Gordon Institute of Business Science
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Perceived trust and workplace proactive behaviour: An investigation into the moderating effect of unpredictability of the future

A quantitative study

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

4th March 2025

Abstract

This research sought to examine the relationship between Perceived Trust and Proactive Behaviour in the workplace, as well the influence that Unpredictability of the Future would have on this relationship. Using data collected from survey respondents employed in the South African manufacturing sector, Structural Equation Modelling was employed to model the relationships and examine the proposed hypothesis.

This quantitative study was grounded on the theoretical framework of Self-determination Theory and asked research questions which were supplemented with the proposal of two hypotheses. Hypothesis 1, which proposed that Perceived Trust was positively and significantly related to Proactive Behaviour was supported, although only moderately in strength. Hypothesis 2, which proposed that Unpredictability of the Future would significantly moderate the relationship between Perceived Trust and Proactive Behaviour was not supported in that the relationship was not statistically significant.

The findings of this study provide valuable insight for business leaders to appropriately define, support and develop their organisations. With an enhanced understanding of how Perceived Trust and Unpredictability of the Future affect motivation levels in the workplace, leaders are able to encourage Proactive Behaviour through enhancing the motivation levels in their teams.

Keywords

Motivation

Perceived trust

Proactive behaviour

Self-determination theory

Unpredictability of the future

Plagiarism Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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4th March 2025

List of abbreviations

Abbreviation	Explanation
AVE	Average Variance Extracted
CFI	Comparative Fit Index
CMB	Common Method Bias
CMF	Common Method Factor
C.R.	Composite Reliability
FSM	Full Structural Model
HMR	Human Resource Management
MI	Modification Index
MMM	Mixed Model Method
OCB	Organisational Citizenship Behaviour
PB	Proactive Behaviour
PT	Perceived Trust
RMSEA	Root Mean Square Error of Approximation
SDT	Self-determination Theory
SEM	Structural Equation Modelling
TLI	Tucker-Lewis Index
UF	Unpredictability of the Future

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1. Introduction to the research problem

Organisations today have certainly come to realise that operating in a VUCA world (volatile, uncertain, complex and ambiguous) has become the norm, a way of life (Baran & Woznyj, 2020; Edmondson, 2021) The COVID-19 pandemic certainly set the stage for the decade to come (Edmondson, 2021), suggesting that 'unprecedented' disruptions affecting organisations and economies on a global scale could no longer be labelled 'unique' or 'unforeseen', but rather an ongoing trend (Arya & Dimitrijevic, 2023). Global climate change trends are leading to extreme weather events and economies are being disrupted by increasing geopolitical conflicts and trade disruptions, supply chain disruptions and raw material shortages. The message is being driven home to organisation that the unexpected needs to be expected if profitability and sustainability are to be achieved in the long run.

These same organisations continue to value the teams and individuals that comprise them. Based on the trend in the literature, understanding the theories and constructs that motivate employees to act autonomously, correctly and in the best interests of the organisation continue to enjoy increasing focus (Balkin et al., 2022). As workplace environments become more uncertain and more ambiguous (Baran & Woznyj, 2020), organisations continue to see the worth of employees who are able to operate effectively in an ambiguous climate and also act proactively in it.

However, the ambiguous nature of the modern workplace also has the tendency to affect relationships within teams, as more autonomous work practices can be interpreted as workplace climates of 'low support' (Kubovcikova & Lauring, 2022). Trust in peers and leadership teams relate positively to organisational performance (Addison & Teixeira, 2020) and organisations strive to stimulate trust within team members, despite the presence of uncertainty.

As research continues to focus on the constructs of trust (David & Roberts, 2020), employee behaviour (Balkin et al., 2022) and uncertainty (Fay et al., 2023) in the workplace as individual constructs, there is room in the literature for these three constructs to be investigated in a single model. An understanding of such a model would assist organisations to understand how trust and uncertainty can be leveraged to encourage proactive behaviour in the workplace (Rouzi & Wang, 2021).

1.1. Research problem

As organisations strive to become more efficient and more competitive, business leaders have had to learn how to lead with agility (Edmondson, 2021). As leadership styles have developed from being primarily transactional to more transformational, organisations expect employees to be able to solve problems quickly, with their own intuition, using minimum resources and minimum available information (Renault & Tarakci, 2023). Leaders have come to realise that their organisations need to be quick and agile, if they are to maintain their competitive advantage in the marketplace (Edmondson, 2021).

Uncertainty is rife in the modern workplace (Trapp, 2024). As organisations become more flexible, job functions may become less structured. Focused job roles may widen as employees are expected to manage a wider scope of responsibilities. Information is not always easily available, as workplaces continue to struggle with the difficulty of skills retention (Sutherland, 2020). In summary, the roles and responsibilities of some employees may not be as structured as in the past, and these employees will need to deal with the expectations of the organisation in this regard.

What this means is that leaders need to build organisations that echo this sentiment. Leaders are seeing value in employees who are able to make good decisions quickly, even if all resources are not at hand, or all of the information not available (Fay et al., 2023). This is referred to in the literature as proactive behaviour (Colbert et al., 2019; Fay et al., 2023) or taking-charge behaviour (Rouzi & Wang, 2021). The principle around this behaviour concerns taking initiative (Du et al., 2022) rather than waiting for instruction to follow-through. It is related to being given a problem together with a desired outcome (a desired ‘end-state’), however not necessarily being given the roadmap between the two. As this construct exists in the realm of ‘behaviour’, theories such as Self-determination theory (SDT) propose such that such behaviour would be motivated by the fulfilling of basic psychological needs through either autonomous or controlled motivation (Deci et al., 2017). Leaders are thus encouraged to provide such motivation, either through behavioural cues (i.e., their leadership style), their specific support provided to employees or the creation of workplace environments which fosters such motivation (Deci et al., 2017).

Trust is known to relate positively to team performance (Addison & Teixeira, 2020), as

well as to support the creation of a psychologically safe workplace and enhance a sense of belonging (Rouzi & Wang, 2021). According to SDT, motivation is driven by the fulfilment of basic psychological needs (Deci et al., 2017) and thus trust is understood to be a key driver in enhancing motivation within the workplace.

The above challenges are especially pertinent for the South African manufacturing industry. South Africa is understood to be going through a premature deindustrialisation, which would have a detrimental effect on the economic growth of the country (Andreoni et al., 2021; Fortunato, 2022). The steel industry (Beesley & Scribante, 2025), crude oil refining sector (Wright, 2022) and the textile and clothing industries (Green Industry Specialists, 2023) are examples of recent descaling of manufacturing capacity in the country which has resulted in significant job losses over the past two decades (Wright, 2022; Green Industry Specialists, 2023).

This study explores how South African leaders can foster proactive behaviour, motivated through trust, even when employees face uncertainty in their roles. As leaders navigate both micro and macro challenges, trusting their teams during uncertain times is essential for organisational success.

1.2. Research purpose – aims and objectives

This study aims to contribute to existing literature by furthering the understanding of motivation in the workplace in order to encourage proactive behaviour (PB). This understanding will specifically be directed from the construct of trust between employee and manager. As behaviour of employees will be studied as the dependent factor, it is required to assess trust from the perspective of the employee himself or herself. In other words, trust will not be assessed from the perspective of ‘to what extent do I trust my manager’, nor is it the intention to pursue a dyadic investigation to understand ‘to what extent do I trust my direct reports’. To understand how the intrinsic motivation of employees translates to their own proactive behaviour, the study will assess the extent to which employees feel that they are trusted by their managers (Skiba & Wildman, 2019). This internal feeling of ‘being trusted’, is expected to foster a sense of belonging, which in turn would influence behaviour. This perspective of trust shall be defined as Perceived Trust (PT).

The research thus aims to establish whether there is a significant positive relationship between PT and the demonstration of PB. With this understanding, leaders in industry can understand the importance of how *feeling trusted* (Skiba & Wildman, 2019) relates to their employees behaving proactively which – if becomes routine – would be expected to boost the performance of the business.

This research study further intends to enhance understanding of how uncertainty in the workplace influences the ability of PT to translate to PB. From the perspective of this study, uncertainty will be defined as Unpredictability of the Future (UF). UF is related to the certainty that employees have that their decisions and actions will have a positive impact either for themselves or for the organisation (Fay et al., 2023). It is expected that UF will have an inverse, significant relationship with PB. However, the study intends to further understand the impact that UF will have on the relationship between PT and PB.

With an understanding of this relationship, organisations can appreciate the impact that workplace uncertainty has on the ability of PT to positively encourage PB. This knowledge can assist leadership teams in applying their focus appropriately when it comes to the levels of ambiguity that can be allowed in the workplace before performance is negatively affected.

1.3. Theoretical contribution

Existing literature on trust and proactive behaviour has largely focused on the service industry, including hospitality (Kwan et al., 2023), IT and telecommunications (Skiba & Wildman, 2019), finance (Blomme et al., 2022) and tertiary education (Kubovcikova & Lauring, 2022). While some studies have explored the manufacturing sector, the available research in this domain is limited, with most studies conducted in China (Jain et al., 2023). Geographically, research has been concentrated in China, the USA, Europe and the United Kingdom, with no relevant studies found within Africa.

This highlights a gap in understanding PT and PB within the South African manufacturing context. Given the specific cultural characteristics of South Africa, existing research findings may not be applicable to the South African manufacturing sector. This study aims to address this gap, by examining the nuances of PT and PB in South African manufacturing, providing insights relevant to the local industry.

1.3.1. Perceived Trust

Perceived Trust (PT) is distinct from an employee's trust in another individual. It refers to the extent to which employees feel trusted by their superiors, rather than the degree of their own trust in others. The literature differentiates between "feeling trust and feeling trusted" (Skiba & Wildman, 2019). Grounded in SDT, PT is understood to positively influence workplace motivation by fulfilling the psychology needs of the employees (Deci et al., 2017). While numerous existing studies define the topic from the perspective of trust directed to others (Kubovcikova & Lauring, 2022), this study will define the topic as "trust perceived". This idea is also referred to as *felt trust* in the literature (Skiba & Wildman, 2019).

Felt trust has been shown to positively influence workplace engagement, commitment and proactive behaviour (Rice & Searle, 2024; Skiba & Wildman, 2019). It has been seen how employees who perceive higher levels of trust experience enhanced relational energy, which encourages proactive contribution in the workplace (Rouzi & Wang, 2021). PT can originate from leadership style, workplace climate and workplace practices (Babalola et al., 2023). The research by Braun et al. (2023) has also shown how micromanagement in the workplace can cause employee fatigue and reduce tendencies for employees to behave proactively through a breakdown in trust.

1.3.2. Proactive Behaviour

Proactive Behaviour (PB) refers to an individual's tendency to take initiative and act autonomously without external instruction. The concept of PB has been studied under various related constructs termed proactive work behaviour (PWB), taking-charge behaviour, workplace proactivity and autonomous motivation (Fay et al., 2023; Rouzi & Wang, 2021; Balkin et al., 2022). Key elements of the definitions for PB include the ideas of being self-initiated and being focused on the future. PB is beneficial for both the individual and the organisation, driving faster decision-making and improved performance (Kwan et al., 2023). PB enhances the employee's sense of meaning, competence and leadership potential (Fay et al., 2023; Law et al., 2021). However, Kamran-Morley et al. (2022) has studied the negative drivers of PB which was cited as being critical for organisations to appreciate.

1.3.3. Unpredictability of the Future

Unlike PT and PB, Unpredictability of the Future (UF) remains an unexplored concept in workplace research, with no clear standardised definition. Existing literature has defined UF according to various elements of uncertainty, fairness and disruption (Kamran-Morley et al., 2022; Skiba & Wildman, 2019). This study shall approach the concept of UF from the perspective of employees' uncertainty on the consequences of their actions, as well as making decisions with limited information and resources available (Fay et al., 2023).

Considering the theoretical concepts of SDT, it is proposed that UF would affect PB through its effect on intrinsic motivation (Deci et al., 2017), however existing literature on this subject is limited. This study therefore aims to further explore the relationship between UF on PB, as well as on the relationship between PT and PB.

In summary, there is scope in the literature for further investigation on the direct relationship between PT and PB, as well as further understanding of how UF impacts on this relationship. This is especially true and relevant from the perspective of the South African manufacturing context.

1.4. Business contribution

Business operating in today's complex environments face numerous challenges in performing profitably with minimal resources, finite information and increasing competition in a continuously evolving context. Leaders of these organisations require high-performance teams which can make good decisions in their own realms of control, without relying on instruction from their superiors. These leaders are required to build workplaces which provide appropriate motivation which would encourage such proactive behavioural tendencies.

An enhanced understanding of PT and PB can provide valuable insights for businesses, organisations and industry leaders seeking to build high-performing, agile workforces. Trust is a fundamental driver of employee engagement (Skiba & Wildman, 2019) and when employees perceive high levels of trust, higher levels of motivation are expected. Organisations that focus on building a workplace centred on trust could foster higher levels of proactive behaviour based on this enhanced motivation, leading to improved effectiveness and performance. This is particularly relevant in the manufacturing sector,

where adaptability and continuous improvement are critical for maintaining competitiveness in an increasingly challenging landscape. When leaders can understand how perceive trust affects motivation levels, it can encourage these leaders to ensure that trust is being felt by their teams.

Further to this, creating an understanding of how UF impact this relationship introduces an additional layer of complexity to the relationship between PT and PB. Different levels of UF are expected to influence the strength of the relationship between PT and PB. With this understanding, leaders can prioritise the management of levels of uncertainty in the workplace. Focus can be given to the availability of resources and the availability of information in order to ensure that the balance of uncertainty is optimally placed to drive innovation, while still encouraging proactive behaviour. This may also support organisations with appropriate policy design to optimise the structure of the workplace.

1.5. Conclusion

In today's business environment, uncertainty and ambiguity are inevitable, requiring organisations to routinely navigate through micro and macro disruptions (Edmondson, 2021). To remain profitable and competitive, business must develop resilient teams capable of managing uncertainty while simultaneously demonstrating proactive behaviour to drive growth.

PT has been identified as a key factor in motivating employees to behaviour proactively in the workplace. Rooted in SDT, PT enhances autonomous motivation, enabling employees to engage in constructive workplace behaviours when their basic psychological needs are met (Deci et al., 2017). While research has extensively examined trust and its antecedents, there remains a gap in understanding how PT relates to PB.

Similar, UF remains unexplored in existing literature. Investigating how UF moderates the relationship between PT and PB will provide valuable insights for leaders in the South African manufacturing sector. A deeper understanding of these constructs will equip leaders with the strategies needed to structure, support and guide teams effectively in today's uncertain and rapidly evolving business landscape.

2. Literature review

2.1. Introduction

Research into organisational team dynamics, relationships and behaviour show no signs of waning as organisations continue to strive for increased performance in terms of speed, adaptability, efficiency and effectiveness. As leaders in industry continue to appreciate the significance of the human contribution to the performance of the organisation, existing constructs are further dissected and investigated from new perspectives, and new constructs are brought to the fore to understand their place in existing research.

Self-determination theory proposes the effect of motivation on the behaviour of employees on an individual level (Deci et al., 2017). This theory has encouraged research to focus on constructs which positively motivate employees to greater levels of engagement (Skiba & Wildman, 2019; Rice & Searle, 2024), involvement and self-action (Collins & Parker, 2010). From this available research the element of trust in the workplace has been explored in detail, as organisations strive to understand how higher levels of trust enhance team performance.

In a similar frame, organisations have come to value the worth of Proactive Behaviour (PB) on the workplace (Fay et al., 2023; Cheng et al., 2019) specifically the benefits of quick action leading to quick benefits. However, the risks and potential negative effects of increased autonomy have also been identified in the literature (Kamran-Morley et al., 2022).

Uncertainty around the consequences of one's actions adds complexity to the workplace. This Unpredictability of the Future (UF) could potentially effect engagement, self-confidence and self-initiated action – elements which are directly related to both trust and PB (Fay et al., 2023). UF relates to the certainty around which employees have on the consequence of their actions. The construct is based on employees understanding their roles, accessing the necessary resources and information, and receiving feedback to make more effective decisions.

This literature survey explores existing research on the three constructs of **Perceived Trust (PT)**, **Proactive Behaviour (PB)** and **Unpredictability of the Future (UF)**, while addressing the existing research gap by examining them in a single model within the

manufacturing sector. By addressing the identified gap, this research attempts to understand how PT affects to PB in the workplace, as well as how UF moderates this relationship.

2.2. An understanding of trust

The element of trust within the organisation has received much focus over the past decade as researchers endeavour to understand the antecedents and mediation paths of trust as far as increased performance of the workplace is concerned.

Many definitions of trust within an organisational context exist, however the most salient definitions focus on the **vulnerability** of the individual concerned (Kubovcikova & Lauring, 2022; Kim et al., 2021; Ash et al., 2020; Kim, 2019; Deci et al., 2017; Hasche et al., 2021; Dietz et al., 2021). The most appropriate definition for trust in the context of this argument can be given as follows:

> *"a willingness to be vulnerable to other parties under the expectation that their intentions or behaviour in important matters will be positive"*
>
> (Kim et al., 2021; Lam et al., 2014; pg. 12)

Existing research attempts to categorise trust into distinct elements which can be shown to accurately contribute to and rationalise the current definition of workplace trust. Hasche et al. (2021) has defined trust antecedents as trust based on **competence**, based on **goodwill** and based on **consistency**. Ability-based trust (based on competence) is, for example, based on managers' trust in the ability (skill level) of their teams. Benevolence-based trust (based on goodwill) is related to the trust in one's colleagues to contribute to the goals of the organisation in order to support and benefit the team as a unit rather than him- or herself individually. Integrity-based trust (based on consistency) is concerned with the trust that managers or colleagues will behave in a consistent manner, regardless of the context or situation (Hasche et al., 2021).

Trust is not control (Rice & Searle, 2024). Excessive control has been seen to erode trust, which would be expected to negatively impact on team performance due to the engagement if informal control mechanisms (such as peer enforcement of norms) as a workaround to organisational policies (Rice & Searle, 2024).

2.3. The significance of trust in an organisation

It is intuitive as to why organisations would value trust between teams and work colleagues. Teams with high levels of trust are known to perform better from a financial perspective as well as with higher productivity levels (Addison & Teixeira, 2020). Trust in one's management team has been shown to reduce work-related anxiety, which leads towards higher levels of performance (Mostafa & Yunus, 2022). When trust levels deteriorate, job satisfaction is reduced which ultimately lowers the performance of the team (David & Roberts, 2020). This has been investigated from the perspective of 'boss phubbing', where managers allow their cell phones to distract their attention from their team, damaging the levels of existing trust (David & Roberts, 2020). To retain high performance within an organisation, through enhanced cooperation and reduced uncertainty (Addison & Teixeira, 2020), trust in leaders is known to be critical (Kim, 2019).

A trusting relationship between employee and manager is essential for job autonomy to be most effective (Kubovcikova & Lauring, 2022). High trust in management teams means that employees are less concerned with self-preservation and can focus energy on value-adding activities (Gavin & Mayer, 2005) leading to better behaviours (Rice & Searle, 2024) and ultimately improved team performance. Employees may perform their required duties regardless of trust, however with genuine trust existing, employees will be motivated to contribute to a greater extent than the formal job description requires (Kim et al., 2021).

Employees with higher levels of trust in their managers are more likely to remain in the employ of the company as well as be willing to share their knowledge (Kim, 2019). This is partly due to the reduced levels of uncertainty and anxiety when trust levels are high (Skiba & Wildman, 2019).

Existing research in organisational trust have differentiated between vertical trust relationships (between superior and subordinate) and horizontal trust relationships (amongst peers) (Hasche et al., 2021). It has been seen that high performing employees show greater value in being able to trust their management team, while those who do not perform to such a high degree show greater value in being able to trust their colleagues (Kim, 2019). Research has shown a relationship present between vertical and horizontal trust relationships (Hasche et al., 2021), such as colleagues looking to each other for support when trust in their management teams have deteriorated. Further to this, should

employees perceive disparities in levels of trust between team members, any positive impact of feeling trusted would reduce (Fan et al., 2021).

2.4. An understanding of perceived trust

The direction (or perspective) of trust is critically important in understanding the nuances of how the relationships and dynamics of a team will complement or detract from their capabilities. Our own understanding of how we would trust our managers or colleagues in various context's remains complex. Similarly, our perception of whether we are trusted by others is a very different construct in comparison to how we would trust another individual. The current literature covers both constructs of trust (Mostafa & Yunus, 2022) and perceived (or felt) trust (Han et al., 2021). This is the argument of "feeling trust versus feeling trusted" (Skiba & Wildman, 2019). The argument made is that, based on the principles of Self-determination Theory (SDT), an individual's tendency to behave in a certain manner is related to how they feel, through how their basic needs are being met. Further to this, the tendency for any individual to behave in a proactive manner would be dependent on the extent to which his or her needs are being met, in turn impacted by the extent to which trust is felt, or perceived. The difference of being told 'I trust you', to that of genuinely feeling that one is trusted through the actions of others is relevant and is the basis of the arguments being made in this research.

Many research papers refer to the term 'perceived trust' (Wu et al., 2021) or 'perceived levels of trust' (Kubovcikova & Lauring, 2022), however many of these are referring to trust extended towards another individual, such as 'I perceive that I have trust in my supervisor' (Kubovcikova & Lauring, 2022). In this investigation, PT shall be defined from the perspective of trust directed 'to me'. Alternatively defined – 'do I feel that my manager trusts me?'

The construct of PT is also referred to as 'felt trust' in the literature. In trying to define felt trust, definitions are limited, however the element of vulnerability still exists. An appropriate definition for **felt trust** is proposed as follows:

> *"employees' perception that leaders are willing to accept vulnerability to their actions"*
>
> (Fan et al., 2021; Baer et al., 2015; pg. 1637).

2.5. The significance and antecedents of perceived trust

Trust in a manager and felt trust are seen to not be interchangeable, however do interact and contribute uniquely to motivation in the workplace (Skiba & Wildman, 2019). Felt trust enhances social exchange relationships, which enhance the degree of work engagement in teams (Skiba & Wildman, 2019; Rice & Searle, 2024). It is understood to be a moderator between empowerment and a proactive way of working (Kim et al., 2021), as well as enhancing employees' autonomy and engagement in the workplace (Braun et al., 2023).

Employees who feel trusted have been seen to exhibit higher levels of relational energy, which in turn would lead to improved performance (Fan et al., 2021), engagement (Skiba & Wildman, 2019) and commitment (Rice & Searle, 2024) in the workplace. These higher states of relational energy can be related to greater alignment of the objectives of the organisation – akin to 'being an insider' (Rouzi & Wang, 2021).

The perception of trust can be due to observable actions of one's manager (Rice & Searle, 2024), however is also due to the perception of an ethical workplace climate which can influence employee's perception of trust in the leadership of the organisation (Babalola et al., 2023). Similarly, flexible workplace practices can signal managerial support and care, which strengthens the perception of trust (Mostafa & Yunus, 2022). Low levels of trust in management and in support teams such as HR have been seen to support counterproductive behaviours (Rice & Searle, 2024).

Employees that both trust their superiors and feel reciprocated trust do experience reduced workplace uncertainty, which encourages employees to remain in the employ of the company (Skiba & Wildman, 2019). However, it has been shown that felt trust is a more significant contributor to improved work engagement that trust felt in a manager, due to the feelings of obligation, competency and autonomy (Skiba & Wildman, 2019). Ash et al. (2020) has investigated two key paradigms in trust theory – cognition-based trust (CBT) and affect-based trust (ABT), indicating that ability and behavioural integrity are the two most significant predictors of CBT. This provides some insight on how proactive behaviours could be indicated by cognition-based trust.

Aligned with SDT, felt trust has been segmented into felt reliance, whereby leaders rely on the skills and abilities of their direct reports, and felt disclosure, whereby leaders share personal or sensitive information with direct reports (Han et al., 2021). Felt reliance

enhances voice behaviour – an employee proactively offering suggestions for workplace improvements – while felt disclosure does not affect this directly (Han et al., 2021). This was seen due to the intrinsic motivation and obligation to contribute that is evident when employees feel that they are trusted (Han et al., 2021).

The literature also covers workplace practices which do not encourage PT. Frequent monitoring of performance has been seen to lower levels of felt trust, leading to increased fatigue (Braun et al., 2023). Mismatched congruence between trust expected (or wanted) and trust received has seen to lead to perception of unfairness. This can be defined as 'under-trusting' or 'over-trusting', with either leading to negative employee reactions (Baer et al., 2021). This argument is based on the notion that not all employees would react positively to high levels of trust. Similarly, observable discrepancies between the levels of trust placed in employees within the same team would reduce the benefit of the PT (Fan et al., 2021).

2.6. An understanding of proactive behaviour

PB can be understood as the tendency for an individual to act on his own initiative, via his own motivation, without the instruction of another person. PB in the context of organisational performance has been investigated under the constructs of "proactive work behaviour" (PWB) (Fay et al., 2023), "taking-charge behaviour" (Rouzi & Wang, 2021; Babalola et al., 2023), "proactive customer service" (Peng et al., 2023; Kwan et al., 2023), "autonomous motivation" (Balkin et al., 2022) and "workplace proactivity" (Blomme et al., 2022). Definitions of PB include fundamental terms such as "self-starting" (Colbert et al., 2019; pg. 2) "future orientated behaviours" (Cheng et al., 2019; pg. 1), "future orientated change" (Fay et al., 2023; pg. 2) and "change-focused work behaviour" (Blomme et al., 2022; pg. 4). This terminology illustrates the main concepts behind the idea of proactive behaviour – it is self-initiated, driven by an individual's own internal motivation, it is focused on introducing change and it has a future-biased outlook. PB shall be defined as follows:

> *"self-initiated, anticipatory action that aims to change and improve the situation or oneself"*
>
> (Cheng et al., 2019; Collins & Parker, 2010; pg. 635)

2.7. The significance of proactive behaviour

It is perhaps intuitive to understand the benefits of proactivity for organisations striving for improved performance. Proactive actions from employees can benefit the organisation through faster action and quicker decision-making, however, have various benefits for the respective employees. It is, however, critical to understand the mediation paths between PB and improved organisational performance, as well the moderators which have the potential to derail this relationship (Kamran-Morley et al., 2022).

