

The effect of organisational and job autonomy on employees' psychological ownership of the organisation post hybrid and work-from-home

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Abstract

The Covid-19 pandemic had a profound impact on employees. With companies having to rapidly adopt hybrid and work from home arrangements, employee's ways of working, their organisational structures, and team dynamics has changed at an unprecedented pace. Whilst the pandemic is no longer considered to be a global health emergency, organisations are reconsidering their work arrangement policies, as global developments have resulted in changes in the way companies interact across borders and business functions as relationships between countries evolve. These events have resulted in changes in employees' job and organisational designs, the impact of which is unknown.

The aim of this study was to understand the relationship between employees organisational and job autonomy on their psychological ownership of the organisation, post the adoption of hybrid work arrangements. Psychological ownership is a construct in human resource management that reflects the feeling of "It is Mine" in the employee and is associated with positive organisational and employee outcomes.

Utilising a quantitative survey study of 153 respondents, the study found statistically significant correlations between job autonomy and psychological ownership, and the strategic component of organisational autonomy and psychological ownership. Further, the study found limited significant difference in psychological ownership and work arrangements of the respondents. The findings contributed to understanding the relationship between job and organisational autonomy and psychological ownership of the organisation, providing insight for theory, human resource development practitioners and managers.

Keywords

Psychological Ownership

Job-autonomy

Organisational autonomy

Hybrid work

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.

1 November 2023

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List of abbreviations

EFA – Exploratory Factor Analysis

SPSS – IBM® SPSS® Statistics version 29

1. Introduction

This research relates to the effects of changes in organisational structure with the introduction of hybrid and work-from-home on employee psychological ownership due to related changes in job and organisational autonomy. This chapter details the background to the research problem, the research purpose statement, the academic and business rationale, the research problem, and the value to be gained from the research.

1.1. Background to the research problem

"Psychological ownership is positively related to financial firm performance" was the finding of Torp and Nielsen (2018, p. 488). The construct of Psychological Ownership was introduced by Pierce et al. (2001) as "a state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is "theirs" (i.e., "It is MINE!")" (p. 299). The construct and was explored in the organisational context and found to explain variances in key employee attitudes such as organisational citizenship behaviour (Van Dyne & Pierce, 2004). Whilst psychological ownership can be applied at the individual level, where an individual has a feeling of ownership for their job or role, it can also be expressed at an organisational level, where the individual has feelings of ownership for the organisation or team (Pierce & Jussila, 2010). Psychological ownership at an organisational level has been associated with desirable employee attitudes and feelings of belonging, belief and commitment (Dawkins et al., 2017; Van Dyne & Pierce, 2004). The dimensions of psychological ownership were first defined by Pierce et al. (2001) to be belonging, self-efficacy and self-identity and extended by Avey and Avolio (2009) to include territoriality and accountability.

Due to the link of psychological ownership to the variables of self-efficacy and self-identity, autonomy at a job and organisational level have been empirically tested to affect psychological ownership (Avey & Avolio, 2007; Cocieru et al., 2019; Mayhew et al., 2007; Pierce et al., 2001). Job-autonomy was defined by Hackman and Oldham (1975) as "The degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out." (p. 162). Within psychological ownership, autonomy has been proposed as an additional variable of

psychological ownership, with developing instruments proposing the inclusion of autonomy (Olckers, 2013).

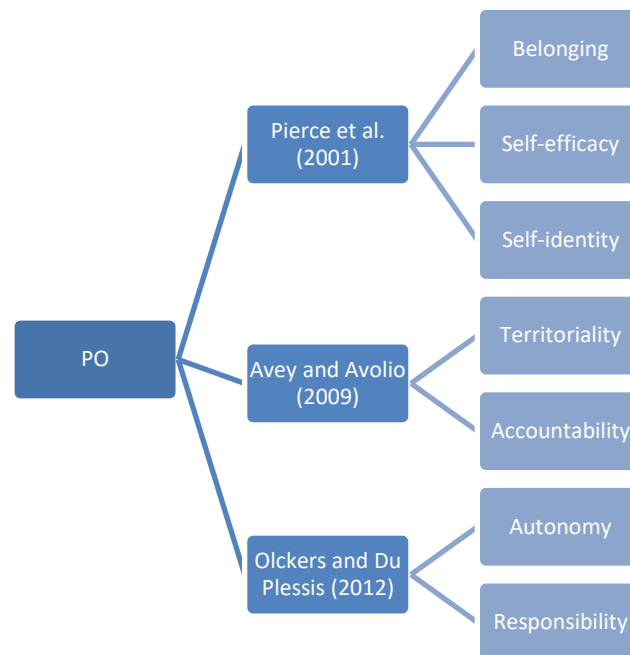


Figure 1 - Dimensions of psychological ownership

Source: Adapted from Olckers and Du Plessis (2012)

Organisational structure is a crucial determinant of effective resource usage. Thus the dimensions of organisational structure must be considered in determining the factors influencing the effectiveness of the organisation (Shafique et al., 2022). For decades the role of organisational structure in organisational effectiveness has evolved; seminal authors identified the links between organisational structure and strategy, innovation and information flows whilst defining the different types of structures (Miller, 1987; Mintzberg, 1980; Pierce & Delbecq, 1977; Pugh et al., 1968). Organisational structure remains the focus of research due to its evolution over time; as technology has evolved business models, so too have the structures which define the organisations' way of working, with the introduction of artificial intelligence changing the manner in which decisions can be made in organisations, the structures will also adapt to include these tools (Shrestha et al., 2019). Within organisational development and influenced by organisational structure, Organisational Autonomy has evolved with structures, with Wiedner and Mantere (2019) recently defining organisational autonomy as “performing organizational practices without explicit

direction or approval from others” (p. 662). In multi-national and diversified organisations, organisational structure impacts organisational autonomy as organisational autonomy would impact how different markets and products are structured. Dattée et al. (2022) recently explored dynamics of organisational autonomy, including aligning to the organisational autonomy for Lamborghini and their parent company Audi.

Based on the wide-ranging impact of organisational structure on employees, two of the potential sources for the development of psychological ownership are impacted, as it impacts the employees' control or influence over the organisation or parts of the organisation, as well as the employees' potential to impact the creation of the organisation or department in the organisation (Pierce et al., 2001). As such, in designing an organisational structure or making changes to a structure, the impact on employees' psychological ownership of the organisation should be understood as well as on other factors such as strategy and culture. Employees' autonomy is specifically impacted by the organisational structure implemented in the organisation. Various levels of hierarchy, responsibility and decision-making authority are linked to employees' autonomy. Given the overlap between psychological ownership developed via control and influence and organisational structure-determined autonomy, the effect of a change in organisational structure on psychological ownership should be assessed.

Work from home and hybrid working models (“Hybrid Work”) allow for employees to complete their work tasks either fully from locations outside of the office or combine working at the office and working remotely. Whilst there were organisations that applied these models previously, the advent of Covid-19 in 2020 led to forced use of Hybrid Work to mitigate the spread of the virus, transforming many organisations ways of working (Choudhury et al., 2022). The stresses of living through a pandemic combined with the drastic change of Hybrid Work led to an array of personal and work-related complaints. Some of the work-related complaints included increased work hours as well as difficulty in communicating effectively, as many struggled to adapt to their new normal (Xiao et al., 2021). Whilst the pandemic has passed, the changes introduced to employees' ways of working are ongoing as companies try to balance the benefits that employees identified with Hybrid Work with the challenges and the impact on the culture of the organisation (Sampat et al., 2022).

1.2. Research problem and purpose

This research aims to determine the effect of job and organisational autonomies on psychological ownership for the organisation, post Hybrid Work. In particular, the research will focus on organisational autonomy and job autonomy and their impact on psychological ownership, a relationship previously included in a model by Degbey et al. (2021).

1.3. Theoretical Rationale for the Study

Research in the area of psychological ownership has developed steadily after the seminal article of Pierce, Rubenfeld and Morgan (1991). With the development of job-based and organisation-based psychological ownership, two branches of development emerged (Van Dyne & Pierce, 2004). As the theory has developed links have been identified to both positive impacts such as organisational commitment, employee performance, and reduced turnover, as well as potential negative impacts such as resistance to and reduced commitment to change. It has therefore become more important to understand the impact of organisational design as a result of its link to control on employees (Cocieru et al., 2019; Renz et al., 2022; Van Dyne & Pierce, 2004). The behaviours linked to psychological ownership for the organisation impact the organisation's culture, these feelings of ownership of the organisation change the employees' behaviour and thus has an impact on the culture (Schein, 1986). Psychological ownership whilst existing at an employee level, therefore has potential strategic impacts at an organisational design component level as the design of the structure or changes to the structure may have potential downstream impact on culture. Thus, for scholars in the field of organisational design and human resource management, understanding the relationship between psychological ownership and organisational structure is fundamental to developing effective organisational models. As job-autonomy and organisational autonomy is impacted by organisational structure, the impact of these changes and their relationship with psychological ownership is key for future organisational structure design. In addition, the advent of Hybrid Work has changed key underpinnings of organisations' ways of working, including the location and structures. Furthermore understanding the impact of the change in the ways of work is key for businesses and organisational development practitioners to understand.

1.4. Business Rationale for the Study

Businesses have faced elevated levels of change over the last five years; the combination of disruption to global trade due to trade wars, the Covid-19 pandemic, and the emergence of war in Europe has resulted in widespread volatility and uncertainty. A result of this volatility is high financial risk, cost pressures, and changes in trading as sanctions take hold and economies are contracting (*Chief Economists Outlook*, 2023; Guénette et al., 2022). Regardless of whether the sources of change are positive or negative, changes often result in amendments to organisational structure. These may be due, amongst other reasons, a change in strategy, a newly acquired business or a divesture. The management of the change and the new design of the organisation will however have widespread consequences for the employees of the organisation and their roles, and in turn the success or failure of the organisation. With changes in workplaces primarily brought upon by Covid-19 resulting in increased Hybrid Work, organisations are reassessing the type of structures in place. As geography becomes less relevant to some structures, potentially functional or product-based structures become more suitable (*The Future of Work: Managing Three Risks of the Hybrid Workplace*, n.d.). The combination of these changes in organisational structure and Hybrid Work for employees affects psychological ownership due to the potential for changes in the three routes to psychological ownership, control, creation and intimate knowledge, and thus an effect on the positive employee behaviours ordinarily associated with psychological ownership (Pierce et al., 2001). The contextual setting post Covid-19, in a polarised geopolitical climate that results in companies divesting of operations in countries such as Russia, whilst navigating the hybrid working environment adds to the relevance of this research.

1.5. Research scope and limitations

This research aimed to respond to the research questions within a South African organisational context, specifically assessing the impact of hybrid work. The research targeted formally employed individuals in South Africa, and thus included both those that work within both the Hybrid and central workplace structures. The research took place over two years post the Covid-19 pandemic, allowing for the impact of Hybrid Work to be assessed post the pandemic induced stresses, however it is limited in that some of the pandemic specific induced policies that governed Hybrid Work may still be a factor impacting the respondents.

1.6. Document structure

The remainder of the document is structured as follows - Chapter 2 contains the review of relevant literature of the key constructs and dimensions, including conceptualisation and integration. This is followed by Chapter 3 which details the relevant research questions and hypotheses based on the research requirement noted in Chapter 1 and further detailed in Chapter 2. Chapter 4 details the research methodology selected, the research design as well as the appropriateness and relevance thereof. The results of the research follow in Chapter 5, including collection outcomes, analysis of the data collected and statistical analysis. Chapter 6 analyses the results of the research, including discussion of the findings for each hypothesis. The research concludes in Chapter 7 with a summation of the implications of the findings in a business and academic context, as well as limitations identified. This is followed by recommendations for future research.

2. Literature Review

2.1. Introduction

Chapter contains a synthesis of literature in support of the research objective. The chapter is structured on constructs, within which the literature analysis is organised based on overarching theory related to the construct and its evolution. This encompasses definitions, measurement, and empirical research in the area. The literature is focused on seminal works on these constructs and highlights the developments over the last five years. The Chapter also includes sections relevant to the context of the introduction of Hybrid Work.

The chapter concludes with an integration of the constructs which culminates in the research gap and supports the research hypothesis in Chapter 3, thereby consolidating the constructs and their theoretical evolution to the time of the research.

2.2. Psychological ownership

2.2.1. Definition, theoretical evolution, and antecedents

The construct of psychological ownership has evolved, from the initial “It’s mine”, to the potential “it’s ours” and the subtle but fundamental differences between it is my job and it is my organisation. The construct was theorised in an analysis of employee share ownership schemes three decades ago. The theorisation was driven by debate in organisations between the impact of formal ownership schemes with research indicating the schemes had not had the impact on employee attitudes and behaviours expected. Although initial progress in research was sluggish, momentum persists through ongoing analysis and testing of the theory, along with extensions beyond the original concept (Pierce et al., 1991, 2001; Van Dyne & Pierce, 2004).

Together with this conceptualisation of Psychological Ownership, the three antecedents to the creation of psychological ownership were proposed to be control, intimate knowledge and investment of oneself in the target (Pierce et al., 2001). The hurdle of distinctness was passed with distinction of Psychological Ownership from other psychological constructs being validated. The confirmation of distinctness was combined with the initial research into the antecedent of control, which was proposed

initially, and resulted in the first empirical finding of the relationship between autonomy and psychological ownership being tested (Mayhew et al., 2007).

Since validation of distinctness the construct has evolved past its initial scope in the psyche of employees. Applications have stretched to online communities and public goods, illustrating the depth of the construct and its applicability across human relationships. Its impact, and importance in the organisational context, however, remains a key research area with recent research extending to leadership styles and executive behaviour reflecting its growing reach (J. Kumar, 2022; Nurtjahjani et al., 2022; Peck et al., 2021; Renz & Vogel, 2023).

Since conceptualisation branches of Psychological Ownership have emerged. In line with the initial context, two types of psychological ownership have been identified, i.e., job-based psychological ownership and organisation-based psychological ownership. These initial branches are closely related and were part of the seminal conceptualisation by Pierce et al. (2001). A further branch that was introduced by Pierce & Jussila (2010) repositions psychological ownership as a construct which is not only experienced by the individual, but can be collectively experienced at different levels of the organisation or grouping, for example by teams. It follows that the target of psychological ownership can also be at a different level, for example at a project level.

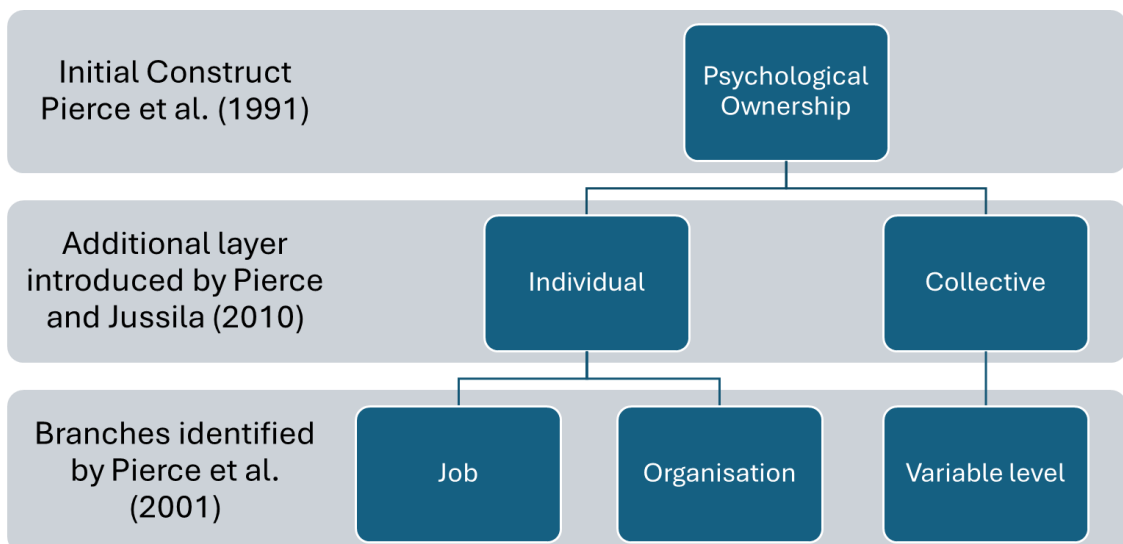


Figure 2 - Branches of psychological ownership, generated by author.

2.2.2. Dimensions of psychological ownership

The dimensions of psychological ownership were first proposed by Pierce et al. (2001) and included self-efficacy, self-identity and belonging. These were then supplemented by Avey and Avolio (2009) with accountability and territoriality dimensions. The latest dimensions i.e. autonomy and responsibility, were proposed and validated through factor analysis by Olckers and Du Plessis (2012), a seminal South African author on the construct.

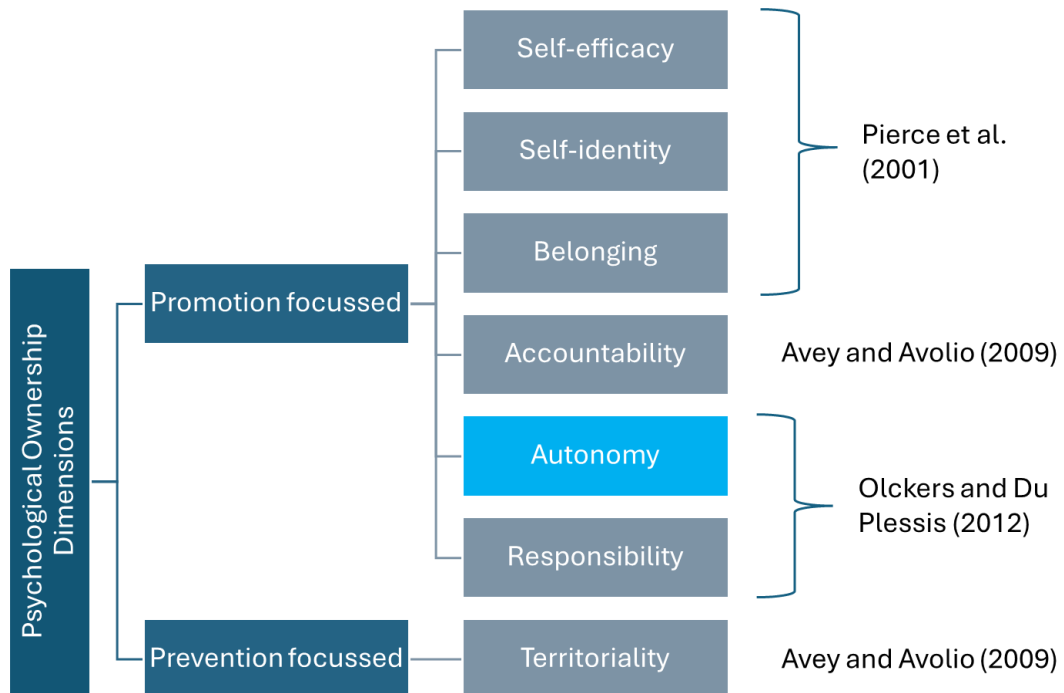


Figure 3 - Dimensions of psychological ownership, adapted from Olckers and Du Plessis (2012).

As part of their research, Avey and Avolio (2009) also suggested a grouping of the dimensions to separate dimensions which carried a promotion focus, i.e. forward development based behaviours; from preventative which are defensive and focussed on the maintenance of status. The categorisation has been followed by empirical research which found that despite the negative connotations associated with prevention focus, these dimensions had a stronger relationship associated with work engagement than the promotion focus dimensions, balanced with the negative impact of territoriality which results in knowledge hiding (Dai et al., 2021; Singh, 2019). Territoriality continues to be a contentious dimension of Psychological Ownership, often resulting in the need to balance the promotion and prevention

focusses. This is because the negative consequences of a skewed position has been found to have a negative effect on performance due to the emergence of defensiveness and territory marking (Chen et al., 2023). These research findings emphasise the delicate balance required between the dimensions of psychological ownership in order to achieve optimal outcomes from employees whilst reflecting the imbalances that organisational changes in job and organizational design can have (Cocieru et al., 2019).

The contribution of certain dimensions of psychological towards other attractive outcomes and behaviours has resulted in ongoing research being performed to understand the balance of the impact of these dimensions and the holistic relationship between psychological ownership and other variables. In the area of self-efficacy, the intricacies of management of self-efficacy in employees was identified as the results of a study noted that the timing of assistance provided by a senior to a team member impacted the level of psychological ownership in the employee whilst the manner in which the assistance was offered resulted in a moderating effect on psychological ownership (Koo et al., 2023). The moderation effect resulting from the manner of assistance offered was illustrated when assistance driven towards creating independence, reduced the negative impact of offering assistance too early, as compared to assistance offered early which did not create increased future independence. This highlighted the balance required by seniors and managers in maintaining and enhancing psychological ownership which is complicated in new environments such as Hybrid Work (Koo et al., 2023).

In the development of an instrument to measure psychological ownership, identity has consistently passed factor tests (Olckers, 2013; Olckers et al., 2017; Olckers & Booyen, 2021). The consistency and strength of the dimension across the development process not only supports the underlying impact of the dimension on Psychological Ownership, it also indicates the potential negative impact of organisational changes. Merger and acquisition transactions, for example, were posited to be affected by psychological ownership (Degbey et al., 2021). The organisational changes in mergers and acquisitions are not dissimilar to those implemented as a result of the Covid-19 pandemic, such as Hybrid Work models which change the actual or perceived identity of a job or organisation.

Belonging as a dimension has received less focus in the context of psychological ownership, with research being limited to fringe research sources. However, belonging as a psychological construct remains relevant and ever more so during times of Hybrid Work. Belonging has been linked to the capacity to foster enhanced health and greater resilience. Given the potential that a sense of belonging creates, and its link to psychological ownership, it is important that actions are taken by organisations to maintain belonging despite the new ways of working by maintaining the social element of work (Allen et al., 2021; Kennedy & Link, 2021).

Accountability as a dimension has also received sparse research focus within psychological ownership despite the importance of the dimension in organisational contexts. Hybrid Work environments have been conceptualised to foster negative employee behaviour in the absence of accountability, suggesting that accountability as a dimension of psychological ownership may be of increased importance and demand in Hybrid Work (Keating et al., 2023).

Autonomy, a key dimension of psychological ownership, is the focus of this paper. Whilst autonomy as a construct is reviewed separately, within psychological ownership autonomy was originally found to be a positive antecedent by Mayhew et al. (2007). This work was however limited by the focus on a singular industry i.e., accounting firms, and a limited sample size, reducing the power of its statistical analysis. Subsequently, autonomy has remained an area of focus. Olckers and Du Plessis (2012) first proposed autonomy as a dimension of psychological ownership and followed this with an initial proposal for an instrument to assess psychological ownership in a South African context where in autonomy was confirmed as a distinct dimension, including across generational cohorts (Olckers & Booysen, 2021). Despite the recency and contextual appropriateness of the said work, it was completed prior to the Covid-19 pandemic and thus does not consider the impact of changes as a result of Hybrid work. The prior works focussed on autonomy as a construct, whilst this was appropriate in the background to those studies, the different types and dimensions of autonomy have varied sources, for autonomy to be leveraged as a tool in development and management of psychological ownership the relationship at the organisational and employee, or job, level must be understood to provide practical routes to influence psychological ownership. Seminal author Pierce, continued research in the construct and found that job-control had an indirect impact

on organisation based psychological ownership through its link with job based psychological ownership, further emphasising the role of autonomy and implied control as a dimension (H. Peng & Pierce, 2015). Although this model remains untested, other studies have posited that the loss of firm autonomy due to changes in structure induced by corporate actions are moderators of psychological ownership in the employees of the acquired firm (Degbey et al., 2021). Autonomy orientated assistance provided to employees was also found to moderate the mediation of loss of psychological ownership by employees for a task (Koo et al., 2023). This relationship is key given the challenges in providing assistance to employees in Hybrid environments due to technology and communication barriers.

