymized manuscript should contain the main body of your paper including:

- References
- Figures
- Tables

It is important that your anonymized manuscript does not contain any identifying information such as author names or affiliations.

Read more about peer review.

Title page

You are required to include the following details in the title page information:

- Article title. Article titles should be concise and informative. Please avoid abbreviations and formulae, where possible, unless they are established and widely understood, e.g. DNA.
- Author names. Provide the given name(s) and family name(s) of each author. The order of authors should match the order in the submission system. Carefully check that all names are accurately spelled. If needed, you can add your name between parentheses in your own script after the English transliteration.
- Affiliations. Add affiliation addresses, referring to where the work was carried out, below the author names. Indicate affiliations using a lower-case superscript letter immediately after the author's name and in front of the corresponding address. Ensure that you provide the full postal address of each affiliation, including the country name and, if available, the email address of each author.
- Corresponding author. Clearly indicate who will handle correspondence for your article at all stages of the refereeing and publication process and also post-publication. This responsibility includes answering any future queries about your results, data, methodology and materials. It is important that the email address and contact details of your corresponding author are kept up to date during the submission and publication process.
- Present/permanent address. If an author has moved since the work described in your article was carried out, or the author was visiting during that time, a "present address" (or "permanent address") can be indicated by a footnote to the author's name. The

address where the author carried out the work must be retained as their main affiliation address. Use superscript Arabic numerals for such footnotes.

Abstract

You are required to provide a concise and factual abstract which does not exceed 250 words. The abstract should briefly state the purpose of your research, principal results and major conclusions. Some guidelines:

- Abstracts must be able to stand alone as abstracts are often presented separately from the article.
- Avoid references. If any are essential to include, ensure that you cite the author(s) and year(s).
- Avoid non-standard or uncommon abbreviations. If any are essential to include, ensure they are defined within your abstract at first mention.

Keywords

You are required to provide 1 to 7 keywords for indexing purposes. Keywords should be written in English. Please try to avoid keywords consisting of multiple words (using "and" or "of").

We recommend that you only use abbreviations in keywords if they are firmly established in the field.

Highlights

You are encouraged to provide article highlights at submission.

Highlights are a short collection of bullet points that should capture the novel results of your research as well as any new methods used during your study. Highlights will help increase the discoverability of your article via search engines. Some guidelines:

- Submit highlights as a separate editable file in the online submission system with the word "highlights" included in the file name.
- Highlights should consist of 3 to 5 bullet points, each a maximum of 85 characters, including spaces.

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You are encouraged to provide a graphical abstract at submission.

The graphical abstract should summarize the contents of your article in a concise, pictorial form which is designed to capture the attention of a wide readership. A graphical abstract will help draw more attention to your online article and support readers in digesting your research. Some guidelines:

- Submit your graphical abstract as a separate file in the online submission system.
- Ensure the image is a minimum of 531 x 1328 pixels (h x w) or proportionally more and is readable at a size of 5 x 13 cm using a regular screen resolution of 96 dpi.
- Our preferred file types for graphical abstracts are TIFF, EPS, PDF or MS Office files.

We encourage you to view example graphical abstracts and read about the benefits of including them.

Math formulae

- Submit math equations as editable text, not as images.
- Present simple formulae in line with normal text, where possible.
- Use the solidus (/) instead of a horizontal line for small fractional terms such as X/Y.
- Present variables in italics.

- Denote powers of e by exp.
- Display equations separately from your text, numbering them consecutively in the order they are referred to within your text.

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Tables must be submitted as editable text, not as images. Some guidelines:

- Place tables next to the relevant text or on a separate page(s) at the end of your article.
- Cite all tables in the manuscript text.
- Number tables consecutively according to their appearance in the text.
- Please provide captions along with the tables.
- Place any table notes below the table body.
- Avoid vertical rules and shading within table cells.

We recommend that you use tables sparingly, ensuring that any data presented in tables is not duplicating results described elsewhere in the article.

Figures, images and artwork

Figures, images, artwork, diagrams and other graphical media must be supplied as separate files along with the manuscript. We recommend that you read our detailed artwork and media instructions. Some excerpts:

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- Cite all images in the manuscript text.
- Number images according to the sequence they appear within your article.
- Submit each image as a separate file using a logical naming convention for your files (for example, Figure_1, Figure_2 etc).
- Please provide captions for all figures, images, and artwork.
- Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX, text graphics may also be embedded in the file.

Artwork formats

When your artwork is finalized, "save as" or convert your electronic artwork to the formats listed below taking into account the given resolution requirements for line drawings, halftones, and line/halftone combinations:

- Vector drawings: Save as EPS or PDF files embedding the font or saving the text as "graphics."
- Color or grayscale photographs (halftones): Save as TIFF, JPG or PNG files using a minimum of 300 dpi (for single column: min. 1063 pixels, full page width: 2244 pixels).
- Bitmapped line drawings: Save as TIFF, JPG or PNG files using a minimum of 1000 dpi (for single column: min. 3543 pixels, full page width: 7480 pixels).
- Combinations bitmapped line/halftones (color or grayscale): Save as TIFF, JPG or PNG files using a minimum of 500 dpi (for single column: min. 1772 pixels, full page width: 3740 pixels).