Proactive workplace behaviour has been shown to foster a sense of meaning for employees, as well as establishing a connection with the future (Fay et al., 2023). Individuals who exhibit such tendencies in their behaviour are seen to be more capable, and more likely to be seen as future leaders than their peers (Law et al., 2021).

PB's are known to enhance socialisation outcomes for the benefit of both the individuals and the organisation (Li et al., 2023). They are seen to be interconnected, promoting self-management of employees' careers, with consequential benefit to the performance of the organisation (Jain et al., 2023). Role clarity and organisational commitment have all both been shown to correlate positively with PB (Li et al., 2023) which can be expected to boost organisational performance.

2.8. Drivers of proactive behaviour

PB can be driven by either an individual's inherent proactive personality or by situational cues, such as leadership style, or workplace environment.

Proactivity in the workplace is greatly enhanced by psychological empowerment and work autonomy (Du et al., 2022; Hughes et al., 2023). Employees who feel in control of their work environments are more likely to take initiative, provide their own ideas and execute improvements (Blomme et al., 2022) and engage in Organizational Citizenship Behaviours (OCB's) (Du et al., 2022).

The significance of leadership styles when it comes to proactive behavioural tendencies has been covered to a fair degree in the literature (Colbert et al., 2019; Peng et al., 2023; Ash et al., 2020; Wu et al., 2021). While it can be understood why individuals with natural proactive personalities do tend towards PBs, this tendency is most prominent when

transformational leadership is absent (Colbert et al., 2019). The presence of a clear transformational leadership style will reduce the significance of a proactive personality in any individual's tendency to behave proactively (Colbert et al., 2019). Leader humility has shown a positive correlation with proactive attention to customers in the service industry, mediated through relational energy (Peng et al., 2023). Similarly, exploitative leadership has shown a negative correlation in a comparable context (Kwan et al., 2023). Servant leadership has been seen to promote the motivation of proactive employees to take charge in an organisational setting (Chow et al., 2022).

Organisational factors such as workplace innovation also play a role (Balkin et al., 2022; Colbert et al., 2019). The translation of proactive personality to PB is most pronounced when innovation in the workplace is weak, and thus having a strong innovative culture within the team will reduce the requirement for strong proactive personalities to promote taking-charge behaviour in the workplace (Colbert et al., 2019). In low initiative work environments, employees with high initiative may face greater resistance with coworkers (Law et al., 2021).

It has been argued that autonomy alone may not always lead to proactivity, however that empowering HRM practices support and enhance PB (Blomme et al., 2022). Similarly, granted autonomy has shown to enhance proactivity through self-efficacy and control (Du et al., 2022). This knowledge should be used to facilitate job design to foster PB in the workplace. A strong ethical workplace climate does encourage proactive ethical behaviours by reinforcing a sense of duty and increasing moral efficacy (Babalola et al., 2023).

An employees own awareness of his or her own proactive tendencies is also relevant in the literature. Intrinsic motivation – motivation driven by one's own personal values and interests – increases the tendency for an individual to take initiative in the workplace (Balkin et al., 2022). From a similar perspective, the need for individuals to receive feedback on their performance is positively associated with self-directed proactive action, mediated by work meaningfulness (Jain et al., 2023; Fay et al., 2023) which would lead to improved performance over time. Middle managers who feel skilled in their roles, understand the impact of their actions, and who have greater self-esteem as a result, are more likely take initiative (Hughes et al., 2023) and engage in OCBs (Kim et al., 2021).

Behavioural tendencies in the workplace are not solely bound to the confined of the office. It has also been shown how structuring your time away from the work environment can have positive effects on proactive behaviour in the workplace, through increased self-efficacy (Cheng et al., 2019). This is due to the psychological states that employees bring to the work each day, and this helps to understand that PB in the workplace is not solely confined to the boundaries of the workplace environment.

The emotional state of the workplace environment is especially relevant – negative emotional states, such as fear, uncertainty, high pressure or low autonomy may indeed also encourage proactive development, however, it may lead to burnout (Kamran-Morley et al., 2022; Kwan et al., 2023). Employees who tend to 'take charge' are also likely to be perceived as "less warm" by their colleagues and may not enjoy as much support from them (Law et al., 2021; pg. 2). This is relevant for leaders to be aware of when it comes to the motivation behind PB in the team dynamic.

Finally, the risk exists that employees who are managed using a self-leadership approach could exhibit opportunistic behaviours, biased towards personal preference rather than in alignment with the objectives of the organisation. This misinterpretation of autonomy would negatively affect trust that managers would have in their teams (Hasche et al., 2021) which would in turn discourage PB.

2.9. Perceived trust and its relation to proactive behaviour

Research into the relationship between trust (trusting others) and behaving in a proactive manner is limited, with the similar understanding of perceived trust ("do I feel trusted") in this same relationship even more so.

Aligned with the principles of SDT, it is expected that employees who trust their managers or colleagues would, via their intrinsic motivation, exhibit more initiative. Trust in management has shown to enhance discretionary effort (OCBs) which includes elements of PB (Gavin & Mayer, 2005). Autonomy also encourages employees to take initiative, however this is significant only when trust in the manager is high (Kubovcikova & Lauring, 2022).

PB relates to the 'self-initiation of work', and can be related to job autonomy, which can be defined as to the extent to which an employee can design his own work environment,

processes and tools to suit his way of working. It has been shown that trust is required for autonomy to be perceived in a positive light by employees, and not as a lack of support (Kubovcikova & Lauring, 2022).

PT positively affects different organisation-oriented behaviours (OCBs) (Kim et al., 2021). Feeling trusted has been seen to enhance relational energy, which may manifest itself in behaving in a more proactive manner (Fan et al., 2021). Improved relationships in an organisation have been seen to foster proactive work behaviour, stemming from high career adaptability of the individuals concerned (Cai et al., 2023), however a gap seems to be present in the literature between PT and the demonstration of PB.

Feeling trusted by one's superior has shown to increase one's tendency to take charge in one's function due to the factor of perceiving oneself to be an insider within the organisation (Rouzi & Wang, 2021). This encourages leaders to foster a sense of belonging within the team, as they identify more with the organisation.

Self-expression is also related to PT in the literature. Employees who perceive themselves to be relied upon by their managers will be more likely to speak up than those who feel that they merely share a decent relationship with them (Han et al., 2021). This supports the argument that leaders should not stop at merely building good relationships with their team members, but to also express his or her reliance on their skills and abilities.

Employees who feel trusted take more initiative and engage more actively in the workplace, felt trust being a more significant driver than trust in one's manager (Skiba & Wildman, 2019). When trust levels are reduced their proactive engagement decline (Rice & Searle, 2024) which presents a risk to the performance of the organisation.

It is thus understood that, when PT is considered from the perspective of this argument ("am I trusted by my manager?"), the literature covers the effect on OCB's (Kim et al., 2021), relational energy (Fan et al., 2021) and self-expression (Han et al., 2021), however there is limited literature available covering the significance of PT on the tendency for employees to behave proactively in the workplace, especially in the context of the manufacturing sector.

2.10. The context of existing research – perceived trust and proactive behaviour

Existing literature covering the constructs of trust and proactive behaviour have been biased towards the service industry, specifically hospitality (Peng et al., 2023; Kwan et al., 2023; Du et al., 2022; Hughes et al., 2023; Kim et al., 2021; Fan et al., 2021), IT and telecommunications (Cheng et al., 2019; Law et al., 2021) and finance (Blomme et al., 2022). Tertiary education facilities have also been covered in similar research investigations (Colbert et al., 2019; Kubovcikova & Lauring, 2022; Kamran-Morley et al., 2022; Kim, 2019). Studies in manufacturing sectors have been covered by Jain et al. (2023).

Most of the research investigations around the ideas of trust and PB have been executed in China (Cheng et al., 2019; Peng et al., 2023; Kwan et al., 2023; Du et al., 2022; Law et al., 2021; Kim et al., 2021; Wu et al., 2021; Fan et al., 2021; Cai et al., 2023; Han et al., 2021; Chow et al., 2022), as well as the USA (Colbert et al., 2019; Kamran-Morley et al., 2022), Europe (Fay et al., 2023; Balkin et al., 2022; Blomme et al., 2022; Kubovcikova & Lauring, 2022), and the UK (Mostafa & Yunus, 2022; Rice & Searle, 2024). No applicable research was sourced within the African continent.

The purpose of this investigation is to understand the nuances of the relationship between PT and PB in the context of manufacturing in South Africa. There appears to be a gap in the literature in understanding these constructs within a manufacturing context, and none were found covering manufacturing in South Africa. The significant amount of literature available around the East (China, South Korea, Malaysia, etc.) is limited in application in South Africa due to a potential variance in cultural parameters such as power-distance between these two economies. An argument thus exists to extend research of these topics into the context of South African manufacturing.

2.11. Self-determination theory

Self-determination theory shall be used as a guiding framework for further understanding of how perceived trust would affect proactive behaviour in the South African manufacturing industry.

The literature has approached similar research on PB and trust constructs with Conservation of Resources (COR) Theory (Peng et al., 2023; Mostafa & Yunus, 2022),

Job Characteristics Theory (Du et al., 2022; Kubovcikova & Lauring, 2022) and Trait Activity Theory (Wu et al., 2021; Chow et al., 2022). Other theories that have been used to frame similar arguments are Agency Theory (Du et al., 2022) and Social Cognitive Theory (Babalola et al., 2023).

Conservation of Resources Theory is not an ideal framework for the research as the argument for the relationship of trust and behaviour is not being made from the perspective of resources or the availability thereof. Neither is the argument being made from the consideration of delegation of work, and how work is delegated, and for this reason, Agency Theory is not particularly suitable to explore this topic.

The principal element of this research topic is motivation of employees to behaviour proactively. Job Characteristics Theory does include the principle of intrinsic motivation which is also a critical element of SDT (Deci et al., 2017). Social Cognitive Theory employs the idea of learning through observation of others, which is not well aligned with the constructs identified with this research investigation. This research topic does not focus specifically on the state of the workplace (environment), so would not be easily examined from the Trait Activation Theory framework.

Self-determination theory (SDT) is a macro-theory developed by psychologists Edward Deci and Richards Ryan explaining the elements of human motivation. This theoretical framework acknowledges autonomous motivation and controlled motivation, intrinsic and externally imposed respectively. The framework recognises three basic psychological needs that drive an individual's motivation, and in turn, their behaviour (Deci et al., 2017). These needs are:

- **Competence**: The need to be competent (by gaining mastery and control) in their own role in the workplace, including actions and decisions.
- **Autonomy**: The need to feel in control of their immediate environment, including actions and decisions.
- **Relatedness**: The need to feel that one belongs, the need for connection and to feel valued by other.

A model of these needs is illustrated in Figure 1 below.

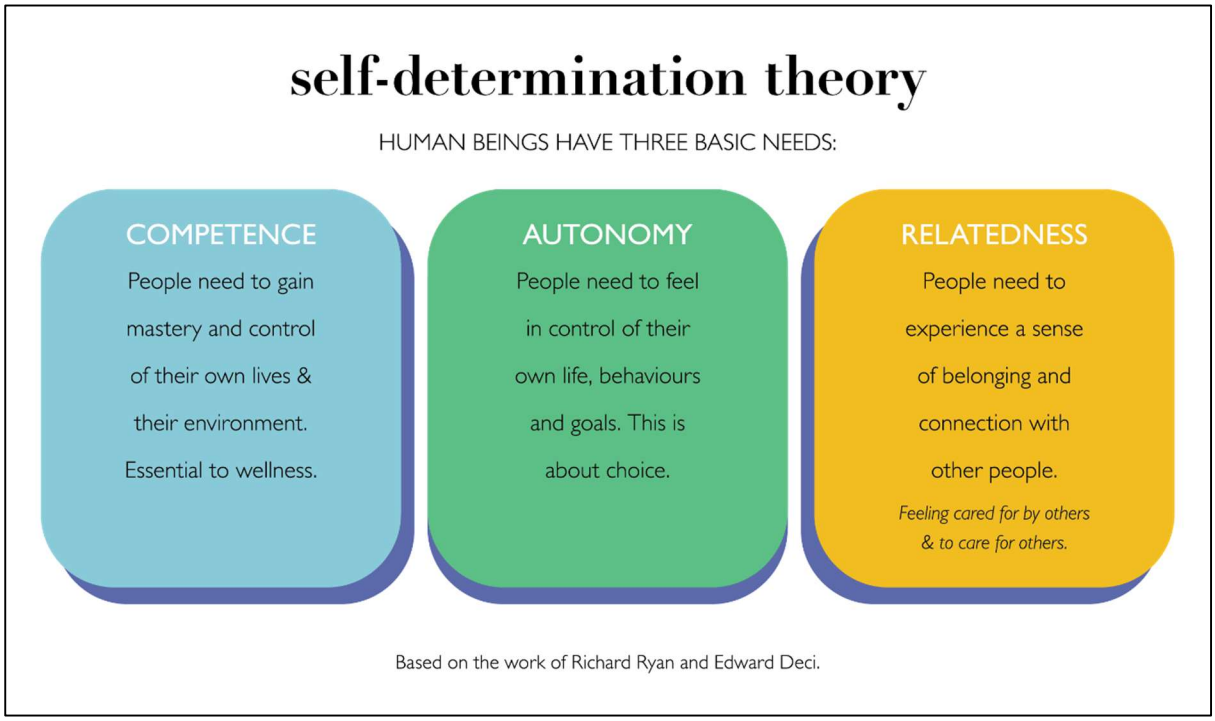


Figure 1: The Self-determination theoretical framework.
(Source: https://opentextbc.ca/peersupport/chapter/self-determination-theory/)

When these needs are met for an employee, this employee would tend to experience intrinsic motivation, which would promote engagement, enthusiasm, performance and general wellbeing in the workplace (Deci et al., 2017).

Perceived trust can be directly related to the three basic needs of the SDT:

- **Competence**: The need to 'be competent' is met by knowing that my manager trusts my abilities.
- **Autonomy**: The need to 'feel in control of my immediate environment' is met by my manager empowering me to take initiative at work.
- **Relatedness**: The need to 'feel that I belong' and 'feel that I am valued' is met by the manner in which my manager has empowered me in the workplace.

It can thus be argued that increased levels of PT would result in an increase in autonomous motivation. This enhanced motivation would expect to positively impact on workplace behaviours for the employee. It is argued that PB would be enhanced by an increase in autonomous motivation (Deci et al., 2017). Figure 2 illustrated this proposed

relationship below.

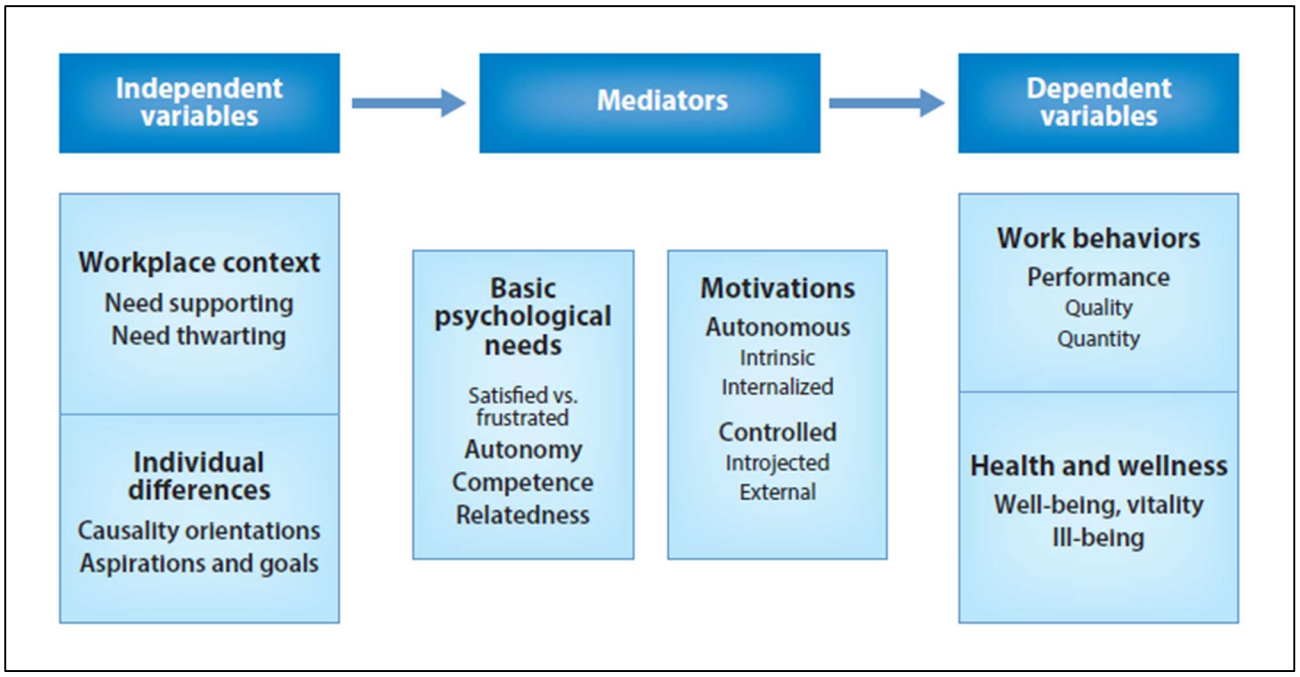


Figure 2: “The basic self-determination theory model in the workplace” (Deci et al., 2017; pg. 5).

SDT has been used to understand how exploitative leadership would not fulfil the basic psychological needs of employees, reducing their inclination to service customers proactively (Kwan et al., 2023). The theory helps to explain how providing autonomy to employees and providing them access to necessary resources encourages workplace proactivity by addressing these same needs (Blomme et al., 2022).

Skiba and Wildman (2019) used SDT to clarify how felt trust boosts both capabilities, through greater self-confidence, and autonomous working practices, through greater control of their outputs in the workplace. The positive influence of felt trust on employees’ promotive voice behaviour (through intrinsic motivation) has been investigated based on the principles of SDT, felt reliance assuming a more significant role than felt disclosure (Han et al., 2021). From the perspective of ‘needs not met’, it has been shown how daily monitoring of employee work performance may damage levels of felt trust, reducing intrinsic motivation and undermining autonomy (Braun et al., 2023).

2.12. An understanding of Unpredictability of the Future (UF)

In comparison to the constructs of trust, felt trust and PB, the idea of UF has not yet been fully explored in the literature. Where it has been incorporated into research around workplace performance and behaviours, there does not appear to be robust, clear definitions around what constitutes UF. Of the limited references to UF or 'uncertainty' in the workplace interpretations of the topic have included:

- **Financial uncertainty**, due to external crisis situations (Kamran-Morley et al., 2022)
- **Uncertainty in the workplace** with regards to "fairness and trustworthiness of those around them" (Skiba & Wildman, 2019; pg. 221)
- **Uncertainty** born from experiencing major disruption within the organisation (Dietz et al., 2021)
- **Job insecurity**, from the perspective of losing one's job as well as losing various job features (Huang et al., 2021)

In the context of this research, 'unpredictability of the future' shall be defined as

"individuals' perceived uncertainty about the future impact of their decisions they make as part of their core job"

(Fay et al., 2023; pg. 4).

UF, as defined, is concerned primarily around how certain employees perceive the purpose of their roles in the workplace, how ambiguous the work is that they are expected to complete, and how certain they are on the consequences of the decisions that they make. It is argued that UF would moderate the relationship between PT and PB. UF can influence this relationship by affecting the extent to which employees feel psychologically safe when performing their duties. When employees can easily understand the consequences of their actions and decisions (low levels of UF), confidence levels would increase and frustration levels would be reduced, which in turn would positively impact on both the workplace context and the basic psychological needs of the employee (Deci et al., 2017). Conversely, when uncertainty levels are high, confidence and satisfaction levels are both low, and workplace behaviours would be negatively affected, despite high levels of felt trust.

2.13. The significance of UF

The significance of UF on the constructs of trust and PB is limited in the available literature (Fay et al., 2023; Huang et al., 2021). It is known that when employees are uncertain about the implications of their decisions and actions, proactive work behaviour develops greater meaning and value for these employees than those who are not proactive (Fay et al., 2023). In uncertain work environments, frequent monitoring of employees by their managers exacerbates the negative effect of being 'micro-managed' – more so than during times of certainty (Wu et al., 2021).

Job insecurity has been seen to impact on one's tendency to behaviour proactively. Research by Huang et al. (2021) segmented job security into quantitative and qualitative elements, arguing that the impact on employees and the organisation as a whole would be different. Quantitative job security (such as losing one's job) reduced commitment and proactivity to one's own career, while qualitative job security (threat to job features) reduced commitment and proactivity towards the organisation (Huang et al., 2021).

2.14. Perceived trust, Proactive behaviour and Unpredictability of the future

Recent literature within higher grade academic journals covering the three constructs of PT, PB and UF has been extremely limited. While research on each of these individual constructs is readily available (Colbert et al., 2019; Du et al., 2022; Kubovcikova & Lauring, 2022; Babalola et al., 2023; Li et al., 2023; Jain et al., 2023; Law et al., 2021; Addison & Teixeira, 2020; David & Roberts, 2020; Ash et al., 2020; Hasche et al., 2021; Baer et al., 2021; Fan et al., 2021) as well as pairs of these constructs (Fay et al., 2023; Mostafa & Yunus, 2022; Kamran-Morley et al., 2022; Dietz et al., 2021; Wu et al., 2021) literature on these three constructs modelled together is extremely limited, specifically in the South African manufacturing context.

2.15. Limitations of the research study

This research specifically intends to focus on the manufacturing sector within South Africa. It this does not intend to investigate industries outside of the manufacturing sector, such as service industries, information technology and healthcare, which have to a certain extent been covered in the literature (Cheng et al., 2019; Peng et al., 2023; Blomme et

al., 2022).

The study is purely focused on the relationship between the identified constructs within the South African context. Related research has been conducted in the USA (Babalola et al., 2023), China (Du et al., 2022) and Europe (Fay et al., 2023). However, this research will not attempt to understand the effect of cultural factors, such as power distance or collectivism, etc. on the proposed relationships.

The research will be limited to the defined constructs of PT, PB and UF. It will not attempt to explore any other constructs which may affect the behaviour of employees in the workplace, such as workplace environment, workplace engagement, leadership styles or level of autonomy, etc.

2.16. Conclusion

This literature survey has reviewed existing research on PT, PB and UF, assisting to understand their relevance in the workplace. While substantial literature exists on these three constructs individually, and in pairs, there is a notable gap when it comes to understanding the relationship of these three ideas in a single model, specifically in the manufacturing context.

PT is a development of the original idea of 'trusting in others' and deals with one's internal perspective and feelings of being trusted by others. High levels of perceived trust boost relational energy (Fan et al., 2021), workplace engagement (Skiba & Wildman, 2019) and self-expression (Han et al., 2021) which all contribute to individual job satisfaction and, ultimately, organisation performance improvements.

PB has received extensive focus in recent years, particularly in the service sector (Peng et al., 2023; Kwan et al., 2023; Blomme et al., 2022). PB is influenced by leadership styles (Colbert et al., 2019; Kwan et al., 2023) empowered work climates and workplace autonomy (Braun et al., 2023). Employees who take initiative contribute positively to the performance improvements of the organisation (Jain et al., 2023).

The construct of UF has received less attention in modern research around workplace performance. However, existing studies suggest that UF can moderate the relationship between PT and PB (Fay et al., 2023; Skiba & Wildman, 2019; Hasche et al., 2021).

Varying levels of UF are expected to impact self-confidence, engagement and job satisfaction which, according to SDT, affects workplace behaviours according to the effect on intrinsic motivation of employees (Deci et al., 2017).

Despite the depth of research on these constructs as individual ideas, and in pairs, a gap remains in understanding how these three constructs interact as a triad. This gap is particularly evident within the manufacturing industry, where workplace dynamics and leadership biases may differ from those in the service sector. By addressing this gap through empirical evidence would provide value insight into how the manufacturing sector can effectively improve performance through the fostering of proactive behavioural tendencies of its employees.

3. Research question and hypotheses

This research intends to employ Self-determination theory (SDT) to examine the effect of intrinsic motivation, arising from perceived trust (PT), has on the behaviour of employees in the workplace. This behaviour will be specifically investigated from a proactivity perspective (proactive behaviour, PB).

The literature, together with SDT, further proposes that unpredictability of the future (UF) would moderate this relationship, as this construct may itself affect intrinsic motivation of employees.

The research questions have been proposed as follows:

> **RQ1:** How significant is the degree of trust that a supervisor (manager) has in an employee – as perceived by the employee – on the employee's tendency to exhibit proactive behaviour in the workplace?
>
> **RQ2:** Is unpredictability of the future a significant moderator when assessing how perceived trust translates into proactive behaviour in the workplace?

Hypotheses were developed from these research questions to form the basis upon which the statistical assessment was done. The research questions were hypothesised as follows:

> **Hypothesis 1**: The degree of trust that a supervisor (manager) has in an employee – as perceived by the employee – positively translates to proactive behaviour demonstrated by the employee in the workplace.
>
> **Hypothesis 2**: Unpredictability of the future moderates the relationship between the degree of perceived trust and workplace proactive behaviour significantly, such that this relationship is larger when unpredictability of the future is high (the future is uncertain) and, conversely, is reduced when unpredictability of the future is low (the future is certain).