The responsibility dimension has been previously linked to the accountability dimension; however, the key distinction is in the negative view, or potential burden of responsibility. Seminal author J Pierce, in his works in 2009 posited the potential negative impacts the burden of responsibility could place on an employee and represented one of the first views of a dimension that could have a dichotomy of impacts - the positive being a sense of responsibility and the negative a burden of responsibility (Pierce et al., 2009). Whilst Olckers (2013) included responsibility as a significant factor in their proposed instrument, empirical research has not followed.

2.2.3. Individual and job outcomes of psychological ownership and empirical research

Psychological Ownership through its multi-dimensional nature can result in a broad range of both positive and negative outcomes. Since theorisation, empirical research has extended the knowledge of the reach of Psychological Ownership and thus it is potential outcomes and roles. These vary between as a mediator, moderator, antecedent and comparator. Within these relationships increasing focus has been placed on the potential negative outcomes.

In relation to positive job-related outcomes, a psychological ownership has been related to positive behavioural traits with an expanding research base. Ambidexterity has been found by Lee and Kim (2021) to be positively related to both job and organisation based Psychological Ownership. Ambidexterity has become a sought-after trait in employees, as the dynamism of an employee who can combine exploration and exploitation behaviours result in improved job outcomes. Whilst the

study contributes a key and topical relationship to the field, it is limited as a result of the South Korean focus which decreases generalisability due to unique culture and population effects, as well as the focus on executives which may cloud formal versus psychological ownership

In the area of innovation, a quantitative survey in China found that psychological ownership of the organisation is positively related with individual innovative behaviours (F. Liu et al., 2019). Hypothesised through the dimension of responsibility which resulted in higher performance and innovation, psychological ownership was balanced against the possibility that the dark side of psychological ownership may surface in the form of change aversion and lack of knowledge sharing. Whilst a limitation in generalisability exists due to the Chinese context which may impact culturable variables, the results confirmed the positive relationship and was supported by a strong sample size of 804 respondents across 157 firms (F. Liu et al., 2019). Innovation has also been noted in the German small business context where in empirical research found that the existence of psychological ownership in the CEO's of family led businesses resulted in a maintenance and enhancement of innovation output in latter generations of management (Rau et al., 2019). This adds the potential to foster psychological ownership to mitigate generational decay in these businesses. The findings were supported by a large sample of businesses comprising of 942 respondents. Whilst the study was limited to the German context it is more generalisable to Westernised (Rau et al., 2019).

In the works by seminal author Pierce, in H. Peng and Pierce (2015) a range of positive outcomes were also confirmed in the Chinese context. An example of which is a relationship between the branches of psychological ownership and job satisfaction. Whilst this had already been confirmed in Western studies, the inclusion of the Chinese context added increased generalisability across cultural contexts. The study also extended theory further through its finding that job based psychological ownership demonstrated positive relationships with organisational citizenship behaviours and negative relationship with employee turnover intent (H. Peng & Pierce, 2015). The extensions by a seminal author demonstrate the breadth of outcomes to be expanded on in the construct.

The potential negative consequences of psychological ownership have also gained focus, bringing balance to the analysis and providing additional dimensions to model for research. Organisational development practitioners should also consider in organisational design when managing or developing psychological ownership as behaviours like paternalism can result in supervisors intruding on the personal lives of their teams (Renz et al., 2022). The effect of the presence of psychological ownership during times of forced change such as with the proliferation of Hybrid Work for an organisation is key, given the backdrop of this study with high volatility and change.

Recent research into the negative effects of psychological ownership started with Cocieru et al. (2019) who conceptualised a model of the negative impacts of psychological ownership on employees during periods of significant change which impact the object of the psychological ownership, be it the job or the organisation.

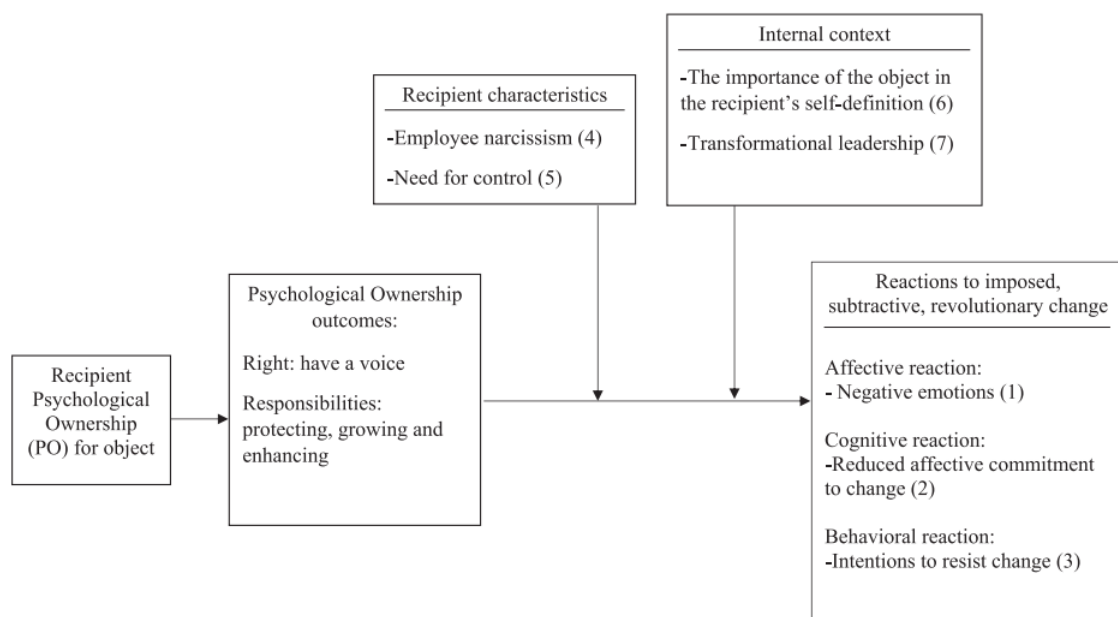


Figure 4 - Cocieru et al. (2019) model of negative outcomes of psychological ownership in specific circumstances of change.

Source: Cocieru et al. (2019)

The key area of change that results in negative reactions are the imposed and subtractive nature, which inflicts on the dimensions of psychological ownership, in particular territoriality, responsibility, and autonomy leading to resistance to change,

negative emotions and reduced affective commitment (Cocieru et al., 2019). The model is key due to the type of changes theorised in their similarity to both the impact of the Covid-19 pandemic in general as well as the longer-term changes as result of Hybrid Work, of which the empirical research is lacking across contexts post Hybrid Work.

Outside change, the negative impacts of psychological ownership are focussed on the outcomes linked to territoriality. Two studies across Chinese and UAE contexts focussed on knowledge hiding. Knowledge hiding was found to be positively impacted by territoriality and in turn resulted in further negative effects in the form of reduced task performance (Singh, 2019). Whilst the generalisability of these results are limited due to the UAE and financial services focus, they were then further backed up by a study in China focused on high-tech companies in which psychological ownership was found to moderate the relationship between knowledge leadership and knowledge hiding (Xiao et al., 2021). Recent research, in the *Journal of Applied Psychology*, examined the way in which job-based psychological ownership could either enhance or impair job performance, with a dependency on the employees' territoriality combined with regulatory focus. The research context in China was backed by a structural equation model on the sample size of 358. The context however remains a limitation to generalisability outside of China (Chen et al., 2023).

The increased focus on the balance required in managing psychological ownership has highlighted the dark side of the construct that was theorised based on its positive outcomes. This has contributed to theory in both directions as well as enhanced the effectiveness of practitioners. In particular, the impact of change, and the potential for knowledge hiding which may be enhanced in Hybrid Work due to the change in social interaction.

2.2.4. Organisational and collective psychological ownership development

The development of the organisational impacts of organisation-based psychological ownership has experienced increased focus compared to job based psychological ownership, driven by the organisation focus of seminal authors. Given the context of a rapidly changing global environment, resilience has been the subject of increased focus. In the area of organisational resilience and psychological ownership, a recent

study, backed by a theoretical model which included social support, was concluded (He et al., 2022). Tested using the Avey and Avolio (2009) Psychological Ownership Questionnaire for the psychological ownership component, the results of the study which took place in China found a direct relationship between psychological ownership and organisational resilience. The positive relationship was also found to be mediated by organisational identity. The pervasive psychological ownership of the organisation promoted unity and collaboration to increase organisation resilience. Whilst limited by context specificities, the findings emphasise the possibilities of the impact of psychological ownership on employee groups (He et al., 2022).

The role of psychological ownership in the turnover intentions of employees and the retention rates in organisations is also evolving. Within the context of mergers and acquisitions it has been modelled as positively affecting retention. Whilst moderated by loss of firm autonomy in the firm which was purchased, the potential for the construct in organisational design is expanding and further empirical testing is required (Degbey et al., 2021).

Psychological ownership has also been found to reduce negative organisational behaviours. In a study focussed on the impact of organisational justice on counterproductive work behaviour, a balance of psychological ownership combined with organisational embeddedness was found to moderate the impact on counterproductive work behaviours. Whilst the study is limited by a highly specific context due to its law enforcement respondents in Pakistan, it further evidences the reach of psychological ownership and complexities of its influence and management of its dimensions in organisations (Mehmood et al., 2023).

Whilst the initial dissemination of the theory was to the job and organisational level, a separate branch of psychological ownership, collective psychological ownership, research has assessed the potential for psychological ownership at the team-level (Giordano et al., 2020). The study confirmed that the theory has application at a team to team projects level and was distinct from other team behaviours such as identification. The study confirmed that positive behaviours such as product championing were maintained. The study demonstrated the applicability of

psychological ownership at various levels of the organisation rather than the standard focus on the job and organisation (Giordano et al., 2020).

The collective branch of psychological ownership is supported by the development of an instrument focussed on the branch by a seminal theorist and has since been supported as distinct branches of psychological ownership through empirical research (Martinaityte et al., 2020; Pierce et al., 2018). The pace of research in the branch has increased, and now includes comparisons between individual and collective psychological ownership and organisational behaviours such as organisation-based self-esteem, and responds to the gap identified in the empirical research for a focus on cultural impacts on psychological ownership (Dawkins et al., 2017; Renz et al., 2022). These extensions increase the potential organisation impact and reflect that psychological ownership in teams and projects can be impacted by changes in organisational contexts such as Hybrid Work and structure which can impact autonomy.

Studies across different management levels have been expressly noted as an area for further research, given the potential difference in psychological ownership within the same organisational structure due to the differing levels of control (Degbey et al., 2021). Progress has been made in this area, as Olckers and Booyesen (2021) validated measurement across generational differences in employees in the South Africa Psychological Ownership Questionnaire, leading to reliance on the questionnaire for comparison of psychological ownership across employee groupings.

Organisational leadership theories have also been linked with psychological ownership. Psychological ownership, found to be a moderator in the relationship between transformational leadership and work engagement, in addition to being a mediator between authentic leadership and employee voice in terms of speaking up to leaders. Whilst both studies were in east Asian contexts, the role of leaders in understanding the impact of their leadership style on employees and groups in organisations with elements of psychological ownership links to key dimensions of psychological ownership and is thus related to organisational success (Nurtjahjani et al., 2022; Xu et al., 2023). Upstream of the organisation, psychological ownership impacts the executive shareholder alignment, with executives interests aligning closer to shareholder interests whilst reducing fraud (Renz & Vogel, 2023).

Financially, psychological ownership arose from an analysis of the alternatives of equity ownership and employee share schemes that resulted in similar outcomes to equity ownership. Thus, the analysis of the financial implications of psychological ownership has been a gap in the research. This is mainly due to the difficulty in isolating the variable i.e., controlling the other variables and measuring psychological ownership vs financial outcomes only resulting in limited causality. A study by Torp and Nielsen (2018) however found that psychological ownership was positively related to return on assets in 500 Danish companies.

2.2.5. Conclusion

Psychological ownership has evolved over the last three decades with new branches theorised and tested through empirical research. Research has been focussed on organisational contexts and expanded to collective levels. The core dimensions which have developed and evolved now include autonomy which completes the ownership feeling dimensions. Increased research on the negative impacts has improved the balance in the theoretical discussion on the construct, in particular the impact during enforced change. Changes in autonomy and control are key to the focus of this study and underpin the research requirement given the changes due to Hybrid Work induced by the pandemic, as well as to extend the understanding of the autonomy dimension of psychological ownership further to the job and organisational autonomy level. In addition, the research has shifted from a western to eastern contextual bias, with research in the African, and specifically South African context, remaining limited to the efforts such as those shown in developing the South African instrument. The South African focus of this study therefore also addresses a broader requirement for wider research into cultural and contextual dynamics in psychological ownership.

2.3. Autonomy

Autonomy within the ambit of employees is separated into two areas which impact the employee's activities. The first is job-autonomy, specific to the individual's role, and the second is organisational autonomy, relating to the organisations decision-making capacity in different areas of the organisation. Autonomy is a dimension of psychological ownership that has been tested empirically in the past across western and eastern contexts, and has been the focus of studies in South Africa by

researchers who posited its inclusion as a distinct dimension of the construct, these studies focussed on overall autonomy, as compared to the split of autonomy areas in this study (Olckers & Booyesen, 2021; Olckers & du Plessis, 2012). Autonomy is also related to job and organisational design and is therefore expected to be impacted by Hybrid Work.

2.3.1. Job autonomy

2.3.1.1. Definition and evolution

An employee's role in an organisation is defined by the job allocated to the employee and comprise of the tasks required to be completed. The theorisation and application of Job-autonomy dates back to the definition by Hackman & Oldham (1975):

“Autonomy, The degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out.” (p.162)

Defined in the context of the job-diagnostic questionnaire, the definition encompasses the decision-making inherent to an individual completing a task. The definition has evolved with the conceptualisation of dimensions of job-autonomy. Four aspects of job autonomy were identified, i.e. work scheduling, decision-making, work methods and last but more relevant than ever with the emergence of Hybrid Work, locational (De Spiegelare et al., 2016; Morgeson & Humphrey, 2006).

2.3.1.2. Outcomes of job autonomy

Job-autonomy has been related to both positive psychological and organisational outcomes. In the psychological outcomes area, a broad study of 1502 public health care employees found that job-autonomy was positively related to vitality, the energetic feeling that is important for employees' psyche. Despite the context limitation to public sector respondents, the combination of survey and experimental study adds strength to the results (Tummers et al., 2018). The psychological outcomes linked to job-autonomy were extended when a non-linear relationship with psychological well-being was found in a study with high significance given its 4340 respondents across different job-groups. Whilst the results differed across job-groups, the addition of job-groups as a control variable demonstrated the level of

complexity in job-design, and therefore the optimal level of job-autonomy (Clausen et al., 2022). Related to psychological wellbeing, job-autonomy has also been found to be negatively related to employee burnout. Employee burnout due to changes in working conditions is a risk faced in job and organisation design and the relationship therefore contributes to the understanding practitioners can consider in the designing jobs (Guo et al., 2023). These recent studies demonstrate the significant psychological benefits associated with job-autonomy, and thus those at risk when job-design results in a change in job-autonomy.

In the relationship between organisational outcomes and job-autonomy, recent research related job-autonomy with job satisfaction, innovation performance and knowledge sharing. Changes to job-autonomy and job design are significant - in a similar way in which Hybrid Work has influenced job-design and autonomy, so too has the advent of the gig-economy. The differential in impact in the gig economy or part time work and full-time work was included in an analysis utilising fuzzy set qualitative comparative analysis. The 415 respondents in a Chinese context demonstrated a positive relationship, both in full and part time work, between job-autonomy and job satisfaction (J. Wu & Zhou, 2022). With changes in job-design where the level of distance between employees has changed such as in Hybrid work, where knowledge sharing is at risk, the relationship between job-autonomy and knowledge sharing intentions was confirmed as positive. The quantitative study was limited to China, and focused on technology companies, however the moderation relationship found demonstrated the importance of continuous extension of empirical research in job-autonomy as job and organisational design evolves (Y. Wu et al., 2023). In a similar study, the behaviour of knowledge hiding was also found to be negatively related to job-autonomy, thus confirming the strength of the relationship in both the preventative and promotive areas (Q. Peng et al., 2022). Job-autonomy is also a contributor to organisation capabilities and innovation performance is an attribute which organisations aim to improve Whilst job-autonomy has not been found to independently influence innovation performance, it is a key resource that must be used in combination to support innovation performance (Nande et al., 2022).

Whilst most studies reflect the positive impacts of job-autonomy, there are also negative impacts to consider. In the moderator role, job-autonomy was found to moderate the relationship identified between employee procrastination

and substandard quality of sleep. This finding reflects the employee and cultural specific nuances to be considered when determining the autonomy component of job design (Song et al., 2022).

2.3.1.3. Conclusion – job autonomy

Job-autonomy is a key dimension of job-design, and one which has far reaching implications on the employee as well as the organisation that the employee serves. With the inclusion of location autonomy as a dimension the link to Hybrid work, and the potential shift in the construct due to Hybrid Work, emphasises the research gap.

2.3.2. Organisational autonomy

2.3.2.1. Definition and comparison to job-autonomy

Within the employee context, the other form of autonomy which impacts employees is that of Organisational Autonomy. A key difference between job-autonomy and organisational autonomy is that organisational autonomy can occur at any level of unit-parent relationship and can present at any level above the individual, up to the entire organisation (Pugh et al., 1969). Organisational autonomy's role in directing the entities decision-making processes results in the level of organisational autonomy at different levels being a strategic decision as it influences the ability of units and the organisation as a whole to implement strategic actions (Arregle et al., 2023). Whilst theorised decades ago, many varied and contextual definitions of organisational autonomy have been applied, in addition to the definition by Wiedner and Mantere (2019), after a review of literature Arregle et al. (2023) proposed a synthesised definition:

“a unit's extent of actual collective decision rights over its resource orchestration decisions and actions vis-à-vis its parent organization which has the formal power to grant this autonomy.” (p.14)

2.3.2.2. Organisational autonomy variables

Organisational autonomy variables have been surmised over years of research to be the strategic autonomy to set direction and the operational autonomy to determine the daily activities carried out (Arregle et al., 2023). The strategic component of organisational autonomy relates to the decision making capacity whether at the unit

or organisational level to determine the strategic priorities such as which problems to address and which goals to pursue (Vera et al., 2016). Operational autonomy related to the manner which actions carried out in pursuit of goals or to address problems are completed (Das & Joshi, 2007). As organisational autonomy determines decision-making levels at organisations and units within organisation design, the psychological ownership of the organisation is expected to be affected when the organisational design is changed, as variables of psychological ownership such as self-efficacy and territoriality are impacted by the change in autonomy and related decision-making ability afforded to the employee and unit.

2.3.2.3. Outcomes and impacts of organisational autonomy.

Organisational autonomy is most commonly impacted by changes in organisational design. These changes can be induced by a restructuring, merger activity or due to a change in the context the organisation operates in. The manner and frequency of the changes can however impact the perceived and actual organisational autonomy of the organisation, as shown in public organisations when frequent and deep changes resulted in a perception of lower policy autonomy (Kleizen et al., 2018). Due to the ever changing business context, organisational autonomy is a dynamic and can change over time due to circumstances and differences in strategies. Significantly, it is also influenced by the relationships between management at different levels of units. From subsidiaries to parents and sub groups, the relationship between management can result in fluctuations in organisational autonomy (Dattée et al., 2022). In particular, the role of respect in the relationships between units in organisations was noted in two longitudinal qualitative case studies in the automobile and health care sectors, as being key during the interdependence period as well as during times of separation to obtain favourable results for both organisations (Dattée et al., 2022; Wiedner & Mantere, 2019).

Given increased geopolitical tensions in the global landscape, the level of organisational autonomy that multi-national companies allow their in-country offices has received increased focus. Whilst empirical testing has found organisational autonomy is positively related to performance, the level of organisational autonomy – performance relationship is relative to the dynamism needed in the operating market (Galli Geleilate et al., 2020). In the face of political attention, multi-national companies are now increasing the level of organisational autonomy afforded to

country operations to show independence from head office influence which could be in geopolitically sensitive locations (Meyer & Li, 2022). The level of organisational autonomy in parent subsidiary relationships has also been the subject of debate, as the lines of where one unit starts and ends have been removed, due to globalisation and cross-national integration. However, whilst some researchers' focus has shifted to structures and work organisation rather than parent subsidiary relationships, others have argued that the subsidiary concept remains relevant as the complexities of globalised structures require further research and understanding within the construct of subsidiary relationships, potentially shifting the organisational autonomy level from geographical to functional (Andrews et al., 2023; Edwards et al., 2022).

2.3.2.4. Conclusion Organisational autonomy

Organisational autonomy's relevance to the employee and position within the autonomy dimension of psychological ownership is key to the organisational branch of psychological ownership. The roots of ownership feelings begin with control and autonomy, or the ability to direct and influence. Whilst both variables of autonomy impact employees, balance is required in embedding the level of autonomy which supports psychological ownership feelings for the organisation. This balance may differ based on role which determines whether a more strategic or operational focus is required for the employee.

2.4. Organisational structure

2.4.1. Theoretical background

Organisational structures have traversed time and evolved before being recognised as a focus area as the world industrialised, globalised and internet-connected business structures came into focus. Preeminent researchers in the field, such as Galbraith (1982), Malone (1988) and Mintzberg (1980) modelled organisational structures in their works on organisational development and design, interlinking the structure with information flows and technology design. Organisational structures have evolved from the functional basis, through product-based structures to inter-linked matrix structures (Cummings & Worley, 2015).

2.4.2. Theoretical evolution

As the environment in which organisations operate in has increased in complexity so too has the organisational design, which is fit for that environment, and thus the organisational structure. New types of structures such as meta-organisations relook at the relationship between units of the organisation as a system regardless of employment. These meta-organisations create new relationships between the parties in the organisation with mutual dependence rather than legal agreement but can result in divergent cultures and values (Gulati et al., 2012; Joseph & Gaba, 2020). The complexity of organisational structure is driven further by the specialisation of business models. As new organisations innovate in business models and identify niches or unique positioning, the related structure which suites that element of the value chain is adapted whilst new technology allows for integration out of the organisation into structures in other elements of the value chain (Fjeldstad & Snow, 2018).