Please do not submit:

- files that are too low in resolution (for example, files optimized for screen use such as GIF, BMP, PICT or WPG files).

- disproportionally large images compared to font size, as text may become unreadable.

Figure captions

All images must have a caption. A caption should consist of a brief title (not displayed on the figure itself) and a description of the image. We advise you to keep the amount of text in any image to a minimum, though any symbols and abbreviations used should be explained.

Provide captions in a separate file.

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If you submit usable color figures with your accepted article, we will ensure that they appear in color online.

Please ensure that color images are accessible to all, including those with impaired color vision. Learn more about color and web accessibility.

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Supplementary material

We encourage the use of supplementary materials such as applications, images and sound clips to enhance research. Some guidelines:

- Supplementary material should be accurate and relevant to the research.
- Cite all supplementary files in the manuscript text.
- Submit supplementary materials at the same time as your article. Be aware that all supplementary materials provided will appear online in the exact same file type as received. These files will not be formatted or typeset by the production team.
- Include a concise, descriptive caption for each supplementary file describing its content.
- Provide updated files if at any stage of the publication process you wish to make changes to submitted supplementary materials.
- Do not make annotations or corrections to a previous version of a supplementary file.
- Switch off the option to track changes in Microsoft Office files. If tracked changes are left on, they will appear in your published version.

Video

This journal accepts video material and animation sequences to support and enhance your scientific research. We encourage you to include links to video or animation files within articles. Some guidelines:

- When including video or animation file links within your article, refer to the video or animation content by adding a note in your text where the file should be placed.
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- Provide files in one of our recommended file formats. Files should be within our preferred maximum file size of 150 MB per file, 1 GB in total.
- Provide "stills" for each of your files. These will be used as standard icons to personalize the link to your video data. You can choose any frame from your video or animation or make a separate image.
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We publish all video and animation files supplied in the electronic version of your article.

For more detailed instructions, we recommend that you read our guidelines on submitting video content to be included in the body of an article.

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We are committed to supporting the storage of, access to and discovery of research data, and our research data policy sets out the principles guiding how we work with the research community to support a more efficient and transparent research process.

Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Please read our guidelines on sharing research data for more information on depositing, sharing and using research data and other relevant research materials.

Research data deposit, citation and linking

For this journal, **Option B** instructions from our research data guidelines apply. This means that you are **encouraged** to:

- Deposit your research data in a relevant data repository.
- Cite and link to this dataset in your article.
- If this is not possible, make a statement explaining why research data cannot be shared.

Data linking

Linking to the data underlying your work increases your exposure and may lead to new collaborations. It also provides readers with a better understanding of the described research.

If your research data has been made available in a data repository there are a number of ways your article can be linked directly to the dataset:

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- For some data repositories, a repository banner will automatically appear next to your published article on ScienceDirect.
- You can also link relevant data or entities within the text of your article through the use of identifiers. Use the following format: Database: 12345 (e.g. TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

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You are encouraged to publish a description of your research data, methods, or protocols related to your regular article as a co-submission article in *Data in Brief* or *MethodsX*.

This co-submission can be submitted at the same time as your regular manuscript submission to this journal. If both your regular and co-submitted manuscripts are accepted for publication, they will be linked together on ScienceDirect, thereby promoting research reproducibility, interoperability, and open science.

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- Submit this co-submission alongside your regular manuscript as a separate submission item; on the **'Attach files'** page in Editorial Manager, after which it will be automatically forwarded to the *Data in Brief* or *MethodsX* and assigned an editor.
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  - MethodsX
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Please visit **co-submission Researcher Support page** for more information on how to submit a co-submission.

Journal specific information: Writing and formatting

Guidance on Appropriate Citation Practices

To uphold the highest standards of scholarly integrity and ensure the accurate dissemination of knowledge, authors submitting manuscripts to JEC must provide citations that are directly relevant and appropriate to the statements they support. Inappropriate or irrelevant citations compromise the quality and credibility of the research and may result in delays or rejection of the manuscript. Please ensure that you:

- Cite only references that directly support the claims or information presented.
- Avoid citing articles that do not clearly relate to the context or content of your statements.
- Verify that all references are accurate, current, and from reputable sources.
- When citing foundational or background literature, select the most relevant and authoritative works.

Refrain from excessive self-citation or citing unrelated works to artificially inflate citation metrics.

Article structure

Article sections

- Divide your article into clearly defined and numbered sections. Number subsections 1.1 (then 1.1.1, 1.1.2, ...), then 1.2, etc.
- Use the numbering format when cross-referencing within your article. Do not just refer to "the text."
- You may give subsections a brief heading. Headings should appear on a separate line.
- Do not include the article abstract within section numbering.