These hypotheses have been modelled as illustrated in Figure 3 below.

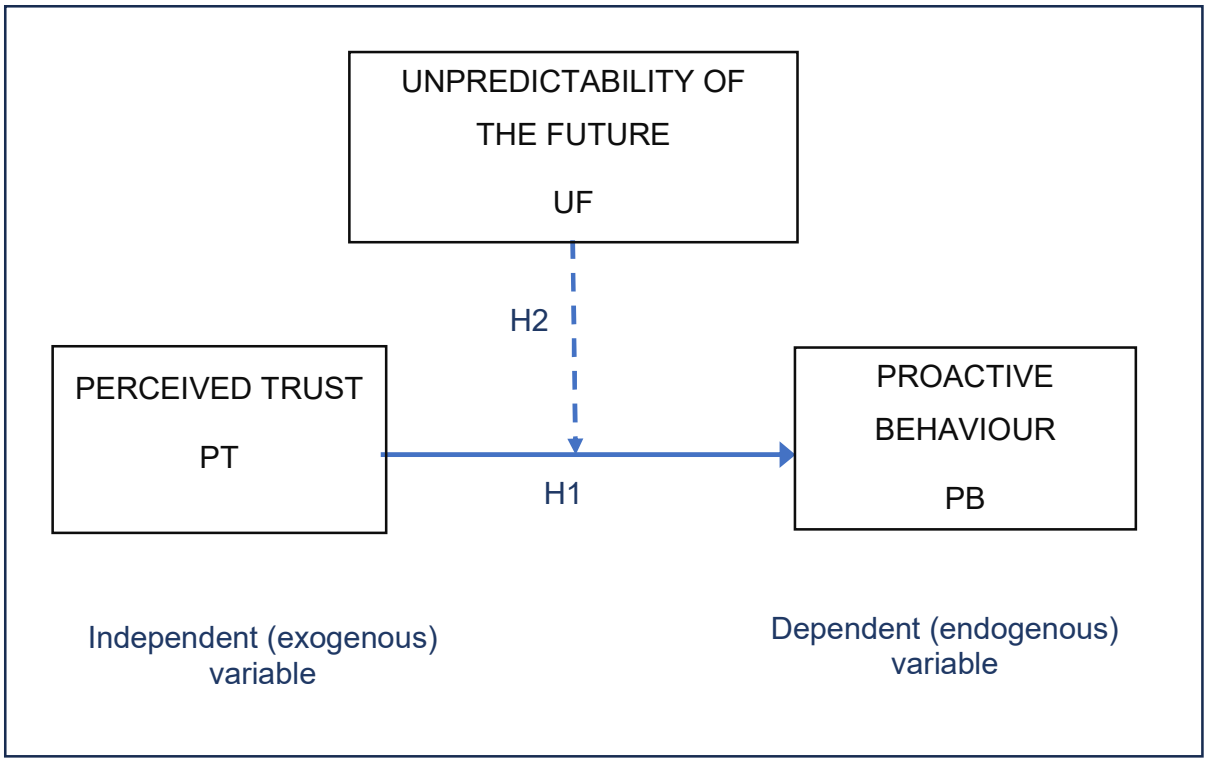


Figure 3: Hypothesised model for perceived trust, proactive behaviour and unpredictability of the future (as a moderator).

4. Research methodology

This research followed a structured methodology and was quantitative in nature. In line with this approach, and as proposed in Chapter 3, two hypotheses were proposed for the study. The investigation attempted to quantitatively correlate the constructs of perceived trust (PT) and proactive behaviour (PB), as well as quantify the impact of unpredictability of the future (UF) on this relationship.

4.1. Purpose of the research design

The purpose of the investigation was to quantify the significance of the hypothesised relationship between PT, PB and UF, as well as to examine and quantify the correlation between the defined variables. The research is thus defined as descriptive in nature, as it would attempt to *describe* the relationship in quantifiable terms (Lewis & Saunders, 2018).

4.2. Research philosophy

A positivist research philosophy was applied to the intended field of study. The relationships between the chosen variables were observed objectively and were seen to be based on absolute truths (Lewis & Saunders, 2018) anticipating cause-effective relationships. This study would not attempt to assess the context or social constructs behind the relationships in question.

4.3. Theory development approach selected

To satisfy the need to test the proposed hypotheses, a deductive approach to theory development was applied, which is aligned with the positive research philosophy. Data was collected, analysed and used to test both proposed hypotheses, which is turn is based on existing theory. Correlations between the identified variables were analysed and will be discussed through this approach (Lewis & Saunders, 2018).

4.4. Methodological choices

This research followed a mono-method approach in terms of the methodological choice, in that it is purely quantitative in design. There was no intention to research any element

of this research topic from a qualitative perspective, nor was any attempt made to apply both (or mix) these approaches (multi- or mixed-methods).

4.5. Research strategy

The research investigation utilised a single survey questionnaire as part of the research strategy to collect the required quantitative data on the chosen three constructs. The survey questionnaire was based on existing scale measures for the assessment of PT, PB and UF. Some revision was applied to these scale measures in order to align optimally to the perspective of the investigation. This choice of measurement instrument is aligned with the deductive approach to the theory development using quantitative data. The use of the survey questionnaire mitigates most of the risk of reliability and validity of the research data (Lewis & Saunders, 2018), as well as being best placed to obtain accurate quantification of the constructs. This is aligned with research conducted in related fields (Cheong et al., 2019; Rouzi & Wang, 2021; Kamran-Morley et al., 2022; Colbert et al., 2019; Kwan et al., 2023; Balkin et al., 2022)

4.6. Time horizon

The study collected data at a particular point in time and thus will be defined as cross-sectional (as opposed to longitudinal) with regards the time horizon (Lewis & Saunders, 2018). This research is concerned with the examination of correlations between the latent variables, and this is a cross-sectional approach is appropriate (Cheng & Wang, 2020). This research does not mean to imply causality.

4.7. Population and target population

The population defined for this research comprised individuals employed within the manufacturing environment in South Africa, as well as those service industries directly supporting such manufacturing organisations (such as engineering consulting services, engineering workshops, etc.). Industries and services far removed of manufacturing (such as education, healthcare and technology) would not be considered as part of the target population.

The participants included in the population were employed in any role (operations,

training, finance or procurement etc.) within the existing organisational structure of these manufacturing environments or direct support services.

4.8. Unit of analysis

The unit of analysis for this research will be at the individual level. Quantitative data shall be collected from individuals falling within the target population. The purpose of this research is to make deductions between relationships at an individual level. The unit of analysis shall be defined as **individual**.

4.9. Sampling method and size

From the definition of the population, it was not possible to define the sampling frame for this research. It was thus necessary to utilise a non-probability sampling technique (Cheng & Wang, 2020) to define the sample for the study (Lewis & Saunders, 2018). Using a convenience sampling method, 523 participants were contacted directly requesting their time to participate in the survey. These participants comprised contacts that had been developed with the researcher over approximately 15 years of experience in the South African manufacturing industry, occupying various roles including technical, operational, planning, in-training, human resourcing, recruiting, sales and procurement, etc. Existing contacts occupying roles outside of the manufacturing industry (such as finance & education, etc.) were excluded from the opportunity to participate in the survey. The survey questionnaire was also shared as a post in the LinkedIn business platform to allow it to be shared to the wider business audience in the country. The survey was set up such that it was not possible for any participant to complete the survey more than once.

Due to the survey being communicated on the LinkedIn business platform, certain participants to the survey fell outside of the target population. These responses were filtered and excluded from the final dataset (see section 5.1).

It was originally estimated to be able to obtain between 170 and 200 respondents to the survey, in line with similar research by Rouzi & Wang (2021) (187 final sample size), Fay et al. (2023) (107 final sample size), Kwan et al. (2023) (207 final sample size), Balkin et al. (2022) (120 final sample size), Cheng et al. (2019) (102 final sample size) and Jain et al. (2023) (196 final sample size). The recommendation by Kim et al. (2021) was

considered in that the sample size should approximate, or ideal exceed, five (5) times the number of measurement indicators (Westland, 2010).

4.10. Design of the measurement instrument

4.10.1. Demographic and control variables

Eight (8) generic questions were introduced at the start of the survey to serve as inputs for descriptive analysis of the population as well as to be utilised as control variables in the correlation analysis. These demographic variables were defined as follows:

- Gender
- Country of employment
- Years of age
- Work experience (years)
- Employment sector
- Role in the organisation
- Highest qualification
- Time period reporting to current superior (manager)

Of these demographic variables *gender*, *years of age*, *work experience*, *role in the organisation*, *highest qualification* and *time reporting to current supervisor* would be proposed as control variables in the correlation analysis.

The purpose of including control variables in the correlation analysis is to reduce bias in the estimates by accommodating potential influences from these variables. Control variables would typically improve model fit and enhance the significance in the construct relationship (Collier, 2020).

4.10.2. Construct variables

The data required to investigate the first of the two proposed hypotheses was defined as follows:

- Measurement of trust, as perceived by the employee (**perceived trust**) – the **independent** (exogenous) variable.

- Measurement of proactive behaviour of the employee – the **dependent** (endogenous) variable.

The data required to investigate the **second** of the two proposed hypotheses is as follows:

- Measurement of trust, as perceived by the employee (perceived trust) – the **independent** (exogenous) variable.
- Measurement of proactive behaviour of the employee – the **dependent** (endogenous) variable.
- Measurement of unpredictability of the future, as perceived by the employee – the **independent** (exogenous) variable acting as the **moderator**.

These variables are termed latent, or unobservable, variables as they cannot be directly observed or measured. Observed indicators (survey questions) are used to capture the measurement of these latent variables (Collier, 2020).

In this research report the terms ‘unobservable variables’ or ‘factors’ will be used to refer to latent variables. The terms ‘variables’ or ‘constructs’ will also be used interchangeably.

As mentioned in section 4.5, the observed indicators were based on existing scale measures from the literature, revised to suit the context of the study. The observed indicators and scale measures shall now be discussed.

4.10.3. Observed indicators for perceived trust

Observed indicators for the measurement of PT were sourced from the 10-item scale originating from Gavin and Mayer (2005) (Rouzi & Wang, 2021). These observed indicators were originally developed from the perspective of measuring trust in another individual. Eleven observed indicators for PT were developed from the ten original indicators by Gavin and Mayer (2005). Both the original measurement scale (Gavin & Mayer, 2005) as well as the revised scale have been provided in Appendix A.

Indicators that were used for the measurement of perceived trust include *'My superior is comfortable delegating a critical task to me, even if he / she could not monitor my actions'*, *'My superior asks my opinion on important matters concerning the organisation'*, and *'My superior is not concerned about any ulterior motives I may have at work*'.

No permission was assumed for the use of this 10-scale, as this scale has been used in

other research without reference to permissions or acknowledgment (Rouzi & Wang, 2021).

4.10.4. Observed indicators for proactive behaviour

Observed indicators for the measurement of PB were sourced from Fay et al. (1997). This 7-item scale was designed for self-reported initiative, i.e. as assessed by the employee (Fay et al., 2023). These indicators are provided in Appendix B. The indicators were used as per the existing standard in the survey questionnaire without revision.

Indicators that were used for the measurement of PB (part a) include *'I actively attack problems', 'Whenever something goes wrong, I search for a solution immediately',* and *'Usually, I do more than I am asked to do'*.

No permission was assumed for the use of this 7-scale, as this scale has been used in other research without reference to permissions or acknowledgment (Fay et al., 2023).

The observed indicators for PB were complemented with the 10-item scale from Morrison and Phelps (1999). These indicators were originally defined for *taking-charge behaviour* (Cheong et al., 2019). These observed indicators were originally developed from the perspective of measuring taking-charge behaviour against another individual. Nine (9) observed indicators for PB were developed from the ten original indicators by Morrison and Phelps (1999). Both the original measurement scale as well as the revised scale have been provided in Appendix C.

Questions that were used for the measurement of PB (part b) include *'I adopt improved procedures for performing my job', 'I try to bring about improved procedures and work methods for my department, in order to improve effectiveness'* and *'I make constructive suggestions for improving how things operate within the organisation'.*

No permission was assumed for the use of this 10-item scale (Morrison & Phelps, 1999), as this scale has been used in other research without reference to permissions or acknowledgment (Cheong et al., 2019).

4.10.5. Observed indicators for unpredictability of the future

Observed indicators for the measurement of UF were sourced from (Blackburn et al., 1993) (Fay et al., 2023; pg16). This 4-item scale was developed for self-assessment of UF. These indicators are provided in Appendix D. The indicators were used as per the existing standard in the survey questionnaire without revision.

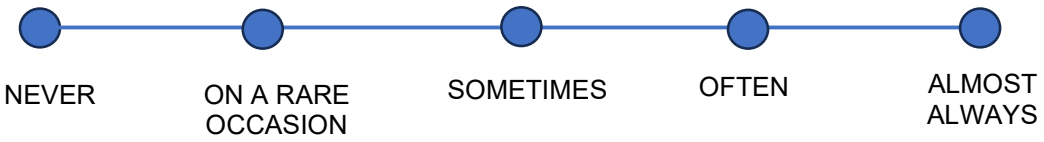
Questions that were used for the measurement of UF include '*I have to make decisions about complex issues for which I am missing information*', '*I have to make decisions about complex issues for which I cannot estimate the long-term consequences'*, and '*I have to proceed with my work not knowing if I am on the right track*'.

4.11. Measurement instrument – the development thereof

The survey questionnaire was developed in a Google electronic form, to facilitate easy sharing with the target population. The survey was initiated by an introduction, which provided an explanation for the purpose of the research and what it intended to investigate. Participants were made aware that their participation was entirely voluntary and that they could withdraw at any time without penalty. It was also noted that all participation is anonymous and that only aggregated data would be used for the investigation.

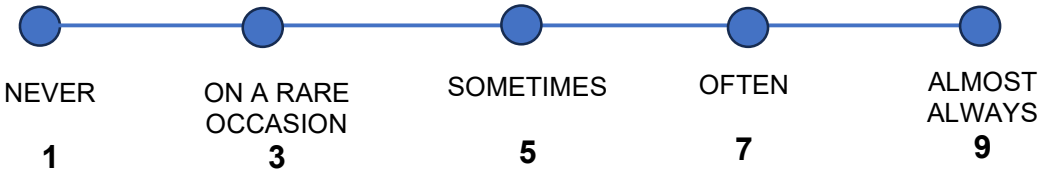
The eight control questions (section 4.10.1) were introduced after the above survey introduction paragraph.

Following the control questions, the 31 observed indicators were posed. These questions were arranged (sequenced) in a random order, i.e. the set of indicators related to perceived trust were not arranged in order, followed by the set of indicators related to proactive behaviour, etc. Rather, the indicators were randomly sequenced as not to alert any participant to any 'theme' of questioning, which may bias their response based on prior responses. The indicators were posed from the perspective of suggesting a workplace scenario to which the participant would be exposed and could reflect upon. Each participant would respond to the proposed scenario according to the following 5-point Likert scale.



The questions posed per construct were scaled in such a way that, considering the hypothesised relationships to be true, participants would not tend to respond repeatedly to either extreme of the scale (i.e. repeatedly '*Almost Always*' or repeatedly '*Never'*) and would thus need to consider the context of each question individually before answering it.

By default, the Likert scale was scored in magnitude as follows:



This resulted in a scoring scale as follows:

Table 1: Scoring table for observed indicators based on the Likert scale.

	Latent variable		
Score	PT: Perceived trust	PB: Proactive behaviour	UF: Unpredictability of the future
1	*'I do not perceive that I am trusted by my superior'*	*'Behaviour is not proactive'*	*'The future is certain; I am aware of the consequence of my decisions'*
3			
5			
7			
9	*'I do perceive that I am trusted by my superior'*	*'Behaviour is significantly proactive'*	*'The future is uncertain; I am not aware of the consequence of my decisions'*

All indicators were worded such that a higher score related to higher levels of PT, higher levels of PB and greater levels of UF. Only a single indicator under the perceived trust indicator required reversing of the score to satisfy the direction of influence (PT10: *'my superior feels that he / she needs to keep an eye on me*').

4.12. Data gathering process

A 'trial' survey was conducted prior to the start of the data gathering process to test the integrity of the questionnaire. Five individuals participated in this trial, with feedback received from three individuals. The feedback from this trial was positive – one employment sector was added to the available options; one observed indicator was reworded to reduce ambiguity, and the introduction was enhanced with additional explanation of the research.

As stated in section 4.9, 523 network contacts of the researcher were approached to participate in the survey. It was envisaged that a primary response rate of 40% would be achieved with this sampling method, yielding approximately 210 recorded responses. This was then expected to reduce to approximately 190 usable responses (~90% secondary yield), once the criteria of the data were considered (participants working in South Africa, fully completed survey responses, etc.).

As mentioned, the survey questionnaire was developed on a Google electronic form. The link to this form was embedded in a formal message addressed to each proposed participant, indicating the purpose of the research. A copy of this introduction message, together with the survey questionnaire, is provided in Appendix E.

A link to the survey questionnaire was also posted on the LinkedIn business platform, in order to reach a wider audience. As mentioned, the survey was set up such that it was not possible for any participant to complete the survey more than once (based on their web accounts used to access the survey). A note was also included in the private messages to the participants that this request was the same survey as that seen on the LinkedIn platform.

4.13. Data storage, data management, and protection of personal information

The response rate to the survey was monitored during and after the period of engagement with the participants. The survey was closed after no new respondents had contributed for a period of one week, at which point 231 responses had been received.

The data was downloaded from the Google forms server onto a personal laptop and stored on a personal (not business) Microsoft OneDrive cloud server account which could only be accessed by the researcher. No links to this data drive were shared. In this way it was assured that only the researcher had access to the dataset.

In compliance with the Protection of Personal Information (POPI) Act, special consideration was made concerning the management of personal information obtained during the data gathering process. With reference to this study, information relating to gender, age, qualification and employment sector, etc. was collected. As mentioned, the data was stored on a personal cloud server, only accessible by the researcher to mitigate against unauthorised access. Consent for the gathering of this data did form part of the survey questionnaire itself, to ensure that the respondents were fully aware of how the data was to be managed during the process. The data shall be handed over to the academic institution as per the existing protocols, which requires the data to be stored for a period of ten years. Once this data has been handed over, it shall be permanently deleted from the personal cloud server of the researcher.

4.14. Analysis approach

In response to research question 1, it is hypothesised that there is a significant relationship between levels of PT and the exhibition of PB. The data related to this analysis includes the independent latent variable (PT) and the dependent latent variable (PB).

Descriptive statistical analysis of the data would be executed in IBM SPSS in order to understand the positioning of the data in terms of mean, standard deviation, etc. (Jain et al., 2023).

Structural Equation Modelling was utilised to examine the relationship between the defined latent variables in a “simultaneous way” (Collier, 2020; pg. 1) as has been applied to similar research in the literature (Jain et al., 2023; Kamran-Morley et al., 2022; Law et

al., 2021). Confirmatory Factor Analysis (CFA) was applied in IBM SPSS AMOS to assess the integrity of the measurement model (the degree of fit of the observed indicators to the unobserved constructs as well as the distinction of the constructs) (Jain et al., 2023; Collier, 2020). Convergent, discriminant validity and common method bias of the data were also assessed during this process (Fan et al., 2021; Collier, 2020). Following the CFA, an assessment of the full structural model was executed in AMOS, in order to examine the significance of the relationship between the latent variables, considering the measurement errors in the respective indicators (Collier, 2020). The control variables were also accounted for (Law et al., 2021; Fan et al., 2021). The moderation factor of UF (hypothesis 2) was also assessed within this structural model in AMOS (Collier, 2020).

4.15. Quality controls

With this quantitative study, certain quality controls have been applied to the data and data collection process in order to ensure that the reliability and validity of the analysis is assured. This will now be discussed.

4.15.1. Data reliability controls

The reliability of research data is concerned with the repeatability of the measures under the “same methods and procedures”, as well as the presentation of clear conclusions arising from interpretation of the data (Lewis & Saunders, 2018). The use of a questionnaire survey in this research has mitigated the risk of poor data reliability when compared to more subjective data collection methods such as observations. Four factors posing a risk to reliability of research data are subject error, subject bias, observer error and observer bias (Lewis & Saunders, 2018) and are related to the way in which the questions of the survey questionnaire were posed.

Subject error refers to variances introduced due to measures taking place at different times of the day (Lewis & Saunders, 2018). As the data was collected via structured questionnaire surveys, and thus the measurement was not based on observation, there is little risk that respondents would have responded differently at different times.

Subject bias refers to the tendency for the subject to bias their response to the survey due to the perception that an honest answer would reflect poorly on them (Lewis &

Saunders, 2018). To control for this, the observed indicators were worded in such a way as to not create any negative perception when they were answered. Further, anonymity of the subjects was assured in the introduction paragraph of the survey questionnaire to encourage as honest response as possible from each participant.

Observer error (Lewis & Saunders, 2018) refers to the variance in posing the same question by different observers, thus influencing the response. As the survey questionnaire was self-completed, there will not be any risk of influence by the observer (researcher), however there may be risk due to ambiguous posing of the survey questions (Lewis & Saunders, 2018). The use of the described standard measurement scales (covered in paragraph 4.10) for the basis of the questions would to a large degree have mitigated this risk. In addition to this, the questionnaire survey was run in a trial prior to the main launch to identify any ambiguity in any of the indicators. This trial did identify one observed indicator which was not clear in understanding to more than one of the trial respondents.

Observer bias refers to the variance in how the observer (researcher) interprets the same data, “biasing the findings and conclusions” (Lewis & Saunders, 2018). The use of the survey questionnaire with predefined measurement scales (paragraph 4.10) will fully mitigate this risk, as no interpretation of this (quantitative) data will apply in this study. A test for Cronbach’s alpha, or Composite Reliability (Collier, 2020; Cheung et al., 2024) may be used to test for reliability of the research data.

4.15.2. Data validity controls

The validity of the research data is critical in ensuring that the findings of the research accurately and fairly represent the outcomes of the data analysis and the research purpose (Lewis & Saunders, 2018). The following research validity risks proposed by (Lewis & Saunders, 2018) are applicable to this project:

Subject selection refers to inappropriate selection of the research subjects in that they are not representative of the research population (Lewis & Saunders, 2018). To mitigate this risk, the respondents were screened in order to select only those directly from the manufacturing sector, or those employed as direct technical service providers to the manufacturing industry. It has there been assured that the target population will only

comprise subjects from these targeted sectors.

The **testing** factor refers to “any effects that the data collection process itself may have on the subjects” (Lewis & Saunders, 2018). The data collection process was in the form of a self-completed survey, in which there was minimal influence by the researcher. The purpose of the study was well articulated in the introduction to the survey, and anonymity was assured at the same time. The survey was limited to 39 questions and was timed to enable completion within 5 to 7 minutes to prevent frustration or irritation from effecting the valid responses from the participants.

Ambiguity around the direction of causal relationships may threaten the validity of the research (Lewis & Saunders, 2018). The research had to be clearly articulated in terms of the dependent and independent variables on which the hypotheses are based. For the research it has been clearly defined that PT is the latent independent construct, PB is the latent dependent construct and UF is defined as the latent independent moderating variable in the proposed hypotheses.

Common method bias was identified as a risk to the validity of the research data considering that all variables, both independent and dependent, were captured by the same response method, i.e. ordinal scales (Buil et al., 2019; Assaf et al., 2021). When common method bias is present, the relationship between the chosen variables is affected, often inflated (Collier, 2020), thereby affecting the validity of the research data (Assaf et al., 2021). Common method bias is a real risk in this research; however, the following mitigation actions were taken to reduce the risk as far as possible:

- The anonymity of the respondents was assured in the introduction to the survey (Assaf et al., 2021)
- Complex and ambiguous indicators were avoided (Assaf et al., 2021), and
- The survey was kept concise (Assaf et al., 2021).

Tests that were considered for the testing of common method bias were Harmans single factor test and Confirmatory Factor Analysis (CFA) (Rouzi & Wang, 2021; Assaf et al., 2021).

4.16. Limitations of the research methodology

The following limitations of the chosen research methodology have been identified and considered:

The study would be cross-sectional in nature, and thus it would not be possible to demonstrate causality (correlation not being causation) (Colbert et al., 2019), although this is aligned with the purpose of the research.

The target population has been specified as the manufacturing sector in South Africa, and the results of the investigation would need to be verified in other industry sectors in South Africa, or other cultural settings (Rouzi & Wang, 2021).

The study will be susceptible to common method bias due to the manner in which the data is being collected (Buil et al., 2019; Assaf et al., 2021). It will be necessary to pay special attention to the mitigation actions as proposed in paragraph 4.15.2.

The measurement scales sourced from the literature have been revised in order to suit the context of this study. There may be a limitation of the effectiveness of the resultant observed indicators (survey questions) in that they do not accurately or sufficiently describe the chosen constructs. This shall be assessed during the evaluation of the measurement model (Collier, 2020).

5. Research findings

5.1. Summary of survey response statistics

Of the 523 participants directly contacted for the survey 231 responses were obtained, yielding a primary response rate of 44.2%. As the survey was also posted on the LinkedIn business platform, actual primary response rate would be lower than this.

One survey response was disregarded due to zero data inputted for the response (respondent abandonment). Seven (7) survey responses were disregarded due to the participants working outside of South Africa. A further fourteen (14) responses were disregarded due to the participants being business owners, and thus not being considered in a position to relate to perceived trust from a manager or superior. In total, twenty (20) survey responses were disregarded considering the employment industry falling outside of the requirement of manufacturing sector and direct support services. This had an effective reduction impact of 17 survey responses after considering the impact of the above criteria. Ultimately, the final dataset population consisted of 192 survey responses.

The assessment of compliance of survey respondents is summarised in Table 2 below.