Contradictory to organisational structure practises, it has been proposed that regardless of the organisation's structural form, the networks within the organisation form the basis of organisational interaction and thus argue in favour of pure self-organisation. This was contradicted in a study that found that a formal structure, even if not of ideal fit for the organisation, provided a direction for searching out employees with the requisite knowledge or information. Failing this, the lack of direction and organisation would hamper the search for that knowledge (Clement & Puranam, 2018). However, recent studies have found that whilst formal structure changes may impact reporting lines and formal information flows, informal communication lines remain resilient as it was found that senior employees remain central communication figures regardless of changes. Promotions increased centrality however demotions did not impact communication centrality. This demonstrates the flexibility and organic adjustments that take place in informal communication network structures within organisations (Maurer et al., 2023). These relationships can however be used together, as the combination of both formal and informal structures can improve social relationships and thus reduce blocks to interaction across the organisation (Hunter et al., 2020).

Based on the change in life cycle of the organisation, structures must evolve. The early structure of a startup is vital due to their high failure rates. Whilst startup

organisations are predominantly informal in structure and can lack coordination, it has been proposed that even in early startups, a level of flexible structure and coordination can be developed by leveraging off learning styles (Jones & Schou, 2023). This demonstrates the evolution of organisational structures over time to not only cater for business models but also life cycles of organisations.

Organisational structures can influence and determine the synthesis of information flows which are key for executives' decision making. Whilst functional and divisional structures have long been applied in organisational design, their impact on executives continues to be studied. A secondary data longitudinal study focussed on S&P500 firms found that functional structures increased the gap in the perceived competitive environment compared to those based on objective information for chief executive offices as compared to divisional structures. The study demonstrated the manner in which information flows and perception can be influenced by organisational structure and impact management decision making (Junge et al., 2023).

2.4.3. Organisational structure and autonomy

Whilst decision-making processes are theoretically developed as part of the management practise design component, the organisational structure developed aside from the management practise often determines the practical reality of the decision-making hierarchy and process and thus, decision-making ability and levels should be considered in the development of structures (Piezunka & Schilke, 2023). This as individual's behaviour is firmly woven into decision-making processes and structures. As such, job and organisational autonomy are linked to organisational structures due to the impact on decision-making both levels. The organisational structure and inherent organisational autonomy are pervasive across the organisation and are thus expected to impact psychological ownership of the organisation not only directly but indirectly as the organisational autonomy overrides the job-level autonomy through its wider limitations.

2.4.4. Organisational structure conclusion

Organisational structures are one component of organisational design, but the structure has far reaching implications for the organisation and its employees. Whilst evolving over time, the impact on communication, information flows, perception and

autonomy intersects with employees and can result in a differential in autonomy and thus autonomy as a dimension of psychological ownership.

2.5. Hybrid Work

Whilst hybrid Work existed prior to the Covid-19 pandemic, it never had the broad applications which were brought upon by the pandemic which accelerated the adoption of Hybrid Work in a short space of time. Following the end of the pandemic, ways of work policies have continued to evolve, with some organisations having reverted to their previous policies, and some adopting new policies to continue to embrace an element of Hybrid Work and increased flexibility. Whilst research in Hybrid Work was scarce prior to the Covid-19 pandemic, since the pandemic a large influx of research across qualitative and quantitative studies have emerged across contexts to contribute to the construct.

2.5.1. Covid-19 Hybrid Work transformation

The Covid-19 pandemic spurred multi-decade growth in Hybrid Work in just months, with 42% of the US labour force working from home as of June 2020. Post-pandemic some of that growth has reversed as lockdowns eased and certain companies returned to office-based working. However, many took a more nuanced view, opting to remain remote and support employees or to embrace the hybrid model through a mix of days in the office and at home (Gratton, 2021; Hirsch, 2021; Wong, 2020). This reversion and increased balance is further backed by a World Bank Study which found that in developed nations, the requirements of 20% of jobs can be completed from home, whilst the impact of connectivity reduced this to just 3.8% in low-income countries (Garrote Sanchez et al., 2021).

Companies and employees were ill prepared for the transition to Hybrid Work being induced by the pandemic. Combined with the pandemic stressors, the conditions for Hybrid Work were not ideal (Wang et al., 2021). Stresses faced by professionals during lockdown-induced Hybrid Work included reduced work performance, the social stigma of infection with Covid-19 and the potential for job loss due to the economic impact of the pandemic (Srivastava et al., 2022). The impact on workstation users was found to be a decrease in physical and mental health, noting an increase in the volume of issues across the health spectrum (Xiao et al., 2021).

Due to the inability to prepare for it, family distraction factors influenced job performance during the Covid-19 induced Hybrid Work (P. Kumar et al., 2021).

Despite these stresses, studies have found that employees with a health focus still preferred Hybrid Work, and that preference was strengthened by enhanced flexibility and work-life balance (Sampat et al., 2022). Given the lack of preparation for Hybrid Work there is a significant focus on the effects of Hybrid Work; studies have found that the impact of Hybrid Work on the volume of work completed is linked to the level of experience of the employee and the type of function being carried out (N. Kumar et al., 2023). A mixed methods study by Wang et al. (2021) found that certain Hybrid Work challenges, such as loneliness, can be mitigated through work design characteristics like job autonomy. Measurement scale development has begun to measure the level of stress as a result of Hybrid Work amongst professionals to enable practitioners and researchers alike to further understand the relationship (Srivastava et al., 2022). Employee preference for work from home varies based on internal and external factors; individual specific factors such as the job; and characteristics of the employee, for example, age and work commute time; and organisational factors such as the specific Hybrid Work policy (Smite et al., 2023). The extension of individual specific factors has included research which found that employees that are defined as “workaholics” combined with highly meaningful work may be negatively impacted by Hybrid Work resulting in a lack of work-life balance and higher job stresses (Magrizos et al., 2023).

Within organisations, the change in organisational design to adopt Hybrid Work resulted in fears of a loss or change in organisational culture. Research has responded with the Harvard Business Review suggesting that culture can be maintained in Hybrid Work by utilising the work task themselves to disseminate culture rather than the office; to target emotional proximity over office proximity and lastly to support microculture development by letting go of some aspects of control (S. Liu, 2022). This was followed by empirical research in 2023 that found that dimensions such as organisational commitment and employee motivation influences Hybrid Work culture which in turn impacts job satisfaction (Mandal et al., 2023). Within culture, the permeation of network effects and structures was studied and it was identified that focusing on context specific culture within clusters can result in a contagious spread of the culture embedded within the cluster, highlighting the

importance and reach of networks across Hybrid Work boundaries (Arena et al., 2023)

Whilst the short term impacts of Hybrid Work are beginning to emerge, the longer term impacts are not yet known. A recent study in the UK however identified that whilst Hybrid Work may lead to achieving work related goals, well-being and long term career success can be prejudiced (Unger et al., 2023).

Hybrid Work research is in the infancy of its evolution given the recency of its accelerated adoption. In South Africa a qualitative study found that Hybrid Work whilst associated with positive traits in some employees such as improved productivity, flexibility and wellbeing, can also result in negative impacts in others, for example, higher stress, distraction and feelings of isolation (De Klerk et al., 2021). This study demonstrates the dichotomy of outcomes and impacts on employees, which is more context than region dependent but requires further understanding of its psychological impact on sought after organisational and individual outcomes. This was confirmed in a further South African study, which reflected that aside from internal factors there are also external factors such as power supply and web connectivity which can influence Hybrid Work experiences (Matli, 2020).

2.5.2. Hybrid work, autonomy, structure and psychological ownership

What has become clear is that many companies will never fully return to the prior way of working. Thus, it is imperative to understand how Hybrid Work will impact facets of the organisation and its effectiveness, including employees' psychological ownership of the organisation. It has been proposed that practitioners in the human resource development area consider an inclusive, and customised approach which increases autonomy to allow for individuals to manage their engagement (Pass & Ridgway, 2022). The appropriateness of the organisational and job design has already been shown to have a positive impact on desired outcomes such as job-satisfaction and efficiency, thus evidencing the need to understand how to achieve these outcomes and the impact on constructs such as psychological ownership, and types of autonomy (Rožman & Čančer, 2022). Job-autonomy has been identified as a job-design characteristic impacting Hybrid Work, whilst being moderated by the self-discipline of the employee. This reflects the relationship and further potential for impacts on psychological ownership (Wang et al., 2021).

3. Research hypotheses

3.1. Research questions and hypotheses

Psychological ownership has developed over time to be a distinct and key construct in understanding the psyche of employees and the impact of ownership feelings. The expansion of the construct dimensions to include autonomy reflects the natural progression as the ownership feelings are researched and disaggregated into components. Extensive and comprehensive empirical research reinforces the presence of both favourable and potential adverse consequences stemming from psychological ownership amongst employees. This is combined with the context of evolution in organisation and job design because of changes in organisational contexts, technology and Hybrid Work. The changes in design extend from structures to specific job design elements which impact both autonomy at the job level and the organisational level. Based on this change, the relationships between psychological ownership and autonomy in the context of the adoption of Hybrid Work must be understood. Whilst studies prior have tested the relationship of autonomy and psychological ownership, they have not extended into the two areas of autonomy which impact employees to understand their potential difference in relationship and the components of autonomy which may have a larger impact than others (Mayhew et al., 2007; Olckers, 2013). Given the changes at both organisational and job level for the employee, this relationship should be understood at these same levels to enable adequate understanding for theory and enable response in practise Thus, the previously identified positive relationship between autonomy is extended and split to assess the relationship at a job and organisational autonomy level post Hybrid Work.

H1: Increased job autonomy increases psychological ownership of the organisation.

Due to the context of changes in job-design in the context of Hybrid work, increased job-autonomy is expected, thus the hypothesis that the relationship between job autonomy and psychological ownership of the organisation is positive.

H2: Increased organisational autonomy increases psychological ownership of the organisation.

In the context of organisational redesign to adapt to Hybrid Work and a new global multi-national context, it is hypothesised that organisational autonomy is positively related to psychological ownership of the organisation in the context of Hybrid Work and the new organisational structures given the change in multi-national and geopolitical context.

H3: Organisational autonomy moderates job autonomy and Psychological Ownership

Due to the level of operational organisational autonomy, as implied in the organisational structure and overall organisational design, impacting management's ability to direct job design, as well as influence the policies and processes of the business, it is hypothesised that the level of organisational autonomy will moderate job autonomy within a Hybrid Work context.

H4: Hybrid Work significantly influences psychological ownership

The adoption of Hybrid Work has resulted in changes across job and organisational design, which influence psychological ownership, thus Hybrid Work has an influence on psychological ownership.

3.2. Conclusion

The relationships hypothesised above have previously been tested by authors such as Mayhew et al. (2007) and Olckers (2013), however the evolution of the organisational and job context due to Hybrid Work, as well as the large focus on empirical research in the field based first in western countries and recently in China, results in the requirement to understand the current relationships in South Africa, given the adoption of Hybrid Work.

4. Research methodology and Design

4.1. Introduction

This chapter elaborates on the research methodology applied in this study to test the hypothesis determined in chapter 3. The chapter begins with the design and philosophy of the study, followed by the details of the population, sampling and unit of analysis. There after the data gathering process and measurement instrument is detailed, followed by the details of the analysis approach and the controls applied. Lastly the limitations inherent in the study are detailed.

4.2. Research philosophy, design, and approach

The research philosophy of a study is determined by the nature and intent of the researcher and research questions given the nature and development of knowledge the research targets (Saunders & Lewis, 2018). This study was intended to determine the relationship between observed variables rather than theorise further theoretical development and is thus a positivist research philosophy (Rahi, 2017). The positivist philosophy is because of the aim of objectively testing the cause-and-effect relationships between organisational-based psychological ownership, job and organisational autonomy and Hybrid Work (Saunders & Lewis, 2018).

Thus, the research design is descriptive as it describes the characteristics of the individuals who respond to the study and their characteristics. This was guided by the research questions and will inform the details of the design components (Saunders & Lewis, 2018).

The study is based on specific hypotheses, which have been developed based on the theory reviewed in chapter 2. These hypotheses represent expectations deduced from general related theory, and are in line with the definition of deduction by Babbie (2016); i.e. "The logical model in which specific expectations of hypotheses are developed on the basis of general principles" p.24, the study follows a deductive research approach.

To achieve this, the study verified the relationship between the two variables of job and organisational autonomy; psychological ownership at an organisational level; the relationship between job and organisational autonomy and the relationship

between Hybrid Work and Psychological ownership. The nature of the relationships between the constructs in terms of mediation and moderation were also assessed.

The selection of a quantitative approach is in line with the positivist and deductive approaches and current studies of psychological ownership and autonomy (Saunders & Lewis, 2018; Singh, 2019; Song et al., 2022; Xiao et al., 2021).

4.3. Methodological choice

A mono methodological choice will be applied in the form of a quantitative study, whilst a restriction of the mini-dissertation is also the most suitable given the research question, which seeks to measure the impact of variables on organisational-based psychological ownership. Quantitative research involves the numerical-based analysis of relationships between variables and is thus aligned with the research purpose and questions as it aims to assess the single truth that exists (Saunders & Lewis, 2018; Slevitch, 2011).

4.4. Research strategy

In assessing the relationship, the focus is on the organisation's employees. To collect this data, a survey strategy has been selected for its alignment with the timescale of the study for faster data collection, as well as its low cost to accuracy ratio (Zikmund et al., 2013). A survey questionnaire instrument was applied. The use of the survey questionnaire, which is suited for the deductive approach, will also allow the research to reach a larger audience of employees and thus increase the generalisability of the research by increasing reach and reducing potential concentration of responses (Saunders & Lewis, 2018).

4.5. Time dimension

A cross-sectional study was assessed as appropriate given the time scale of the study. The study collection was completed between 11th of August 2023 and 9th of September 2023. The cross-sectional selection is also aligned with recent studies across constructs (He et al., 2022; Sampat et al., 2022; J. Wu & Zhou, 2022).

4.6. Population

Based on the focus on the employee within organisational structures, the population was defined as employees in companies that have a formal structure. This formal positioning of the employee within their job and the organisations structures allowed for sufficient exposure to those who have elements of job and organisational design influencing their psychological ownership. Employees from firms of all sizes were targeted, with firm size being a control variable. This is because the level of psychological ownership and the autonomy constructs are expected to be related to firm size because the organisational distance between employees is reduced. Due to the broad array of organisations with formal structures and employees it is impossible to define the full population. This is considered in both the sampling technique selection and the sample size targeted.

4.7. Unit of analysis

The unit of analysis or the subject of the study, is determined by analysis of the research questions or hypothesis, defined by Babbie (2016) as “The what or who being studied.”. The selection of the employee as the unit of analysis is in line with the research purpose, which is to understand the impact on employees despite the changes in autonomy at both levels and how they impact organisational-based psychological ownership. Whilst the inclusion of organisation focussed constructs places emphasis on an organisational level, the study aims to add additional value by supplementing the research outcomes across constructs in the South African context. An individual level analysis provides enhanced insight across the regional boundary as compared to an organisational specific focus. The unit of analysis is therefore appropriate for the research purpose and in line with recent psychological ownership and social science studies (Babbie, 2016; Lee & Kim, 2021; Olckers & Booyesen, 2021).

4.8. Sampling technique and size

As noted above, due to the broad nature of the potential population, and the lack of limitations inherent in the research purpose and hypothesis, a population figure cannot be reliably quantified. In these instances a non-probability sampling technique was appropriate (Saunders & Lewis, 2018). The selection of non-probability instead of further consideration of probability-based sampling is also based on the cost and timing limitations with respect to the study, which require a

trade-off to meet the requirements and the aim of achieving a larger scale in respondents in an economical and timely manner (Zikmund et al., 2013). Three forms of non-probability were applied, with an aim to increase response and reach.

The first sampling method employed was purposive sampling. This involved identifying individuals within the researcher's own network, including fellow researchers, colleagues, and those from social circles who are employees at formal organisations, thus warranting inclusion (Taherdoost, 2016). Individuals were identified from class lists, and the researcher's contact lists. Identified individuals were asked to participate in the study via message.

A secondary convenience sampling method was applied, which involved the inclusion of individuals who were ready and available. This included family members, work colleges and members of WhatsApp and Telegram groups who met the requirements to participate in the study (Taherdoost, 2016). The search for respondents was extended to social media - a questionnaire link explaining the background of the research being conducted and an appeal to participate was shared across social media platforms, including LinkedIn, WhatsApp, Facebook and X (Formerly Twitter).

Lastly, snowball sampling technique was also be applied to increase the reach of the research. This was effective given that purposively sampled individuals would have a network of colleagues who would be appropriate participants. Snowball sampling is a recognised approach to reaching populations without public knowledge due to confidentiality (Parker et al., 2019). The use of social media also improved the capacity of snowball sampling to increase sample size and reach through resharing, reposting, "liking" and commenting on the convenience sampling posts.

Whilst the use of non-probability sampling does introduce selection bias risk, which results in the sample differing from the general characteristics of the population, mitigations such as the use of purposive sampling, general social media platforms; and statistical adjustment reduces this risk from negatively impacting the study (Baker et al., 2013).

To achieve generalisability and high-quality analysis in the quantitative field, the sample size must be appropriate. Based on the broad and material impacts of the constructs in the study, the effect size of the constructs is expected to be large, and thus larger sample sizes may be of limited statistical significance. In these instances, sample sizes of 100 have been suggested to be appropriate (Hair et al., 2009). This sample size is aligned to Tabachnick et al. (2013) which suggested minimum formula of $50+8x$ Number of independent variables for multiple regression testing, in this case resulting in a minimum of 58 which was further backed by a suggested minimum of 50 for relationship testing (Wilson Van Voorhis & Morgan, 2007). Based on these principles, with the intent of improving the power of the sample in the study, a minimum of 120 respondents was targeted. In the time scale, a total of 153 responses were recorded, i.e., 33 more than the target and theoretical supported minimum requirements.

4.9. Measurement instrument and Data gathering process.

As noted, an online questionnaire was be utilised within the survey method. Specifically, due to the broad spectrum of participants based on the lack of limitation of geography, to increase potential reach, a questionnaire to be completed by the participant online was appropriate so that participants could complete the survey without face-to-face or time-specific constraints. An online questionnaire was key to reaching employees who may be in a Hybrid Work environment (N. Kumar et al., 2023).

Questions were based on previously validated questionnaires in line with the requirements mini thesis-thesis. The first construct of Psychological Ownership was tested through the utilisation of the Psychological Ownership Questionnaire developed by Avey and Avolio (2009). The questionnaire is aligned to the dimensions and areas of psychological ownership which Avey and Avolio (2009) posited and tested in their seminal study and thus covers both preventative and promotive segments in a single Likert scale measured questionnaire numbering 16 items which had demonstrated excellent reliability and validity in a recent study (He et al., 2022).

This was combined with the job autonomy related extract of the Work Design Questionnaire by Morgeson and Humphrey (2006). The operational organisational autonomy question set of Das and Joshi (2007) and strategic organisational

autonomy scale of Bedi (2020). The questionnaires were assessed for reliability and relevance to the research purpose and include criteria such as the type of Likert scale applied; the order of questions and the specificity of the quantifiers (Lietz, 2010). The questionnaire included the required informed consent and confidentiality disclosures as well as a background to the study. Completed in Google forms, special attention was placed on user friendly experience on mobile, i.e., the primary interface used by respondents. An extract of the questionnaire is included in Appendix B

Post-completion of ethical clearance, a questionnaire pilot was completed to test for ambiguity (Sampat et al., 2022). Refer to the Appendix B, which includes the questionnaire extract.

4.10. Ethical clearance

The required institutional ethical clearance process was completed and obtained prior to pre-testing and distribution of the survey. The ethical clearance notification is included in Appendix D.

In line with best practices and ethical requirements, the confidentiality and anonymity of the respondents was maintained, and only aggregated data was analysed and included in the study outcomes. Data security and backups are maintained by two forms of cloud storage, in addition to offline storage, to ensure that the required retention period of 10 years is achieved. The raw data set was also submitted to the university per submission requirements.

4.11. Data transformation and coding

Post closure of the survey, the data set was downloaded from the Google forms output and multiple copies made of the original data before any transformation was performed. The aim of the first transformation was to assess for missing data. As all but one control variable question was required, no missing inputs were identified. One control variable question, relating to the number of days worked at the office, contained a free text response field and was thus adjusted for consistency to be a numeric value only. Where a range was provided by the respondent the upper end of the range was applied for consistency. There after coding was applied, with

questions being assigned alphanumeric keys, Likert scale numbers, and control variable responses numbers.

Table 1 - Extract of code book, generated by author.

c7	Code	c8	Code	Lickert	Code
Employee Share Options or Similar	1	Hybrid work	1	1 - Strongly disagree	1
None	2	Office/Central location	2	2 - Disagree	2
Shares	3	Work from home	3	3 - Neither Agree nor Disagree	3
				4 - Agree	4
				5 - Strongly agree	5

The full code book is included in Appendix C.

One question was identified for reverse coding in relation to operational organisational autonomy, due to it being phrased in the negative. The codes were applied via lookup formulas to the data set and manually validated via a sample to ensure correct application.

4.12. Analysis approach and quality controls

Once coded a multifaced data analysis was applied, through IBM SPSS v29 (“SPSS”) with the addition of Hayes Process Model for moderation testing.. Post loading to SPSS, the next step was to analyse the descriptive statistics of the sample and control variables to understand the characteristics of the sample obtained and identify any potential control areas to be filtered in order to reduce bias and ensure respondents had characteristics appropriate to the study.

Thereafter, the first step of inferential analysis was to assess the reliability and validity of the measurements against their intended constructs, to ensure that the analysis of the data was not based on data which did not relate to the constructs intended for testing or data which may not be free from error and thus repeatable (Dawson, 2023). These quality checks are vital to the strength and validity of the study (Köhler et al., 2017).

Reliability was tested through an internal consistency method wherein the correlation of measures against a construct were assessed. Cronbach’s Alpha was utilised to assess the sum of the measures internal correlations and thus assess the internal consistency at a construct level and was applied across a board spectrum (Bonett & Wright, 2015). The test for Job Autonomy, Organisational Autonomy and

Psychological Ownership was completed in IBM SPSS. Cronbach's Alpha results range between 0 and 1, with higher results indicating higher acceptance. The result was assessed at a total level and individual measures impact on the result were assessed in cases where exclusion of the measure could improve the result of the construct as the measure is reducing the reliability of the overall outcome. The result was assessed against a threshold of 0.7, i.e. the suggested minimum for the statistical test (Dawson, 2023; Hair et al., 2009).

The validity of the construct was then tested using two methods. The first was a correlation analysis of each measure within a construct against an item total score of the construct's measures, analysed through a bivariate Pearson's correlation in IBM SPSS. The correlations were assessed individually to test the validity of the construct through analysing the correlation of each measure assigned to a construct against the item total score, providing evidence of convergent validity (Swank & Mullen, 2017). In this test, two statistics are evaluated, the p-value, which is tested to a 95% confidence interval, and the Pearson's correlation r value, in which scores above 0.5 are considered highly favourable and scores below 0.3 are considered unacceptable (Swank & Mullen, 2017).