Theory and calculation

The theory section should lay the foundation for further work by extending the background you provided in the introduction to your article. The calculation section should represent a practical development from a theoretical basis.

Glossary

Please provide definitions of field-specific terms used in your article, in a separate list.

Footnotes

We advise you to use footnotes sparingly. If you include footnotes in your article, ensure that they are numbered consecutively.

You may use system features that automatically build footnotes into text. Alternatively, you can indicate the position of footnotes within the text and present them in a separate section at the end of your article.

Acknowledgements

Include any individuals who provided you with help during your research, such as help with language, writing or proof reading, in the acknowledgements section. Include acknowledgements **only** in the **title page** since this journal follows a double anonymized peer review process. Do not add it as a footnote to your title.

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List funding sources in this standard way to facilitate compliance to funder's requirements:

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If no funding has been provided for the research, it is recommended to include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Appendices

We ask you to use the following format for appendices:

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- Give separate numbering to formulae and equations within appendices using formats such as Eq. (A.1), Eq. (A.2), etc. and in subsequent appendices, Eq. (B.1), Eq. (B. 2) etc. In a similar way, give separate numbering to tables and figures using formats such as Table A.1; Fig. A.1, etc.

References

References within text

Any references cited within your article should also be present in your reference list and vice versa. Some guidelines:

- References cited in your abstract must be given in full.
- We recommend that you do not include unpublished results and personal communications in your reference list, though you may mention them in the text of your article.
- Any unpublished results and personal communications included in your reference list must follow the standard reference style of the journal. In substitution of the publication date add "unpublished results" or "personal communication."
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Linking to cited sources will increase the discoverability of your research.

Before submission, check that all data provided in your reference list are correct, including any references which have been copied. Providing correct reference data allows us to link to abstracting and indexing services such as Scopus, Crossref and PubMed. Any incorrect surnames, journal or book titles, publication years or pagination within your references may prevent link creation.

We encourage the use of Digital Object Identifiers (DOIs) as reference links as they provide a permanent link to the electronic article referenced.

Reference format

This journal does not set strict requirements on reference formatting at submission. Some guidelines:

- References can be in any style or format as long as the style is consistent.
- Author names, journal or book titles, chapter or article titles, year of publication, volume numbers, article numbers or pagination must be included, where applicable.
- Use of DOIs is recommended.

Our journal reference style will be applied to your article after acceptance, at proof stage. If required, at this stage we will ask you to correct or supply any missing reference data.

Reference style

All citations in the text should refer to:

- Single author: the author's name (without initials, unless there is ambiguity) and the year of publication.
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Citations can be made directly (or parenthetically). Groups of references can be listed either first alphabetically, then chronologically, or vice versa. Examples: "as demonstrated (Allan, 2020a, 2020b; Allan and Jones, 2019)" or "as demonstrated (Jones, 2019; Allan, 2020). Kramer et al. (2023) have recently shown".

The list of references should be arranged alphabetically and then chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Abbreviate journal names according to the List of Title Word Abbreviations (LTWA).

Examples:

Reference to a journal publication:

Van der Geer, J., Handgraaf, T., Lupton, R.A., 2020. The art of writing a scientific article. J. Sci. Commun. 163, 51–59. https://doi.org/10.1016/j.sc.2020.00372.

Reference to a journal publication with an article number:

Van der Geer, J., Handgraaf, T., Lupton, R.A., 2022. The art of writing a scientific article. Heliyon. 19, e00205. https://doi.org/10.1016/j.heliyon.2022.e00205.

Reference to a book:

Strunk Jr., W., White, E.B., 2000. The Elements of Style, fourth ed. Longman, New York.

Reference to a chapter in a book:

Mettam, G.R., Adams, L.B., 2023. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), Introduction to the Electronic Age. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 2023. Cancer statistics reports for the UK. http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ (accessed 13 March 2023).

Reference to a dataset:

Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions [dataset]. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.

Reference to software:

Coon, E., Berndt, M., Jan, A., Svyatsky, D., Atchley, A., Kikinzon, E., Harp, D., Manzini, G., Shelef, E., Lipnikov, K., Garimella, R., Xu, C., Moulton, D., Karra, S., Painter, S., Jafarov, E., & Molins, S., 2020. Advanced Terrestrial Simulator (ATS) v0.88 (Version 0.88) [software]. Zenodo. https://doi.org/10.5281/zenodo.3727209.

Web references
When listing web references, as a minimum you should provide the full URL and the date when the reference was last accessed. Additional information (e.g. DOI, author names, dates or reference to a source publication) should also be provided, if known.

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We encourage you to cite underlying or relevant datasets within article text and to list data references in the reference list.

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Add [dataset] immediately before your reference. This will help us to properly identify the dataset. The [dataset] identifier will not appear in your published article.

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Before completing the submission of your manuscript, we advise you to read our submission checklist:

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- Spelling and grammar checks have been carried out.
- All references in the article text are cited in the reference list and vice versa.
- Permission has been obtained for the use of any copyrighted material from other sources, including the Web.
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