Table 2: Quantitative summary of data collection parameters.

Dataset parameters	**Quantity**
Total participants directly approached (***a***)	523
Total participants connected through the LinkedIn business platform (survey posting) (***b***)	unknown
Total potential participants approached (***c*** = ***a*** + ***b***)	**> 523**
Total survey responses received (**d**)	231
Actual primary response rate (***d*** / ***c***)	**< 44.2%**
Data cleansing – survey responses disregarded (total) – for reasons of:	**39***
Insufficient data completion	1
Participants working 'outside of South Africa'	7
Business owners	14
Non-manufacturing industry sectors	17* (20)
Education	2* (3)
Government & civil services	10
Real estate, finance & business services	1* (2)
Healthcare	1
Wholesale & retail trade	1
Unknown (no data)	2* (3)
* *The effective reduction, after considering other cleansing criteria.*	
Final dataset population size (*n*)	**192**

The survey had allowed open fields ('other', with an open field input) for the 'employment sector', 'role in the organisation' as well as 'highest qualification' parameters. Each of these parameters had to be reviewed and translated to the standard criteria that had been developed for the survey. Explanations of these data translations are provided in Appendix F (employment sector), Appendix G (role in the organisation) and Appendix H (highest qualification).

Considering the recommendation of Westland (2010) and Kim et al. (2021) the sample size should ideally be greater than five (5) times the number of measurement items in the survey. With the survey questionnaire consisting of 39 questions, the final sample size would need to approximate or ideally exceed 195 participants. Although slightly before this recommendation, it is considered adequate for the purpose of this research study.

5.2. Data screening

Prior to initiating the statistical analysis of the data, it was required to screen the data for any missing data, outliers or respondent misconduct (Collier, 2020).

5.2.1. Respondent misconduct

The standard deviation of the construct questions was analysed to determine if any respondent misconduct is present. This scenario refers to any respondent who is not paying attention to the question and merely answering all questions are the same, or similar, scale (Collier, 2020). There was no cause for concern on respondent misconduct, with the minimum standard deviation measured at 0.67 (see Appendix I).

5.2.2. Impermissible values

The data was considered for impermissible values. Outlier detection and rectification was not applicable, as the survey did not allow inputs beyond the defined 5-point Likert scale (defined single-input radio buttons were used in the survey).

After considering both respondent misconduct and impermissible values, no respondent data was deleted from the dataset.

5.2.3. Missing data – demographic variables

Certain categorical data was missing from the demographic variables in the dataset – summarised as follows:

- *Gender* (categorical nominal): 1 of 193 datapoints missing
- *Work experience* (categorical ordinal): 1 of 193 datapoints missing
- *Role in the organisation* (categorical ordinal): 1 of 193 datapoints missing

- *Time reporting to current superior (manager)* (categorical ordinal): 1 of 193 datapoints missing

Mode imputation was utilised in IBM SPSS to fill in this missing data – where the missing datapoint is replaced by the mode of the parameter. This was considered appropriate (and preferable to deletion of the data, as per Collier (2020)) as this method preserves the integrity of the data category types, and it is simple to execute. The assumption is made that the data is missing completely at random (MCAR), and this replacing missing data with the most frequent category will not disturb the overall distribution of the data (Collier, 2020).

5.2.4. Missing data – latent construct variables

There was also missing data in some of the latest construct variables (categorical, ordinal data). A single respondent datapoint was missing each from indicators PT4, PT5, PT6, PT7, PT9, PT10 and PT11 (representing the perceived trust construct). A single respondent datapoint was missing each from indicators PB4, PB7, PB15 and PB16 (representing the proactive behaviour construct). No data points were missing from the indicators representing unpredictability of the future. Linear interpolation in SPSS was used to replace the missing data points for the latent constructs.

5.3. Description of the sample obtained

A statistical description of the demographic data is provided in Table 3 below. These will then be discussed in further detail in this report.

Table 3: Descriptive statistics of the sample population.

Descriptive Statistics							
		Gender	Years of age	Work experience	Role in the organisation	Highest qualification	Reporting period
N	Valid	192	192	192	192	192	192
	Missing	0	0	0	0	0	0
Mean		1.19	4.39	3.80	6.61	2.82	1.24
Median		1.00	4.00	4.00	6.50	3.00	1.00
Mode		1	4	3	6	3	1
Std. Deviation		0.421	1.646	1.532	1.875	0.874	0.565

5.3.1. Gender

The sample consisted of 192 adults, of which 157 were male (81.8%), 33 were female (17.2%) and 2 declined the question (1.0%).

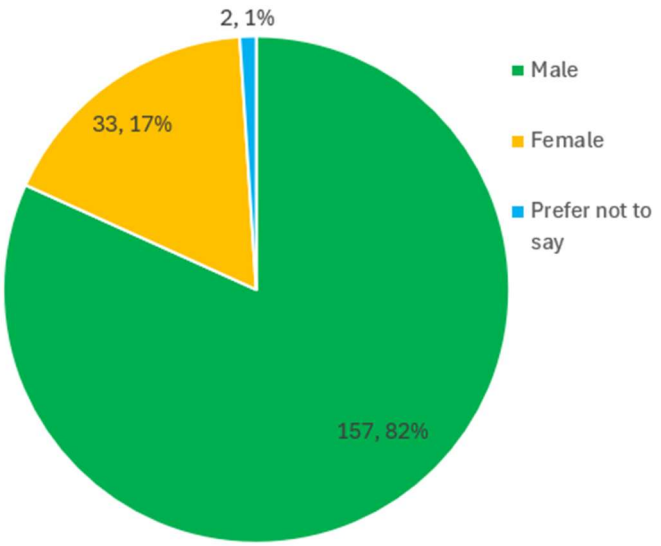


Figure 4: Gender distribution of the sample population.

5.3.2. Respondent age

The mean of the age group categories was 4.39 (median age 4.00, mode of 4), which corresponds to an age group of 36 to 40 years of age (group 4), tending slightly to the next age group of 41 to 45 years of age (group 5) – the majority of the sample population fell into the category of 36 to 40 years. The standard deviation of the age group categories was 1.646.

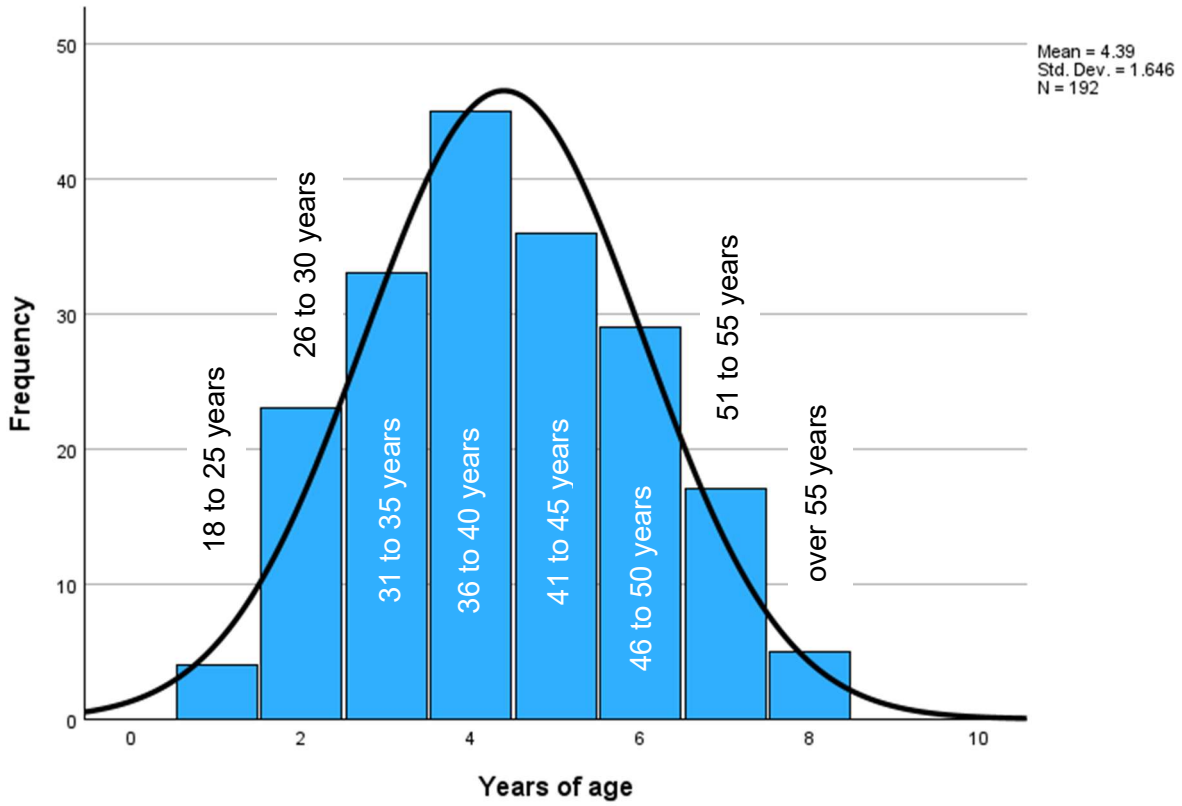


Figure 5: Histogram depicting age group of the sample population.

Table 4: Distribution of the sample population according to age group.

Age group categories of respondents		Frequency	Percent	Cumulative Percent
Valid	18 to 25 years	4	2.1	2.1
	26 to 30 years	23	12.0	14.1
	31 to 35 years	33	17.2	31.3
	36 to 40 years	45	23.4	54.7
	41 to 45 years	36	18.8	73.4
	46 to 50 years	29	15.1	88.5
	51 to 55 years	17	8.9	97.4
	Over 55 years	5	2.6	100.0
	Total	**192**	**100.0**	

5.3.3. Respondent work experience

The mean of the work experience group categories was 3.80 (median of 4.00, mode of 3) which corresponds to a category of individuals working for 11 to 15 years (group 3) – the majority of the sample population had 11 to 15 years of work experience. The standard deviation of the work experience categories was 1.532.

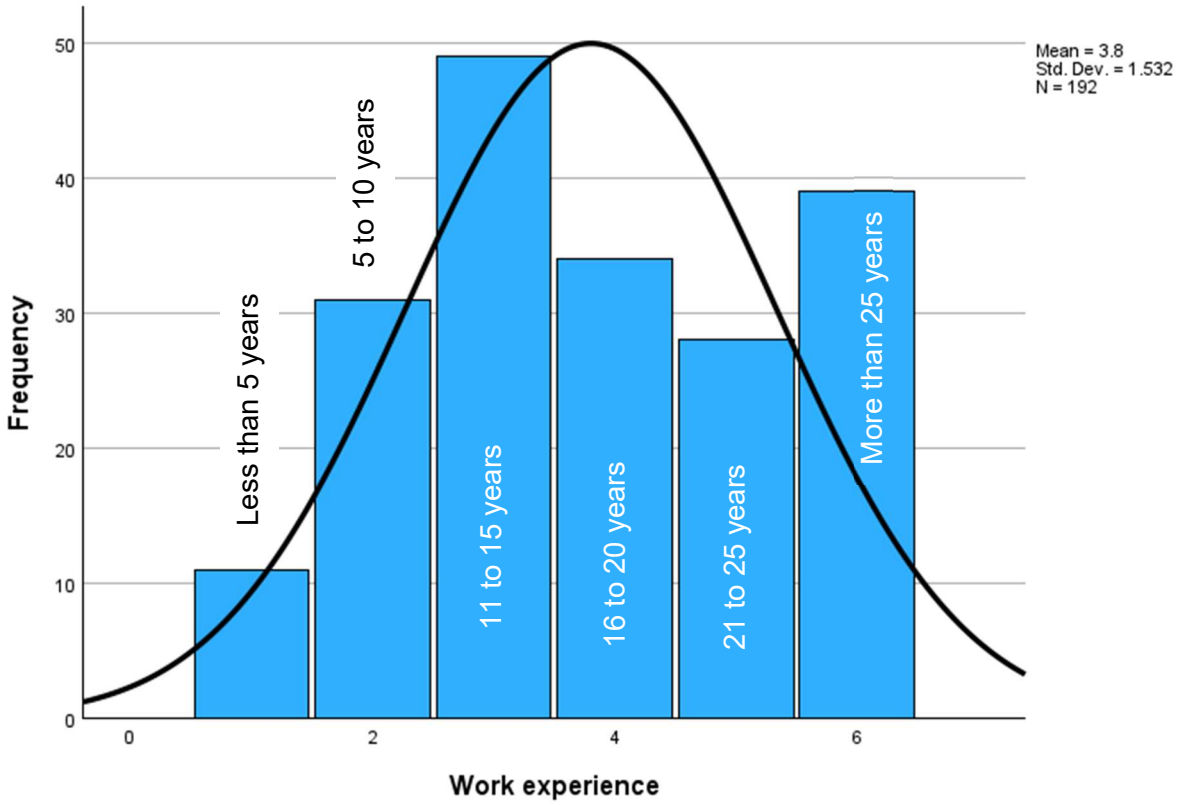


Figure 6: Histogram depicting work experience of the sample population.

Table 5: Distribution of the sample population according to work experience.

Respondents according to work experience		Frequency	Percent	Cumulative Percent
Valid	Less than 5 years	11	5.7	5.7
	5 to 10 years	31	16.1	21.9
	11 to 15 years	49	25.5	47.4
	16 to 20 years	34	17.7	65.1
	21 to 25 years	28	14.6	79.7
	More than 25 years	39	20.3	100.0
	Total	**192**	**100.0**	

5.3.4. Respondent time reporting to current manager

The mean of the reporting time (to current manager) group was 1.24 (median of 1.00, mode of 1) which corresponds to a time-period category of less than 5 years (group 1) – the majority of the sample population had reported to their current manager for less than 5 years. The standard deviation of the reporting time group category was 0.565.

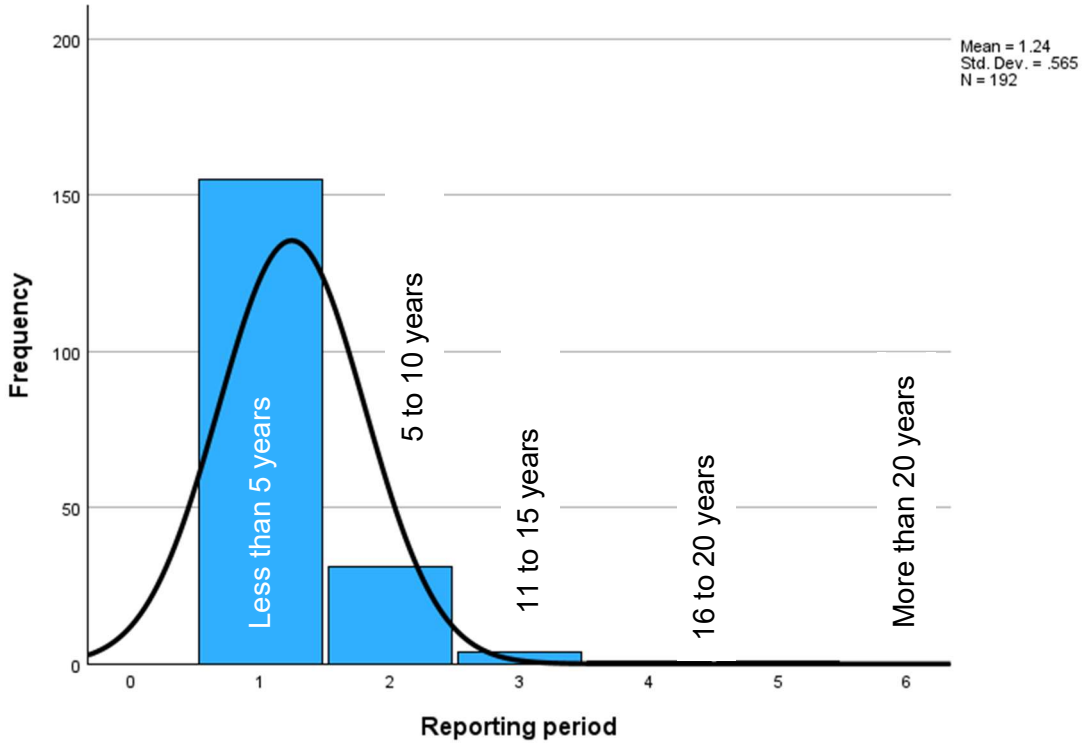


Figure 7: Histogram depicting reporting period (to current manager) of the sample population.

Table 6: Distribution of the sample population according to time-period reporting to current manager.

Time-period reporting to current manager of respondents		Frequency	Percent	Cumulative Percent
Valid	Less than 5 years	155	80.7	80.7
	5 to 10 years	31	16.1	96.9
	11 to 15 years	4	2.1	99.0
	16 to 20 years	1	.5	99.5
	More than 20 years	1	.5	100.0
	Total	**192**	**100.0**	

5.3.5. Industry employment sector

The majority of the sample population was employed within the manufacturing sector (61%), with a large component employed within mining and quarrying (11%) and construction (9.5%). The distribution of the participant responses in sectors of industry employed is illustrated in Figure 8 below.

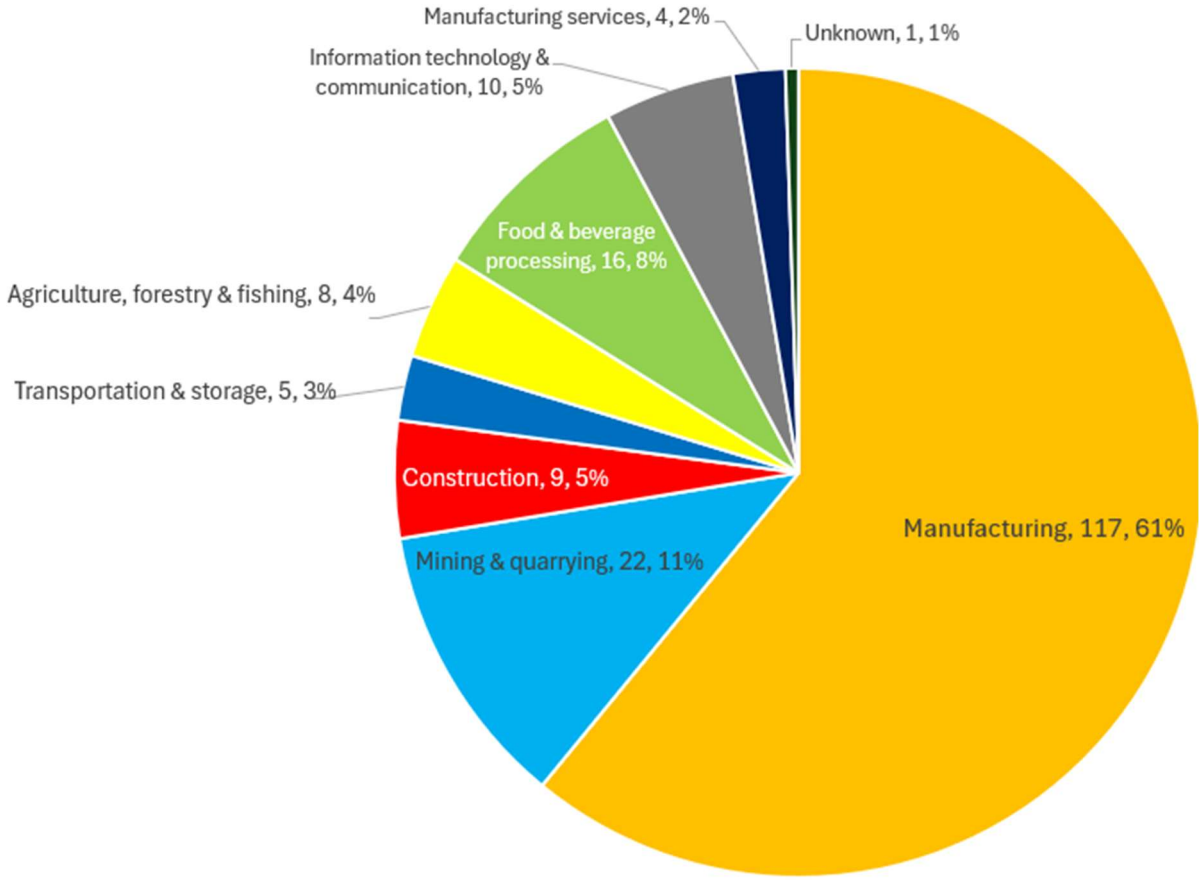


Figure 8: Employment sector distribution of the sample population.

Table 7: Distribution of the sample population according to employment sector.

Employment sector of respondents		Frequency	Percent	Cumulative Percent
Valid	Manufacturing	117	60.9	60.9
	Mining & quarrying	22	11.5	72.4
	Construction	9	4.7	77.1
	Transportation & storage	5	2.6	79.7
	Agriculture, forestry & fishing	8	4.2	83.9
	Food & beverage processing	16	8.3	92.2
	Information technology & communication	10	5.2	97.4
	Manufacturing services	4	2.1	99.5
	Unknown	1	.5	100.0
	Total	**192**	**100.0**	

5.3.6. Respondent job role

The mean of the job role of the sample population was 6.61 (median 6.50, mode 6) which corresponds to middle management (group 6), tending towards specialist (group 7). The standard deviation for the participant job role category was 1.875. Middle management, specialists and senior specialists comprised 67% of the sample population.

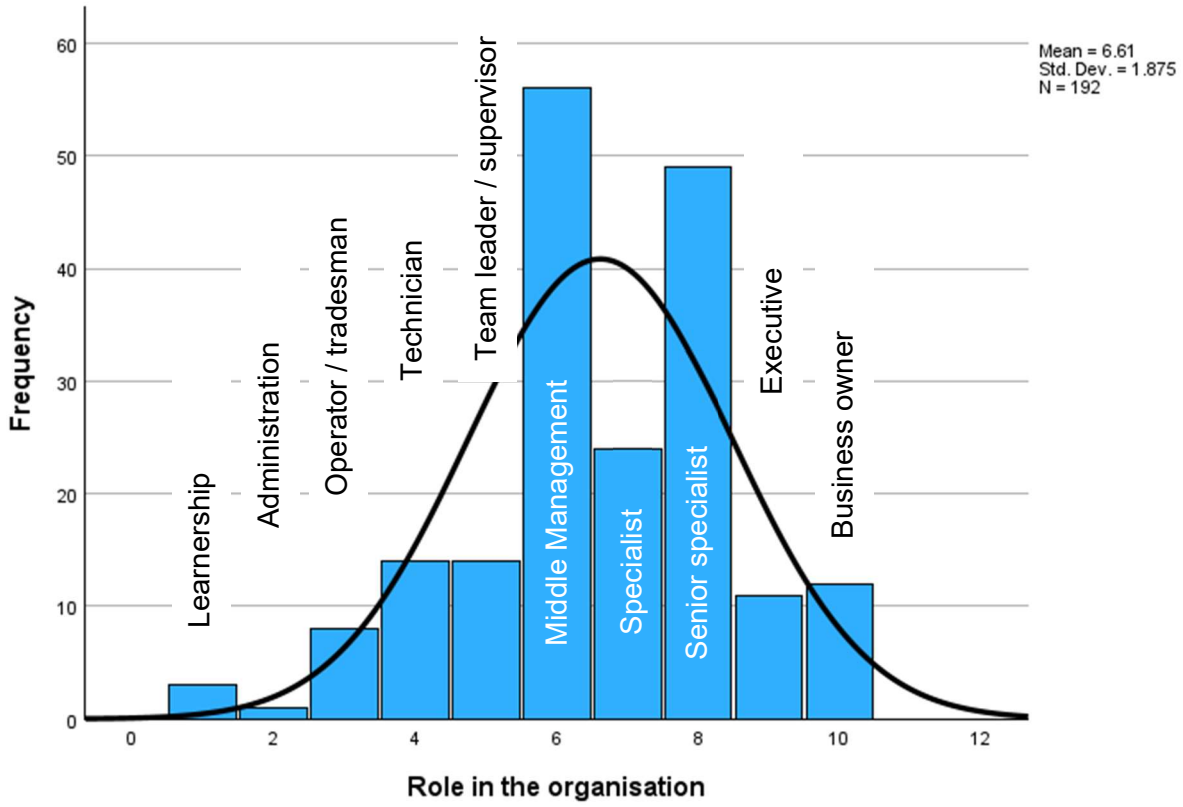


Figure 9: Histogram depicting role in the organisation of the sample population.

Table 8: Distribution of the sample population according to their role in the organisation.

Respondent role on the organisation		Frequency	Percent	Cumulative Percent
Valid	Learnership	3	1.6	1.6
	Administrator	1	.5	2.1
	Operator / tradesman	8	4.2	6.3
	Technician	14	7.3	13.5
	Team leader / supervisor	14	7.3	20.8
	Middle management	56	29.2	50.0
	Specialist	24	12.5	62.5
	Senior management	49	25.5	88.0
	Senior specialist	11	5.7	93.8
	Executive	12	6.3	100.0
	Total	**192**	**100.0**	

5.3.7. Participant highest qualification

The mean of the participant highest qualification category was 2.82 (median 3.00, mode 3) which corresponds to a bachelors or honours degree – the majority of the sample population were educated to a bachelor's degree or honours degree. The standard deviation for the highest qualification category was 0.874.