The second method of validity analysis is through the utilisation of factor analysis. Factor analysis also allows for a reduction of measures, by reducing the measures to revised groupings which can be tested statistically rather than a test of each measure (Finch, 2023). Two forms of factor analysis can be applied, firstly, given the known groupings of measures against constructs due to the use of validated questionnaires a series of Confirmatory Factor Analysis ("CFA") could be completed (Srivastava et al., 2022). However, CFA requires large sample sizes for model testing. Where sample sizes are smaller than 200 items it has shown to potentially reject models incorrectly. Exploratory Factor Analysis ("EFA") was therefore utilised to assess validity and for data reduction as EFA can be effective on samples as small as 50 items, given the low number of variables and the high volume of observations per variable at a sample size of 153 (Hair et al., 2009). Within EFA the two statistical indicators assessed for validity of the EFA model were the Kaiser-Meyer-Olkin ("KMO") test and the Bartlett's test of sphericity. The acceptable threshold for KMO set at 0.6 and for Bartlett's test of sphericity a p-

value of <0.05 , in line with the 95% significance applied across this study (Dawson, 2023; Watkins, 2018).

Once completed, the factor correlation was assessed. Measures with no correlation to other measures greater than 0.3 were assessed to decide if exclusion was necessary. Once measures were loaded, any factor with a single measure were excluded to avoid single item analysis. Thereafter the new factors were named and scores across responses averaged for the measures that loaded to the factor.

With the descriptive statistics of the sample, the reliability and validity of the measures assessed for each construct; and the factor reduction process completed, the next analysis was the testing of the hypothesis. The statistical tests preferred were Pearson's correlations and multiple regression analysis, Hayes Process Model's and ANOVA. These tests were selected due to the fit for the hypothesis in measuring relationships and the direction of relationships between constructs, as well as the fitness for the sample size of 153 which is not suitable for other tests such as structural equation modelling. However, post EFA completion it was identified that the psychological ownership construct, the hypothesised dependent variable, loaded on four factors aligned to the dimensions of psychological ownership, and thus multiple linear regression analysis was not appropriate for the study as there were multiple dependent variables. The hypothesis testing was therefore based on the Pearson's correlation test. To test the moderation relationship hypothesised in Hypothesis 3, a Hayes Process Model 2 test was conducted. Due to the nature of Hypothesis four, it requires a test for difference between three groups, thus an ANOVA analysis was utilised to test the difference on measures of psychological ownership due to differences in work arrangement.

Pearson's correlation was selected due to the fit of the product moment correlation type to linear regression and the association of variables tested in the hypothesis of the study as it only measures linear relationships (Kraemer & Blasey, 2017; Tabachnick et al., 2013). Whilst Pearson's correlation is associated with the requirement of a normally distributed dataset, it has been found not to be sensitive to non-normally distributed data nor differences in scale compared to the assumed continuous scale data (Havlicek & Peterson, 1976). Due to the lack of sensitivity to non-normally distributed data, combined with the limitations of non-parametric

alternatives, Pearson's correlation was preferred. Results range from -1 to 1, representing the movement from a negative to positive relationship (Wagner, 2020). Consistent with the rest of the study, a 95% confidence interval as utilised in assessing the statistical significance of the results of the Pearson's correlation.

Multiple regression analysis was selected for hypothesis three due to its test of moderation relationships, however centring is required to reduce the impact of multicollinearity on regression coefficients. The analysis will require creation of interaction terms between the components that are created, and subsequently regression analysis run between the interaction terms and the components of the dependent variable being psychological ownership (Tabachnick et al., 2013). Whilst Multiple regression tests are associated with assumptions of normal distributions of errors, due to the larger sample size than the minimum, and the increased sample compared to the target, this is mitigated and is not expected to impact results (Williams et al., 2013). To simplify the moderation test, Hayes Process Macro will be utilised in SPSS due to its standard moderation model that allows for multiple types of models.

The ANOVA analysis is based on the F distribution and is associated with normally distributed data. However, the sensitivity of its results in analysis of non-normal data is low, and thus is still an appropriate test for the study despite the sample not representing a normal distribution due to its size (Blanca et al., 2017). The analysis of the normality of the data for this test was assessed using the Levene statistic and based on the result the appropriate post hoc analysis was completed. Consistent with the other statistical tests in the study, significance in Levene's test and the ANOVA model fit was based on a 95% confidence interval.

4.13. Control Variables

Within positivist studies, control variables are used to assess the impact of these variables on the relationships hypothesised (Babones, 2016). Control variables include organisation size, job level as this may create a differential due to the level of control, organisational structure type as this would influence the level of autonomy, and organisational type, as there may be differentials between non-profits, private businesses, and public entities. In addition, organisational tenure would be controlled to assess the impact of long service periods on psychological ownership,

organisational age as psychological ownership is developed over a period of time, ownership as equity ownership may have overlap with psychological ownership outcomes and lastly the type of workplace, hybrid, work from home or office-based working.

4.14. Limitations

The first limitation is due to the recency of the increase in Hybrid Work. There are still changes taking place with some employers changing the level of Hybrid work, thus, the current impact of Hybrid Work in the cross-sectional study may evolve. The second limitation is that of common method bias, where in the questionnaire respondents respond in a different manner due to the purpose of the study (Podsakoff et al., 2003; Sampat et al., 2022). The use of validated questionnaires and questionnaire pilots has partially mitigated the possibility of common method bias. The next limitation is with regard to the use of purposive sampling in combination with snowball sampling which results in the possibility of reduced generalisability as the respondents are likely to be similar to those who referred them to the research and thus may create a pool of similar responses (Saunders & Lewis, 2018).

The use of an English-standardised online questionnaire introduces multiple limitations, whilst the sampling methods would target participants with English first language, target employees are not limited to these, and the risk of misunderstanding due to language differences exists, even across English-speaking cultures.

The nature of online questionnaires results in a one-sided interaction, with the responses being received in a flat format with no interaction. This limits the researcher's ability to assess the participants' understanding of the intention of the research, and gain access to knowledge on the background of the participant that may be relevant to the research and is not provided within the questionnaire. Thus, context that may result in outliers and anomalies cannot be isolated and understood in terms of the root cause.

4.15. Conclusion

The study has been completed based on the methodology detailed in this chapter, a summary of key methodological selections is summarised below.

Table 2 - Methodology summary, generated by author.

Methodology	Selection
Philosophy	Positivist
Approach	Deductive
Methodological choice	Mono-method quantitative
Strategy	Survey
Time Horizon	Cross-sectional
Population	Formally employed
Unit of analysis	Individuals
Sampling	Purposive and snowball, 120 responses targeted, 153 responses received.
Measurement	Psychological Ownership Questionnaire, Work design questionnaire, Das and Joshi, and Bedi
Quality Controls	Reliability - Cronbach's alpha Validity - Bivariate Item-total correlation and EFA
Data Analysis	Pearsons's correlation and ANOVA
Limitations	- Cross sectional - Common methods - Snowball sampling bias - Online questionnaire lack of interaction

5. Findings and results

5.1. Introduction

Chapter 5 details findings and the results of the study and the statistical outcomes of the analysis completed. The chapter begins reliability and validity analysis of each construct, and thereafter the statistical analysis of each hypothesis is presented.

5.2. Validity and reliability

5.2.1. Job-autonomy reliability and validity

The first validity assessment is the bivariate Pearson's correlation of the construct item totals, the results of the output from IBM SPSS are presented below.

Table 3 - Pearson's's correlation of Job-Autonomy including item total, extracted from IBM SPSS, summarised and maximum calculated by author.

Pearsons Correlation Matrix - Job Autonomy										
	j1	j2	j3	j4	j5	j6	j7	j8	j9	j_total
j1	1	.549**	.535**	.595**	.483**	.393**	.411**	.586**	.461**	.751**
j2	.549**	1	.683**	.490**	.446**	.406**	.389**	.413**	.392**	.705**
j3	.535**	.683**	1	.628**	.465**	.464**	.376**	.432**	.364**	.717**
j4	.595**	.490**	.628**	1	.682**	.631**	.497**	.567**	.467**	.808**
j5	.483**	.446**	.465**	.682**	1	.726**	.602**	.597**	.511**	.812**
j6	.393**	.406**	.464**	.631**	.726**	1	.469**	.571**	.450**	.751**
j7	.411**	.389**	.376**	.497**	.602**	.469**	1	.692**	.553**	.731**
j8	.586**	.413**	.432**	.567**	.597**	.571**	.692**	1	.691**	.816**
j9	.461**	.392**	.364**	.467**	.511**	.450**	.553**	.691**	1	.711**
j_total	.751**	.705**	.717**	.808**	.812**	.751**	.731**	.816**	.711**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the above all measures demonstrating a statistically significant correlation with the item total the test for validity is passed and the scale is a valid measure of Job-autonomy.

The next validity analysis is the EFA for Job-autonomy. The results of the KMO and Bartlett's test of sphericity is presented in the table below for the job-autonomy construct.

Table 4 – KMO and Bartlett’s Test of Sphericity of Job-Autonomy extracted from IBM SPSS.

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.867
Bartlett’s Test of Sphericity	Sig.	0.000

Based on the results, the KMO is above the threshold of 0.6, and is regarded as meritorious, whilst the significance of the Bartlett’s Test of Sphericity is within the required 95% confidence level (Beavers et al., 2013). In addition, all items demonstrated a correlation greater than 0.3 with at least one other measure. As the pre-tests for EFA are met, the factor analysis can be completed for Job-Autonomy.

The factor analysis completed is based on principle components. For the analysis an eigenvalue one was utilised to determine the number of factors to be assessed for representation.

Table 5 - Job-autonomy Eigenvalue 1 results, extracted from IBM SPSS.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.166	57.405	57.405	5.166	57.405	57.405	3.472	38.575	38.575
2	1.034	11.487	68.892	1.034	11.487	68.892	2.729	30.317	68.892
3	0.757	8.414	77.306						
4	0.515	5.723	83.029						
5	0.443	4.919	87.948						
6	0.365	4.054	92.002						
7	0.306	3.403	95.405						
8	0.223	2.478	97.883						
9	0.191	2.117	100.000						

Based on the eigenvalue one, the job-autonomy construct is expected to be represented by two components. The EFA was completed based on the rotated component matrix, items were allocated to components based on their highest loading. Components were then named and items summarised to a component level in IBM SPSS for statistical analysis.

Table 6 - Job-autonomy rotated component matrix, extracted from IBM SPSS, loadings, and component naming by author.

Rotated Component Matrix			
	Component		Component loaded
	1	2	
j1	0.406	0.658	2
j2	0.199	0.838	2
j3	0.212	0.870	2
j4	0.550	0.624	2
j5	0.737	0.391	1
j6	0.666	0.380	1
j7	0.803	0.183	1
j8	0.838	0.274	1
j9	0.765	0.201	1
Revised Component Name	JOB-DECISION	JOB-PERSON	

Based on the analysis, j1-j4 loaded on component two, which was named job-person, whilst j5-j9 loaded on component one, named job-decision.

The reliability of the job-autonomy construct was assessed using Cronbach's Alpha to measure internal consistency of responses. The results of the analysis at a construct level are presented below, whilst the details are presented in Appendix C.

Table 7 - Reliability statistics of constructs, extracted from IBM SPSS, summarised by author.

Reliability Statistics			
	Cronbach's Alpha	N of Items	Items excluded
JAUT	0.903	9	0

Based on the results, all constructs generated scores above the threshold of 0.7 and thus all measures were concluded to be reliable and were included for further analysis.

5.2.2. Organisational-autonomy validity and reliability

The first validity assessment is the bivariate Pearson's correlation of the construct item totals, the results of the output from IBM SPSS are presented below.

Table 8 - Pearson's's correlation of Organisational-Autonomy including item total, extracted from IBM SPSS, summarised by author.

Pearsons Correlation Matrix - Organisational Autonomy											
	o_o1	o_o2	o_o3	o_o4	s_o5	s_o6	s_o7	s_o8	s_o9	s_o10	o_total
o_o1	1	.220**	0.039	0.151	0.062	.224**	.254**	.302**	.211**	.300**	.501**
o_o2	.220**	1	.391**	0.110	0.051	0.070	0.055	-0.024	0.004	0.016	.358**
o_o3	0.039	.391**	1	.295**	0.014	0.138	-0.010	0.067	0.061	0.028	.400**
o_o4	0.151	0.110	.295**	1	.164*	.435**	.326**	.392**	.474**	.299**	.633**
s_o5	0.062	0.051	0.014	.164*	1	.191*	.226**	.191*	0.156	.213**	0.055
s_o6	.224**	0.070	0.138	.435**	.191*	1	.441**	.522**	.503**	.446**	.679**
s_o7	.254**	0.055	-0.010	.326**	.226**	.441**	1	.612**	.613**	.586**	.681**
s_o8	.302**	-0.024	0.067	.392**	.191*	.522**	.612**	1	.550**	.562**	.714**
s_o9	.211**	0.004	0.061	.474**	0.156	.503**	.613**	.550**	1	.499**	.703**
s_o10	.300**	0.016	0.028	.299**	.213**	.446**	.586**	.562**	.499**	1	.654**
o_total	.501**	.358**	.400**	.633**	0.055	.679**	.681**	.714**	.703**	.654**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Based on the above all measures except s_o5 correlated the item total at a 95% confidence interval., and thus the test for validity is passed and the scale is a valid measure of Organisational autonomy. The correlation for s_o5 of 0.226 is below the statistically significant confidence interval, however before exclusion the item as assessed further through EFA and for reliability before exclusion with exclusion only if impacting statistical results.

The next validity analysis is the EFA for Organisational autonomy. The results of the KMO and Bartlett's test of sphericity are presented in the table below for the job-autonomy construct.

Table 9 - KMO and Bartlett's Test of Sphericity of Job-Autonomy, extracted from IBM SPSS.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.826
Bartlett's Test of Sphericity	Sig.	0.000

Based on the results, the KMO is above the threshold of 0.6, and is regarded as meritorious, whilst the significance of the Bartlett's Test of Sphericity is within the required 95% confidence level (Beavers et al., 2013). All items except s_o5 demonstrated correlation of at least 0.3 with at least one other item. As the pre-tests for EFA are met, the factor analysis can be completed for Organisational-Autonomy.

The factor analysis completed is based on principle components, for the analysis an eigenvalue one was utilised to determine the number of factors to be assessed for representation.

Table 10 - Organisational-autonomy Eigenvalue 1 results, extracted from IBM SPSS.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.691	36.911	36.911	3.691	36.911	36.911	3.464	34.644	34.644
2	1.473	14.732	51.643	1.473	14.732	51.643	1.495	14.946	49.591
3	1.001	10.014	61.657	1.001	10.014	61.657	1.207	12.066	61.657
4	0.932	9.316	70.973						
5	0.660	6.596	77.570						
6	0.559	5.588	83.157						
7	0.538	5.379	88.536						
8	0.433	4.334	92.870						
9	0.400	3.995	96.865						
10	0.313	3.135	100.000						

Based on the eigenvalue one, the organisational-autonomy construct is expected to be represented by three components.

The EFA was completed based on the rotated component matrix, items were allocated to components based on their highest loading, components were then named, and items summarised to a component level in IBM SPSS for statistical analysis.

Table 11 - Job-autonomy rotated component matrix, extracted from IBM SPSS, loadings and component naming by author.

Rotated Component Matrix				
	Component			Component loaded
	1	2	3	
o_o1	0.196	0.070	0.854	3
o_o2	-0.097	0.719	0.449	2
o_o3	0.084	0.857	-0.084	2
o_o4	0.640	0.434	-0.184	1
s_o5	0.355	0.045	-0.053	1
s_o6	0.723	0.163	0.057	1
s_o7	0.765	-0.098	0.268	1
s_o8	0.786	-0.046	0.218	1
s_o9	0.804	0.020	0.056	1
s_o10	0.709	-0.096	0.325	1
Revised Component Name	OA_STRAT	OA_OP	N/A	

Based on the analysis, o_o1 loaded on component three, but to reduce the risk of analysis on a single item, this component was not assessed further. o_o1 - o_o2 loaded on component two, and was named Operational Organisational Autonomy, and lastly o_o4 – s_o10 loaded on component one, which was named Strategic Organisational Autonomy.

The reliability of the organisational-autonomy construct was assessed by using Cronbach's Alpha to measure internal consistency of responses. The results of the analysis at a construct level are presented below, whilst the details are presented in Appendix C.

Table 12 - Reliability statistics of Organisational autonomy, extracted from IBM SPSS, summarised by author.

Reliability Statistics			
	Cronbach's Alpha	N of Items	Items excluded
ORGAUT	0.768	10	0

Based on the results, organisational autonomy generated scores above the threshold of 0.7 and thus all measures were assessed as reliable and were included for further analysis. The s_o5 measure was found to load in the EFA and not impact the reliability in Cronbach's Alpha and was thus not excluded, o_o1 was the only item loaded on a component and was excluded.

5.2.3. Psychological Ownership validity and reliability

The first validity assessment is the bivariate Pearson's correlation of the construct item totals and the results of the output from IBM SPSS are presented below. Based on the Psychological Ownership Questionnaire, the items are split based on the preventative and promotive segments of Psychological Ownership, thus the validity analysis is based on the split of these segments.

Table 13 - Pearson's's correlation of preventative psychological ownership including item total, extracted from IBM SPSS, summarised and maximum calculated by author.

Pearsons Correlation Matrix - Psychological Ownership - Preventative					
	t_p1	t_p2	t_p3	t_p4	prev_p _total
t_p1	1	.372**	.589**	.601**	.798**
t_p2	.372**	1	.471**	.413**	.733**
t_p3	.589**	.471**	1	.618**	.840**
t_p4	.601**	.413**	.618**	1	.809**
prev_p_ _total	.798**	.733**	.840**	.809**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 14 - Pearsons's correlation of promotive psychological ownership including item total, extracted from IBM SPSS, summarised and maximum calculated by author.

Pearsons Correlation Matrix - Psychological Ownership - Promotive													prom_p
	s_p5	s_p6	s_p7	a_p8	a_p9	a_p10	b_p11	b_p12	b_p13	i_p14	i_p15	i_p16	_total
s_p5	1	.854**	.657**	.396**	.344**	.481**	.475**	.477**	.486**	.446**	.267**	.302**	.671**
s_p6	.854**	1	.625**	.423**	.337**	.428**	.471**	.460**	.415**	.420**	.291**	.283**	.650**
s_p7	.657**	.625**	1	.496**	.450**	.528**	.508**	.481**	.468**	.432**	.332**	.400**	.703**
a_p8	.396**	.423**	.496**	1	.554**	.602**	.399**	.355**	.434**	.373**	.359**	.401**	.649**
a_p9	.344**	.337**	.450**	.554**	1	.611**	.490**	.543**	.531**	.361**	.390**	.444**	.684**
a_p10	.481**	.428**	.528**	.602**	.611**	1	.479**	.459**	.494**	.414**	.296**	.422**	.695**
b_p11	.475**	.471**	.508**	.399**	.490**	.479**	1	.752**	.787**	.661**	.553**	.583**	.833**
b_p12	.477**	.460**	.481**	.355**	.543**	.459**	.752**	1	.774**	.629**	.572**	.549**	.823**
b_p13	.486**	.415**	.468**	.434**	.531**	.494**	.787**	.774**	1	.675**	.516**	.505**	.825**
i_p14	.446**	.420**	.432**	.373**	.361**	.414**	.661**	.629**	.675**	1	.629**	.641**	.786**
i_p15	.267**	.291**	.332**	.359**	.390**	.296**	.553**	.572**	.516**	.629**	1	.570**	.689**
i_p16	.302**	.283**	.400**	.401**	.444**	.422**	.583**	.549**	.505**	.641**	.570**	1	.719**
prom_p _total	.671**	.650**	.703**	.649**	.684**	.695**	.833**	.823**	.825**	.786**	.689**	.719**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the above all measures statistically significantly correlated to the item total and thus the test for validity is passed and the scale is a valid measure of Psychological Ownership.

The next validity analysis is the EFA for Psychological Ownership. The results of the KMO and Bartlett's test of sphericity is presented in the table below for the job-autonomy construct.

Table 15 - KMO and Bartlett's Test of Sphericity of preventative psychological ownership extracted from IBM SPSS.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.784
Bartlett's Test of Sphericity	Sig.	0.000

Table 16 - KMO and Bartlett's Test of Sphericity of promotive psychological ownership extracted from IBM SPSS.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.886
Bartlett's Test of Sphericity	Sig.	0.000

Based on the results, the KMO is above the threshold of 0.6, and is regarded as middling for preventative and meritorious for promotive, whilst the significance of the Bartlett's Test of Sphericity is within the required 95% confidence level (Beavers et al., 2013). All items demonstrated a correlation of at least 0.3 with at least one other measure. As the pre-tests for EFA are met, the factor analysis can be completed for Psychological Ownership.

The factor analysis completed is based on principle components, for the analysis an eigenvalue one was utilised to determine the number of factors to be assessed for representation.

Table 17 - Preventative psychological ownership Eigenvalue 1 results extracted from IBM SPSS.

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.546	63.657	63.657	2.546	63.657	63.657
2	0.674	16.841	80.498			
3	0.403	10.081	90.579			
4	0.377	9.421	100.000			

Table 18 - Promotive psychological ownership Eigenvalue 1 results extracted from IBM SPSS.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.414	53.451	53.451	6.414	53.451	53.451	3.919	32.657	32.657
2	1.433	11.941	65.391	1.433	11.941	65.391	2.583	21.527	54.184
3	1.038	8.648	74.039	1.038	8.648	74.039	2.383	19.854	74.039
4	0.667	5.556	79.595						
5	0.466	3.883	83.478						
6	0.437	3.640	87.118						
7	0.385	3.210	90.328						
8	0.345	2.877	93.205						
9	0.279	2.329	95.534						
10	0.230	1.915	97.449						
11	0.189	1.571	99.020						
12	0.118	0.980	100.000						

Based on the eigenvalue one, the psychological autonomy construct is expected to be represented by four components, one for preventative and three for promotive.

The EFA was completed based on the rotated component matrix, items were allocated to components based on their highest loading, components were then named, and items summarised to a component level in IBM SPSS for statistical analysis.

In the case of preventative Psychological Ownership, the rotated component matrix was not available as all factors loaded on one component, thus items t_p1-4 are all included in component preventative psychological ownership.

Table 19 - Promotive psychological ownership rotated component matrix, extracted from IBM SPSS, loadings and component naming by author.

Rotated Component Matrix ^a				
	Component			Component loaded
	1	2	3	
s_p5	0.225	0.901	0.186	2
s_p6	0.206	0.893	0.175	2
s_p7	0.263	0.668	0.409	2
a_p8	0.193	0.241	0.788	3
a_p9	0.353	0.106	0.772	3
a_p10	0.237	0.306	0.769	3
b_p11	0.775	0.325	0.238	1
b_p12	0.771	0.309	0.234	1
b_p13	0.750	0.294	0.289	1
i_p14	0.809	0.267	0.126	1
i_p15	0.780	0.047	0.164	1
i_p16	0.720	0.052	0.323	1
Revised Component Name	PO_PROM_BELID	PO_PROM_SE	PO_PROM_ACC	

Based on the analysis, s_p5- s_p7 loaded on component 2, Psychological Ownership Self Efficacy, a_p8 – a_p10 loaded on component 3, named Psychological Ownership Accountability, and lastly b_p11- i_p16 loaded to component 1, named Psychological Ownership belonging and self-identity. These three components are thus used to further analyse Psychological Ownership. The split of the components also aligns to the split of the items per Avey and Avolio (2009) except for belonging and self-identity, which are combined in the factor loadings however these were split based on the validated measures. The difference in loading limits the analysis in the potential difference in the belonging versus identity dimensions of psychological ownership, and could be related to the smaller sample size and cultural impact of the South African context in the interpretation of the difference between items that relate to belonging and self-identity.