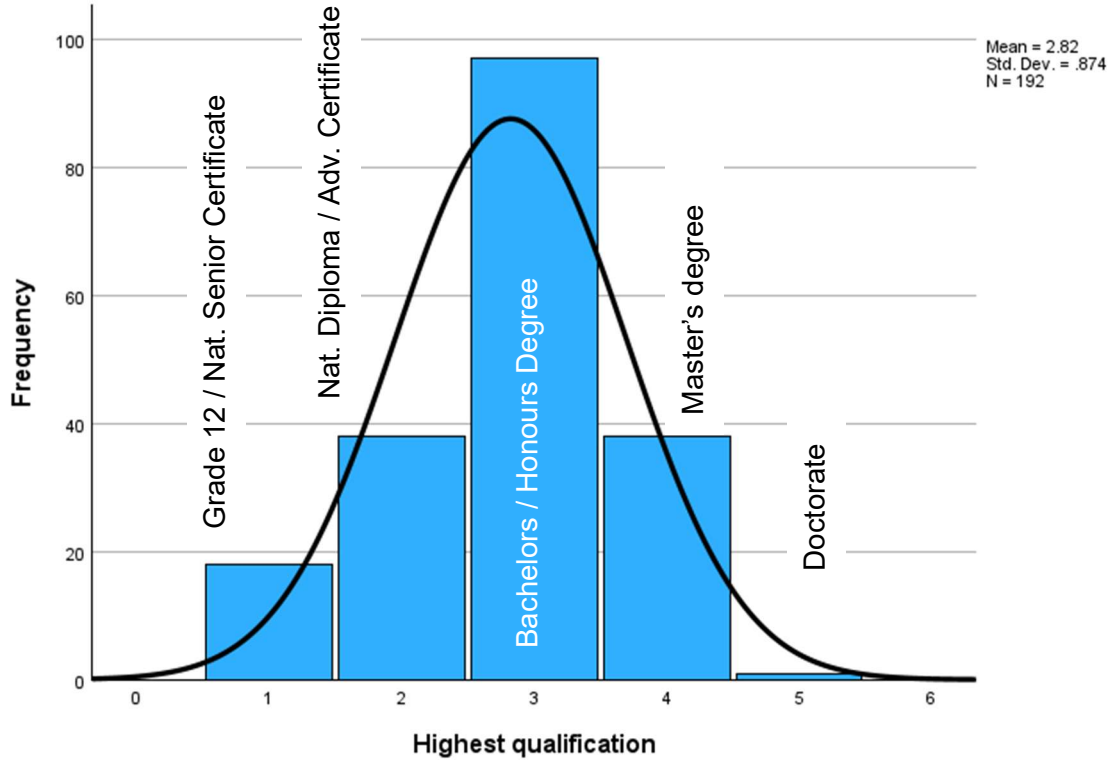


Figure 10: Histogram depicting level of education of the sample population.

Table 9: Distribution of the sample population according to level of education.

Highest qualification of respondents		Frequency	Percent	Cumulative Percent
Valid	Grade 12 / Nat. Senior Certificate	18	9.4	9.4
	National Diploma / Adv. Certificate	38	19.8	29.2
	Bachelor's / Honour's Degree	97	50.5	79.7
	Master's degree	38	19.8	99.5
	Doctorate	1	.5	100.0
	Total	**192**	**100.0**	

5.4. Introduction to the relationship modelling – SEM

Structured Equation Modelling (SEM) was utilised to investigate the relationship between the chosen construct variables in a concurrent way. This statistical technique is appropriate in examining the proposed relationships, via the hypotheses, to understand the "directionality and significance" (Collier, 2020; pg.1). A covariance approach was used, as the investigation is concerned with the relationship between random variables. SEM is utilised to examine correlation between variables but is not appropriate for the determination of causation (Collier, 2020).

IBM SPSS Amos software was selected to perform the SEM analysis for this research.

5.5. Reliability testing of the data

5.5.1. Indicator reliability – Cronbach's alpha

The reliability of the chosen indicators was assessed using Cronbach's alpha in IMB SPSS. A value for Cronbach's alpha of above 0.70 would indicate that the responses to the construct are consistent. Due to the large number of indicators, the Cronbach's alpha may be inflated for Proactive Behaviour (PB) and Perceived Trust (PT) (Collier, 2020).

The initial results for the calculation of Cronbach's alpha are provided in Table 10 below.

Table 10: Initial results for the calculation of Cronbach's alpha for the latent variables.

Latent variable	Number of indicators, *n*	Cronbach's alpha, α
Perceived Trust (PT)	11	0.825
Proactive Behaviour (PB)	16	0.874
Unpredictability of the Future (UF)	4	0.821

All responses for Cronbach's alpha indicate that the responses are consistent for the respective constructs. For the constructs of PB and UF, there was no indication from the analysis that the removal of any observed indicators would improve the reliability of the constructs (see Appendix J). From the assessment of the indicators for PT, it was noted that an improvement in reliability would be achieved with the removal of indicator PT4 (Table 11).

Table 11: Reliability Statistics for observed indicators for Perceived Trust (PT).

Item-Total Statistics – Perceived Trust (initial)				
Observed Indicator – Perceived Trust	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PT1	62.88	188.707	0.529	0.811
PT2	62.98	183.675	0.585	0.805
PT3	63.91	182.598	0.525	0.809
PT4	64.80	187.377	0.198	0.852
PT5	64.45	174.888	0.598	0.801
PT6	63.55	173.883	0.624	0.799
PT7	64.15	176.967	0.515	0.809
PT8	62.85	178.816	0.591	0.803
PT9	64.93	176.734	0.456	0.816
PT10	62.86	181.542	0.494	0.811
PT11	64.20	176.006	0.590	0.802

Observed indicator PT4 was removed from the dataset, and the Cronbach's alpha for PT was improved to 0.852 (Appendix J). The question pertaining to PT4 was as follows:

'My superior is not concerned about any ulterior motives I may have at work'

The final results for the reliability assessment of the indicators are presented in Table 12.

Table 12: Final results for the calculation of Cronbach's alpha for the latent variables.

Latent variable	Number of indicators, *n*	Cronbach's alpha, α
Perceived Trust (PT)	11	0.852
Proactive Behaviour (PB)	16	0.874
Unpredictability of the Future (UF)	4	0.821

Although the proposed removal of indicator PT9 from the dataset indicated further improvement of reliability, the dataset was left as was at that point. Final values for Cronbach's alpha for the constructs indicated consistency of the indicators within the respective constructs.

5.6. Testing the measurement model with CFA

The measurement model is used to test the validity of the observed indicators per construct; specifically, how well the constructs are measured by the associated indicators and how well the constructs are indistinguishable from each other. Confirmatory Factor Analysis (CFA) was utilised to test the integrity of the measurement model (Collier, 2020).

The CFA was performed using IMB SPSS AMOS software. The model was constructed using all three latent variables – PT, PB and UF. In the construction of the measurement model, all the unobserved variables are treated as independent variables with covariances incorporated between them (Collier, 2020).

A confidence level of 95% has been assigned for the statistical assessments within this research investigation ($p = 0.05$).

The SPSS data file was loaded into the AMOS software for the construction of the measurement model, which included the observed indicators (survey questions) per latent variable. The individual indicators for PT were named PT1 to PT11 (10 indicators, with PT4 having been removed during reliability testing of the data) and the individual indicators for PB were named PB1 to PB16 (16 indicators). The individual indicators for UF were named UF1 to UF4 (4 indicators). The latent variables were loaded into the AMOS measurement model together with their respective indicators. Covariance links were applied between all the three latent variables (Collier, 2020). To perform an assessment of the factor loading for the individual construct indicators, one of the indicator factor loadings per latent variable is constrained to the value of 1.0 (regression coefficient); the balance of the indicator factor loadings would then be estimated individually (Collier, 2020). For the factor loading analysis, the regression coefficient for indicators PT1, PB1 and UF1 were set to 1.0. This model, Model 1, is shown in Figure 11 below.

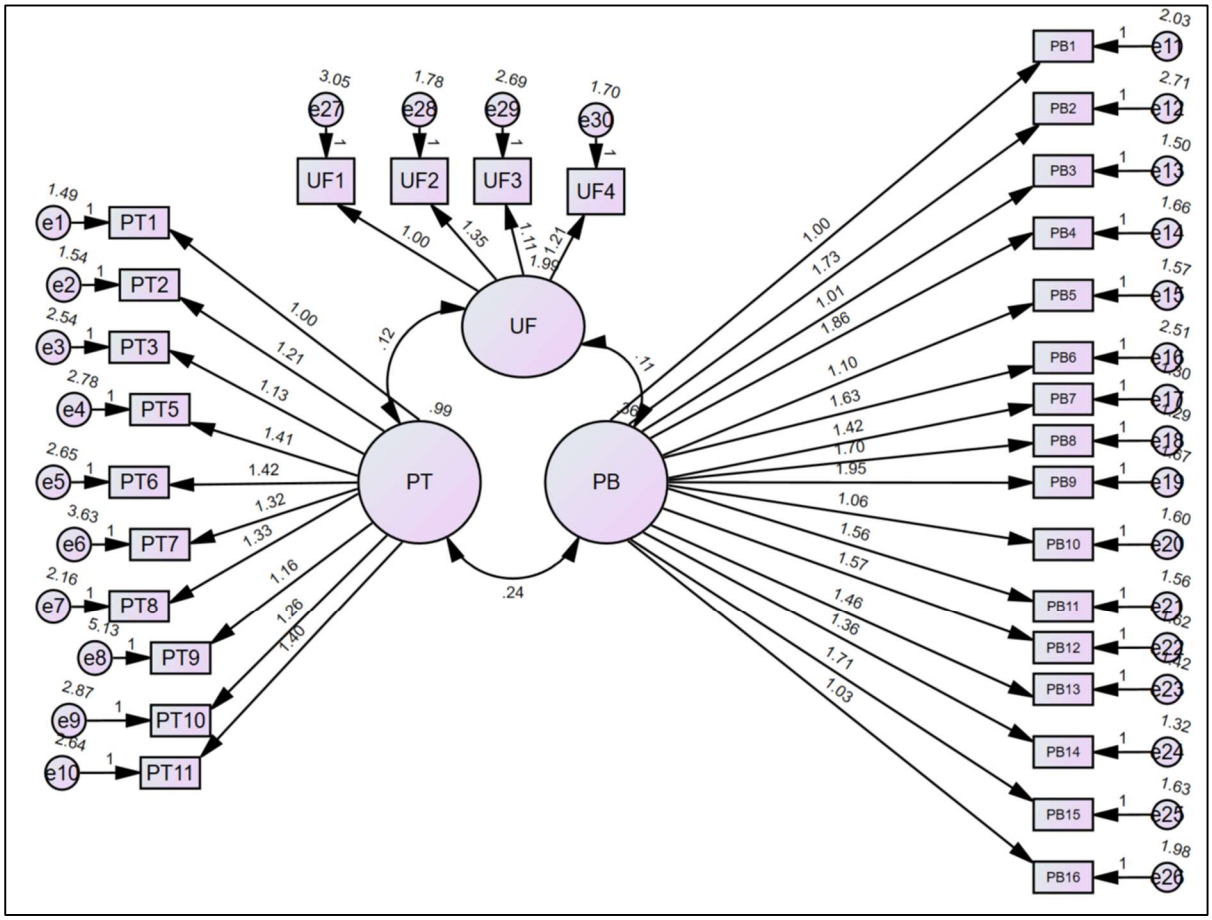


Figure 11: Model 1: Initial measurement model, no indicator covariance applied.

5.6.1. Assessment of required indicator error term covariance – Convergent Validity

The convergent validity of the latent variables determines to what extend the indicators converge to measure the same construct, i.e. are the indicators measuring the same construct (Collier, 2020). The convergent validity of each construct was assessed in IBM SPSS AMOS, by calculating the Average Variance Extracted (AVE) per construct. The AVE is calculated as the average of the proportion of variance (R^2-value) per construct. The AVE should be greater than 0.5 to prove for Convergent Validity (Collier, 2020; Cheung et al., 2024). The AVE for the three constructs based on Model 1 is provided in Table 13 below.

Table 13: Average Variance Extracted (AVE) for the three latent constructs for Model 1 (no error term covariance).

Perceived Trust	R-squared
PT11	0.424
PT10	0.356
PT9	0.208
PT8	0.450
PT7	0.324
PT6	0.431
PT5	0.413
PT3	0.335
PT2	0.484
PT1	0.399
AVE	**0.382**

Proactive Behaviour	R-squared
PB16	0.163
PB15	0.394
PB14	0.337
PB13	0.353
PB12	0.354
PB11	0.360
PB10	0.203
PB9	0.451
PB8	0.448
PB7	0.360
PB6	0.277
PB5	0.219
PB3	0.198
PB2	0.285
PB1	0.151
PB4	0.429
AVE	**0.311**

Unpredictability of the Future	R-squared
UF4	0.632
UF3	0.479
UF2	0.670
UF1	0.395
AVE	**0.544**

The AVE for Unpredictability of the Future (UF) is greater than 0.5 and thus convergent validity can be proven for this construct. Both the AVE measures for Perceived Trust (PT) and Proactive Behaviour (PB) are below 0.5 and thus these constructs possess weak convergent validity (Collier, 2020; Cheung et al., 2024).

The Modification Indices (MI) for the model were assessed to determine whether any covariance should be applied between the error term of the observed indicators. The application of additional covariances between the error terms of the indicators would potentially improve the fit of the model as well as increase the AVE for the latent constructs related to the applicable indicators of the linked error terms. Such covariances would only be applied between indicator error terms related to a common latent variable, not across latent variables (Collier, 2020).

After considering the MI, five covariances were incorporated into the indicator error terms of PT, and six covariances were incorporated into the indicator error terms of PB. No covariances were incorporated into the indicator error terms of UF as it was not

suggested.

The proportion of variance (R^2) value for the indicators were assessed with the intention of eliminating indicators that were supporting very little value to the understanding of their respective constructs. Based on a minimum value of $R^2 = 0.30$, seven of the sixteen PB indicators were removed from the measurement model, and one of the ten PT indicators were removed (Blomme et al., 2022). None of the UF indicators were removed from the model as they all contributed adequately to the understanding of the construct.

The resultant model, Model 2, is shown in below in Figure 12:

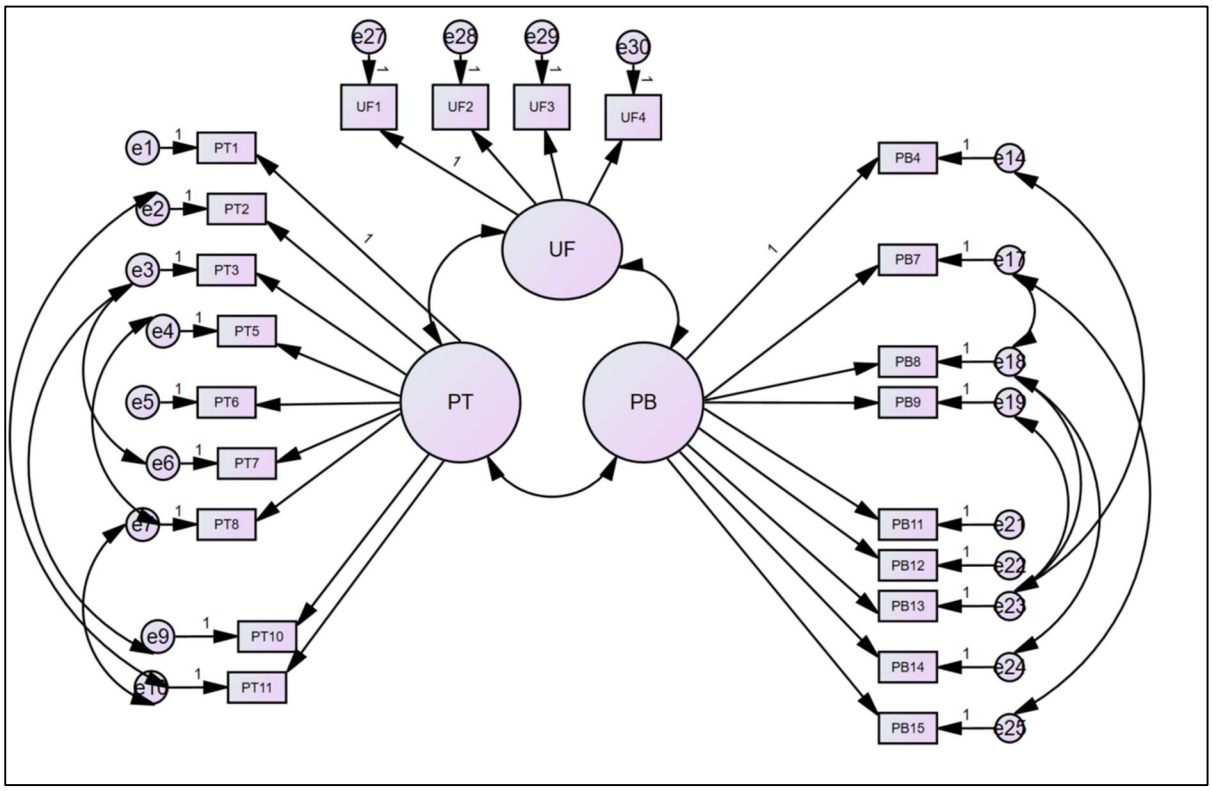


Figure 12: Model 2 - covariance added on error terms, and certain observed indicators removed.

The AVE for PT for Model 2 improved from 0.382 to 0.420. The AVE for PB improved from 0.311 to 0.419. The AVR for UF remained unchanged at 0.544. The variables of PT and PB still possess weak convergent validity. The variable UF possess adequate convergent validity. These results are summarised in Table 14 below.

Table 14: Average Variance Extracted (AVE) for the three latent constructs for Model 2.

Perceived Trust	R-squared
PT11	0.468
PT10	0.381
PT8	0.525
PT7	0.32
PT6	0.421
PT5	0.438
PT3	0.373
PT2	0.491
PT1	0.364
AVE	**0.420**

Proactive Behaviour	R-squared
PB15	0.395
PB14	0.361
PB13	0.458
PB12	0.273
PB11	0.286
PB9	0.463
PB8	0.65
PB7	0.391
PB4	0.498
AVE	**0.419**

Unpredictability of the Future	R-squared
UF4	0.632
UF3	0.482
UF2	0.668
UF1	0.393
AVE	**0.544**

5.6.2. Model fit

The Chi-square (χ^2) test for model fit (Model 2) achieved of value of 341.28, which is not significant, indicating that the model is not poorly fitting. A more appropriate test for fitness is the relative Chi-square test, which divides the Chi-square value by the degrees of freedom of the model (Collier, 2020). This produces a result of 1.750 which indicates an acceptable fit (Dawson et al., 2021). Further to this, the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) support the proposal that this model has an adequate fit for the data (see Table 15) (Dawson et al., 2021).

Table 15: Fit tests for Model 2 (CFI, TLI, RMSEA)

Model fit test	**Test output**	**Interpretation**
Chi-square test (χ^2)	341.280	Acceptable fit
Chi-square relative test (χ^2 / DoF)	1.750	Acceptable fit
Comparative Fit Index (CFI)	0.902	Acceptable fit
Tucker-Lewis Index (TLI)	0.884	Adequate fit
Root Mean Square Error of Approximation (RMSEA)	0.063	Adequate fit

5.6.3. Standardised residuals

The standardised residuals were assessed to determine any misspecification of the model. The standardised residuals would indicate any large variance between the observed covariance matrix and the estimated covariance matrix, which would indicate that the model is at risk of misspecification (Collier, 2020). A residual value exceeding 2.58 is considered large (Dawson et al., 2021) and additional covariances between the error terms may be required. The standardised residuals for Model 2 are summarised in Table 16 below.

Table 16: Standardised residual matrix for Model 2.

	UF4	UF3	UF2	UF1	PB15	PB14	PB13	PB12	PB11	PB9	PB8	PB7	PB4	PT11	PT10	PT8	PT7	PT6	PT5	PT3	PT2	PT1
UF4	0																					
UF3	0.344	0																				
UF2	-0.066	-0.162	0																			
UF1	-0.287	-0.234	0.338	0																		
PB15	0.91	-0.697	0.111	1.343	0																	
PB14	0.028	-1.431	0.029	1.003	0.637	0																
PB13	-1.153	-2.489	-1.499	0.034	-0.784	0.508	0.197															
PB12	0.182	-0.186	-0.102	0.292	0.216	1.388	0.495	0														
PB11	1.074	0.036	1.669	1.704	0.162	0.568	0.842	1.062	0													
PB9	0.538	-1.256	0.054	1.163	1.067	-0.99	-0.048	0.181	-0.387	0												
PB8	0.437	-0.756	0.367	0.267	-0.022	-0.065	-0.532	-0.849	-0.95	0.649	0.099											
PB7	0.927	-0.661	0.132	1.353	0.121	-0.193	0.802	0.231	0.482	-0.841	-0.149	-0.048										
PB4	1.478	-0.152	1.678	0.593	-0.146	-0.379	-0.246	-0.707	-0.094	-0.572	0.632	-0.311	0									
PT11	-0.278	0.677	0.553	1.735	2.725	0.647	0.79	2.425	1.803	2.187	2.082	0.762	1.941	-0.071								
PT10	-3.061	-3.174	-2.025	-0.833	-1.638	-2.769	-0.294	0.217	-0.453	0.247	-1.287	-0.915	-1.488	-0.63	0							
PT8	-2.337	-2.553	-0.99	-0.628	0.352	-3.008	-1.024	0.604	-0.112	-0.511	-0.593	-2.432	-1.212	0.224	1.06	-0.009						
PT7	0.348	0.142	0.77	0.317	-1.556	-0.024	0.168	2.531	1.724	-0.42	-0.764	-1.178	-0.337	-0.1	1.11	0.209	0					
PT6	-0.324	-0.287	1.386	1.037	-0.239	-2.005	-1.846	-0.552	-1.334	-0.661	0.505	-2.872	-0.357	-0.338	-0.072	1.035	1.174	0				
PT5	1.434	0.485	2.114	1.29	-0.579	-0.851	-0.675	1.274	1.042	0.06	1.098	-0.594	0.602	-0.214	-1.162	0.022	-0.698	0.053	0			
PT3	1.641	0.497	2.581	1.626	2.518	-0.97	0.826	0.558	0.814	1.748	0.79	0.59	2.48	0.256	-0.237	-0.345	-0.201	-0.955	0.762	0.061		
PT2	-0.735	-1.017	0.487	1.559	-0.845	-0.598	1.234	2.395	0.662	0.787	-0.457	-0.113	-0.425	0.207	0.416	-0.83	-0.413	-0.572	0.571	-0.054	0	
PT1	-1.091	0.412	-0.072	1.963	0.982	-1.051	1.8	2.331	1.712	0.495	0.536	-0.251	-0.628	-0.232	-0.281	-0.564	-0.439	-0.569	0.325	-0.1	1.49	0

The standardised residuals exceeding 2.58 appear across constructs (not within a specific construct) so no misspecification of the model is suspected, and no further covariance additions were considered. Based on the magnitude of the standardised residuals, the argument is further supported that the model appropriately fits the data (Dawson et al., 2021).

5.6.4. Testing the measurement model for Discriminant Validity

Discriminant validity intends to show that each individual construct of interest is distinct and not well associated with any of the chosen constructs in the model.

The discriminant validity of the chosen constructs was assessed in IBM SPSS by calculating the Single Compositive Score (SCS) per construct (the mean of the observed

indicator scores per construct per respondent), investigating the correlation between these constructs, and then comparing the square of these correlation values to the AVE value for the latent construct in question. With the square of the correlation being less than the AVE, discriminant validity can be shown for the construct pair.

Using Spearman's correlation (2-tailed), the correlation values for the three latent variables is presented in Table 17 and Table 18 below.

Table 17: Correlation analysis: Composite variables for Perceived Trust, Proactive Behaviour and Unpredictability of the Future (IBM SPSS).

Correlations			Perceived Trust Composite	Proactive Behaviour Composite	Unpredictability of the Future Composite
Spearman's rho	Perceived Trust Composite	Correlation Coefficient	1.000	**0.357****	**0.077**
		Sig. (2-tailed)	.	<.001	0.290
		N	192	192	192
	Proactive Behaviour Composite	Correlation Coefficient	**0.357****	1.000	**0.060**
		Sig. (2-tailed)	<.001	.	0.412
		N	192	192	192
	Unpredictability of the Future Composite	Correlation Coefficient	**0.077**	**0.060**	1.000
		Sig. (2-tailed)	0.290	0.412	.
		N	192	192	192
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 18: Correlation analysis: Perceived Trust, Proactive Behaviour and Unpredictability of the Future (summarised).

Correlation between Constructs	Perceived trust	Proactive behaviour	Unpredictability of the future
Perceived trust	1		
Proactive behaviour	0.357	1	
Unpredictability of the future	0.077	0.060	1

The shared variance between the constructs is calculated as the square of the correlation coefficient – this is shared in Table 19 below.

Table 19: Shared variance: Perceived trust, proactive behaviour and unpredictability of the future.

Shared variance	Perceived trust (**0.420**)	Proactive behaviour (**0.419**)	Unpredictability of the future (**0.544**)
Perceived trust (**0.420**)	1		
Proactive behaviour (**0.419**)	0.127	1	
Unpredictability of the future (**0.544**)	0.006	0.004	1

The values for shared variance (Table 19) are below the AVE values for the respective constructs Table 14. Thus, there is support for discrimination between all three latent constructs.

5.6.5. Composite reliability of the observed indicators

Composite reliability (C.R.) is a more appropriate alternative to Cronbach's alpha to assess the reliability of the observed indicators (Cheung et al., 2024; Collier, 2020). Composite reliability is a ratio calculated from the standardised factor loading; the results for the three constructs is presented in the three tables below.