The reliability of the psychological ownership construct was assessed by using the Cronbach's Alpha to measure internal consistency of responses. The results of the analysis at a construct level are presented below, whilst the details are presented in Appendix C.

Table 20 - Reliability statistics of psychological ownership, extracted from IBM SPSS, summarised by author.

Reliability Statistics			
	Cronbach's Alpha	N of Items	Items excluded
PO	0.812	16	0

Based on the results, psychological ownership generated scores above the threshold of 0.7 and thus all measures were assessed as reliable and were included for further analysis.

5.2.4. Conclusion validity and reliability

Due to the outcome of the validity and reliability testing, only one item was removed from analysis within Organisational autonomy due to it being the sole item to load on a component in the construct. The validity of the s_o5 item within Organisational autonomy was noted due to its low correlation with other items, however as it loaded on the new Strategic organisational autonomy component, and did not result in a reliability concern, it was not excluded.

Table 21 - Summary of validity and reliability, created by author.

Construct	Validity and Reliability
Job-Autonomy	Bivariate correlation - >0.3 Component loadings: 1. Job - Decision autonomy 2. Job - Person autonomy Cronbach's Alpha: 0.903
Organisational Autonomy	Bivariate correlation - >0.3 except s_o5 Component loadings: 1. Strategic organisational autonomy 2. Operational organisational autonomy Cronbach's Alpha: 0.768
Psychological Ownership	Bivariate correlation - >0.3 Component loadings: 1. Preventative Psychological Ownership (Territoriality) 2. Promotive Psychological Ownership: Self-efficacy 3. Promotive Psychological Ownership: Accountability 4. Promotive Psychological Ownership: Belonging and Self-Identity Cronbach's Alpha: 0.812

5.3. Descriptive statistics and frequencies of components

5.3.1. Means and standard deviations

The descriptive statistics of the components identified from the EFA completed are presented below, three components show notable means with Promotive Psychological Ownership: Self-Efficacy showing the highest mean over 4 (Agree) with both Operational organisational autonomy and Preventative Psychological Ownership: Territoriality recording means below 3 (Neither Agree nor Disagree).

Table 22 - Descriptive statistics of components, extracted from IBM SPSS.

Descriptive Statistics			
	N	Mean	Std. Deviation
JO_DEC	153	3.773	0.778
JO_PER	153	3.938	0.781
OA_STRAT	153	3.232	0.707
OA_OP	153	2.673	0.925
PO_PREV_TERR	153	2.263	0.779
PO_PROM_SE	153	4.183	0.706
PO_PROM_ACC	153	3.765	0.782
PO_PROM_BELID	153	3.455	0.929

5.3.2. Frequency plots

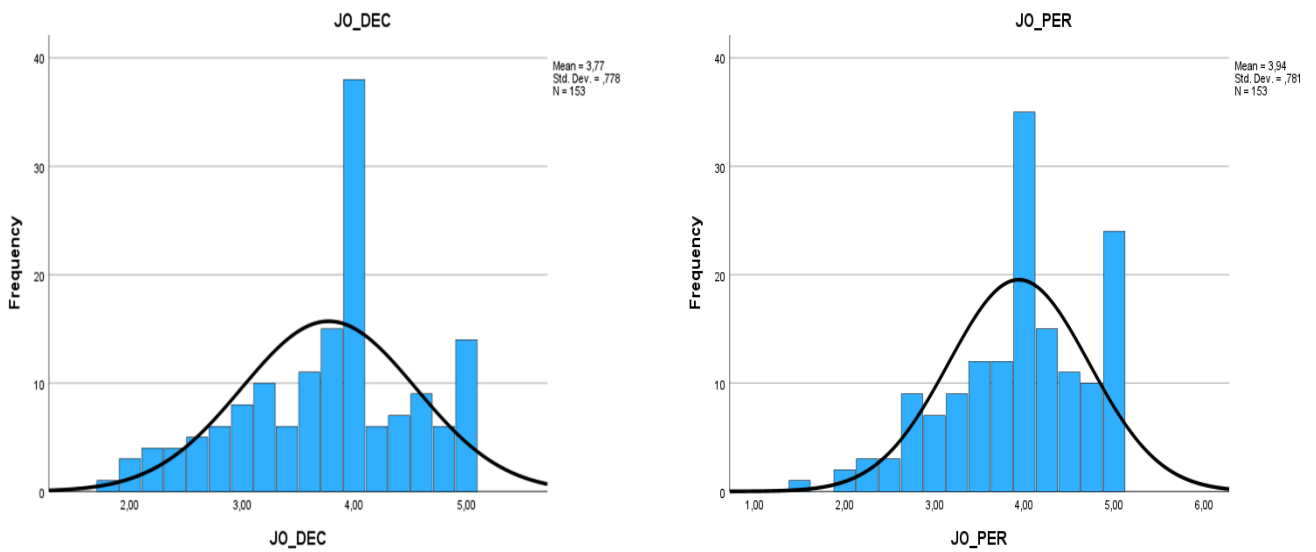


Figure 5 - Frequency plots of job-decision autonomy and job-person autonomy components of job-autonomy, extracted from IBM SPSS.

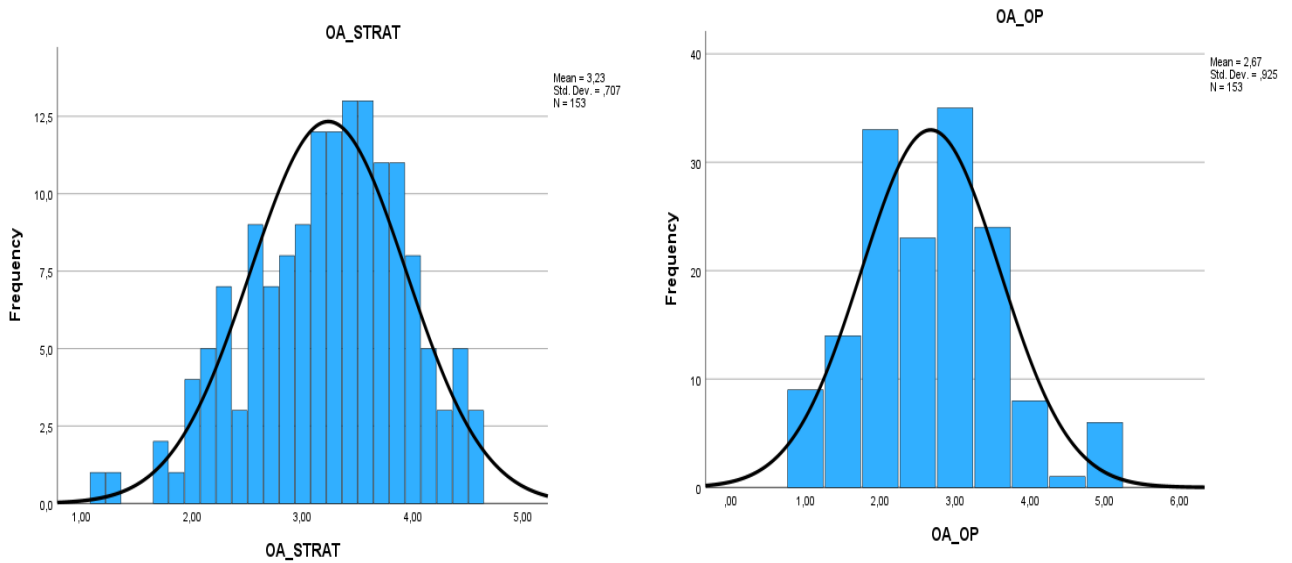


Figure 6 - Frequency plots of strategic organisational autonomy and operational organisational autonomy components of organisational-autonomy, extracted from IBM SPSS.

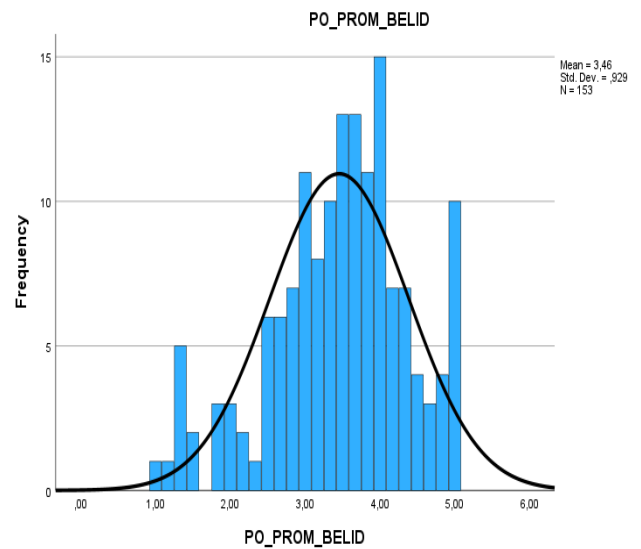
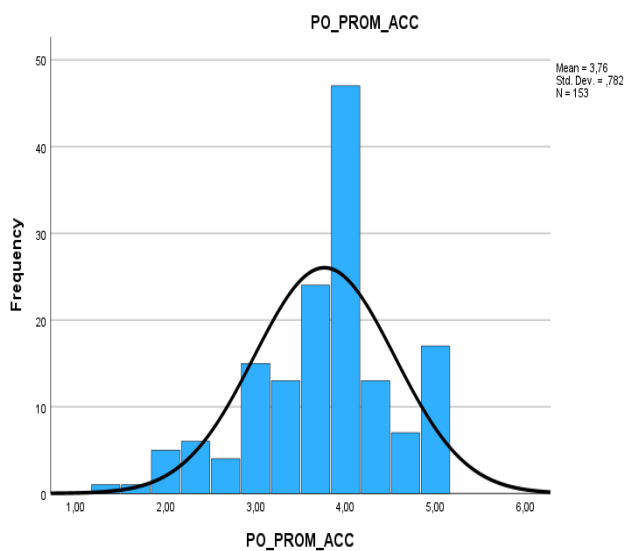
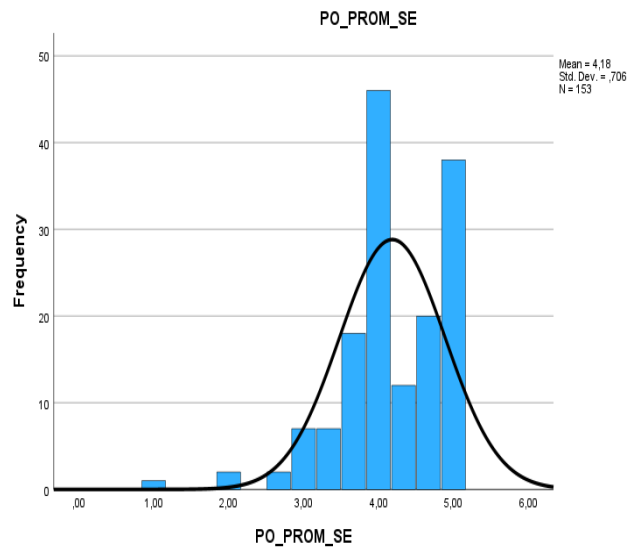
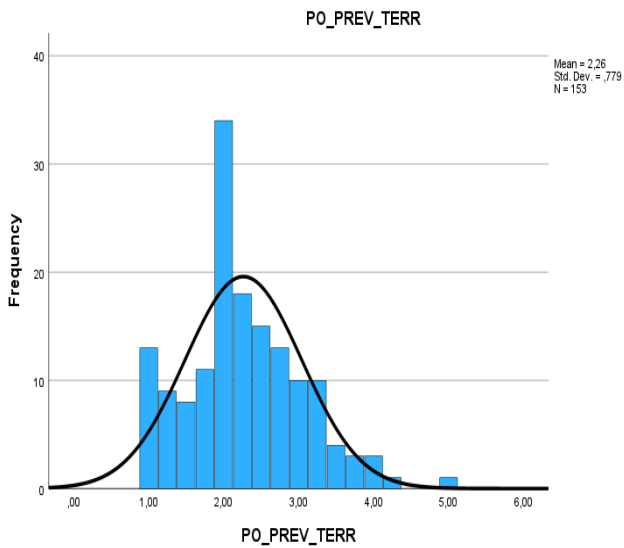


Figure 7 - Frequency plots of territoriality(preventative), self-efficacy, accountability, belonging and self-identity (promotive) components of psychological ownership, extracted from IBM SPSS.

Based on the frequency plots, the skewness in territoriality and self-efficacy was noted. Based on the methodology applied, however, as normality is not required for this study, and the skew distributions will not impact results.

5.4. Hypothesis testing

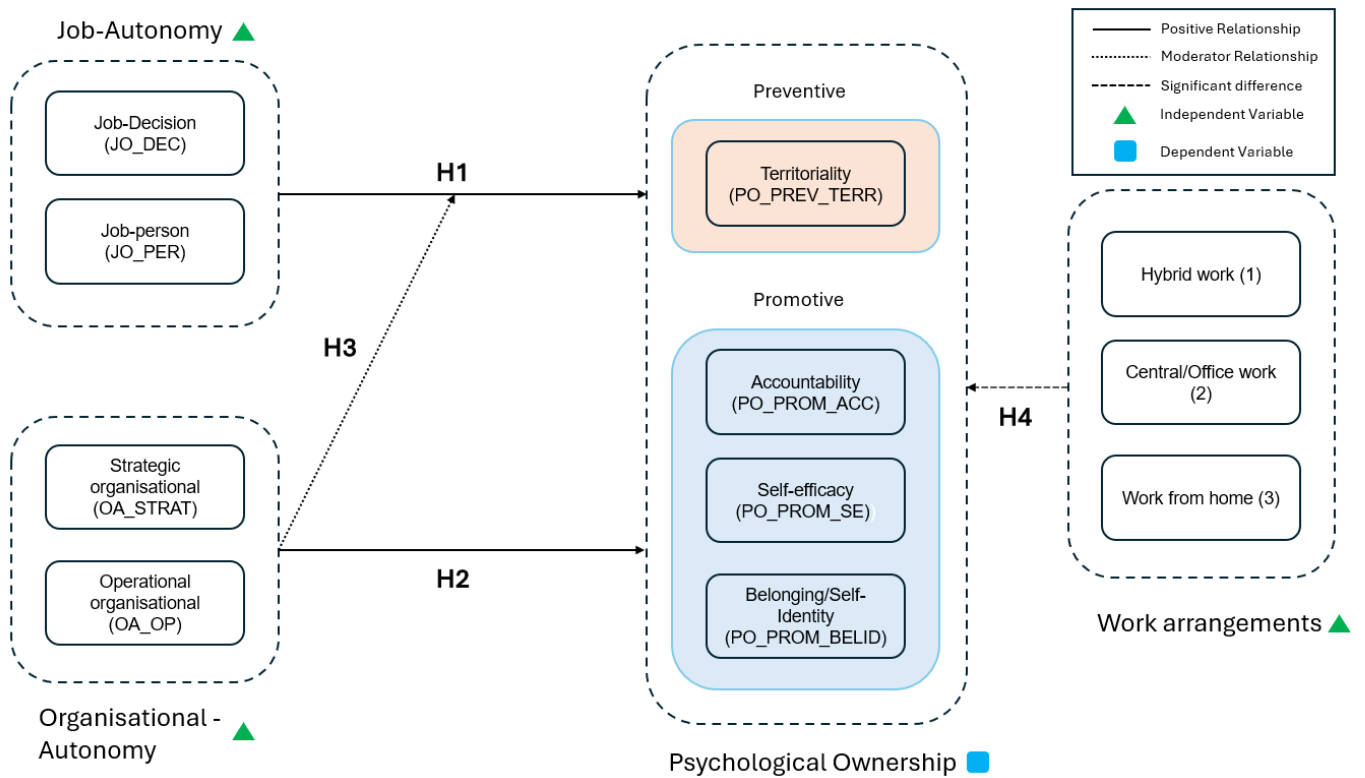


Figure 8 - Summary model of hypothesis tested including factor analysis results, generated by author.

5.4.1. Hypothesis testing H1: Increased job autonomy increases psychological ownership of the organisation

The hypothesis relates to the positive relationship between job-autonomy and psychological ownership of the organisation. To assess if the hypothesis is true and the null hypothesis is rejected, the Pearson's correlation coefficient results are presented below.

Table 23 - Pearson's correlations job-autonomy and psychological ownership, extracted from IBM SPSS

		Correlations			
		PO_PREV_TERR	PO_PROM_SE	PO_PROM_ACC	PO_PROM_BELID
JO_DEC	Pearson Correlation	-,218**	,496**	,493**	,544**
	Sig. (2-tailed)	0.007	0.000	0.000	0.000
	N	153	153	153	153
JO_PER	Pearson Correlation	-,270**	,473**	,399**	,465**
	Sig. (2-tailed)	0.001	0.000	0.000	0.000
	N	153	153	153	153

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the above, both components of job-autonomy showed a weak negative correlation with preventative psychological ownership in the form of territoriality, and showed moderate positive results against promotive psychological ownership. In addition, all correlations were significant, reflecting results tested to a 99% significance, more than the 95% targeted in this study. Thus, the null hypothesis is rejected as the positive relationship is evidence from the correlation results.

5.4.2. Hypothesis testing H2: Increased organisational autonomy increases psychological ownership of the organisation.

The hypothesis relates to the positive relationship between job-autonomy and psychological ownership of the organisation. To assess if the hypothesis is true and the null hypothesis is rejected, the Pearsons correlation co-efficient results are presented below.

Table 24 – Pearsons’s correlations job-autonomy and psychological ownership, extracted from IBM SPSS.

		Correlations			
		PO_PREV_ TERR	PO_PROM _SE	PO_PROM _ACC	PO_PROM _BELID
OA_STRAT	Pearson Correlation	-,338**	,367**	,386**	,537**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	153	153	153	153
OA_OP	Pearson Correlation	0.136	0.012	0.069	0.088
	Sig. (2-tailed)	0.094	0.887	0.398	0.278
	N	153	153	153	153

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the above, Strategic organisational autonomy showed a moderate negative correlation with preventative psychological ownership, and a moderate positive correlation with promotive psychological ownership. In addition, all correlations between strategic organisational autonomy and psychological ownership were significant, reflecting results tested to a 99% significance, i.e., more than the 95% targeted in this study. The correlations of operational organisational autonomy were weak positive across psychological ownership, however only the relationship with the self-efficacy dimension was significant at a 95% confidence interval. Thus, the null hypothesis is not rejected as only the strategic component of organisational autonomy was found to have a positive relationship with psychological ownership.

5.4.3. Hypothesis testing H3: Organisational autonomy moderates job autonomy and Psychological Ownership

To complete the multiple regression analysis, Hayes Process Model 2 was used to test all combinations of job autonomy and psychological ownership components. A summary of the results is presented below.

Table 25 - Hayes Process Model 2 – Two moderators, extracted from IBM SPSS.

	PO_P_AC - JO_PER	PO_P_AC - JO_DEC	PO_P_BI - JO_PER	PO_P_BI - JO_DEC
Model :	2	2	2	2
Y :	PO_P_AC	PO_P_AC	PO_P_BI	PO_P_BI
X :	JO_PER	JO_DEC	JO_PER	JO_DEC
W :	OA_STRAT	OA_STRAT	OA_STRAT	OA_STRAT
Z :	OA_OP	OA_OP	OA_OP	OA_OP

	PO_P_SE - JO_PER	PO_P_SE - JO_DEC	PO_PV_T - JO_PER	PO_PV_T - JO_DEC
Model :	2	2	2	2
Y :	PO_P_SE	PO_P_SE	PO_PV_T	PO_PV_T
X :	JO_PER	JO_DEC	JO_PER	JO_DEC
W :	OA_STRAT	OA_STRAT	OA_STRAT	OA_STRAT
Z :	OA_OP	OA_OP	OA_OP	OA_OP

Table 26 - Hayes Model Summaries, extracted from IBM SPSS.

Model Summary							
Prediction variable and independent variable	R	R-sq	MSE	F	df1	df2	p
PO_P_AC - JO_PER	0.4609	0.2125	0.4975	7.9312	5.0000	147.0000	0.0000
PO_P_AC - JO_DEC	0.5126	0.2628	0.4657	10.4799	5.0000	147.0000	0.0000
PO_P_BI - JO_PER	0.5937	0.3524	0.5773	16.0016	5.0000	147.0000	0.0000
PO_P_BI - JO_DEC	0.6111	0.3734	0.5586	17.5204	5.0000	147.0000	0.0000
PO_P_SE - JO_PER	0.5098	0.2599	0.3815	10.3228	5.0000	147.0000	0.0000
PO_P_SE - JO_DEC	0.5307	0.2816	0.3703	11.5254	5.0000	147.0000	0.0000
PO_PV_T - JO_PER	0.4300	0.1849	0.5114	6.6683	5.0000	147.0000	0.0000
PO_PV_T - JO_DEC	0.3954	0.1563	0.5293	5.4467	5.0000	147.0000	0.0001

Table 27 - Hayes Models, extracted from IBM SPSS – Significant values highlighted.

Model							
Prediction Variable	Item term	coeff	se	t	p	LLCI	ULCI
PO_P_AC	JO_PERxOA _STRAT	0.0144	0.1100	0.1310	0.8960	-0.2030	0.2318
PO_P_AC	JO_PERxOA _OP	-0.0213	0.0799	-0.2667	0.7901	-0.1791	0.1365
PO_P_AC	JO_DECxOA _STRAT	-0.0765	0.1028	-0.7443	0.4579	-0.2797	0.1266
PO_P_AC	JO_DECxOA _OP	-0.0724	0.0823	-0.8797	0.3805	-0.2352	0.0903
PO_P_BI	JO_PERxOA _STRAT	0.0578	0.1185	0.4874	0.6267	-0.1764	0.2920
PO_P_BI	JO_PERxOA _OP	0.0566	0.0860	0.6581	0.5115	-0.1134	0.2266
PO_P_BI	JO_DECxOA _STRAT	-0.1407	0.1126	-1.2496	0.2134	-0.3632	0.0818
PO_P_BI	JO_DECxOA _OP	-0.0405	0.0902	-0.4488	0.6543	-0.2187	0.1377
PO_P_SE	JO_PERxOA _STRAT	-0.0626	0.0963	-0.6498	0.5168	-0.2530	0.1278
PO_P_SE	JO_PERxOA _OP	-0.0626	0.0699	-0.8946	0.3725	-0.2007	0.0756
PO_P_SE	JO_DECxOA _STRAT	-0.1067	0.0917	-1.1641	0.2463	-0.2879	0.0744
PO_P_SE	JO_DECxOA _OP	-0.1424	0.0734	-1.9390	0.0544	-0.2874	0.0027
PO_PV_T	JO_PERxOA _STRAT	0.2188	0.1115	1.9621	0.0516	-0.0016	0.4393
PO_PV_T	JO_PERxOA _OP	-0.0147	0.0810	-0.1822	0.8557	-0.1748	0.1453
PO_PV_T	JO_DECxOA _STRAT	-0.0292	0.1096	-0.2660	0.7906	-0.2457	0.1874
PO_PV_T	JO_DECxOA _OP	0.1198	0.0878	1.3644	0.1745	-0.0537	0.2933

The Hayes Process test for moderation was run for both components of organisational autonomy against each combination components of job-autonomy and psychological ownership. Hayes Process Model 2 was utilised as it catered for two moderators, in this case strategic and operational organisational autonomy.