Table 20: Composite Reliability (C.R.) - Perceived Trust

			Standardised Factor Loading
PT1	<---	PT	0.604
PT2	<---	PT	0.700
PT3	<---	PT	0.610
PT5	<---	PT	0.662
PT6	<---	PT	0.649
PT7	<---	PT	0.565
PT8	<---	PT	0.724
PT10	<---	PT	0.617
PT11	<---	PT	0.684
Composite reliability			**0.866**

Table 21: Composite Reliability (C.R.) - Proactive behaviour

			Standardised Factor Loading
PB4	<---	PB	0.706
PB7	<---	PB	0.625
PB8	<---	PB	0.807
PB9	<---	PB	0.680
PB11	<---	PB	0.535
PB12	<---	PB	0.523
PB13	<---	PB	0.676
PB14	<---	PB	0.601
PB15	<---	PB	0.629
Composite reliability			**0.865**

Table 22: Composite Reliability (C.R.) - Unpredictability of the future

			Standardised Factor Loading
UF1	<---	UF	0.627
UF2	<---	UF	0.817
UF3	<---	UF	0.694
UF4	<---	UF	0.795
Composite reliability			**0.825**

The Composite Reliability values for the three latent variables indicate strong consistency amount the indicators measuring the respective variables.

5.6.6. Confirmatory Factory Analysis Results

With the measurement model having been adapted for good fit and validity, the Confirmatory Factory Analysis (CFA) was conducted on the measurement model. The CFA was conducted in SPSS AMOS and the results of the analysis are provided in Table 23 below.

Table 23: Results of the Confirmatory Factor Analysis.

Constructs	Standardised Regression Weight (Factor Loading)	Critical Ratio (t-value)
Perceived trust (C.R. = 0.866)		
PT1: 'My superior allows me to manage issues that are important to him / her'	0.604	***
PT2: 'My superior is comfortable delegating a critical task to me, even if he / she could not monitor my actions'	0.700	7.746
PT3: 'My superior asks my opinion on important matters concerning the organisation'	0.610	7.026
PT5: 'My superior allows me to have control over items within his / her portfolio'	0.662	7.410
PT6: 'If someone questioned my motives, my superior would give me the benefit of the doubt'	0.649	7.411
PT7: 'My superior is not especially punitive concerning mistakes made on the job and is more concerned about the learnings arising from such mistakes'	0.565	6.629
PT8: 'My superior expects me to speak freely and openly about problems in the workplace'	0.724	7.808
PT10: 'My superior feels that he / she needs to keep an eye on me'	0.617	7.105
PT11: 'My superior would share his / her opinions around sensitive issues with me, even if these opinions were unpopular'	0.684	7.461
Proactive behaviour (C.R. = 0.865)		
PB4: 'I try to introduce new structures, technologies, or approaches to improve efficiency'	0.706	***
PB7: 'I take initiative immediately, even when others do not'	0.625	7.803
PB8: 'I try to bring about improved procedures and work methods for my department, to improve effectiveness'	0.807	9.728
PB9: 'I try to implement solutions to pressing organisational problems'	0.680	8.901
PB11: 'I try to correct a faulty procedure or practice'	0.535	7.141
PB12: 'I try to change how my job is executed to be more effective'	0.523	6.984
PB13: 'Whenever there is a chance to get actively involved, I take it'	0.676	7.464
PB14: 'I am particularly good at realising ideas'	0.601	7.663

PB15: 'I make constructive suggestions for improving how things operate within the organisation'	0.629	8.226
Unpredictability of the Future (C.R. = 0.825)		
UF1: 'I must make decisions about complex issues for which I am missing information'	0.627	***
UF2: 'I must make decisions about complex issues without knowing the criteria the decision should be based on'	0.817	8.348
UF3: 'I must proceed with my work not knowing if I am on the right track'	0.694	7.588
UF4: 'I must make decisions about complex issues for which I cannot estimate the long-term consequences'	0.795	8.258
Model fit statistics: χ^2 (Chi-squared) = 341.280, DoF = 195, CFI = 0.902, χ^2 relative = 1.750, TLI = 0.884, RMSEA = 0.063		
*** = items constrained for identification purposes		
C.R. = Composite Reliability		

The model fit can be deemed acceptable based on results for Chi-square, CFI and RMSEA indices, the value of TLI being slightly below the ideal of 0.90 (Dawson et al., 2021; Collier, 2020). The regression weights (factor loading) for the indicators of PT are acceptable, with that of PT7 slightly low at 0.565. The regression weights of the PB indicators are also acceptable with those of PB11 and PB12 considered low at 0.535 and 0.523 respectively. The indicators for UF relate strong to the construct with regression weights from 0.627 to 0.817.

All values for Composite Reliability are above 0.80 indicating good internal consistency (Cheung et al., 2024).

5.6.7. Assessment for Common Method Bias

As both independent and dependent latent variables were obtained from the same source during the data collection process, it was necessary to test whether the results could be affected by common method bias (David & Roberts, 2020).

The test for common method bias is done in IBM SPSS AMOS by introducing an additional Common Method Factor (CMF) into the existing AMOS model. This is known as the Latent Common Method Factor method (Collier, 2020). This factor is then related to all existing observed indicators with equal regression coefficients (set as '*a*'). The variance of the common method factor is set to 1.0 (Collier, 2020).

The model incorporating the Common Method Factor is illustrated in Figure 13 below.

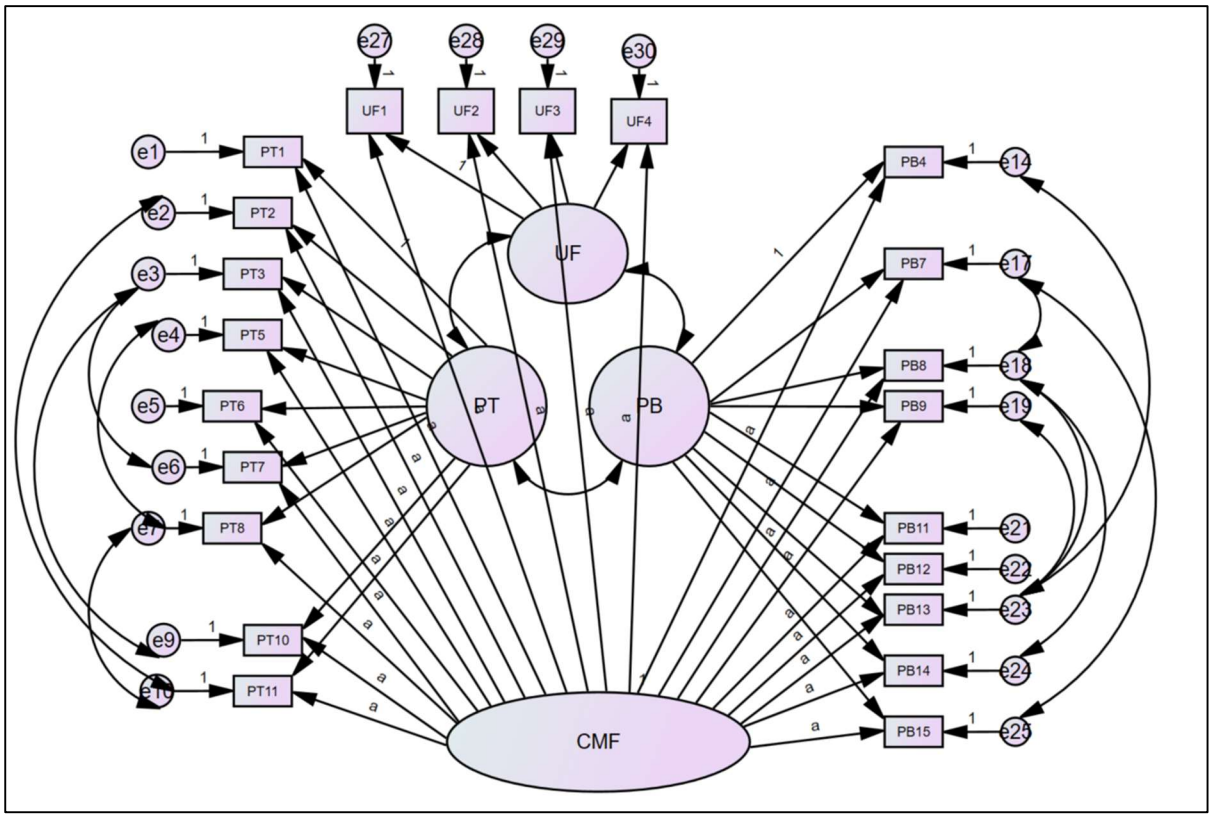


Figure 13: AMOS model incorporating the Common Method Factor in the test for Common Method Bias.

The model is then run in this state and the model fit (chi-square test) is compared with that prior to the introduction of the common method factor. The results are provided in Table 24 below.

Table 24: Chi-test difference analysis for the test of Common Method Bias

Chi-square (χ^2) value: CFA (without Common Method Factor)					
	NPAR	CMIN	DF	P	CMIN/DF
Default model	58	341.280	195	0	1.750
Saturated model	253	0	0		
Independence model	22	1726.545	231	0	7.474

Chi-square (χ^2) value: CFA with Common Method Factor					
	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	59	325.483	194	0	1.678
Saturated model	253	0	0		
Independence model	22	1726.545	231	0	7.474

Variance - Chi-square (χ^2) value: with and without the Common Method Factor					
	Δ NPAR	**Δ CMIN**	**Δ DF**	**Δ P**	**Δ CMIN/DF**
Default model	-1	15.797	1	0	0.072

The reduction in the Chi-square test value was calculated at 15.797 indicating an improvement in model fit with the introduction of the common method factor. The significance of 1 degree of freedom variance in the two models is 3.84 at the p = 0.05 level, so the introduction of the Common Method Factor has resulted in a statistically significant improvement in the model fit. This indicates the presence of Common Method Bias in the data. To conform this, the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) were also assessed – the results are as follows:

Table 25: Model fit assessment results utilising CFI, TLI and RMSEA.

	Model without CMF	Model with CMF	Variance	Interpretation
CFI	0.902	0.912	+0.010	Improved model fit, slight
TLI	0.884	0.895	+0.011	Improved model fit, slight
RMSEA	0.063	0.060	-0.003	Improved model fit, very small

The test results from CFI, TLI and RMSEA support the presence of Common Method Bias, however the impact of CMB is not considered extreme based on the relatively small change in the CFI, TLI and RMSEA results. It was decided to retain the common method factor in the model when testing the structural relationship between the constructs, to control for the potential bias of the common method (Collier, 2020).

5.7. Testing of the Structural Model

With the integrity of the measurement model understood, the structural model would be assessed according to the two proposed hypotheses. A Full Structural Model (FSM) was developed in SPSS AMOS for the testing of both hypothesis 1 and hypothesis 2.

5.7.1. The Structural Model – Control Variables

As covered in 4.10.1, the following demographic variables were proposed as control variables for the Full Structural Model:

- Gender
- Years of age
- Work experience (years)
- Role in the organisation
- Highest qualification
- Time period reporting to current superior (manager)

Each of the variables were introduced into the FSM, and their standardised regression coefficients were assessed to determine their contribution as control variables in the model. The results are provided in Table 26 below.

Table 26: Assessment of demographic variables as control variables in the FSM.

Correlation			Unstandardised regression weight	**Standardised regression weight**	S.E.	Critical Ratio (t-value)	Significance (p-value)
PB	<---	PT	0.419	**0.325**	0.107	3.901	***
PB	<---	Gender	-0.063	**-0.021**	0.201	-0.311	0.756
PB	<---	Reporting period	-0.019	**-0.009**	0.149	-0.125	0.901
PB	<---	Highest qualification	0.021	**0.015**	0.099	0.214	0.831
PB	<---	Years of age	-0.156	**-0.207**	0.053	-2.944	0.003
PB	<---	Work experience	0.126	**0.156**	0.056	2.252	0.024
PB	<---	Role in the organisation	0.045	**0.069**	0.046	0.988	0.323
*** Significant at the 0.001 significance level							

It was seen that *gender*, *time period reporting to manager*, *highest qualification and role in the organisation* had very little impact on the relationship. *Years of age* and *work experience* both had reasonable impact on the relationship. Based on this assessment, *years of age* and *work experience* were incorporated into the Full Structural Model as control variables (Collier, 2020).

5.7.2. Introducing the Common Method Factor into the Full Structural Model

Initially, the Common Method Factor was introduced into the Full Structural Model fully constrained as per the measurement model. However, this was found to over-constrain the model and severely affect the standardised regression weights and CMF loadings.

The constraints on the model (between the common method factor and the latent variable indicators) were optimised to reduce the regression weights as far as possible (it was found that too little constraints exaggerated the regression weight of the relationship), while retaining significance of the relationship ($p<0.01$) as well as retaining acceptable model fit. The results of trialling the constraints on the FSM is provided in Table 27 below.

Table 27: Results of trials according to the degree of constraint applied to the CMF in the FSM.

Number of constraints	Standardised regression weight	Significance level, p	Relative Chi-square (CMIN / DoF)	Comparative Fit Index, CFI	Most significant CMF loadings	R^2 SMC values (proportion of variance)
1	0.547	< 0.01	1.768	0.932	0 to 0.790	0 to 0.640
2	0.510	< 0.01	1.792	0.929	0 to 0.787	0 to 0.638
3	0.481	< 0.01	1.865	0.922	0 to 0.687	0 to 0.637
4	0.449	< 0.01	1.852	0.922	0 to 0.663	0 to 0.641
5	**0.386**	**< 0.01**	**1.860**	**0.921**	**0 to 0.523**	**0 to 0.648**
6	**0.371**	**< 0.01**	**1.870**	**0.919**	**0 to 0.527**	**0 to 0.647**
7	**0.311**	**< 0.01**	**1.874**	**0.918**	**0 to 0.526**	**0 to 0.649**
8	0.414	0.108	1.783	0.926	-2.017 up to 0.518	0 to 0.648
9	0.121	0.949	1.800	0.924	0 to 0.665	0 to 0.670
10	0.386	0.967	1.897	0.914	0 to 0.638	0 to 0.687

It was seen that five to seven constraints between the CMF and the independent latent variable provided the optimal results of loading of the CMF and the model fit. It was decided to apply seven constraints in order to be conservative on the standardised regression weight of the relationship.

5.7.3. Correlation assessment – Hypotheses 1

A Full Structural Model (FSM) was developed in SPSS AMOS including the Common Method Factor (CMF) and *years of age* and *work experience* as control variable. The FSM is a more appropriate analysis technique than Path Analysis, as it provides a more robust test of the construct relationships due to the present of the indicators, with better model fit (Collier, 2020).

This model is illustrated in Figure 14 below.

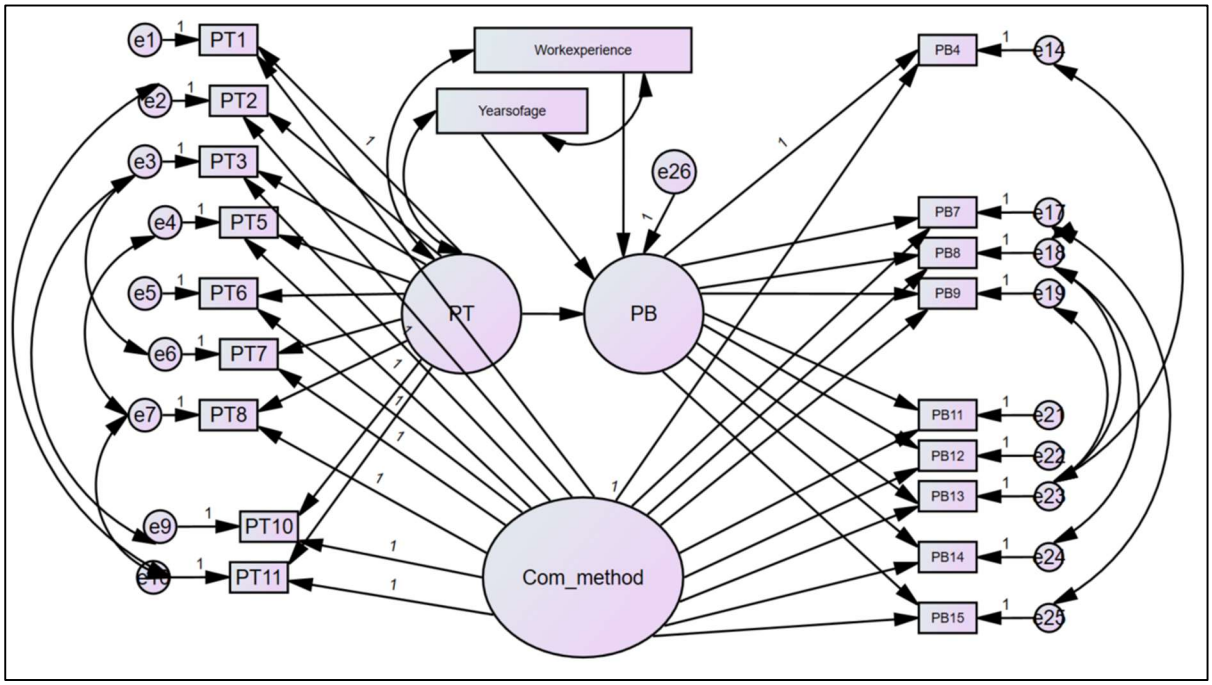


Figure 14: Full Structural Model for Hypothesis 1.

The results of the tests for model fit for Hypothesis 1 are provided for in Table 28 below.

Table 28: Results of tests for model fit - Hypothesis 1.

Model fit test	**Test output**	**Interpretation**
Chi-square test (χ^2)	244.335	Acceptable fit
Chi-square relative test (χ^2 / DoF)	1.697	Good fit
Comparative Fit Index (CFI)	0.933	Good fit
Tucker-Lewis Index (TLI)	0.912	Good fit
Root Mean Square Error of Approximation (RMSEA)	0.060	Acceptable fit

As with the previous assessments for model fit, the tests indicate acceptable good fit of the model to the data, having been improved by the incorporation of the control variables.

The standardised regression weight for the relationship between PT and PB was calculated at **0.283**. This relationship is highly statistically significant at the 0.001 significance level. These results are summarised in Table 29 below.

Table 29: FSM SEM results for Hypothesis 1 (SPSS AMOS).

Correlation	Unstandardised regression weight	Standardised regression weight	Critical Ratio (t-value)	Significance (p-value)
PT → PB	0.388	0.283	3.553	***
*** Significant at the 0.001 significance level				

These results can be compared against those achieved for the Spearman's correlation deployed during the test for Discriminant Validity (see section 5.6.4). These regression coefficients have been provided again below for easy of reference (Table 18).

Table 18: Correlation analysis: Perceived Trust, Proactive Behaviour and Unpredictability of the Future (SPSS)

Correlation between Constructs	Perceived trust	Proactive behaviour	Unpredictability of the future
Perceived trust	1		
Proactive behaviour	0.357	1	
Unpredictability of the future	0.077	0.060	1

The results from the correlation analysis using Spearman's rho are slightly inflated against the FSM, however it needs to be noted that the Spearman's correlation did not account for Common Method Bias.

From the assessment of the FSM, it can be deduced that while there is a positive relationship between PT and PB, this relationship can be considered only moderate in strength. There are potentially other factors affecting PB aside from PT.

As expected, it is noted that the correlations between UF and the other two latent variables were extremely weak in magnitude and were also not statistically significant.

5.7.4. Test for moderation of UF – Hypothesis 2

The test for moderation of UF was performed in IBM SPSS AMOS based on the FSM developed for hypothesis 1. The model incorporated *age* and *work experience* as control variables, as well as the Common Method Factor (CMF).

Due to the high number of indicators assigned to the latent construct of PT (9 of), it was not preferred to conduct the moderation analysis using the Full Indicator Interaction Method (Collier, 2020), which would have resulted in a complex model with 36 interaction terms over the constructs of PT and UF (with 4 indicators assigned).

A Matched Pair method was also considered, however, due to the difference in number of indicators between the constructs of PT and UF (9 versus 4), five indicators of PT would have been discarded in the process. For this reason, this was not the preferred method for the moderation analysis (Collier, 2020).

Instead, the Mixed Model Method (MMM) was utilised to assess the interaction of UF in the relationship between PT and PB. Composite variables are obtained for PT and UF, this being the mean of the indicator scores per respondent. These variables are then centred around the mean in order to reduce the risk of issues relating to high collinearity with the original constructs (Collier, 2020).

A composite product variable was then created in SPSS by calculating the product of mean-centred variables of PT and UF. This term acted as the interaction variable in the analysis (Collier, 2020). The composite variable of the moderating variance UF is also incorporated into the model. This model is illustrated in Figure 15 below.

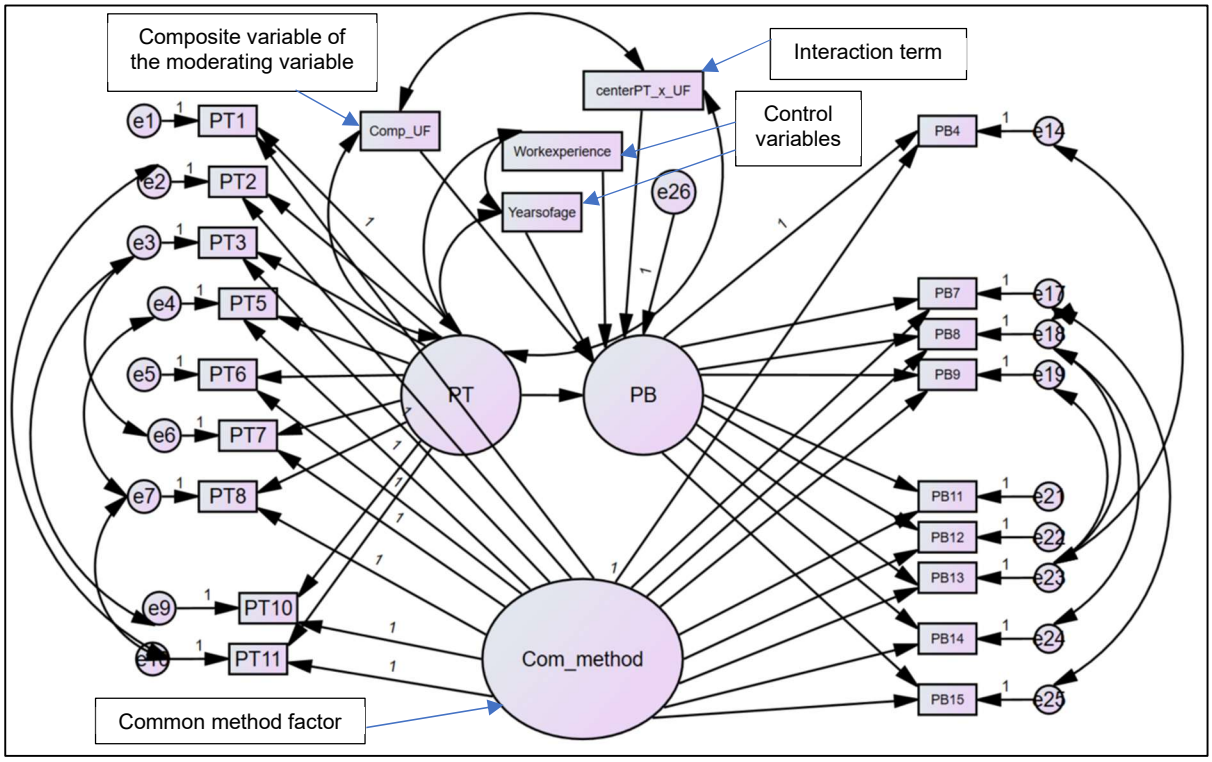


Figure 15: Full Structural Model to test for moderation of Unpredictability of the Future (Hypothesis 2).

The results of the tests for model fit for Hypothesis 2 are provided for in Table 30 below.

Table 30: Results of tests for model fit - Hypothesis 2.

Model fit test	**Test output**	**Interpretation**
Chi-square test (χ^2)	318.679	Acceptable fit
Chi-square relative test (χ^2 / DoF)	1.770	Acceptable fit
Comparative Fit Index (CFI)	0.910	Acceptable fit
Tucker-Lewis Index (TLI)	0.885	Adequate fit
Root Mean Square Error of Approximation (RMSEA)	0.064	Acceptable fit

The model fit assessments indicate that the fit is still acceptable, although slightly less so than for Hypothesis 1. The results of the moderation analysis are presented as follows:

Table 31: FSM SEM results for Hypothesis 2 (SPSS AMOS).

Correlation	Unstandardised regression weight	Standardised regression weight	Critical Ratio (t-value)	Significance (p-value)
PT → PB	0.394	**0.349**	3.156	**0.002**
Age → PB	-0.137	-0.193	-1.217	0.224
Work experience → PB	0.109	0.142	0.900	0.368
UF (composite) → PB	0.027	0.042	0.596	0.551
PT-UF (interaction term) → PB	-0.014	-0.031	-0.441	**0.659**

The regression coefficient between PT and PB has strengthened from 0.283 to 0.349 when the moderating effect of UF is accounted for. However, the effect of UF on the relationship between PT and PB (the interaction term) is not significant (p = 0.659), suggesting that UF does not moderate this relationship as what was hypothesised. In other words, the relationship between PT and PB does not depend on any variation of UF.

5.7.5. Probing the interaction of UF

Upon completion of the moderation study, it would be required to probe the interaction in order to further understand how the relationship between PT and PB would be affected based on difference variance levels of UF (Collier, 2020). This would be executed by creating two new variables for UF – one moved 1 standard deviation above the mean, and another moved 1 standard deviation below the mean. Two new interaction (product) variables are created based off these variables. These new interaction variables are incorporated into the FSM and the changes in the regression coefficients between PT and PB is noted. From this analysis it is possible to examine the effect that moderating variable would have on the relationship between the independent and dependent variables.

In this study it has been shown that the moderating effect of UF is not significant on the relationship between PT and PB. Therefore, it is not appropriate to continue to probe this interaction.

6. Discussion of results

6.1. Introduction and overview

The purpose of this chapter is to present the findings arising from the analysis on the relationship of Perceived Trust (PT) and Proactive Behaviour (PB), as well as the assessment of the moderating effect of Unpredictability of the Future (UF) on this primary relationship. A sample population within the manufacturing industry in South Africa (as well as industry sectors directly impacting on the manufacturing industry) provided data against observed indicators which intended to represent the latent variables of PT, PB and UF. Structural Equation Modelling was utilised as a statistical technique to test the proposed relationships. In this chapter the results of the statistical tests will give insight as to the significance and strength of these relationships.