The results noted that all models provided statistically significant results, with moderate to weak r-squared values. However, analysis of the detailed models identified only two item terms with significant moderation characteristics i.e., these being operational organisational autonomy moderating the relationship between job-decision autonomy and the self-efficacy dimension of promotive psychological ownership and strategic organisational autonomy moderating the relationship between job-person autonomy and the territoriality dimension of preventative psychological ownership. These moderation relationships were significant at the target 95% confidence level.

Due to the limited statistical evidence, the null hypothesis of H3 is not rejected, and the moderation effect of organisational autonomy between job-autonomy and psychological ownership is not evidenced in the sample.

5.4.4. Hypothesis testing H4: Hybrid Work significantly influences psychological ownership

The fourth hypothesis is related to the impact of Hybrid Work on psychological ownership. To test this hypothesis and ANOVA statistical test is completed in IBM SPSS between the groupings of the control variable describing if a respondent's working arrangements are Hybrid, centralised or work from home. The statistical significance of the difference between each group and the difference dimensions of psychological ownership will be tested in IBM SPSS v28.

The first stage of the ANOVA analysis is to determine the homogeneity of variances to determine whether the Tukey or Games-Howell analysis should be utilised.

Table 28 - Levene test of homogeneity of variances, extracted from IBM SPSS.

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
PO_PREV_TERR	Based on Mean	4.724	2	150.00	0.010
	Based on Median	4.274	2	150.00	0.016
	Based on Median and with adjusted df	4.274	2	149.53	0.016
	Based on trimmed mean	4.274	2	150.00	0.009
PO_PROM_SE	Based on Mean	4.274	2	150.00	0.717
	Based on Median	4.274	2	150.00	0.783
	Based on Median and with adjusted df	4.274	2	143.62	0.783
	Based on trimmed mean	4.274	2	150.00	0.712
PO_PROM_ACC	Based on Mean	4.274	2	150.00	0.273
	Based on Median	4.274	2	150.00	0.346
	Based on Median and with adjusted df	4.274	2	149.86	0.346
	Based on trimmed mean	4.274	2	150.00	0.313
PO_PROM_BELID	Based on Mean	4.274	2	150.00	0.198
	Based on Median	4.274	2	150.00	0.236
	Based on Median and with adjusted df	4.274	2	141.65	0.237
	Based on trimmed mean	4.274	2	150.00	0.208

Based on the Levene's test, the territoriality dimension of preventative psychological ownership was significant, and thus for this component the Games-Howell Analysis is appropriate. For other promotive components of psychological ownership, the result was not significant and the Tukey analysis could therefore be utilised.

The ANOVA analysis was reviewed next.

Table 29 - ANOVA outcome, extracted from IBM SPSS.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
PO_PREV_TERR	Between Groups	1.544	2	0.772	1.277	0.282
	Within Groups	90.680	150	0.605		
	Total	92.224	152			
PO_PROM_SE	Between Groups	0.131	2	0.066	0.130	0.878
	Within Groups	75.634	150	0.504		
	Total	75.765	152			
PO_PROM_ACC	Between Groups	3.933	2	1.967	3.317	0.039
	Within Groups	88.930	150	0.593		
	Total	92.863	152			
PO_PROM_BELI D	Between Groups	1.451	2	0.725	0.839	0.434
	Within Groups	129.605	150	0.864		
	Total	131.056	152			

Based on the ANOVA analysis, only one dimension of psychological ownership demonstrated a significant variance in scores between the groups, i.e., the accountability dimension of promotive psychological ownership. Other components of promotive psychological ownership as well as preventive psychological ownership did not demonstrate statistically significant variances between the groups at the 95% confidence level.

For the accountability dimensions, the variances are assessed further to determine which groups variance differed. Group 1 = Hybrid Work, Group 2 = Office/Central location and 3 = Work from home

Table 30 - Group comparison, Accountability dimension of psychological ownership outcome, extracted from IBM SPSS.

Multiple Comparisons							
Dependent Variable	(I) c8	(J) c8	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence	
						Lower Bound	Upper Bound
PO_PROM_ACC	1	2	0.2245	0.1361	0.2282	-0.0976	0.5466
		3	-0.3188	0.2096	0.2841	-0.8151	0.1775
	2	1	-0.2245	0.1361	0.2282	-0.5466	0.0976
		3	-.54330*	0.2206	0.0394	-1.0656	-0.0210
	3	1	0.3188	0.2096	0.2841	-0.1775	0.8151
		2	.54330*	0.2206	0.0394	0.0210	1.0656

Based on the group comparison, one combination of groups demonstrated a statistically significant variance at a 95% confidence interval, between group 2 and 3, being Office/central location and work from home with a mean variance of 0.54, equivalent to a full-scale level difference.

Whilst one significant variance was noted, overall, the components of psychological ownership did not demonstrate a significant relationship with the groupings of work arrangement in the sample, and thus the null hypothesis is not rejected.

6. Discussion of results

6.1. Introduction

Chapter 6 presents the discussion of the results of the study and begins with the descriptive statistics of the responses received. This is followed by the discussion of the sample, and summary of the results. A discussion of the validity and reliability tests follows, and the chapter is concluded with a discussion of each of the hypotheses and the outcomes of the statistical tests, comparisons to prior studies and literature, and the level of confirmation, extension or contradiction of the outcomes compared to prior studies.

6.2. Descriptive statistics

6.2.1. Research sample

The research sample obtained through Google Forms amounted to 153 responses, as all measures except one control variable describing the number of days worked at the office were compulsory, all 153 responses were complete and valid and thus all included in the analysis, data was coded per the data transformation process detailed in Chapter 4.

6.2.2. Descriptive statistics of the responses

The instrument included control variables relating to the individual respondent and their organisation. Control variables were focussed on characteristics which may potentially influence the constructs and may differentiate their responses.

6.2.2.1. Organisational control variables

The first organisational control variable relates to organisation size:

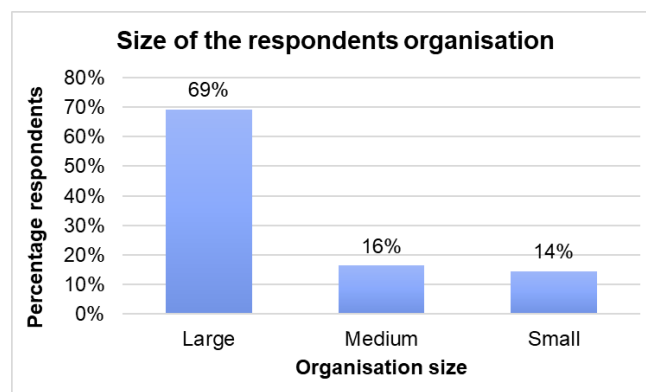


Figure 9 - Distribution of respondent organisation sizes from sample data, generated by author.

The majority (69%) of respondents were from large organisations. Whilst this may be due to the snowball sampling method resulting in more respondents from large organisations, it is also representative of the context in South Africa where large businesses dominate industries.

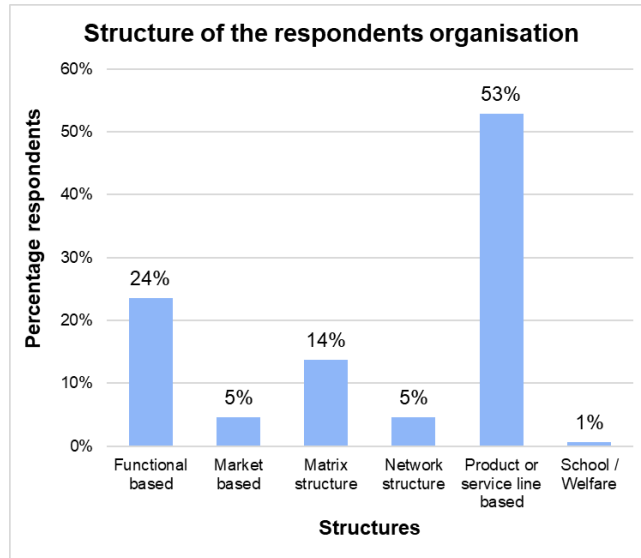


Figure 10 - Distribution of respondent organisational structures from sample data, generated by author.

The sample reflected that two organisational structures dominated, the first being product or service line-based structures comprising 53% of the sample, the second, functional structures comprising 24% of the sample, together covering 77% of respondents.

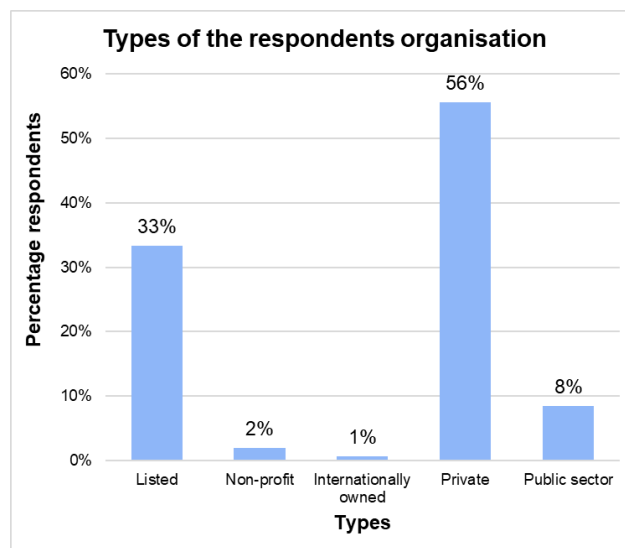


Figure 11 - Distribution of respondent organisation types from sample data, generated by author.

Most respondents belonged to private organisations (53%) whilst respondents belonging to listed companies comprised of 33%, thus a total of 86% of respondents were part of private or listed for profit companies.

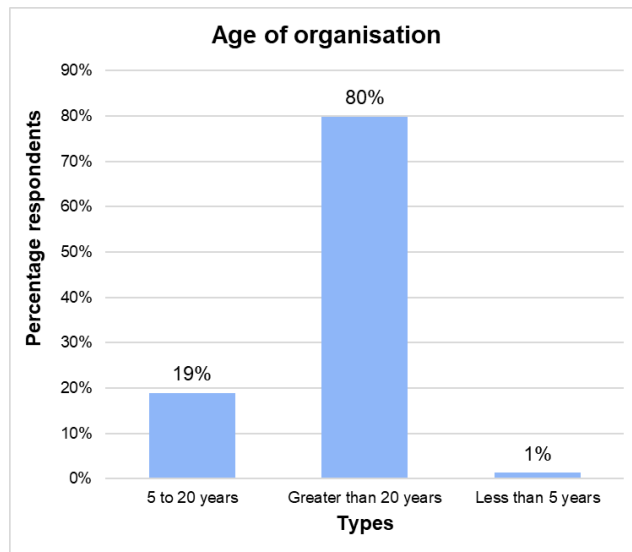


Figure 12 - Distribution of respondent organisation ages from sample data, generated by author.

The age of the organisations was strongly skewed to organisations older than 20 years old, reflecting that the businesses are established organisations with mature processes and structures.

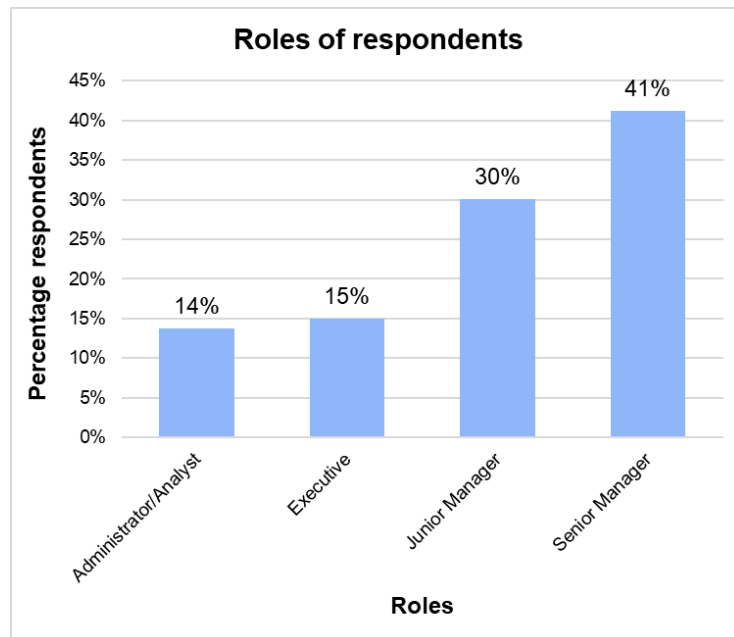


Figure 13 - Distribution of respondent roles from sample data, generated by author.

6.2.2.2. Respondent control variables

The respondents in the sample showed a bias towards junior and senior management roles, comprising 71% of respondents, which may be because of the snowball sampling technique and indicates that the sample is management level focussed, a limitation to be noted for generalisability.

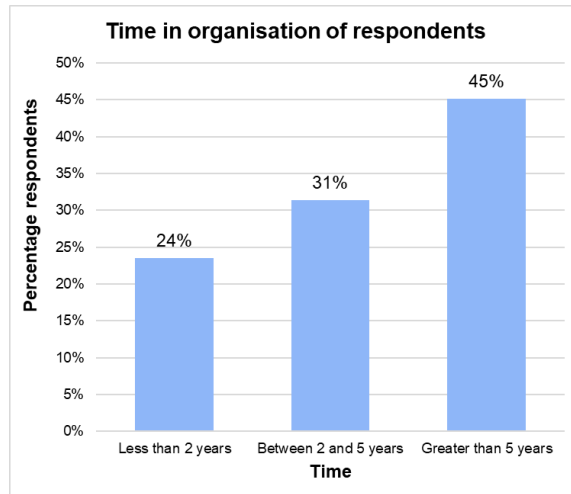


Figure 14 - Distribution of respondent time in organisation from sample data, generated by author.

Whilst most respondents were employees of organisations for more than five years, the sample showed a spread of respondents with less than five years' experience, this reduces the potential for organisational embeddedness influencing ownership feelings.

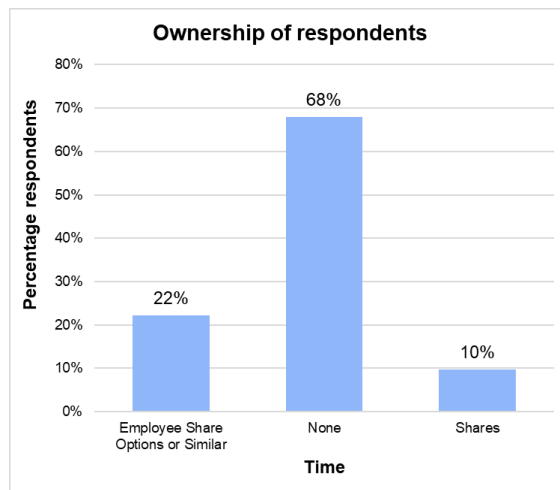


Figure 15 - Distribution of respondent ownership in organisation from sample data, generated by author.

The ownership status of respondents aligns with the job roles, whilst the majority of respondents do not have any ownership, a small portion, 22%, have a form of employee ownership plan which incentivises based on earning shares or earnings based on share prices whilst only 10% of respondents owned shares. This reduces the risk of limitation in the study due to actual ownership skewing psychological ownership.

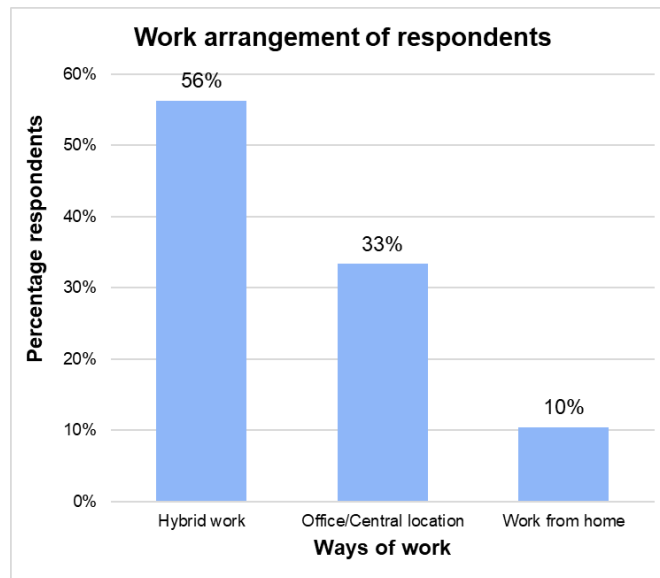


Figure 16 - Distribution of respondent ways of work sample data, generated by author.

Aligned with the post Covid-19 reality, 66% of respondents are in Hybrid Work and Work from Home arrangements. This confirms that the study will reflect the potential impacts of the adoption of hybrid work, but also have sufficient power in non-Hybrid Work respondents to analyse variances in outcomes.

6.3. Discussion of sample and summary of results

The sample of 153 items were all found to be valid responses, the sample descriptive statistics demonstrated key influences and biases which link to the context of the study in South Africa and post Covid-19.

Representing 69% of the sample, the majority of the respondents were from large companies. This bias to large companies is indicative of two factors, the first being the South African context, in which the largest formal employers are larger companies, especially in the context of professionals, It also however indicative of potential bias from snowball and purposive sampling which, based on the authors

and first respondents backgrounds, would include more respondents in larger companies. This trend is also seen in the seniority of respondents, with a substantial proportion of respondents being senior managers, having been in the organisation for more than two years. These characteristics, whilst potentially indicative of biases in the sample, are still representative of the context within which the study was targeted. Actual ownership in larger organisations by employees is difficult to implement effectively and materially and limited, and the junior and senior management are the influential levels at which psychological ownership can have a positive impact.

Low percentage of ownership or employee ownership schemes is also vital to the study as a higher weighting of actual ownership would skew results and cause overlaps between actual ownership and psychological ownership outcomes. The majority of the organisations which the respondents belonged to were also found to be mature and profit focussed organisations, which is aligned to the general context which the constructs studied would be applied in by practitioners.

Table 31 - Summary of results, prepared by author.

Sample	153 valid respondents
Validity	Bivariate correlations all above 0.3 except s_o5 item of Organisational autonomy (0.226). EFA Analysis showed Job-autonomy loaded on 2 components, Organisational autonomy on 2 components with one item excluded, and psychological autonomy on 4 components. Loadings aligned with the POQ except the single component for belonging and self-identity which were separate in POQ.
Reliability	Cronbach's Alpha all >0.7
H1 - Job Autonomy positively related to Psychological Ownership	Pearsons correlation - Significant for all Promotive Psychological ownership, Null rejected
H2 - Organisational Autonomy positively related to Psychological Ownership	Pearsons correlation - Significant for Strategic organisational autonomy, not significant for operational organisational autonomy. Null not rejected
H3 - Organisational autonomy moderates relationship between Job- autonomy and Psychological Ownership	Multiple regression - Hayes Process Model 2 - only two significant moderation relationships - Operational Organisational Autonomy Moderates Job-decision autonomy relationship with Promotive self-efficacy of Psychological ownership, Strategic organisational autonomy moderates job-person autonomy relationship with the preventive territoriality dimension of psychological ownership. Limited moderation variables indicates a weak relationship, thus null not rejected
H4 - Work arrangement difference significantly impacts psychological ownership	ANOVA model - One significant difference in groups - Office/Central location versus Work from home difference in means of the promotive accountability component of psychological ownership. Limited difference in groups, thus null not rejected.

Table 32 - Descriptive statistics of components – Extracted from
IBM SPSS.

Descriptive Statistics			
	N	Mean	Std. Deviation
JO_DEC	153	3.77	0.78
JO_PER	153	3.94	0.78
OA_STRAT	153	3.23	0.71
OA_OP	153	2.67	0.93
PO_PREV_TERR	153	2.26	0.78
PO_PROM_SE	153	4.18	0.71
PO_PROM_ACC	153	3.76	0.78
PO_PROM_BELID	153	3.46	0.93

6.4. Validity and reliability discussion

The validity of the measures was tested through two statistical tests, the multivariate Pearson's's correlation test and the EFA conducted.

All measurement items demonstrated validity except for item s_o5, which did not demonstrate the required correlation level and statistical significance, however it loaded together with other items in the EFA analysis and was thus not excluded subject to reliability analysis. Item o_o1, whilst demonstrating sufficient correlation, loaded on a factor individually and was excluded from further analysis to avoid single measure testing.

The EFA analysis performed to assess validity demonstrated sufficient KMO and Bartlett's Sphericity values across constructs, within the 95% confidence interval set for the study and the 0.7 KMO level.

The job-autonomy construct loaded on two components, these components then named Job-decision Autonomy (JO-DEC) which included five items and Job-person Autonomy (JO-PER) which included four items. The organisational autonomy construct loaded on three components, the first including seven items named Strategic organisational Autonomy (OA_STRAT), the second including two items named operational organisational autonomy and lastly the third component which only included one item that was excluded. Lastly, the construct of psychological ownership was analysed at two levels, the first being the preventative component containing the territoriality dimension, which loaded on a single component for all

four items which has been named Preventative psychological ownership: Territoriality (PO_PREV_TERR). The second, promotive component loaded on three components, the first containing six items named Promotive psychological ownership: Belonging and Identity. The second contained three items and was named Promotive psychological ownership: Self-efficacy. The third contained three items and was named Promotive psychological ownership: Accountability.

The proposed component of psychological ownership and the naming of the components was aligned to the Psychological Ownership Questionnaire by Avey and Avolio (2009), except for component one which combined two dimensions, belonging and Self-identity. These were distinct in the seminal study and were expected to load separately.

This overlap in dimensions between sense of belonging and self-identity has been noted since the inception of the questionnaire, however the distinctness of the constructs is defended as an employee may feel as they belong to the space where their work is conducted, however may not identify with the broader organisation (Avey & Avolio, 2007). This was proven in the study as the measurement items loaded on separate components in a confirmatory factor analysis which resulted in a strong model fit and high loading levels (Avey & Avolio, 2007).

The overlap in the two dimensions is however indicative of the South African context, where inconsistencies in the factor loadings have been noted in previous South Africa studies, with these dimensions loading on a single factor in a study by George (2015). Despite this overlap, the overall construct validity to psychological ownership is maintained in the model, as this study does not require reliance on either of these dimensions as distinct dimensions of psychological ownership, the single factor loading is not considered a limitation. This is in line with other psychological ownership measurement instruments in development which found that self-identity and belonging related items loaded to a single factor in South Africa (Olckers, 2013).

In relation to reliability, all constructs demonstrated Cronbach's Alpha statistics greater than 0.7, reflecting acceptable internal consistency. Whilst psychological ownership's Cronbach's Alpha result of 0.8 aligned with expectations of the Psychological Ownership Questionnaire (Avey et al., 2009). The combined strategic

and operational autonomy construct Cronbach's Alpha result was 0.768. Based on prior validation strategic organisational autonomy measured 0.929 and operational autonomy measured 0.675. The result is therefore in line with the average expected between the components (Bedi, 2020; Das & Joshi, 2007). The job-autonomy Cronbach's Alpha result of 0.903 exceeds the range of 0.85-0.88 that was achieved in the initial validation of the autonomy components in the Work Design Questionnaire by Morgeson & Humphrey (2006) and thus demonstrates the reliability of the scale and applicability across contexts.

6.5. H1: Increased job autonomy increases psychological ownership of the organisation

H1 stated that job autonomy has a positive relationship with psychological ownership of the organisation. The relationship between autonomy and psychological ownership has been previously identified and autonomy has been posited as dimension of psychological ownership (Mayhew et al., 2007; Olckers, 2013). The hypothesis aimed to reassess this relationship post Covid-19, given the significant changes to ways of work, including Hybrid Work and Work from Home, which potentially impacted the autonomy of employees. In addition, prior studies assessed the relationship at the autonomy level rather than assessing the different dimensions of autonomy considered in this study which are separated to job and organisational autonomy in the same manner in which psychological ownership has been noted to occur at both the job and organisational level.

To test the hypothesis, an analysis of a Pearsons correlation test for the components of job-autonomy and psychological ownership was performed. The results demonstrated that both components of job-autonomy (job-decision and job-person) resulted in statistically significant correlations with each component of psychological ownership. Both components of job-autonomy were negatively correlated to the preventative territoriality component of psychological ownership, and positively correlated with the promotive components, self-efficacy, accountability, and combined belonging/self-identity component.

The negative correlation of both job-autonomy components to territoriality is significant. A prior study by Mayhew et al. (2007) which considered the relationship between autonomy and psychological ownership did not test the territoriality

dimension, thereby excluding the preventative of “dark side” of psychological ownership from that analysis. In a further study and development of an instrument, where in Olckers (2013) posited autonomy as a dimension of psychological ownership, the relationship between territoriality and autonomy was assessed, however the weak negative correlation identified was not statistically significant, and the autonomy construct posited was not split between job and organisational autonomy. Job-autonomy due to its personalised characteristics that are specific to an employee and their role could be linked to possible territoriality as the autonomy creates a potential ownership feeling for the job, however this correlation, whilst weak negative is statistically significant and thus demonstrates that job autonomy does not appear to create the territoriality behaviours that are not favoured. This outcome can also be linked to Hybrid working conditions and work from home. The change in work environment provides a wider balance in team organisational interactions and thus may reduce the creation of territoriality from job-autonomy as employees welcome the balanced interactions which are less frequent and not face to face.

The correlations identified in respect of the promotive dimensions of psychological ownership in this study were all moderate positive and statistically significant. These results align to the findings of Mayhew et al. (2007) as well as more recent studies by Olckers and Booyen (2021) in which strong loadings were identified within autonomy related items in the structural equation model across different generations in identifying psychological ownership. The maintenance of this positive relationship across dimensions notwithstanding the changes post Covid-19 provides insight into levers that could be utilised in organisational design to increase psychological ownership despite the reduced interaction due to work from home. Utilising job design to drive job-autonomy will positively correlate across dimensions of psychological ownership. The positive relationship is also across both components, thus demonstrating that both the decision making, and personal components of job-autonomy can be used to manage psychological ownership thus providing flexibility in the job-design process to cater for the requirements and limitations that may exist.

Of significance is that job-autonomy components provided a double positive in terms of desired outcomes, reducing the negatively associated territoriality and increasing accountability, self-efficacy, and belonging/accountability simultaneously. This

provides a strong tool for use when there are fears of the dark side of psychological ownership.

Within the promotive dimensions, of significance is the consistency of correlations, with a narrow range of 0.493 – 0.544 for the decision component and 0.399 – 0.473 for the person component, demonstrating the consistent and cross dimensional relationship despite the range of the sample and dimensions.

The level of difference between decision and person components is also indicative of the importance of each, despite the fact that the items in the decision component are more aligned to the ability to direct associated with ownership. This indicates that the relationship between job-autonomy and psychological ownership is not only due to the decision making power but also the personalisation of work. Specifically this can be seen as item J4 notes the ability to demonstrate personal initiative whilst J3 linked to the personal planning of work. These items can be compared to the decision related component which included items aligned to dimensions of psychological ownership such as being allowed to make decisions on your own (J5) as well as decisions related to methods employed in completing a job (J7) which links to self-efficacy.

The correlations across both components within a small range also demonstrates the complexity of psychological ownership, and why it is distinct from autonomy, as it links between personalisation and decision-making rather than pure decision-making.

Within Hybrid Work, job-autonomy has been noted as a potential tool to reduce potential negative outcomes of Hybrid Work such as loneliness (Wang et al., 2021). The finding thus indicates that job-autonomy can potentially serve two purposes, on one hand correlating positively with psychological ownership and on the other reducing negative outcomes of Hybrid Work.

Based on the empirical evidence obtained, H1 was accepted as a positive relationship between job-autonomy and psychological ownership of the organisation was confirmed. The finding provides further detail into the prior relationship identified between autonomy and psychological ownership, specifically, into the relationship

between job-autonomy and the components of job-autonomy with psychological ownership. Further, the analysis of the component level relationships extended the empirical testing and evidence at a promotive and preventive segment of psychological ownership level.

6.6. H2: Increased organisational autonomy increases psychological ownership of the organisation

H2 stated that organisational autonomy was expected to increase psychological ownership of the organisation. This hypothesis follows a similar path to H1 which proposed the same with regards to job-autonomy. Organisational autonomy differs due to the various levels it impacts, from subsidiaries of multi-national businesses to individual business functions and regions. Given the separation of autonomy between job and organisation, similar to that of psychological ownership of the organisation and job, autonomy has already at the combined level, been assessed in studies. It thus served two purposes in this study - the first being to confirm the relationship at a job and organisational autonomy level; and second to assess the relationship in a post Covid-19 context given the changes to work with the introduction of Hybrid Work (Mayhew et al., 2007; Olckers, 2013).

To test the hypothesis, an analysis of a Pearsons correlation test was completed to identify the correlations with statistical significance between the components of organisational autonomy identified (strategic and operational based on the EFA completed) and the components of psychological ownership. The results demonstrated that strategic organisational autonomy correlated with all components of psychological ownership - negatively with the preventative dimension territoriality and positively with promotive dimensions self-efficacy, accountability, and the combined belonging/self-identity component. All correlations between strategic autonomy and components of psychological ownership were statistically significant. In contrast, the operational autonomy component of organisational autonomy demonstrated near-nil correlation with components of psychological ownership, none of which were statistically significant.

The negative correlation identified between strategic organisational autonomy and the preventative territoriality dimension of psychological ownership, was weak to moderate negative, similar to the relationship identified between both components of

job-autonomy and this component. This finding is of significance due to its implication for organisational design, and the levels of autonomy within scope of such design. A prior study by Olckers (2013) whilst not split to the organisational autonomy level, did not identify a statistically significant correlation between autonomy and territoriality. This finding therefore adds to the understanding of the relationship and may indicate that different levels and types of autonomy impact territoriality in a meaningful manner and can be used to manage territoriality.

Territoriality, associated with the negative or dark side of psychological ownership is an area of the construct which would deter practitioners as outcomes such as defensiveness, marking, knowledge hiding and change aversion are undesirable and can create larger barriers during times of forced change such as that experienced during and post Covid-19 (Chen et al., 2023; Cocieru et al., 2019; Singh, 2019). As a result, the potential for territoriality is one which must be balanced in organisational design where psychological ownership is targeted against the preferred promotive dimensions of the construct. Thus, the negative relationship demonstrates that territoriality can be managed to a limited extent by utilising strategic organisational autonomy as a lever, or at minimum used to drive promotive dimensions without the risk of territoriality, and as a result in increasing strategic organisational autonomy.

Strategic organisational autonomy also demonstrated statistically significant positive correlations with the promotion focussed components of psychological ownership. Correlations for both self-efficacy and accountability were in a close range between 0.367 and 0.386, whilst the combined belonging and self-identity component was notable due to the stronger correlation demonstrated of 0.537. The correlations are in line with studies completed where a proposed responsibility component of psychological ownership, which overlaps with accountability, demonstrated a correlation of 0.364 with autonomy, whilst autonomy and identity demonstrated a 0.575 correlation, both statistically significant to the 99% confidence level (Olckers, 2013).

The moderate positive correlation identified between strategic autonomy and the combined belonging and self-identity component provides insight into the potential for using strategic organisational autonomy in organisational design to improve the

balance in the dimensions of psychological ownership, specifically where belonging and self-identity are lacking.

The results for the operational organisational autonomy contrasted with strategic organisational autonomy result as the component did not result in any statistically significant correlations, and the correlation results that were identified were also weak. The result is also in contrast with prior studies which included autonomy and psychological ownership constructs. One of the potential sources is the limited item loading on the component. The initial questionnaire proposed included four items related to the operational area of organisational autonomy - of these, item 1 loaded on a single component and was excluded for analysis, item 4 loaded with strategic organisational autonomy, and the result was that only item 2 and 3 which remained, "My organisation emphasizes getting things done even if this means disregarding formal procedures" and "My organisation has a tendency to let the expert in a given situation have the most say in decision-making, even if this means temporary bypassing of formal line of authority". The items were sourced from the works of Das and Joshi (2007) which confirmed the four items in a confirmatory factor model. Whilst the two items are related to operational organisational autonomy, the lack of loadings and limited correlations are not aligned with the other results for both job-autonomy and strategic organisational autonomy. The sample descriptive statistics may also be indicative of why operational organisational autonomy was not statistically significant. As over 80% of respondents were in management roles, which indicates that the strategic autonomy may be more important to these respondents than typical operational organisational autonomy which may be part and parcel of their role. This is reflected in the mean response for the items in the component, at just 2.67, the second lowest in the study, and a high standard deviation of 0.93, the highest value in the study. The general low scores and high standard deviation are indicative that the items may also not be well understood by respondents as the responses are not in line with the consistency noted in other responses and findings.

The overarching organisational autonomy is in part set by the organisational structure element of organisational design. Entity organisational structures have been impacted by Hybrid Work as well as recent global events and geopolitical stances. In the study the organisational structure of the respondents was weighted

to product/service line (53%) and functional structures (24%). Product based structures due to their inherent focus on a product convey autonomy over that product or products, and thus may be influence the results at a strategic organisational autonomy component as the strategy within that product line is within the ambit of the “product” organisation. This is however balanced against functional designs which are more business service focussed and less strategy impacting.

Based on the above, given the inconsistency in the findings for the components of organisational autonomy, H2 was not accepted. Despite this, the correlations identified, and relationship identified between strategic organisational autonomy provide insight that a relationship does exist at a component level, and has a moderate strength, combined with its insight into the territoriality negative correlation which will result in new areas for research and potential practitioner decision making assistance. This finding expands the literature beyond the prior relationship empirically tested at the overall autonomy level, to the organisational autonomy level, and specifically strategic organisational autonomy level. The analysis at a component level of psychological ownership also extended empirical evidence on the relationships at a dimensional. preventative and promotive segment level of psychological ownership. The hypothesis also contributes to empirically testing the relationship between organisational autonomy and psychological ownership previously included in a model by Degbey et al. (2021) to empirical testing, providing basis that the model may be revised to a focus on the strategic component of organisational autonomy based on the findings of the study.

6.7. H3: Organisational autonomy moderates job autonomy and Psychological Ownership

H3 hypothesised that organisational autonomy moderates the relationship between job-autonomy and psychological ownership. The moderation relationship was tested with Hayes Process Model 2 in IBM SPSS. The model was selected as it allowed for multiple moderates to be tested at the same time. Due to the component loadings from the EFA analysis, a total of eight model combinations were identified to be tested, being the possible combinations between the two job-autonomy components and the four psychological ownership components.

Whilst all models were statistically significant and generated r-squared values in the weak to moderate range, only two out of the total of 16 moderator relationships were statistically significant at the 95% confidence level after rounding.

The two statistically significant moderation relationships were operational organisational autonomy moderation of the relationship between the job-decision component of job-autonomy and the self-efficacy component of promotive psychological ownership, which produced a negative coefficient of 0.1067. The other moderation relationship is the moderating effect of strategic organisational autonomy on the job-person component of job-autonomy and the territoriality component of psychological ownership which produced a positive coefficient of 0.2188.

The lack of moderation effects identified between the components indicates that at a construct level, a moderation relationship does not exist and thus H3 is not accepted.

The moderation effect hypothesised was due to the pervasive impact that organisational autonomy can have on an employee's feeling for an organisation when combined with their individual job-design, including job-autonomy, where individuals were expected to experience an amplified relationship between job-autonomy and psychological ownership based on the level of organisational autonomy. The inter-relationship between job and organisational autonomy as well as the different types of psychological ownership were identified by H. Peng and Pierce (2015) in their finding on the impact of job-control on both job and organisational branches of psychological ownership. The positive relationships between both components of job-autonomy and the strategic organisational autonomy component, as well as the model significance and r-squared values indicate that rather than a lack of relationship, there is no moderation effect, and that a mediation effect may be in place and should be assessed in future. This finding also supports the distinctness of the job vs organisational autonomy constructs due to the lack of interaction between them and psychological ownership despite the independent relationships demonstrated.

The first moderator identified of operational organisational autonomy in the relationship between the job-decision and self-efficacy components aligns with the

underlying items and constructs. The operational organisational autonomy items are based on decisions related to use of expert opinion in operational decisions, as well as outcomes-based overriding of formal procedures. These items link closely to decision making in a job, as well as the self-efficacy dimension which indicates the employee has the efficacy to make decisions and determine the best course of action.

The second moderator identified is strategic organisational autonomy in the relationship between the job-person component and territoriality. This relationship indicates that the level of strategic organisational autonomy can increase the level of territoriality which occurs because of its relationship with job-person autonomy. This combination of strategy and personal decisions with territoriality shows that combinations of components of the constructs can lead to negative outcomes and the dark side of psychological ownership. This is of significance as individually, correlations indicated a negative relationship between strategic organisational autonomy and territoriality, as well as between job-person autonomy and territoriality. However, the combined effects and resultant moderation role of strategic organisational autonomy indicates a risk to be managed to reduce the impact of territoriality and the complexity of the interacting components of constructs impacting psychological ownership and its varied dimensions which can lead to unintended consequences.

Despite the lack of moderation identified, the finding has significance for both job-design and organisational design. In terms of job-design, the positive potential outcome on psychological ownership as demonstrated in H1, and the positive psychological associations such as vitality and psychological wellbeing, can be managed independently of the expected organisational autonomy with the use of effective organisational design (Clausen et al., 2022; Tummers et al., 2018). In terms of organisational design, the level of organisational autonomy, which is integrated into job-design and the organisational structure, can be determined without a potential detrimental effect on psychological ownership targeted through increased job-autonomy. Thus, organisational structure and the autonomy it provides through the decision-making structures, it implies, will not impact the relationship between job-autonomy and psychological ownership and can be made to manage the level of autonomy required by the business line or area (Piezunka & Schilke, 2023). The

organisational structures in the respondents as noted in the H2 discussion were primarily (53%) from product/service based structures, which imply a high level of strategic autonomy for the product, this may further have impacted the outcome of the tests as the job and organisational autonomy were aligned in the respondents but may not if a larger proportion of respondents were in structures which implied lower autonomy.

The acceptance of the null hypothesis therefore extends the theoretical understanding of the interaction between the distinct types of autonomy and psychological ownership, clarifying the limited interaction at specific components, and providing a base for future research into the independent impacts of the types of autonomy and psychological ownership.

6.8. H4: Hybrid Work significantly influences psychological ownership

H4 hypothesised that Hybrid Work and work from home significantly influenced psychological ownership. Hybrid Work has changed aspects of job and organisational design, both of which have the potential to impact psychological ownership as psychological ownership has been linked with antecedents of control, intimate knowledge and investment in the target (Pierce et al., 2009).

To test the hypothesis, and ANOVA test was performed in IBM SPSS, with the aim of determining if a significant statistical difference existed between the three groups, being Hybrid work, central/office work, and work from home and the resultant psychological ownership at the component level.

The result identified one statistically significant difference between groups at the 95% confidence level out of the four components of psychological ownership, relating to the accountability component of psychological ownership.

The significant difference in groups was found between group 2- Office/central work(n=51), and group 3, work from home(n=16) within the accountability component of psychological ownership. Together, the respondents making up the groups represented 43.8% of the total sample. The mean difference indicated that contradictory to expectations in work from home due to unaccountability, the mean

score for the accountability dimension for respondents who work from home was 0.54 higher (Keating et al., 2023).

Whilst larger variances between groups across dimensions of psychological ownership were expected as a result of the changes Hybrid and work from home models have introduced, the single group variance identified is unique too due to the groups in which the difference was demonstrated in. The central/office work and work from home groups represent the opposite ends of the spectrum of work arrangements, compared to hybrid arrangements that feature a combination of periods of working from home and working at an office or central location.

The difference relating to the accountability component of psychological ownership between the groups is also significant. An increase in accountability for those working from home is linked with the potential noted for work from home to reduce work life balance for workaholics and increase stress (Magrizos et al., 2023). This also links to the overlaps between accountability and responsibility as dimensions of psychological ownership. Whilst both have been posited as distinct dimensions of psychological ownership, in the development of a South African instrument, Olckers (2013) found that accountability and responsibility focussed items loaded on a single factor (Pierce et al., 2009). The overlap with responsibility also highlights the potential burden created from accountability/responsibility which is highlighted in the loneliness which is associated with Hybrid Work.

The lack of significant difference between The Hybrid Work group compared to the central/office work group is of note, as these groups represent the majority of respondents (90%), and with many companies targeting a hybrid environment rather than one a total return to work, is the most applicable scenario in practise in future(Wong, 2020). The lack of difference is indicates that the Hybrid Work models in place in the organisations that the respondents work in, has not resulted in a difference in the dimensions of psychological ownership despite the drastic change in working conditions. The lack of difference could be as a result of the organisations having achieved the correct balance between remote and central work, however this would require further study across organisations and hybrid work policies to be conclusive.

Given the limited difference between groups and dimensions of psychological ownership identified, the null of H4 was not rejected. However the finding has extended literature in Hybrid Work and psychological ownership, indicating that psychological ownership does not appear to differ between work arrangements, except for the accountability impact between work from home and central/office work. The direction of the finding in relation to accountability increasing for respondents who worked from home is notable as lack of accountability is one of the potential inhibitors of effective remote work (Keating et al., 2023).

6.9. Summary of Hypothesis test results

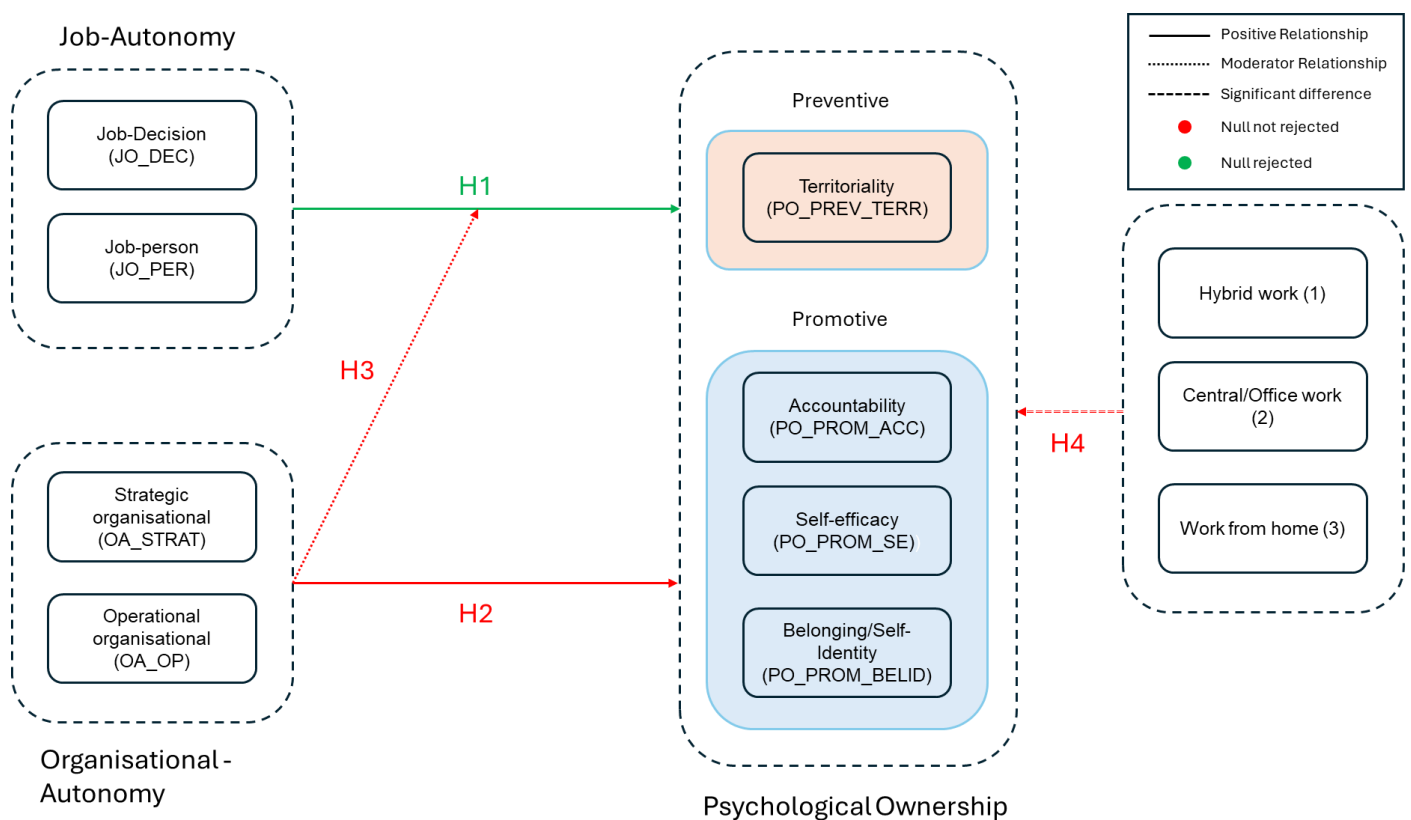


Figure 17 - Summary of Hypothesis results – Created by author.

H1: Increased job autonomy increases psychological ownership of the organisation – Result: Null rejected – Positive correlation demonstrated. The positive correlations identified confirmed the relationship, extending theory from the autonomy relationship to the specific job-autonomy relationship. The relationship contributes to practise, extending job-design considerations due to the potential impact on psychological ownership.

H2: Increased organisational autonomy increases psychological ownership of the organisation – Result: Null not rejected – Partial positive correlation demonstrated. The positive correlation demonstrated with the strategic component of organisational autonomy, extending theory by confirming that part of organisational autonomy does positively correlate with psychological ownership. The relationship contributes to practise in organisational design and organisational structure considerations which impact strategic organisational autonomy and thus possibly psychological ownership.