The analysis will follow structured approach, beginning with a brief review of the literature in order to frame the hypotheses that were proposed in Chapter 3. The processes and results of the data screening and model fit will be presented from the perspective of the sample population that was analysed, as well as the structural model that was developed to represent the proposed hypotheses. The sample population will also be described statistically.

The first hypothesis proposed a positive relationship between the level of trust that an employee perceived he has from his manager (felt trust or perceived trust, PT) and the extent to which the said employee would be more likely to exhibit PB in the workplace. This proposal was based on Self-determination theory (SDT), which frames how individuals are likely to demonstrate certain behaviours based on basic psychological needs being met (Deci et al., 2017). It was proposed that a positive relationship exists between these two constructs.

The second hypothesis explores the proposed moderating effect of the construct of UF on the primary relationship of PT and PB. Utilising SDT further, it is proposed that the degree of uncertainty in how an employee's decision affects either him or her will consequently affect the level of autonomous motivation, which in turn will affect workplace behaviour (Deci et al., 2017). It was proposed that an increase in UF would results in greater significance of the PT-PB relationship, i.e. when unpredictability is high, scenarios

of high levels of PT would be required to encourage PB at work.

The findings would contribute to existing literature on leadership dynamics and organisational behaviour, especially in environments were some levels of uncertainty exist in roles and functions of employees. The results of the statistical analysis will be interpreted within the SDT.

The conclusion to the chapter will summarise the key results of the investigation, providing a basis for the final chapter of this report, as these findings are translated into practical recommendations for industry stakeholders.

6.2. Brief review of the literature

Organisations continue to focus on improving their understanding of key constructs which correlate strongly to improved business performance. Employee behaviour is a key component of organisational performance and SDT frames the principles of how intrinsic motivation can affect the manner in which employees behave, and the decisions that they make (Deci et al., 2017). This research study has focused on how trust, as an independent construct, provides intrinsic and autonomous motivation to employees so that they may demonstrate the desired behaviour, in the case of this research, PB.

The construct of trust has been covered to a fair degree in the literature, with definitions focusing on the element of vulnerability (Kubovcikova & Lauring, 2022; Hasche et al., 2021; Dietz et al., 2021). Trust has been categorised into distinct elements (Hasche et al., 2021) in order to assist practitioners apply the learnings arising from such and similar research. Research on felt trust, or PT, is readily available, specifically its distinction to ‘trusting’ (Han et al., 2021; Skiba & Wildman, 2019). The presence of trust has been seen to relate to improved performance due to higher relational energy levels (Fan et al., 2021; Skiba & Wildman, 2019).

Proactive behaviour was defined in Chapter 2, this definition including the key terms of ‘self-starting’ (Colbert et al., 2019), ‘future orientation’ (Cheng et al., 2019; Fay et al., 2023), and ‘change’ (Blomme et al., 2022). PB has been seen to be related to a positive sense of meaning at work (Fay et al., 2023) and enhanced socialisation outcomes (Li et al., 2023). Ultimately, good work performance indicators have been positively related to proactive workplace behaviours (Jain et al., 2023).

UF is a relatively new construct in the literature and there are various interpretations available on how the construct relates to workplace behaviours and organisational outcomes (Kamran-Morley et al., 2022; Skiba & Wildman, 2019; Dietz et al., 2021; Huang et al., 2021). UF was defined in the context of this research specifically on the uncertainty around the decisions employees make on a daily basis (Fay et al., 2023).

In summary, the availability of literature on the topics of PT, PB and UF as isolated research ideas was noted (Colbert et al., 2019; Du et al., 2022; Kubovcikova & Lauring, 2022) as well these constructs in paired relationships (Fay et al., 2023; Mostafa & Yunus, 2022; Kamran-Morley et al., 2022). This research was motivated by the very limited studies availability on PT, PB and UF as a triad of constructs in a single relationship model. The research was constrained specifically to the manufacturing industry in South Africa.

6.3. Data screening and model fit

A non-probability sampling method was utilised, yielding 231 total responses from the 523 direct contacts made with the survey questionnaire. This equates to a maximum primary response yield of 44.2% considering that the survey was also made available on the LinkedIn business website platform. The primary dataset was screened for acceptable completion, the requirement to be employed in South Africa and to be employed within the manufacturing sector, or within an industry directly supporting the manufacturing sector. This screening processes returned a final sample size of 192 observations, a secondary yield of 83% (overall yield 36.7%).

From an assessment of the data screening process, it can be deduced that the structure and layout of the survey questionnaire was adequate to allow effective completion by the respondents. Missing data was minimal and was able to be managed with available processes (mode imputation, linear interpolation). Adequate engagement of the respondents with the survey is detected based on the acceptable primary response rate (Aguinis et al., 2022) as well as the lack of respondent misconduct present in the data. Impermissible values were not applicable due to the structure of the survey questionnaire. This laid a robust foundation for the statistical tests that were to follow.

The assessment of model fit was executed with the Chi-square and relative Chi-square

tests and the findings were corroborated by Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) tests. These tests all indicated adequate to acceptable fit of the SEM model to the data, supporting that the model is suitable for further statistical analysis of the proposed hypotheses.

Measures for Cronbach's alpha and composite reliability (C.R.) indicate that the respective indicators for the constructs were internally consistent, i.e. the survey questions are measuring the constructs reliably. While the consistency of the indicators towards their respective indicators is adequate, the Average Variance Extracted (AVE) for the constructs of PT and PB were below the threshold of 0.5 for Convergent Validity (Kim et al., 2021), meaning that indicators do not explain as much of the variance as expected. This will limit the reliability of any conclusions drawn from the constructs. Tests for discriminant validity indicated that the three latent variables were statistically distinct from each other, and their indicators are measuring separate constructs as they were intended to do (Collier, 2020).

The Latent Common Method Factor (CMF) method was chosen to assess the model for Common Method Bias (CMB). The results confirmed the presence of CMB, however its impact on the model could be regarded as moderate considering the minor changes in fit values from the CFI, TLI and RMSEA tests. It was observed that the CMB was likely originating from one or more of the indicators measuring PB. In order to control for the presence of CMB in the data, the CMF was retained in the SEM model during the assessment of the direct and moderating relationships in the structural model.

Considering the results for model fit, convergent validity and convergent validity, the following can be observed:

- The constructs have been reliably measured (considering Cronbach's alpha and the CR),
- The model is statistically robust, and
- The constructs are distinct from each other.

However, considering the low values of AVE it is observed that only around 40% of the variance in the indicators of PT and PB are being explained by their respective construct. From this it can be suggested that one or more of these indicators may not represent the

theoretically constructs sufficiently. Based on the observed factor loadings, it was observed that several indicators contribute weakly to the construct. The implications of this shall be discussed further in this chapter when the results of the structural model assessment are discussed.

6.4. Review of the sample population

The majority of the respondents to the survey were employed in the manufacturing sector, at 60.9% of total respondents, which is aligned with the purpose of this survey. Mining and quarrying contributed a further 16.2% to the sample population.

The sample population was heavily biased to male respondents, who represented 81.8% of the 192 respondents to the survey. This may be reflective on the focus of the survey to the manufacturing sector, which demographically is biases towards the employment of male employees (Moutray, 2022). This bias has the potential to impact on the generalisation of the findings of this research, particularly considering any gender-bias which may be present on the topic of trust and how it is perceive. This needs to be considered when considering the results of this research and how it may be applied practically within the industry.

The sample population was fairly evenly represented between the age categories, however the majority of respondents where between the ages of 36 to 40 years (23.4%). The respective age categories were well represented, with representation falling below 10% only for categories below 26 years of age and above 51 years of age. Work experience was also uniformly represented between the categories, with the majority of employees falling in the category of 11 to 15 years (25.5%). This is congruent with employees who typically start their working careers between the ages of 22 and 25 years of age. Most employees (80.7%) had worked for their current manager for less than five years, with almost all (96.8%) had been reporting to their current manager for the past 10 years or less.

Considering the qualification levels of the respondents, the majority of respondents held a bachelors or honours degree. The representation of the sample population was therefore biased towards well-educated professionals in the middle of their careers.

The majority of the respondents occupied roles of middle management, specialists and

senior specialists. More junior roles such as operators, tradesman, technicians and supervisors were underrepresented in this study.

In summary, the sample population is well aligned with the focus on the manufacturing sector. The sample population is heavily skewed towards males in their mid-careers who are occupying management and senior specialist positions in the organisation. Most of the respondents had been reporting to their current managers for less than 5 years, which be relevant considering the time required to build trusting relationships with one's manager. The findings of this research may not be especially relevant to female employees or employees in the initial or final phases of their careers.

6.5. Hypothesis 1 – the relationship between PT and PB

The first hypothesis proposed that "the degree of trust that a supervisor has in an employee – as perceived by the employee – positively translates to PB demonstrated by the end employee in the workplace". This relationship was tested using Structural Equation Modelling (SEM) in IBM SPSS AMOS, controlling for Common Method Bias (CMB) with *age* and *years' work experience* as control variables.

The analysis confirmed a statistically significant relationship ($p < 0.01$), with a critical ratio (t-value) of 3.553 and a standardised regression weight of $\beta = 0.283$, indicating a moderate positive effect. **Hypothesise 1 is thus supported**. The SEM results for Hypothesis 1 (Table 29) are provided again below for ease of reference.

Table 29: FSM SEM results for Hypothesis 1.

Correlation	Unstandardised regression weight	Standardised regression weight	Critical Ratio (t-value)	Significance (p-value)
PT → PB	0.388	0.283	3.553	***
*** Significant at the 0.001 significance level				

The regression coefficient ($\beta = 0.283$) suggests a moderate (i.e., not particularly strong) relationship between PT and PB (Colbert et al., 2019), indicating that other factors may play a greater role in driving PB. However, the significance of the relationship ($p < 0.01$) supports the theoretical proposition that PT fosters PB in employees.

These findings align with prior research demonstrating positive relationships between PT and PB (Rouzi & Wang, 2021; Addison & Teixeira, 2020) and studies highlighting Organisational Citizenship Behaviours (OCBs) as mediators in this relationship (Kim et al., 2021). Notably, regression correlations between PT and the OCBs in Kim et al.'s study ($\beta = 0.10$ to 0.25) were similar to those observed here.

Furthermore, this study supports broader research linking trust to positive workplace behaviours (Ash et al., 2020; Kim, 2019) and recognising the role of other motivational workplace factors in promoting PB, such as leader humility (Peng et al., 2023), harmonious passion for work (Kwan et al., 2023) and autonomous motivation (Balkin et al., 2022).

According to SDT, other motivational factors make take precedence over PT in influencing PB, potentially explaining the relatively low regression coefficients (Deci et al., 2017). Key constructs such as perceived insider status, self-efficacy (Rouzi & Wang, 2021), work meaningfulness (Fay et al., 2023), role self-efficacy and desire for control (Cheng et al., 2019) were not included in this model and may have influenced the results.

Additionally, the workplace environment – a known driver of proactive tendencies – was excluded from this investigation. Leadership style (Peng et al., 2023; Kwan et al., 2023; Blomme et al., 2022) and organisational climate (e.g., innovation and flexibility) have been linked to PB (Colbert et al., 2019) but were not considered in this study. Empowering HRM practices (Blomme et al., 2022) and off-the-job experiences (Cheng et al., 2019) have been shown to encourage PB but were not factored into the model. These unexamined variables may serve as moderators in the PT-PB relationship, possibly accounting for the relatively low magnitude of the observed effect.

The findings align with SDT, which suggest that employees with autonomous motivation – driven by the fulfilment of their basic psychological needs – are more likely to engage in PB (Deci et al., 2017). This study supports this theory, as higher levels of PT are expected to enhance autonomous motivation through relatedness. However, the theory also warns that workplace environments characterised by high control or micromanagement can undermine autonomy and PB (Deci et al., 2017).

The PT and PB demonstrate internal consistency (Cronbach’s alpha and Composite Reliability), convergent validity was weak, suggesting that the observed indicators did not

sufficiently explain variance in their constructs. Thus, while the observed relationship remains statistically valid, interpretations should be made with caution, and further research should refine the construct measurement for greater accuracy and validity.

6.6. Hypothesis 2 – the moderating effect of UF

The second hypothesis proposed that "Unpredictability of the future (UF) moderates the relationship between the degree of PT and workplace PB significantly, such that this relationship is larger when unpredictability of the future is high and is reduced when unpredictability of the future is low". This hypothesis was tested using SEM in IBM SPSS AMOS, controlling for Common Method Bias (CMB) with *age* and *years' work experience* as control variables.

The standardised regression between the PT-PB relationship increased from 0.283 to 0.349 with the introduction of UF as the moderating variable. This PT-PB relationship retained its statistical significance (p = 0.002).

The analysis confirms that the interaction of UF was not statistically significant, with the significance level measured at p = 0.659. **Hypothesis 2 is thus not supported.** The SEM results for Hypothesis 2 (Table 31) are provided again below for ease of reference.

Table 31: FSM SEM results for Hypothesis 2 (SPSS AMOS).

Correlation	Unstandardised regression weight	Standardised regression weight	Critical Ratio (t-value)	Significance (p-value)
PT → PB	0.394	**0.349**	3.156	**0.002**
Age → PB	-0.137	-0.193	-1.217	0.224
Work experience → PB	0.109	0.142	0.900	0.368
UF (composite) → PB	0.027	0.042	0.596	0.551
PT-UF (interaction term) → PB	-0.014	-0.031	-0.441	**0.659**

The results from the SEM for the moderation model indicate that UF has no meaningful impact on the relationship between PT and PB in the model. Employees at work may thus engage in PB regardless of the levels of unpredictability in the workplace.

The correlation coefficient of the PT-PB relationship increased from 0.283 to 0.349 with

the incorporation of UF as the moderating variable. It is likely that this change is simply statistical in nature. The variable UF could be accounting for residual error variance in the model, rather than strengthening the PT-PB relationship (Collier, 2020).

The assessment of these findings against existing literature is limited considering the availability of research on the topic of UF. However, these findings do partially conflict with the research by Fay et al. (2023). In this research, UF was observed to positively impact on employees' work meaningfulness when these employees engage in PB. UF is positioned as an important factor in understanding how PB can make work more meaningful (Fay et al., 2023), however the findings of this research do not suggest any significant impact of UF on PB. The relationship models between these two research proposals are however different with PB being a dependent variable in this study versus an independent variable in the research by Fay et al. (2023) as shown in Figure 16 below.

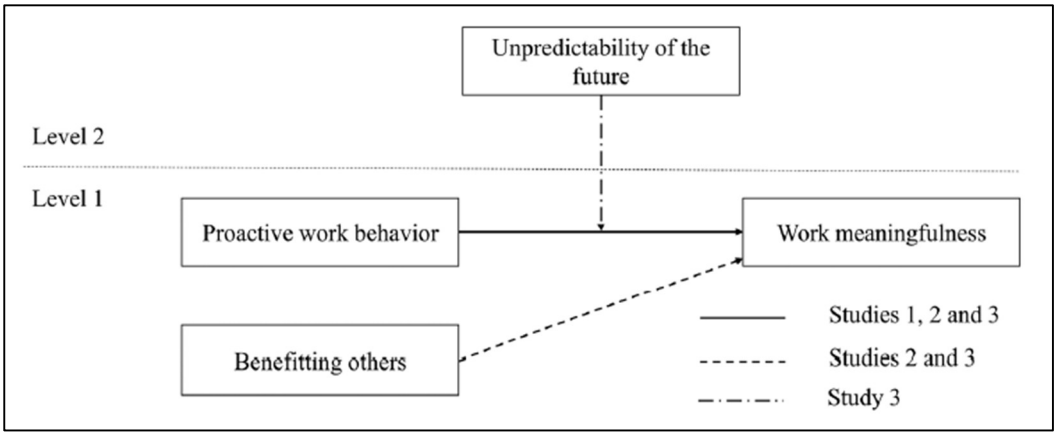


Figure 16: Conceptual model from the research by Fay et al. (2023).

Research by Cai et al. (2023) has supported the notion that career adaptability assists employees to behave proactively when work environments are uncertain. This implies that employees may behave more proactively in response to unpredictability in the workplace. While this research proposes a relationship between unpredictability in the workplace, this was not found during this study. In the study by (Cai et al., 2023), the concept of 'unpredictability' was not explored as such. Rather the idea of 'uncertainty' which used, and this was framed loosely around an 'uncertain world' (Cai et al., 2023; pg.183) and an 'uncertain workplace' (Cai et al., 2023; pg. 197). Although the constructs are related, they could be considered distinct; measures by Cai et al. (2023) include *Career Adaptability*

and *Future Work Self Salience* (amongst others) which can be considered distinct from how UF was defined in this study.

In research examining the construct of job insecurity, Huang et al. (2021) observed that perceived job insecurity had a significant impact on PB through the commitment levels of employees. This is in conflict with the results of this study where no significant was observed between UF and the PT-PB relationship as a moderator. Similar to the argument made for the research by Cai et al. (2023), the constructs used in the research by Huang et al. (2021) – job insecurity, career commitment (amongst others) – can be related, however are distinct to, the definition of UF in this study.

It has been noted that the majority of available literature on ideas of uncertainty (Cai et al., 2023) and insecurity (Huang et al., 2021) appear to be partial conflict with the findings of this study. This could be due to the observed indicators utilised for the defined construct of UF in this research. However, the reliability of the UF construct was deemed acceptable (Cronbach's alpha, $\alpha = 0.821$; C.R. = 0.825) and the variable also demonstrated Convergent Validity (AVE = 0.544) as well as Discriminant Validity (see Table 19). It was therefore recognised that the indicators for UF converged to measure the same underlying construct. The factor loadings indicated that two of the indicators (UF2 and UF4) contributed strongly to the measurement of UF, while the remaining two (UF1 and UF3) contributed to a lesser extent. The indicators may be refined for future research to improve the measurement model for UF.

In the context of SDT, the lack of observable impact of UF as a moderating factor indicates that UF does not affect autonomous motivation levels of employees (Deci et al., 2017). The theory of SDT argues that supportive workplace environments (and organisations) enhance the performance of employees even when these workplaces are unpredictable or uncertain (Deci et al., 2017). This implies that uncertainty influences motivation and behaviour, although this was not observed in this study. UF, as it was defined in this study, may not influence PB in the same manner as the SDT framework predicts it would, at least not according to the PT-PB relationship.

The results suggest that PT remains a strong predictor of PB, independent of the variable UF.

6.7. Conclusion to the research findings – key results

The results of this research have confirmed the significant and positive relationship between PT and PB, supporting the hypothesis that individuals who perceive that they are trusted by their managers are more likely to behave proactively in the workplace. Further, the research findings have not supported the hypothesis that UF would have an effect on the PT-PB relationship ($p = 0.659$).

These findings support the SDT framework, reinforcing the importance of trust in fostering autonomous motivation in order to encourage proactive behaviour (Deci et al., 2017). The study also highlights measurement considerations, particularly around the validity of the UF construct and its potential distinction from related ideas such as job insecurity (Huang et al., 2021) and workplace uncertainty (Rice & Searle, 2024).

PT remains a key ingredient in promoting PB in the workplace, understanding that UF would not meaningfully impact on this relationship.

7. Conclusion and recommendations

This study explored the relationship between Perceived Trust (PT) and Proactive Behaviour (PB) in the workplace, as well as the moderating influence of Unpredictability of the Future (UF) on this relationship. An understanding of how these constructs interact would provide valuable insight for organisations to enhance levels of motivation in the workplace (Balkin et al., 2022), leading to increased PB. This would be especially relevant for industries facing uncertainty or ambiguity in the context of their operations (Fay et al., 2023). This research study was grounded on Self-determination Theory (SDT), which suggests that when basic psychological needs are met, autonomous and intrinsic motivation levels are heightened, which in turn encourage appropriate positive behaviour (Deci et al., 2017). An understanding of these constructs would provide business leaders the knowledge to appropriately structure their teams, develop support systems and other elements of the organisation to best enhance motivation levels, with subsequent benefit for both the employees as well as the business (Han et al., 2021).

Existing literature has covered how trust fosters a sense of belonging (Rouzi & Wang, 2021) and engagement in the workplace (Skiba & Wildman, 2019) as well as its positive relationship to enhanced business performance (Addison & Teixeira, 2020; Kubovcikova & Lauring, 2022). Evidence has been shown as to how damaged trust relationships ('boss phubbing') can lead to decreased job satisfaction and ultimately reduced job performance (David & Roberts, 2020). The literature also provides various antecedents to PB including proactive personality (Colbert et al., 2019), off-job experiences (Cheng et al., 2019), appropriate leadership styles (Peng et al., 2023; Kwan et al., 2023), workplace practices (Blomme et al., 2022; Mostafa & Yunus, 2022) and workplace climate (Babalola et al., 2023).

In comparison to PT and PB, the construct of UF could be considered unexplored. Little convention was found on the definition of the construct, and the literature was spread wide on its application, which included uncertainty on the impact of decisions made (Fay et al., 2023), career adaptability in an uncertain world (Cai et al., 2023), workplace uncertainty (Skiba & Wildman, 2019), and job insecurity (Huang et al., 2021). While prior studies have examined these constructs in isolation, and a limited number in pairs, a research gap appeared in understanding all three elements in a single model.

While prior studies have extensively examined PT and PB in service-oriented industries (Cheng et al., 2019; Skiba & Wildman, 2019), few research endeavours have been focused on the manufacturing sector (Jain et al., 2023). Specifically, no relevant research was found on the constructs of PT, PB and UF within the manufacturing sector in Africa. With the current challenges of premature deindustrialisation in South Africa (Fortunato, 2022), and the implications on the future growth of the economy, leaders in the South African manufacturing sector would benefit from boosting business performance through enhanced motivation and PB in the workforce.

7.1. Study hypotheses, methodology and findings

Two research questions were formulated to translate the identified research problem into the research methodology. Firstly,

> RQ1: *How significant is the degree of trust that a supervisor (manager) has in an employee – as perceived by the employee – on the employee's tendency to exhibit proactive behaviour in the workplace?*

and secondly,

> RQ2: *Is unpredictability of the future a significant moderator when assessing how perceived trust translates into proactive behaviour in the workplace?*

From these research questions, two hypotheses were proposed that would be tested for significance. Firstly,

> H1: *The degree of trust that a supervisor (manager) has in an employee – as perceived by the employee – positively translates to proactive behaviour demonstrated by the employee in the workplace.*

and secondly,

> H2: *Unpredictability of the future moderates the relationship between the degree of perceived trust and workplace proactive behaviour significantly, such that this relationship is larger when unpredictability of the future is high (the future is uncertain) and, conversely, is reduced when unpredictability of the future is low (the future is certain).*

A positivist research philosophy was applied to the research topic, with deductive development of the theory. The methodological choice followed a mono-method approach as the study was purely quantitative in nature. Data was collected from respondents in the South African manufacturing sector using a non-probability sampling method. The study was cross-sectional in that the data was collected at a single point in time.

Observed indicators were developed based on existing theoretical measurement scales (Rouzi & Wang, 2021; Fay et al., 2023) for the constructs of PT, PB and UF. A 5-point Likert scale was utilised in the survey questionnaire where the observed indicators were presented as scenarios for the respondents. A final sample size of 192 datapoints was attained after the data screening process was applied. Descriptive statistics indicated that the sample population was biased towards well-educated males in the middle of their careers in middle management or senior specialist roles. The data has been screened for respondents employed in the manufacturing sector, as well as other industries directly supporting the manufacturing sector.

All observed indicators showed good reliability against both Cronbach's alpha and Composite Ratio, supporting the argument of good internal consistency across these indicators. The measurement model was assessed using Confirmatory Factor Analysis in IBM SPSS AMOS. Convergent validity was confirmed for UF (AVE = 0.544), however was very weak for PT (AVE = 0.422) and PB (AVE = 0.419). This posed some concern for the integrity of the observed indicators chosen for these two constructs. The model fit was deemed acceptable based on numerous model fit tests, including relative Chi-square (χ^2/DF = 1.750), Comparative Fit Index (CFI = 0.901) and others. Discriminant validity was supported for all three latent constructs. The Latent Common Method Factor method was utilised to test for CMB (Collier, 2020). A moderate degree of CMB was observed in the data, and this was controlled for during the assessment of the structural model.

The assessment of the structural model was also performed in SPSS AMOS, based on the measurement model that had been verified. *Age* and *work experience* were incorporated as control variables in the model. Hypothesis 1 was assessed using a Full Structural Model (FSM), incorporating the control variables as well as the CMF. The model fit was deemed acceptable (χ^2/DF = 1.697). The standard regression weight for the relationship between PT and PB was calculated at β = 0.283, indicating a moderate,

positive influence of PT on PB. Thus **hypothesis 1 was supported**, although the strength of the correlation was noted as *moderate*. From this analysis it was confirmed that increased levels of trust perceived from employees would tend to increase proactive behaviour exhibited by these employees. From the theoretical framework of SDT, it can be deduced that perceiving to be trusted by one's manager heightens autonomous motivation (Deci et al., 2017) in employees such that positive behaviours are encouraged.

A Mixed Model Method (MMM) was employed in SPSS AMOS to test for moderation, by introducing an interaction factor into the FSM to represent the moderating influence of UF on the PT-PB relationship. Model fit remained acceptable (χ^2/DF = 1.770) for the test of UF as a moderating factor. However, the interaction of UF as a moderator was seen as **not statistically significant** (p = 0.659). Thus **hypothesis 2 was not supported**. Based on this finding, probing of the moderating relationship was not appropriate. These results indicated that UF did not have any significant influence on how PT relates to PB, i.e. the relationship of how PB depends on PT does not depend on the extent of UF present.

7.2. Theoretical implications

The outcomes of this investigation have supported the argument that higher levels of PT in employees relate to greater tendencies for these employees to exhibit PB. These findings offer further support for similar research between PT and PB (Rouzi & Wang, 2021; Addison & Teixeira, 2020).

These findings confirm the role of perceived trust as an ingredient in fulfilling the basic psychological needs of employees, as per SDT (Deci et al., 2017). As the positive relation between PT and PB is confirmed, so is the understanding that autonomous motivation is positively influenced by the perception of trust by one's manager. This relationship can be considered into future motivational model for the workplace.

The findings have suggested a moderate strength of the PT-PB which are similar in magnitude to those measured by Kim et al. (2021). This suggests that although PT plays a relative role in the prediction of PB, there are potentially other factors at play which need to be considered. From the literature, these could include leadership style of the employee's manager (Peng et al., 2023), self-efficacy (Rouzi & Wang, 2021) and work meaningfulness (Fay et al., 2023). The confirmation of the PT-PB relationship also

confirms the importance of leaders to maintain trust levels in their workplace relationships, for fear of reduced performance and job satisfaction (David & Roberts, 2020).

The validity tests of the observed indicators have raised some doubt as to their suitability for measurement of the chosen constructs. Convergent validity for the constructs of PT and PB were weak, and thus the observed relationships, although statistically valid, should be made with caution. The integrity of the observed indicators for UF have been confirmed as acceptable, based on convergent validity of the construct (Fay et al., 2023). It would be proposed that the observed indicators for all three constructs are reviewed and refined for future research.

Regarding the second hypothesis, it can be confirmed that UF does not influence the relationship between PT and PB. This contributes to the literature by proposing that uncertainty in the workplace does not effectively influence motivation levels to the extent of impacting behaviour. Considering the view of the literature that unpredictability or uncertainty would influence the behaviour of employees (Fay et al., 2023; Cai et al., 2023; Huang et al., 2021) the findings are in partial conflict with existing literature.

These findings challenge the existing understanding of behavioural theory in the workplace. This study suggests that employees' PB may continue to be positively affected by PT regardless of the degree of unpredictability of their work environment. This suggests a more nuanced understanding of UF in the workplace. Considering SDT, this research proposes that UF does not disrupt the basic psychological needs of employees (Deci et al., 2017) in that motivation does not appear to be affected.

Autonomous motivation affected by trust appears to be a much stronger determinant of PB than stability of the work environment. This insight is especially relevant to the manufacturing sector in South Africa, where uncertainty and unpredictability is prevalent.

7.3. Business implications

In the South African manufacturing context, where uncertainty and ambiguity are routine challenges, the outcomes of this research are able to provide valuable insight for business leaders, in terms of team development, leadership style and development of the workplace climate.

With the understanding gained that PT positively relates to PB, leaders are able to appreciate the contribution that PT plays in the prevalence of self-initiative in their organisations and can prioritise the development of this trust accordingly. This can be via trust-building projects or similar initiatives. Leaders who are able to foster a work environment where employees feel trusted can expect their employees to be more engaged and take more initiative in their daily routines (Jain et al., 2023). This would be expected to benefit both employee as well as the business.

The moderate strength of the PT-PB relationship indicates that PT plays but a part in the encouragement of PB in the workplace. Although a critical factor, it does not appear to act in isolation but may work together with leadership style (Colbert et al., 2019; Peng et al., 2023; Blomme et al., 2022), self-efficacy (Du et al., 2022), and work meaningfulness (Fay et al., 2023) in encouraging proactivity amongst employees. These findings should complement existing literature on this topic to assist leaders in developing processes which include all relevant constructs.

Understanding that UF is not a significant influencer on the PT-PB relationship will help business leaders manage uncertainty and unpredictability in their organisations without fear that proactivity will be significantly affected. Instead, leaders can focus on valid factors that foster trust – such as, providing employees their full attention (David & Roberts, 2020), minimal monitoring and micromanagement (Braun et al., 2023), empowerment strategies (Kim et al., 2021) and other trust antecedents (Ash et al., 2020).

Business leaders hold the responsibility of developing work environments and fostering work culture that grow the business as well as meet the needs of the employees. With the knowledge of how PT can motivate employees to take their own initiative, without being concerned that uncertainty may affect this proactive tendency, business leaders can incorporate known ideas and constructs from the literature to foster a culture where employees genuinely feel the trust that managers have in them.

7.4. Limitations of the study and proposals for future research

This research study focused primarily on the manufacturing sector in South Africa and thus may not be applicable to other industry sectors, nor other contexts which may differ in certain cultural aspects. It would be appropriate for future studies to expand the scope

to include other industries and other economies within sub-Saharan Africa.

The sample population was biased towards well-educated male respondents midway through their careers; female employees and individuals in the initial phase of their careers were notable underrepresented. Future studies would do well to focus on more equitable representation of female employees, as well as individuals in the start of their careers.

The presented research is purely based on assessing correlation, and additional research may be required to improve the understanding of the causal flow, specifically the direction thereof (David & Roberts, 2020). It is entirely plausible that exhibited proactive behaviour would influence the trust a manager has in his team, which in turn could be expected to enhance the perception of that trust by employees.

The research used self-report measures of proactive behaviour which may be affected by social desirability bias (David & Roberts, 2020). The presence of CMB was indeed noted during the assessment of the measurement model. A more accurate method could be obtained by using a dyadic study in which the proactive behaviour of the employee is measured by the supervisor, as per Cheong et al. (2019). A longitudinal study could also assist to reduce CMB (Cai et al., 2023). Future research could consider a dyadic approach over various time periods to improve relevance and accuracy.

The low Average Variance Extracted (AVE) values achieved for the PT and PB constructs proved very weak convergent validity for these constructs, indicating that one or more of the chosen indicators do not adequately represent the construct in question. Certain observed indicators were removed from the measurement analysis in order to improve the AVE of the construct. However, when this is done, it is suggested that a second data collection is done to verify that the revised scales are still valid (Collier, 2020). Considering the poor convergent validity of these constructs it is recommended that the measurement scales used are reviewed and revised before being considered for any future research around similar topics.

The results obtained for the significance of UF in the PT-PB relationship did not support existing research in related topics. However, the definition of workplace uncertainty and unpredictability remains scattered, and challenging to execute meaningful comparisons. Future research which focuses on the categorisation and robust definition around the topic on unpredictability would add tremendous value to future research on this construct.

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9. Appendix A

9.1. Observed indicators for perceived trust

Observed indicators for perceived trust as sourced from Gavin and Mayer (2005) (Rouzi & Wang, 2021) – original unrevised indicators:

1. ‘If I had my way, I wouldn’t let ___ have any influence over issues that are important to me.’
2. ‘I would be willing to let ___ have complete control over my future in this company.’
3. ‘I really wish I had a good way to keep an eye on ___.’
4. ‘I would be comfortable giving ___ a task or problem which was critical to me, even if I could not monitor his/her (its) actions.’
5. ‘I would tell ___ about mistakes I’ve made on the job, even if they could damage my reputation.’
6. ‘I would share my opinion about sensitive issues with ___ even if my opinion were unpopular.’
7. ‘I am afraid of what ___ might do to me at work.’
8. ‘If ___ asked why a problem happened, I would speak freely even if I were partly to blame.’
9. ‘If someone questioned ___ ’s motives, I would give ___ the benefit of the doubt.’
10. ‘If ___ asked me for something, I respond without thinking about whether it might be held against me.’

Observed indicators for perceived trust – revised indicators based on the indicators sourced from Gavin and Mayer (2005) (Rouzi & Wang, 2021):

1. ‘My superior allows me to manage issues that are important to him.’
2. ‘My superior allows me to have control over items within his portfolio.’
3. ‘My superior feels that he needs to keep an eye on me.’
4. ‘My superior is comfortable delegating a critical task to me, even if he could not monitor my actions.’
5. ‘My superior is not especially punitive concerning mistakes made on the job and is more concerned about the learnings arising from such mistakes.’

6. ‘My superior would share his opinions around sensitive issues with me, even if these opinions were unpopular.’
7. ‘My superior is not concerned about any ulterior motives I may have at work.’
8. ‘My superior expects me to speak freely and openly about problems in the workplace.’
9. ‘If someone questioned by motives, my superior would give me the benefit of the doubt.’
10. ‘If I asked something from my superior, he / she would respond without thinking whether it may held against him / her.’
11. ‘My superior asks my opinion on important matters concerning the organisation.’

10. Appendix B

10.1. Observed indicators for proactive behaviour (a)

Observed indicators for proactive behaviour as sourced from Fay et al. (1997) via Fay et al. (2023):

1. ‘I actively attack problems’
2. ‘Whenever something goes wrong, I search for a solution immediately’
3. ‘Whenever there is a chance to get actively involved, I take it’
4. ‘I take initiative immediately even when others don’t’
5. ‘I use opportunity quickly in order to attain my goals’
6. ‘Usually I do more than I am asked to do’
7. ‘I am particularly good at realising ideas’

11. Appendix C

11.1. Observed indicators for proactive behaviour (b)

Observed indicators for proactive behaviour (b) as sourced from Morrison and Phelps (1999) via Cheong et al. (2019) – original unrevised indicators:

1. ‘This person often tries to adopt improved procedures for doing his or her job.’
2. ‘This person often tries to change how his or her job is executed in order to be more effective.’
3. ‘This person often tries to bring about improved procedures for the work unit or department.’
4. ‘This person often tries to institute new work methods that are more effective for the company.’ *
5. ‘This person often tries to change organizational rules or policies that are nonproductive or counterproductive.’
6. ‘This person often makes constructive suggestions for improving how things operate within the organization.’
7. ‘This person often tries to correct a faulty procedure or practice.’
8. ‘This person often tries to eliminate redundant or unnecessary procedures.’
9. ‘This person often tries to implement solutions to pressing organizational problems.’
10. ‘This person often tries to introduce new structures, technologies, or approaches to improve efficiency.’

* *Question 4 removed from the indicator set due to high similarity to question 3.*

Observed indicators for proactive behaviour (b) – revised indicators based on the indicators sourced from Morrison and Phelps (1999) (Cheong et al., 2019).

1. ‘I adopt improved procedures for performing my job.’
2. ‘I try to change how my job is executed in order to be more effective.’
3. ‘I try to bring about improved procedures and work methods for my department, in order to improve effectiveness.’

4. ‘I try to change organisational rules or policies that are counterproductive / nonproductive.’
5. ‘I make constructive suggestions for improving how things operate within the organisation.’
6. ‘I try to correct a faulty procedure or practice.’
7. ‘I try to eliminate redundant or unnecessary procedures.’
8. ‘I try to implement solutions to pressing organisational problems.’
9. ‘I try to introduce new structures, technologies, or approaches to improve efficiency.’

12. Appendix D

12.1. Observed indicators for unpredictability of the future (UF)

Observed indicators for unpredictability of the future (UF) as sourced from Blackburn et al. (1993) via Fay et al. (2023) – original unrevised indicators:

1. ‘I have to make decisions about complex issues for which I am missing information’.
2. ‘I have to make decisions about complex issues for which I cannot estimate the long-term consequences’.
3. ‘I have to proceed with my work not knowing if I am on the right track’.
4. ‘I have to make decisions about complex issues without knowing the criteria the decisions should be based on’.

13. Appendix E

13.1. Survey questionnaire

Good day

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA degree.

I am conducting research on how *trust*, as it is perceived by individuals in the workplace, affects that individual's tendency to act in a *proactive* manner, i.e. an individual's self-initiated action to affect change in their workplace and organisation. Further to this, the research will consider the moderation effect of *unpredictability of the future* on this relationship. Unpredictability of the future is concerned with people's need to 'connect with the future' – i.e. our need to be certain about the impact our decisions make on the future of the organisation.

In summary, the research intends to help us understand the relationship between perceived trust and how this translates to proactive behaviour, and then to further understand how future uncertainty affects this relationship.

The survey consists of 39 short questions which cover the four constructs of the investigation: *proactive behaviour*, *perceived trust* and *unpredictability of the future*. The survey should not take longer than 15 minutes to complete in full.

Your participation is entirely voluntary, and you can withdraw at any time without penalty. Your participation is anonymous, and only aggregated data will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Your participation in this research is much appreciated.

Thank you and regards

Survey questionnaire

1	Gender	Male		
		Female		
		Rather not say		
2	Country of employment	South Africa		
		Other		
3	Years of age	18 – 25		
		26 – 30		
		31 – 35		
		36 – 40		
		41 – 45		
		46 – 50		
		51 – 55		
		Over 55		
4	Work experience (in years)	Less than 5 years		
		5 – 10 years		
		11 – 15 years		
		16 – 20 years		
		More than 20 years		
5	Employment sector	Wholesale & retail trade		
		Manufacturing		
		Mining & quarrying		
		Construction		
		Transportation & storage		
		Agriculture, forestry & fishing		
		Hospitality		
		Food % beverage processing		
		Education		
		Government & civil services		
		Information technology & communication		
		Real estate, finance & business services		
		Tourism		
		Other		
6	Role in the organisation	Operator / tradesman		
		Technician		
		Team leader / supervisor		
		Middle management		
		Specialist		
		Senior management		
		Senior specialist		
		Executive		
		Business owner		
		Teacher / Lecturer		
		Other		
7	Highest qualification	Grade 12 / National Senior Certificate		
		National Diploma / Advanced Certificate		
		Bachelors / Honours Degree		
		Master's degree		
		Doctorate		

8	Time period reporting to current superior (manager)	Less than 5 years				
		5 – 10 years				
		11 – 15 years				
		16 – 20 years				
		More than 20 years				
9	I actively attack problems.	Never	On a rare occasion	Sometimes	Often	Almost always
10	Whenever something goes wrong, I search for a solution immediately.	Never	On a rare occasion	Sometimes	Often	Almost always
11	Whenever there is a chance to get actively involved, I take it.	Never	On a rare occasion	Sometimes	Often	Almost always
12	I take initiative immediately, even when others do not.	Never	On a rare occasion	Sometimes	Often	Almost always
13	I use opportunities quickly to attain my goals.	Never	On a rare occasion	Sometimes	Often	Almost always
14	Usually, I do more than I am asked to do.	Never	On a rare occasion	Sometimes	Often	Almost always
15	I am particularly good at realising ideas.	Never	On a rare occasion	Sometimes	Often	Almost always
16	I adopt improved procedures for performing my job.	Never	On a rare occasion	Sometimes	Often	Almost always
17	I try to change how my job is executed to be more effective.	Never	On a rare occasion	Sometimes	Often	Almost always
18	I try to bring about improved procedures and work methods for my department, to improve effectiveness.	Never	On a rare occasion	Sometimes	Often	Almost always
19	I try to change organisational rules or policies that are counterproductive / nonproductive.	Never	Rarely, once identified	Sometimes, once identified	Often, once identified	Immediately once identified.
20	I make constructive suggestions for improving how things operate within the organisation.	Never	On a rare occasion	Sometimes	Often	Almost always
21	I try to correct a faulty procedure or practice.	Never	Rarely, once identified	Sometimes, once identified	Often, once identified	Immediately once identified.
22	I try to eliminate redundant or unnecessary procedures.	Never	Rarely, once identified	Sometimes, once identified	Often, once identified	Immediately once identified.
23	I try to implement solutions to pressing organisational problems.	Never	Rarely, once identified	Sometimes, once identified	Often, once identified	Immediately once identified.
24	I try to introduce new structures, technologies, or approaches to	Never	Rarely, once identified	Sometimes, once	Often, once identified	Immediately once

	improve efficiency.			identified		identified.
25	I must make decisions about complex issues for which I am missing information.	Never	On a rare occasion	Sometimes	Often	Almost always
26	I must make decisions about complex issues for which I cannot estimate the long-term consequences.	Never	On a rare occasion	Sometimes	Often	Almost always
27	I must proceed with my work not knowing if I am on the right track.	Never	On a rare occasion	Sometimes	Often	Almost always
28	I must make decisions about complex issues without knowing the criteria the decision should be based on.	Never	On a rare occasion	Sometimes	Often	Almost always
29	My superior allows me to manage issues that are important to him / her.	Never	On a rare occasion	Sometimes	Often	Almost always
30	My superior allows me to have control over items within his / her portfolio.	Never	On a rare occasion	Sometimes	Often	Almost always
31	My superior feels that he / she needs to keep an eye on me.	Never	On a rare occasion	Sometimes	Often	Almost always
32	My superior is comfortable delegating a critical task to me, even if he / she could not monitor my actions.	Never	On a rare occasion	Sometimes	Often	Almost always
33	My superior is not especially punitive concerning mistakes made on the job and is more concerned about the learnings arising from such mistakes.	Never	On a rare occasion	Sometimes	Often	Almost always
34	My superior would share his / her opinions around sensitive issues with me, even if these opinions were unpopular.	Never	On a rare occasion	Sometimes	Often	Almost always
35	My superior is not concerned about any ulterior motives I may have at work.	Never	On a rare occasion	Sometimes	Often	Almost always
36	My superior expects me to speak freely and openly about problems in the workplace.	Never	On a rare occasion	Sometimes	Often	Almost always
37	If someone questioned my motives, my superior would give me the benefit of the doubt.	Never	On a rare occasion	Sometimes	Often	Almost always
38	If I asked something from my superior, he / she would respond without thinking whether it may be held against him / her.	Never	On a rare occasion	Sometimes	Often	Almost always
39	My superior asks my opinion on important matters concerning the organisation.	Never	On a rare occasion	Sometimes	Often	Almost always

14. Appendix F

14.1. Data translation – employment sector

Participant input for field 'other'	Data translation for analysis
'Engineering sales'	Manufacturing
'Financial Markets'	Real estate, finance & business services
'Paper mill'	Manufacturing
'Manufacturing;Power generation (electricity) Eskom'	Manufacturing
'Petrochemical Industry'	Manufacturing
'Pulp and Paper '	Manufacturing
'Petrochemical'	Manufacturing
'Iron and Steel industry'	Manufacturing
'Pulp and paper'	Manufacturing
'Paper and Pulp Industry'	Manufacturing
'Pulp and paper '	Manufacturing
'Maintenance'	Manufacturing
'Industrial technology transfer '	Manufacturing services
'Imports, sales'	Manufacturing
'Oil'	Manufacturing
'Engineering consulting'	Manufacturing services
'Energies'	Manufacturing
'Petroleum'	Manufacturing
'ENGINEERING '	Manufacturing
'Reliability '	Manufacturing
'Consulting for O&G, Petrochem'	Manufacturing services
'Power Services '	Manufacturing
'Consulting '	Manufacturing services
'Procurement, Inventory and Engineering Services'	Manufacturing services
'Pulp and paper'	Manufacturing
'Industrial Sales'	Manufacturing

15. Appendix G

15.1. Data translation – role in the organisation

Participant input	Data translation for analysis
‘Engineer in Training ‘	Learnership
‘Engineer in Training ‘	Learnership
‘Business Engineer’	Specialist
‘Maintenance Planner’	Technician
‘Occupational health and safety advisor ‘	Technician
‘Administrator/Assistant’	Administrator
‘Engineer’	Specialist
‘Engineer’	Specialist
‘Project engineer’	Specialist
‘Advisor’	Specialist
‘Management Trainee’	Learnership
‘Process Engineer’	Specialist
‘Project Engineer ‘	Specialist
‘SHE Practitioner ‘	Technician
‘Sales and marketing ‘	Middle management
‘Technical Sales Representative’	Technician

16. Appendix H

16.1. Data translation – highest qualification

Participant input	Data translation for analysis
'Higher Diploma = Bachelor '	Bachelors / Honours Degree
'Microsoft and Cisco Certifications'	Grade 12 / National Senior Certificate
'Trade Certificates'	Grade 12 / National Senior Certificate
'Instrumentation Trade, in process of completing National Diploma (2 Subjects left)'	Grade 12 / National Senior Certificate

17. Appendix I

17.1. Standard Deviation measures per respondent

Respondent ID	Standard deviation on response
1	1.767
2	2.118
3	2.044
4	2.030
5	1.980
6	1.896
7	1.217
8	1.736
9	2.823
10	2.676
11	1.614
12	1.929
13	1.614
14	1.680
15	2.752
16	1.795
17	2.134
18	1.993
19	2.075
20	1.554
21	0.978
22	2.363
23	2.532
24	1.519
25	1.757
26	2.178
27	1.637
28	0.875
29	1.496
30	2.178
31	1.316
32	2.472
33	0.894
34	1.881
35	1.786
36	1.431
37	1.413

38	1.856
39	2.697
40	1.588
41	1.965
42	2.624
43	1.499
44	2.246
45	1.378
46	1.316
47	1.795
48	1.650
49	1.586
50	0.670
51	1.416
52	1.238
53	1.499
54	2.462
55	1.210
56	2.011
57	1.468
58	2.713
59	1.117
60	2.538
61	1.313
62	1.925
63	2.339
64	2.693
65	2.124
66	1.319
67	2.781
68	1.755
69	1.446
70	1.788
71	2.614
72	1.411
73	2.436
74	2.462
75	1.519
76	2.428
77	2.705
78	1.431
79	1.667

80	2.253
81	1.635
82	1.578
83	1.532
84	1.892
85	0.836
86	1.471
87	2.054
88	1.413
89	2.197
90	1.287
91	2.018
92	2.527
93	1.396
94	1.328
95	2.370
96	1.662
97	2.016
98	2.255
99	1.513
100	1.722
101	2.272
102	1.662
103	2.151
104	2.428
105	3.004
106	2.348
107	0.670
108	1.892
109	1.974
110	1.362
111	3.396
112	2.310
113	1.425
114	2.081
115	1.601
116	1.596
117	2.814
118	2.024
119	2.589
120	2.312
121	2.272

122	1.431
123	2.589
124	2.433
125	2.054
126	1.786
127	0.736
128	1.499
129	2.489
130	1.635
131	1.856
132	2.246
133	1.411
134	2.178
135	2.333
136	2.120
137	1.660
138	1.468
139	1.999
140	2.178
141	2.412
142	2.024
143	1.856
144	2.918
145	3.140
146	1.413
147	2.054
148	2.116
149	1.946
150	2.560
151	2.693
152	1.496
153	1.540
154	1.238
155	2.482
156	3.167
157	1.957
158	2.199
159	2.537
160	2.081
161	1.362
162	1.328
163	1.362

164	1.362
165	1.183
166	2.153
167	1.845
168	2.272
169	2.582
170	1.950
171	2.128
172	1.411
173	2.525
174	2.711
175	2.574
176	1.121
177	0.790
178	2.381
179	0.841
180	2.146
181	1.381
182	1.800
183	2.674
184	3.403
185	1.586
186	0.999
187	1.583
188	1.381
189	1.738
190	2.180
191	1.933
192	2.016

18. Appendix J

Reliability analysis results – Cronbach's alpha assessment

18.1. Cronbach's alpha – Perceived Trust (initial)

Reliability Statistics – Perceived Trust (initial)	
Cronbach's Alpha	N of Items
0.825	11

Item-Total Statistics – Perceived Trust (initial)				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PT1	62.88	188.707	0.529	0.811
PT2	62.98	183.675	0.585	0.805
PT3	63.91	182.598	0.525	0.809
PT4	64.80	187.377	0.198	0.852
PT5	64.45	174.888	0.598	0.801
PT6	63.55	173.883	0.624	0.799
PT7	64.15	176.967	0.515	0.809
PT8	62.85	178.816	0.591	0.803
PT9	64.93	176.734	0.456	0.816
PT10	62.86	181.542	0.494	0.811
PT11	64.20	176.006	0.590	0.802

18.2. Cronbach's alpha - Perceived Trust (revised – after removal of indicator PT4)

Reliability Statistics – Perceived Trust (revised)	
Cronbach's Alpha	N of Items
0.852	10

Item-Total Statistics – Perceived Trust (revised)				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PT1	57.52	161.926	0.571	0.839
PT2	57.62	157.368	0.621	0.834
PT3	58.55	158.427	0.510	0.842
PT5	59.09	151.394	0.581	0.835
PT6	58.19	149.734	0.622	0.832
PT7	58.79	151.527	0.532	0.840
PT8	57.49	152.712	0.625	0.832
PT9	59.57	154.089	0.423	0.853
PT10	57.51	154.398	0.542	0.839
PT11	58.84	151.169	0.599	0.834

18.3. Cronbach's alpha – Proactive Behaviour

Reliability Statistics – Proactive Behaviour	
Cronbach's Alpha	N of Items
0.874	16

Item-Total Statistics – Proactive Behaviour				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PB1	106.48	204.063	0.368	0.873
PB2	108.15	192.045	0.497	0.868
PB3	106.23	204.662	0.413	0.870
PB4	107.11	191.851	0.590	0.863
PB5	106.95	202.799	0.443	0.869
PB6	107.70	193.927	0.486	0.868
PB7	106.98	197.288	0.584	0.864
PB8	106.95	194.610	0.602	0.863
PB9	107.52	190.010	0.616	0.862
PB10	106.57	203.472	0.426	0.870
PB11	106.82	195.543	0.565	0.864
PB12	107.01	195.366	0.559	0.864
PB13	106.91	196.950	0.566	0.864
PB14	107.51	199.005	0.546	0.865
PB15	107.42	193.659	0.577	0.864
PB16	107.04	203.527	0.383	0.872

18.4. Cronbach's alpha – Unpredictability of the Future

Reliability Statistics – Unpredictability of the Future	
Cronbach's Alpha	N of Items
0.821	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
UF1	12.94	33.253	0.560	0.813
UF2	14.51	29.476	0.712	0.742
UF3	14.90	31.822	0.616	0.788
UF4	14.41	31.457	0.694	0.753