H3: Organisational autonomy moderates job autonomy and Psychological Ownership – Result: Null not rejected – Limited moderation demonstrated at component level. The statistically significant models which demonstrated the lack of moderation extended theory by confirming the lack of moderator relationship, allowing practitioners to consider the distinct types of autonomy separately.

H4: Hybrid Work significantly influences psychological ownership – Result: Null not rejected – Limited difference in groups demonstrated at component level. The result confirmed that the newly adopted work arrangements did not significantly impact psychological ownership, extending theory in Hybrid Work and setting the start for the study of Hybrid Work and psychological ownership.

6.10. Conclusion

This chapter discussed the findings of the statistical analysis performed to test the hypotheses identified in chapter 3, based on the methodology described in chapter 4 and the test results in chapter 5. The outcomes of the tests, and the resultant acceptance or rejection of the hypothesis was discussed, together with the results on the component level and the strength and statistical significance of the results. Further, this chapter highlighted the literature linked to the results, and the potential contradictions, extensions, and confirmations that the results provided.

7. Conclusions and Recommendations

7.1. Purpose, process, and outcomes

The purpose of this study was to study the relationship between two types of autonomy, job and organisational, on psychological ownership, post Hybrid and work from home.

Previous studies have investigated the relationship between autonomy and psychological ownership, however these studies did not assess the relationships at a job and organisational autonomy level, nor the components of organisational autonomy (Mayhew et al., 2007; Olckers, 2013). In addition, these studies were conducted prior to Covid-19. The Covid-19 pandemic accelerated the adoption of hybrid and work from home as arrangements of work, compared to the central/office arrangement that dominated previously (Choudhury et al., 2022). The shift, combined with other global pressures has resulted in changes in employees' job design, organisational structures and autonomy, i.e. items which link to psychological ownership (*The Future of Work: Managing Three Risks of the Hybrid Workplace*, n.d.).

Based on these shifts, this study aimed to test the relationship between job and organisational autonomy, on psychological ownership post hybrid and work from home, to understand the potential impact of the changes given the pandemic, in a South African context. Further, within these constructs, this study tested the potential for organisational autonomy to moderate the relationship between job-autonomy and psychological ownership. Lastly, this study aimed to assess if the work arrangements resulted in a significant difference in psychological ownership, thereby contributing to understanding the impact of hybrid and work from home on overall psychological ownership.

To complete the study, a quantitative survey methodology was developed. The surveys took place in South Africa, with a total of 153 valid responses being received between August and September 2023. The majority of respondents were manager level employees at large companies and had hybrid work arrangements. The survey was composed of question items from previously validated questionnaires, split

between job-autonomy, organisational autonomy, and psychological ownership. Control variable responses related to the employee, their organisations, and their work arrangements were included.

This data collection was followed by a statistical analysis. Validity and reliability were tested through Cronbach's Alpha, multi-variate correlations and EFA analysis. The results demonstrated that the items loaded on components expected within the constructs, with the exception of the belonging and self-identity items which were expected to load on separate components from the initial questionnaire study, however these loaded on a single component. This however appears to be context related, as other studies in South Africa identified the same combined component when using the questionnaire (Avey et al., 2009; George, 2015; Olckers, 2013).

To test the hypotheses, a Pearsons correlation (H1 and H2), Hayes Process Model (H3) and ANOVA (H4) tests were completed. Based on the statistical tests, H1, the positive relationship between job-autonomy and psychological ownership was proven by the statistically significant correlations. H2, however was not proven, as despite the statistically significant correlation between the strategic component of organisational autonomy, no correlation was noted with operational organisational autonomy and thus the relationship between organisational autonomy and psychological ownership was not conclusively proven as positive. In the moderation test for H3 a limited and weak moderation relationship was found between specific components of organisational autonomy and job autonomy, and thus the null was not rejected, organisational autonomy was not found to moderate the relationship between job-autonomy and psychological ownership. In the ANOVA test for differences between groups for H4, out of four components and three groups, only one significant difference between the groups was noted for the accountability component of psychological ownership. The null was therefore not rejected, a statistically significant difference between Hybrid Work and psychological ownership was not found.

Despite the null only being rejected in the test of H1, the specific outcomes at a component and segment level provided insights into the relationships both at the construct and component level. In particular, the negative correlations identified for both components of job-autonomy as well as the strategic component of

organisational autonomy with the preventative-territoriality component of psychological ownership. These relationships, whilst moderate to weak, demonstrated that the autonomy components noted do not contribute to this negatively associated dimension of psychological ownership, and could be utilised to manage territoriality.

The lack of moderation relationships in H3 provides insights into the lack of interaction between distinct job and organisational autonomy and their relationship with psychological ownership. Whilst the overall lack of difference between the groups indicates that the different work arrangements has not impacted psychological ownership, the specific difference identified on the accountability component between the work from home and central/office work group provides insight into the potential for differences, as well as the contradictions where work from home respondents had higher accountability.

7.2. Theoretical contributions

The study aimed to contribute theoretically by assessing autonomy relationships at the job and organisational level, in a post Covid-19 context. The main area of the post Covid-19 context expected influence psychological ownership was Hybrid Work. The findings in the study contribute to theory across constructs. In the area of autonomy, the study contributed by identifying that whilst both decision making and personal components of job-autonomy are positively correlated with promotive dimensions of psychological ownership, they are negatively correlated with the territoriality dimension of psychological ownership. In relation to organisational autonomy, the study contributed by confirming that strategic organisational autonomy correlated positively with promotive dimensions of psychological ownership and negatively with the territoriality dimension of psychological ownership. This compared to the lack of relationship identified with the operational component of organisational autonomy, which was however limited due to the sparse number of item loadings. These findings in job and organisational autonomy extend the theory from prior studies which focussed on autonomy as a construct, to the lower level of job and organisational autonomy. In addition, the analysis at a dimensional level contributes by identifying differences in correlation between preventative and promotive dimensions (Mayhew et al., 2007; Olckers, 2013). In testing the relationship between organisational autonomy and psychological ownership, the

study empirically tested part of the model by Degbey et al. (2021), the findings potentially indicating an iteration of the model which is based only on the strategic component of organisational autonomy rather than organisational autonomy as a whole.

This expansion into the types of autonomy was then extended further by assessing the possible moderation relationship between organisational and job-autonomy with psychological ownership. The finding that there was no moderation relationship contributes to the theory on the types of relationships between autonomy and psychological ownership, as well as the distinctness of the relationships at a job and organisational level.

The analysis of differences between the work arrangement groups, which demonstrated limited differences except in the case of accountability between the work from home and central work groups, sets the base for understanding the impact of Hybrid Work. The finding in relation to accountability differences between the two groups of work arrangements contributes to the understanding of the differences due to work arrangements and the direction of differences.

7.3. Implications for practitioners

The findings have implications for business managers and practitioners primarily in the job and organisational design area of human resource management. In the job-design area, the correlation findings provide insight into the positive relationship of job-autonomy to psychological ownership and its specific dimensions. This can be included in future job-design implementations which target either specific dimensions of psychological ownership or the construct as a whole, whilst the risk of territoriality is mitigated by the negative correlation identified. The manager level focus in the sample also provides job-design practitioners with background into psychological ownership at this level of employee, primarily in large organisations. For managers who are targeting manager levels of psychological ownership in their organisations, the findings provide a lever in job-autonomy to attempt to influence the psychological ownership of their employees.

In the area of organisational design, the findings assist practitioners in understanding that the implied organisational autonomy inherent in the organisational design

correlates with psychological ownership, however the relationship was only found on the strategic component of organisational autonomy and not the operational dimension. One of the key influences in organisational design which influences organisational autonomy is organisational structure. The finding that strategic organisational autonomy positively correlates with psychological ownership is an area both managers and practitioners should therefore consider when determining their organisational design, and in particular organisational structure. The context of the study should be considered, as the majority of respondents were employed in product/service line-based structures and thus the level of organisational autonomy in the study may be related to the structures most prominent in the respondents (product/service line and functional structures). The lack of result with regards to operational organisational autonomy also provides insight for practitioners and managers as to the type of autonomy which is more likely to impact not only psychological ownership but also the dimensions of psychological ownership, which in of their own are key attributes in employees, such as accountability.

7.4. Recommendations for future research

The study findings have identified several areas for future research, primarily in the organisational autonomy and Hybrid Work areas. Within organisational autonomy, the results at a construct level were not conclusive, as only the strategic component of organisational autonomy was found to positively correlated with psychological ownership. Future research is recommended to expand the items related to operational organisational autonomy and the types of organisational structures to attain statistically significant findings in this area and expand on the understanding of the impact of strategic versus operational organisational autonomy.

In the area of Hybrid Work, the study provides the first insight into psychological ownership post the accelerated implementation of Hybrid Work. Whilst the study attempted to assess the difference in psychological ownership between different work arrangements, further studies of a larger sample and longitudinal methodology to improve the understanding of Hybrid work and its impacts are required as they may suit structural equation modelling and provide causation models. Due to the rapid implementation of Hybrid Work, the potential impacts also may not have yet presented in employees, and thus further research after a longer passage of time may provide insight into the full effect of Hybrid Work.

7.5. Limitations

The study despite its contributions to theory and implications for practitioners and management, is subject to limitations given its scope, methodology and time scale.

The study targeted South African employees, and is therefore limited to the South African context. The descriptive statistics of the sample also result in limitations, the first of which is the sample size of 153, whilst sufficient to achieve statistically significant results, could be enhanced with a larger sample which combined with a different sampling methodology which increases the diversity of the sample characteristics. The South African, primarily management level and large organisation-based sample is a limitation to the generalisability of the study. In addition, the weighting towards the product based organisational structure may have impacted the testing regarding organisational autonomy, as well as its potential moderation.

With regards to methodology, chapter 4 detailed the methodology related limitations. Of note is the sample size which limited analysis to EFA rather than CFA, and with regards to H4, the smaller sample size of the work from home and central work groups limits the generalisation of the difference in the groups identified. In addition within the organisational autonomy related H3, the lack of statistically significant findings relating to the operational organisational autonomy component is limited due to the limited item loadings on the component (two items). The large sample size, would also allow for the use of a structural equation model, this testing methodology would enhance the findings and allow for causality conclusions rather than the inferences from the correlations identified in this study (Tabachnick et al., 2013). Further, the findings are limited in that the correlation relationships identified, whilst statistically significant ranged from weak to moderate, with limited strong relationships identified at a component level and thus the level of their correlation must be considered if utilising the findings in practise.

The time scale of the study was cross sectional with data collection between August and September 2023. This choice was limited due to the requirements of the mini-thesis submission timing. Whilst a cross sectional study prior to and post Hybrid work

would be preferred, this could not be performed due to the unforeseeable changes that Covid-19 resulted in.

Lastly, the inexperience of the researcher in the field is noted as a possible limitation, which could have resulted in errors of judgement in the completion of the study.

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Appendix A – Consistency Matrix

Hypothesis	Literature review	Data collection tool	Analysis
H1: Increased job autonomy increases psychological ownership of the organisation.	Mayhew et al. (2007) and Olckers (2013), H. Peng & Pierce (2015) and Koo et al. (2023)	Psychological Ownership of the Organisation - Questionnaire item 29-44 - Sourced from the Psychological Ownership Questionnaire of Avey and Avolio (2009). Job-autonomy - Questionnaire item 10 - 18 - Sourced from the Work Design Questionnaire of Morgeson & Humphrey (2006)	Pearsons's correlation, Cronbach's Alpha and EFA
H2: Increased organisational autonomy increases psychological ownership of the organisation.	Mayhew et al. (2007), Olckers (2013), Cocieru et al. (2019), H. Peng & Pierce (2015) and Koo et al. (2023)	Psychological Ownership of the Organisation - Questionnaire item 29-44 - Sourced from the Psychological Ownership Questionnaire of Avey and Avolio (2009). Organisational autonomy - Questionnaire items 19 - 28 - Operational organisational autonomy (Item 19-22) sourced from Das & Joshi (2007), Strategic organisational autonomy (Item 23-28) sourced from Bedi (2020)	Pearsons's correlation, Cronbach's Alpha and EFA
H3: Organisational autonomy moderates job autonomy and Psychological Ownership	Mayhew et al. (2007) and Olckers (2013)	Psychological Ownership of the Organisation - Questionnaire item 29-44 - Sourced from the Psychological Ownership Questionnaire of Avey and Avolio (2009). Job-autonomy - Questionnaire item 10 - 18 - Sourced from the Work Design Questionnaire of Morgeson & Humphrey (2006) Organisational autonomy - Questionnaire items 19 - 28 - Operational organisational autonomy (Item 19-22) sourced from Das & Joshi (2007), Strategic organisational autonomy (Item 23-28) sourced from Bedi (2020)	Hayes Process Model 2, Cronbach's Alpha and EFA
H4: Hybrid Work significantly influences psychological ownership	Cocieru et al. (2019), Wang et al. (2021), Smite et al. (2023), Mandal et al. (2023) and Rožman & Čančer (2022)	Psychological Ownership of the Organisation - questionnaire item 29-44 - Sourced from the Psychological Ownership Questionnaire of Avey and Avolio (2009). Hybrid-Work - Control question item 8-9 - "Your work location arrangements are best described as:" "If you work hybrid, how many days do you work at the office?"	ANOVA, Cronbach's Alpha and EFA

Appendix B – Questionnaire sample

	Section 1 - Background questions	Response Options
1	The size of your organisation is best described as:	Small, Medium or Large
2	The level of your role is best described as:	Administrator/Analyst, Executive, Junior Manager or Senior Manager
3	The structure of the organisation is best described as:	Functional based, Market based, Matrix structure, Network structure, Product or service line based, School / Welfare
4	The organisation is	Listed, Non-profit, NPC, Owned by an International Company, Private, Public sector
5	You have been part of the organisation for:	Between 2 and 5 years, Greater than 5 years, Less than 2 years
6	The age of the organisation is:	22, 5 to 20 years, Greater than 20 years, Less than 5 years, Na
7	Do you have any form of ownership in the organisation?	Employee Share Options or Similar, None, Shares
8	Your work location arrangements are best described as:	Hybrid work, Office/Central location, Work from home
9	If you work hybrid, how many days do you work at the office?	Numerical input
	Section 2 - Job-autonomy	Response Options
10	The job allows me to make my own decisions about how to schedule my work.	1 - Strongly disagree, 2 - Disagree, 3 - Neither Agree nor Disagree, 4 - Agree, 5 - Strongly agree
11	The job allows me to decide on the order in which things are done on the job.	
12	The job allows me to plan how I do my work.	
13	The job gives me a chance to use my personal initiative or judgment in carrying out the work.	
14	The job allows me to make a lot of decisions on my own.	
15	The job provides me with significant autonomy in making decisions.	
16	The job allows me to make decisions about what methods I use to complete my work.	
17	The job gives me considerable opportunity for independence and freedom in how I do the work.	
18	The job allows me to decide on my own how to go about doing my work.	
	(Morgeson & Humphrey, 2006)	

	Section 3 - Organisational autonomy	Response Options
19	My organisation allows managers' operating styles to range freely from the very formal to the very informal	1 - Strongly disagree, 2 - Disagree, 3 - Neither Agree nor Disagree, 4 - Agree, 5 - Strongly agree
20	My organisation emphasizes getting things done even if this means disregarding formal procedures	
21	My organisation has a tendency to let the expert in a given situation have the most say in decision-making, even if this means temporary bypassing of formal line of authority	
22	My organisation has open channels of communication with important financial and operating information flowing quite freely through out the organization.	
	(Das & Joshi, 2007)	
23	In general, my firm believes that individuals or work groups operating within the traditional hierarchy get the best results	1 - Strongly disagree, 2 - Disagree, 3 - Neither Agree nor Disagree, 4 - Agree, 5 - Strongly agree
24	In general, the top managers of my firm try to keep bureaucracy to a minimum so that people can concentrate on what's important	
25	In general, the top managers of my firm encourage individuals and/or teams to launch new ventures.	
26	In general, the top managers of my firm encourages individuals and/or teams to think 'outside the box' when making decisions	
27	In my firm, employee's initiatives and inputs play a major role in identifying and selecting the entrepreneurial opportunities	
28	In general, the top managers of my firm supports the efforts of individuals and/or teams who work autonomously	
	(Bedi, 2020)	
	Section 4 -Psychological ownership	Response Options
	<i>Sample items of Psychological Ownership Questionnaire</i>	
29	I feel I need to protect my ideas from being used by others in my organization	1 - Strongly disagree, 2 - Disagree, 3 - Neither Agree nor Disagree, 4 - Agree, 5 - Strongly agree
33	I am confident in my ability to contribute to my organization's success.	
36	I would challenge anyone in my organization if I thought something was done wrong.	
	Copyright © 2007 Psychological Ownership Questionnaire (POQ) by James B. Avey & Bruce J. Avolio. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com	

Based on the terms and conditions of use, only the sample items provided may be published of the Psychological Ownership Questionnaire. The full questionnaire is available at www.mindgarden.com

Appendix C – Statistical results

Full Cronbach's Alpha results:

1. Job – autonomy

Table 33 - Reliability analysis item detail Job-autonomy items – Cronbach's Alpha – Extracted from IBM SPSS

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
j1	30.87	31.693	0.654	0.525	0.896
j2	30.83	33.221	0.610	0.533	0.898
j3	30.54	34.790	0.648	0.585	0.895
j4	30.47	33.935	0.759	0.642	0.888
j5	30.91	31.913	0.746	0.666	0.887
j6	31.05	32.866	0.670	0.594	0.893
j7	30.72	33.677	0.652	0.551	0.894
j8	30.82	32.348	0.755	0.694	0.886
j9	30.71	34.535	0.637	0.504	0.895

2. Organisational – autonomy

Table 34 - Reliability analysis item detail Organisational autonomy items – Cronbach's Alpha – Extracted from IBM SPSS

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
o_o1	27.97	29.934	0.331	0.173	0.762
o_o2	29.20	31.505	0.170	0.223	0.784
o_o3	28.76	31.092	0.194	0.242	0.782
o_o4	28.31	28.030	0.515	0.345	0.737
s_o5	29.07	31.219	0.232	0.076	0.773
s_o6	28.37	27.378	0.580	0.390	0.728
s_o7	28.51	27.502	0.603	0.543	0.726
s_o8	28.08	26.855	0.619	0.523	0.722
s_o9	28.56	27.498	0.598	0.509	0.726
s_o10	28.05	28.089	0.572	0.446	0.731

3. Psychological ownership

Table 35 - Reliability analysis item detail psychological ownership items – Cronbach's Alpha – Extracted from IBM SPSS

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
t_p1	51.39	69.173	-0.231	0.506	0.841
t_p2	51.05	66.004	-0.047	0.293	0.834
t_p3	51.44	67.104	-0.105	0.557	0.835
t_p4	51.58	66.416	-0.056	0.519	0.828
s_p5	49.35	59.388	0.576	0.784	0.796
s_p6	49.37	59.248	0.555	0.765	0.796
s_p7	49.61	57.411	0.623	0.556	0.790
a_p8	49.89	57.797	0.526	0.502	0.795
a_p9	49.65	58.412	0.564	0.539	0.794
a_p10	50.05	57.176	0.578	0.554	0.792
b_p11	49.85	54.826	0.670	0.734	0.784
b_p12	50.33	53.050	0.693	0.715	0.780
b_p13	49.97	54.545	0.666	0.770	0.784
i_p14	50.12	53.973	0.658	0.650	0.784
i_p15	50.63	55.168	0.572	0.504	0.790
i_p16	50.14	55.448	0.601	0.557	0.789

Table 36 - Code book, generated by author

c1	Code	c2	Code	c3	Code
Large	1	Administrator/Analyst	1	Functional based	1
Medium	2	Executive	2	Market based	2
Small	3	Junior Manager	3	Matrix structure	3
		Senior Manager	4	Network structure	4
				Product or service line based	5
				School / Welfare	6

c4	Code	c5	Code	c6	Code
Listed	1	Between 2 and 5 years	1	22	1
Non-profit	2	Greater than 5 years	2	5 to 20 years	2
NPC	3	Less than 2 years	3	Greater than 20 years	3
Owned by an International Company	4			Less than 5 years	4
Private	5			Na	5
Public sector	6				

Table 36 continued - Code book, generated by author.

c7	Code	c8	Code	Likert	Code
Employee Share Options or Similar	1	Hybrid work	1	1 - Strongly disagree	1
None	2	Office/Central location	2	2 - Disagree	2
Shares	3	Work from home	3	3 - Neither Agree nor Disagree	3
				4 - Agree	4
				5 - Strongly agree	5

Table 37 - Questionnaire item codes to IBM SPSS mapping, generated by author.

Questionnaire Item	Variable name	Item Type Initial	Factor loading
1	c1	Control responses	Not applicable
2	c2		
3	c3		
4	c4		
5	c5		
6	c6		
7	c7		
8	c8		
9	c9		
10	j1	Job-Autonomy items	JO_PER - Job-person
11	j2		
12	j3		
13	j4		
14	j5		JO_DEC - Job-decision
15	j6		
16	j7		
17	j8		
18	j9		

Table 37 continued - Questionnaire item codes to IBM SPSS mapping, generated by author.

Questionnaire Item	Variable name	Item Type Initial	Factor loading
19	o_o1	Operational organisational autonomy items	Single - excluded
20	o_o2		OA_OP - Operational organisational autonomy
21	o_o3		
22	o_o4		
23	s_o5	Strategic organisational autonomy items	OA_STRAT - Strategic organisational autonomy
24	s_o6		
25	s_o7		
26	s_o8		
27	s_o9		
28	s_o10		
29	t_p1	Preventative - Territoriality- Psychological Ownership items	PO_PREV_TERR/PO_PV_T - Preventative - Territoriality- Psychological Ownership
30	t_p2		
31	t_p3		
32	t_p4		
33	s_p5	Promotive - Self-efficacy - Psychological Ownership items	PO_PROM_SE/PO_P_SE - Promotive - Self-efficacy - Psychological Ownership
34	s_p6		
35	s_p7		
36	a_p8	Promotive - Accountability - Psychological Ownership items	PO_PROM_ACC/PO_P_AC - Promotive - Accountability - Psychological Ownership
37	a_p9		
38	a_p10		
39	b_p11	Promotive - Belonging - Psychological Ownership items	PO_PROM_BELID/PO_P_BI - Promotive - Belonging/Self-identity - Psychological Ownership
40	b_p12		
41	b_p13		
42	i_p14	Promotive - Self-identity - Psychological Ownership items	PO_PROM_BELID/PO_P_BI - Promotive - Belonging/Self-identity - Psychological Ownership
43	i_p15		
44	i_p16		

Note - Psychological ownership factors have two variable names for SPSS as initial coded names were more than the maximum name length valid for use in Hayes Process Model, thus truncated names were applied.

Appendix D – Ethical Clearance

**Gordon Institute
of Business Science**
University of Pretoria

Shiamal Harkison <29164835@mygibs.co.za>

Ethical Clearance Approved

1 message

Masters Research <MastersResearch@gibs.co.za>
To: "29164835@mygibs.co.za" <29164835@mygibs.co.za>
Cc: Masters Research <MastersResearch@gibs.co.za>

31 July 2023 at 12:05

**Gordon Institute
of Business Science**
University of Pretoria

Ethical Clearance Approved

Dear Shiamal Harkison,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards