12-2022

Employees' job positions, psychological ownership, and commitment to change

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SINGAPORE MANAGEMENT UNIVERSITY

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Commitment to Change

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Submitted to Lee Kong Chian School of Business in partial
fulfillment of the requirements for the Degree of Doctor of
Business Administration

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2022

I hereby declare that this DBA dissertation is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in this DBA dissertation.

This DBA dissertation has also not been submitted for any degree in any university previously.

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15 Dec 2022

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Abstract

Organisational change is crucial to the development of enterprises. However, when enterprises are implementing major changes, there are great differences in the attitudes and behaviours of employees in different job positions toward changes. Research in this area is insufficient. Therefore, this dissertation investigates the problem of employee commitment amid enterprises' organisational changes. This dissertation is committed to determining why employees at different levels and with different roles have different degrees of commitment to change and confirming the role of job positions in affecting employees' psychological ownership of the change process. According to the findings, the impact of employees' job rank and managerial position on their psychological ownership has three dimensions: having space, pursuing efficacy, and finding self-identity. The higher an employee's rank or managerial position, the greater their sense of psychological ownership will be. There is an inverted U-shaped relationship between psychological ownership and continuance commitment to change; a U-shaped relationship between psychological ownership and affective commitment to change; and a U-shaped relationship between psychological ownership and normative commitment to change. The above assumptions are tested using both quantitative and qualitative research methods. In addition to enriching studies of organisational change, commitment to change and psychological ownership, this dissertation provides an important reference for enterprises' change practices.

Keywords: job positions, psychological ownership, commitment to change, organisational change

Contents

Acknowledgments

Time flies, and it was the autumn of 2022. I have completed the first draft of my doctoral dissertation. I am filled with mixed feelings and would like to express my gratitude.

First, I would like to show my gratitude to my dear supervisor, Professor Wang Yijiang. He is mild-mannered, knowledgeable, and thoughtful. During my doctoral program and thesis writing, Professor Wang helped me a lot, especially through his exclusive visit to my company for instructing my thesis writing and offering management suggestions. I will continue to scale up my company and make it more influential to repay his help.

Second, I would like to thank Professor Lily Kong and Professor Roy Chua at the Doctoral Supervisor Committee as well as Ms. Yao Wei and Ms. Li Linna at CKGSB for their guidance and assistance in my topic selection, interim report, and graduation defense. Notably, Professor Lily Kong revised my paper though she felt under the weather; Professor Roy Chua gave me over 100 suggestions on revision and solutions; Ms. Yao Wei and Ms. Li Linna organized the doctoral dissertation defense at the risk of being infected by COVID-19.

At last, I am thankful for my family and friends. It was not easy to complete doctoral study and doctoral dissertation writing. It is precisely because of their strong support that I had enough motivation to pursue a doctoral degree and successfully complete my doctoral dissertation. As a result, I missed out on many opportunities to accompany my family and friends. My doctoral degree owes half its credit to them.

The doctoral study has provided me with many new and insightful management concepts. With my graduation as a starting point, I will stay true to my original aspiration, keep forging ahead, and lead Weiqiao Pioneering to better serve the country and the people.

Chapter 1 Introduction

The core task of an entrepreneur is twofold: *doing the right thing* and *doing the thing right*. First, doing the right thing means that the enterprise's development strategy should be correct, and the enterprise should use its core resources and capabilities in appropriate businesses. Accordingly, entrepreneurs must pay attention to changes in their internal and external environments and select businesses that offer core competitiveness based on their own conditions. Because the business environment is always in a state of rapid change, entrepreneurs need to adjust the direction of their business operations to do the right thing, and organisational change is an important means of doing so. Second, doing the thing right means that enterprises should implement their development strategies reasonably, requiring entrepreneurs to allocate appropriate human, financial, material and other resources to implement such strategies and ensure that there is a good synergy effect among the available resources.

Organisational change has always been an important topic of strategic management research (Armenakis & Harris, 2009; Burnes, 2005; Hanelt et al., 2021). Only through continuous changes can enterprises survive and develop in a competitive atmosphere (Soparnot, 2011; Weick & Quinn, 1999), and this is particularly important for Chinese enterprises. With the rapid development of technology and the world economy, ever-expanding globalisation and the quickly changing external environment, Chinese enterprises are facing new challenges. Meanwhile, as the business environment becomes increasingly complex and changeable amid China's economic and social transformation, enterprises cannot allow their management mode to remain unchanged.

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This rapidly changing environment imposes stricter requirements on enterprises' operations. Both small- and medium-sized enterprises (SMEs) and large enterprises need to make changes that consider the fluctuations in the external environment. Individuals also play a fundamental role in organisational change. A large part of the research on organisational change has focused on either the macro level, such as the relationship between environmental and organisational change (Buchanan & Badham, 2020; Suddaby & Foster, 2017), or the individual level, such as the relationship between personal traits and organisational change (Caldwell et al., 2004; Gilstrap & Hart, 2020; Idris et al., 2018). The new challenge for scholars is to determine how to explore organisational change in relation to both macro and individual factors.

Empirical research has shown that successful organisational change depends not only on whether the organisation has ambitious change strategies and detailed change plans but also on employees' cognition and attitudes towards organisational change (Furst & Cable, 2008). However, when enterprises are implementing major changes, their employees vary widely in their attitudes and behaviours towards change, based on their job positions (Armenakis & Bedeian, 1999; Oreg et al., 2011). Unfortunately, we know little about how job position affects organisational change. In recent years, scholars have found that psychological ownership, reflecting an individual's psychological state regarding a target, has an impact on organisational change and is affected by job position (Pierce et al., 2001). My goal in this dissertation is to research employees' commitment to change amid enterprises' organisational change. I am committed to finding out why employees in different job positions engage in different

change-supportive behaviours and determining the role of psychological ownership.

I focus on two typical measures of job position, namely job rank and managerial position, which affect employees' psychological ownership from the following three perspectives: having space, pursuing efficacy, and finding self-identity (Pierce et al., 2001; Van & Pierce, 2004). The higher an employee's job rank or managerial position, the stronger their sense of psychological ownership. Based on other studies, I subdivide commitment to change into three types—continuance, affective, and normative commitment—and propose that different levels of psychological ownership lead to different types of commitment to change. There is an inverted U-shaped relationship between psychological ownership and continuance commitment to change; a U-shaped relationship between psychological ownership and affective commitment to change; and a U-shaped relationship between psychological ownership and normative commitment to change. Using both quantitative and qualitative research methods, I conducted empirical research targeting the 2019 relocation of the Weiqiao Pioneering factory. I administered a questionnaire survey to explore the impact of employees' job positions on their commitment to change while their enterprises were undergoing major changes, along with the role of psychological ownership. All five hypotheses were supported. To verify the mechanisms of the observed effects, I adopted a qualitative research method to study the 2003 aluminium–electricity collaborative reform of Weiqiao Pioneering. I conducted in-depth interviews aimed at understanding the psychological ownership and commitment to change of employees in different positions, further testing the robustness of the empirical research findings. In addition

to enriching studies of commitment to change, and psychological ownership, my work has important practical implications for enterprises' change practices.

The framework of the dissertation is as follows. First, I introduce the universality and importance of organisational change from a practical perspective. Second, I conduct a systematic review of the literature on job positions, psychological ownership, and commitment to change, from which I extract the research questions. Third, based on the practical background and literature review sections, I discuss the effect of job position on psychological ownership and the effect of psychological ownership on commitment to change. I then propose the corresponding research hypotheses. Fourth, I describe the empirical research method used to test the research hypotheses. Fifth, I describe the confirmatory case study method used to test the mechanisms underlying the hypotheses. Finally, I introduce my research conclusions and provide a discussion. The framework is shown below in Figure 1-1.
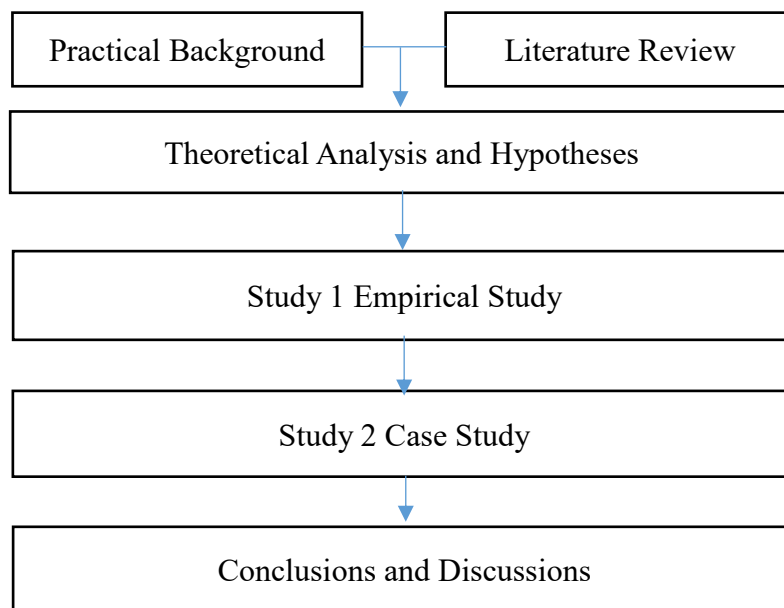
Figure 1-1 Research Framework

Chapter 2 Research Background

2.1 Practice Background

Given the complex linkage between enterprises' internal and external environments, environmental changes often result in corresponding changes in enterprises, namely organisational change. Enterprises are not closed subjects; they are embedded in the external environment at different levels and are affected by changes in the external environment. At the meso level, enterprises are embedded in the industry environment, which consists of enterprises, customers, suppliers, competitors (and potential competitors), and substitutes. Thus, suppliers' and customers' bargaining ability in the industry and threats from competitors (and potential competitors) and substitutes affect the competitive landscape of enterprises, leading them to implement change. At the macro level, enterprises are part of the political, economic, technological, and cultural environments in their locations. Thus, changing regulatory systems, economic fluctuation, technological upgrades and varying cultural environments can affect enterprises' operations. In addition to changes driven by the external environment, enterprises carry out changes driven by their changing internal environment in the areas of resources, abilities, and core competitiveness. The rigidity and inefficiency of enterprise systems are also important factors that promote organisational change. As a result, enterprises are subject to continuous change within their varying environments. There are two reasons for enterprises to make timely changes based on these environments: (a) they need to address environmental threats and opportunities, and (b) they hope to obtain more competitive resources and abilities from new environments

than they had in their old environments, thus increasing their competitive advantage.

Although change is often beneficial to enterprises, enterprise change indicates a change in interest patterns. Stakeholders usually resist enterprise change because of its impact on their interest patterns. The greater the magnitude of change, the greater its impact on stakeholders' interests, and the greater stakeholders' resistance. A typical example of this phenomenon was described by Eilam and Shamir (2005), who studied an employee boycott in Israel launched in response to the relocation of a government department. As a market supervision service agency, the government department needed to make changes in response to varying environments. In the studied case, a government department was relocated to a new office building that had won an architectural award and featured more complete facilities and a more luxurious style than the department's previous location. In theory, the move should have resulted in greater job satisfaction. However, Eilam and Shamir (2005) found through in-depth interviews that the employees showed strong psychological resistance to the relocation and even banded together to oppose the move.

Further research (Eilam & Shamir, 2005) showed that the primary reason for the employees' boycott was the psychological impact of the department's spatial changes. In the previous office building, although the office space was small and the equipment was old, the employees had established stable spatial and emotional relationships with their workspaces and colleagues. In the new office building, they were each required to occupy a small cubicle in an open workspace, obliterating their spatial privacy and emotional stability. In the new office building, the employees were forced to accept a

unified working environment (e.g., unified air conditioning equipment, lighting, office equipment, and access control protocols), decreasing their sense of freedom and efficacy. As the move to the new office environment changed the symbolic meaning of each person and thing in the original space, the sense of psychological ownership established between employees and between employees and their environment disappeared, further reducing employees' sense of personal identity in the workplace (Eilam & Shamir, 2005). Although this example involved a minor change in the workplace with the potential to improve work efficiency, it still evoked strong employee resistance. Therefore, enterprise managers are confronted by an important practical problem, namely how to cope with resistance from stakeholders and reduce the cost of change to gain a competitive advantage in the change process. The logical relationship between environmental change, organisational change, and competitive advantages is shown in Figure 2-1.
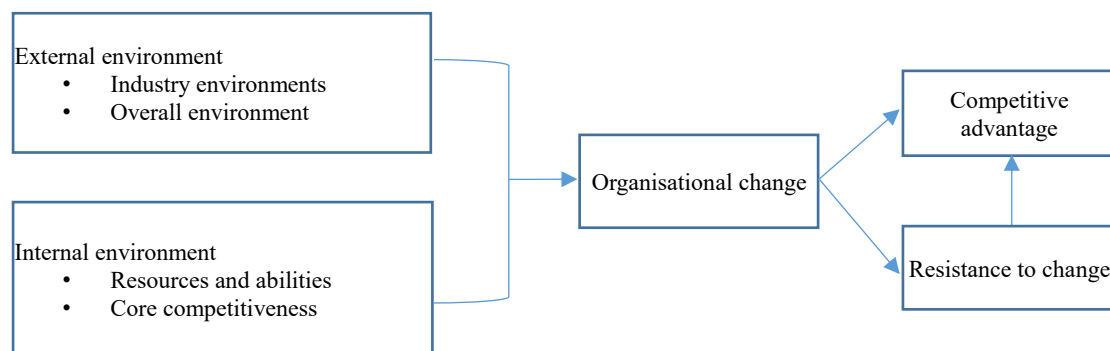
Figure 2-1 Environments and organisational change

Over the last 40 years of China's reform and opening-up, earth-shaking changes have taken place in the Chinese business environment. For example, China's economic system has been transformed from a planned model to a market-oriented model. The degree of marketisation has increased, the relationship between the government and the

market has gradually been optimised, and product markets, factor markets, and intermediary markets have developed, especially in coastal areas (Wang et al., 2019). China has also transformed from a local economy into a world-class economy. In the 20 years since China's accession to the WTO (World Trade Organization), local enterprises have become firmly connected to the world in the fields of economy, politics, science and technology, and culture. The fluctuating global business environment now influences Chinese enterprises, requiring them to pay equal attention to changes in the local business environment and the impact of the world's business environment on their operations. Especially in the current business environment, in which Sino–US trade frictions and the backlash against globalisation are escalating, there is a growing need for Chinese enterprises to make corresponding changes promptly and based on the fluctuating business environment.

For example, in the aluminium industry in which I work, it is imperative (and complex) for Chinese enterprises to make organisational changes. Aluminium is an important industrial raw material that is widely used in construction, transportation, power electronics, packaging, and other fields. Among all metals, aluminium is surpassed only by steel in its consumption volume, and among non-ferrous metals, it ranks number one in terms of production and sales volumes. Over the past 100 years of development, the aluminium industry has developed mature technologies used to mine bauxite and to produce and process alumina and electrolytic aluminium. It also experiences competition in each node of the industrial chain. A global monopoly competition pattern led by industry giants such as Aluminum Corporation of China

Limited (Chalco), Alcoa Corporation, UC RUSAL, and Weiqiao Pioneering has taken shape, and in terms of CR10 (Concentration Ratio), the top 10 enterprises in the areas of alumina and electrolytic aluminium account for up to 75% and 50% of the industry's sales, respectively. Although the competition pattern has remained stable, the aluminium industry is greatly affected by enterprises' internal and external environments.

Regarding the internal resources and abilities of aluminium enterprises, the following three factors promote organisational change. First, as most aluminium enterprises have a long history of development (for example, Chalco and Weiqiao Pioneering were established decades ago), they have established a stable business model and fixed office spaces and production workshops. Although this model and these spaces help enterprises operate efficiently, they may also gradually lead to organisational inertia, resulting in compliant but inefficient business behaviours. This will force enterprises to make changes. Second, most aluminium enterprises use smelting and processing technologies that are either several years old or merely upgraded from their old versions. Thus, although alternative technologies may have been popularised in other industries, there is a lack of disruptive innovative products in the aluminium industry. Accordingly, aluminium enterprises must complete technical upgrades as soon as possible. Third, most of the employees of aluminium enterprises are older than average and have fewer academic qualifications than average. These employees prefer to follow familiar models; they lack interest in new technologies and models. This situation is one important reason for the low business efficiency of

enterprises in the industry, generating an urgent need for change.

Three forces shape the external environment of aluminium enterprises. The first is cost. Aluminium production and processing are highly dependent on electricity. The production of each ton of electrolytic aluminium consumes approximately 13,000 kWh of electricity, and the electrolytic aluminium industry's electricity consumption accounts for approximately 10% of that consumed by the whole society of China. Therefore, fluctuations in the energy market have a huge impact on the aluminium industry. In the current context of soaring fossil energy prices, aluminium enterprises are facing substantial cost pressures and need to take measures to relieve those pressures as soon as possible. This cost structure is shown in Figure 2-2.
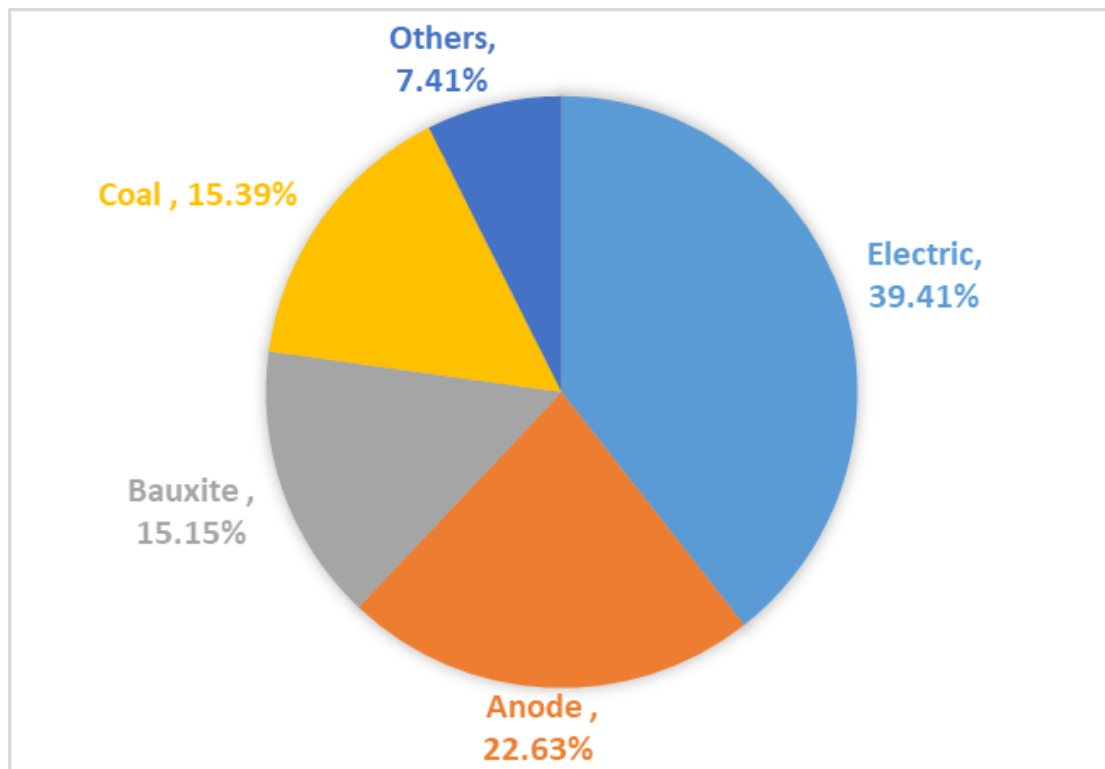
Figure 2-2 Cost Structure of Various Inputs

Many enterprises are attempting to replace fossil energy with green energy, such as hydro power, wind power, and photovoltaic energy. For example, Chalco and

Weiqiao Pioneering are attempting to use hydropower, photovoltaic, and other green energy sources to produce electricity. The second driving force is raw materials. The global distribution of bauxite is relatively concentrated, with more than half coming from Guinea and Australia. Given the rising raw material prices caused by local political fluctuations and soaring global shipping prices caused by the COVID-19 pandemic, downstream production enterprises are also subject to huge cost pressures, forcing them to make changes. For these reasons, many enterprises have started to explore bauxite resources overseas to establish stable raw material supply channels. The third driving force is environmental protection. With recent advances in global cooperation in environmental protection, enterprises with high levels of energy consumption and pollution are under enormous pressure to conserve energy and reduce their emissions. In line with China's carbon peak and carbon neutrality goals, Chinese aluminium enterprises have made changes such as relocating and engaging in technical transformation. For example, in recent years, Chalco and Weiqiao Pioneering have moved some of their production capacity to provinces with rich hydropower resources.

Compared with the case studied by Eilam and Shamir (2005) of the relocation of an Israeli organisation, aluminium companies have a more urgent need for change, and they are making and will make greater efforts to change. Accordingly, the stakeholders of aluminium companies will be more profoundly impacted by change than the employees in Eilam and Shamir's (2005) study. Until now, however, all changes have been unprecedented, with no previous examples to serve as a guide. For this reason, the biggest challenge faced by aluminium enterprises is how to conduct changes efficiently.

To solve this problem, enterprise managers need to find out why employees resist changes so that they can adopt appropriate management measures and efficiently implement organisational change, thus gaining a competitive advantage.

2.2 Theoretical Overview

2.2.1 Commitment to Change

2.2.1.1 Organisational Change

Most management theories take organisational change as an exception, relying on the basic assumption that an organisation remains stable and its order unchanged. Methods of improving organisational efficiency are based (and explored) on this assumption. In practice, however, such a stable state is rare. Enterprises have always operated in a fast-changing environment, except during the short period of rapid development in the seller's market after World War II.

Enterprises' varying internal and external environments promote organisational change. In the external environment, fast-changing technologies, a changing workforce, competition, and globalisation drive an organisation's and its members' participation in and management of changes (Burnes, 2004; Kotter, 1996). In the internal environment, poor management caused by organisational inertia, ability degradation, and other factors is another important force driving organisational change. For example, in the early 1970s, the economic crisis induced by the global oil crisis forced European and American enterprises to adopt a contraction strategy. At that time, enterprises engaged in diversified expansion took change measures to shrink their business lines. When the Four Asian Tigers rose in the 1980s, a large number of high-quality but cheap products

appeared in the European and American markets. For example, Japanese lightweight automobiles gradually replaced American heavyweight ones. With the dominant position of European and American enterprises in the market being challenged, a new round of organisational change was triggered. Since the turn of the 21st century, many traditional enterprises have begun to implement digital transformation in response to the new opportunities and challenges presented by the rapid development of Internet technology.

In light of the universality and importance of organisational change, scholars have studied and defined organisational change from a process perspective. For example, Lewin (1946) proposed a holistic three-stage change model: (a) unfreezing; (b) transitioning to a new stage; and (c) refreezing. The unfreezing stage involves establishing a change vision and developing a change plan to prepare for the transition to a new system, structure, or process. This transition entails implementing changes and modifying existing systems to support changes. Refreezing requires changes to be combined and aligned with other organisational structures and institutions so that the changes can be embedded in the organisation. Judson (1991) proposed a five-step change process: (a) analysing and planning changes; (b) communicating changes; (c) gaining acceptance, especially behavioural acceptance, of the changes; (d) making the initial transition from the status quo to the new situation; and (e) consolidating the new conditions and continuing to promote changes to institutionalise them. Hiatt (2006) developed the ADKAR change model, which stands for *awareness*, *desire*, *knowledge and ability*, and *reinforcement*. First, awareness promotes employees' trust in the need

for change, including proposing a change vision and communicating with employees. Second, desire drives employees to actively implement the change vision. Third, knowledge and ability support employees' participation in changes. Fourth, in the reinforcement stage, these changes are reinforced and firmly integrated with the processes and structures of the organisation. In recent years, Chinese scholars have also strengthened their research related to organisational change. For example, the theme of the 12th (2017) Chinese Academy of Management Annual Conference was "Innovation-Driven·Green Governance and Management Reform," and that of the 17th (2022) Chinese Academy of Management Annual Conference was "Digital Economy and Management Innovation." Drawing on Stouten et al. (2018), this dissertation defines organisational change as an intentional activity to shift the organisation from its current state to its expected future state.

The purpose of organisational change is to help enterprises gain competitive advantages through change so that they can perform well while seeking to survive and develop. Therefore, early studies of organisational change in the West focused on the organisation, and scholars have since hoped to explore and discover the key factors affecting the success or failure of organisational change (Judge et al., 1999; Kotter, 1996). These studies have often attributed the success or failure of organisational change to managers and have developed a change management perspective holding that conceptualising change management is a key ability for senior executives (McCauley, 2006). Although senior executives' change management ability is important, it is not a decisive factor in the success or failure of enterprise change. For example, only one

third of organizational change efforts are considered successful by their leaders (Jarrel, 2017; Meaney & Pung, 2008). In a survey of senior executives in the UK, only 38% of the respondents reported that changes in their organisations led to high performance (Holbeche, 2006).

In addition to change management, studies at the organisational level have paid attention to how organisations prepare for, implement, and cope with organisational change (Armenakis & Bedeian, 1999; Pasmore & Fagans, 1992; Weick & Quinn, 1999). However, organisational change is a systematic task that includes establishing both a top-down normative system and a bottom-up cognitive system. The former mainly involves managers' formulation of change standards and change implementation processes, and the latter involves the recognition and acceptance of changes by employees and the development of stable behavioural paradigms. Most studies at the organisational level have focused on the establishment of a top-down normative system, failing to consider the bottom-up cognitive system at the employee level. A previous study showed that the success of various changes implemented by organisations depended not only on whether the organisations had ambitious change strategies, detailed change plans, and strict change assessment standards, but also on employees' cognition of and attitudes towards organisational change (Rousseau, 1996). Organisational change usually requires consideration of its future benefit to the organisation, which will provide better prospects for its employees. However, organisational change also disrupts employees' current interest patterns and exerts substantial pressure on them. According to the findings of a study of more than 90,000

employees, organisational change led to emotional changes, such as anxiety, among employees (Dahl, 2011).

The success of organisational change is inseparable from employee support for such change. To reduce or even eliminate the pressure and negative emotions that such changes bring to employees and to motivate them to display good work motivation and behaviours against the backdrop of dramatic changes in their power and interest patterns, organisations need to look deeper into the mechanism of action that affects employees' support for or opposition to organisational change (Judge et al., 1999). Employees' reaction to change is a decisive factor that affects the success or failure of change. This dissertation direction supplements research on change at the organisational level and provides deep insight into the timing of enterprise change (Bartunek et al., 2006). It is vital to understand recipients' attitude towards change to understand the organisational change process (Fugate et al., 2008; Oreg, 2006).

2.2.1.2 Commitment to Change

(1) Concept of commitment to change

Most studies of organisational change have been conducted from a macro perspective to explore the factors affecting the success of change, including the social context of organisational change and the implementation of organisational change strategies. We need to do more research on employees' reactions to organisational change from a micro perspective, namely from the perspective of individuals. The only research in this field has focused on employees' resistance to organisational change. The employees of enterprises are the final "doers" of the whole change activity, so their

recognition of or support for organisational change is a key factor affecting organisational change. The success of organisational change requires all employees in an organisation to support the change through their practical behaviours and attitudes. In recent years, the concept of people-oriented management has gradually become popular, and the concept of positive organisational behaviour (POB) has also developed rapidly. Driven by these two theories, researchers and practitioners have paid more and more attention to the role of employees' commitment in organisational change. In the process of organisational change, whether employees demonstrate commitment to change and show corresponding positive attitudes and behaviours is an important factor that affects the success of the change. Therefore, one of the key ways for an enterprise to successfully implement organisational change is to develop and improve employees' commitment to urge employees to do their best to support organisational change.

Organisational commitment refers to individuals' acceptance of and trust in the goals and values of their organisations and the positive emotional experiences that result. It is an important employee attitude variable that has a major impact on employees' behaviours and work performance. Becker (1960) first proposed the concept of organisational commitment, which he defined as a tendency to engage in consistent lines of activity by making side bets. In an organisation, *side bets* can refer to anything of value to that organisation, such as remuneration, efforts, and skills. Mowday et al. (1982) focused on distinguishing attitudinal commitment from behavioural commitment. Attitudinal commitment focuses on the process by which people come to think about their relationship with the organisation. In many ways, it

can be thought of as a mindset reflecting the extent to which individuals consider their own values and goals to be congruent with those of the organisation. In contrast, behavioural commitment relates to the process by which individuals become bound to an organisation and how they cope with this problem. In a comprehensive analysis and review of the findings of many previous studies on organisational commitment, Meyer and Allen (1991:67) defined organisational commitment as "a psychological state that (a) characterizes the employee's relationship with the organization, and (b) has implications for the decision to continue or discontinue membership in the organization." Based on their empirical research, they developed a three-component model of commitment, consisting of (a) affective commitment, referring to the desire to maintain organisational membership; (b) continuance commitment, referring to the need to stay with the organisation; and (c) normative commitment, referring to the feeling of obligation to remain with the organisation. All three factors have different antecedents and different effects on work behaviours.

Meyer and Herscovitch (2001) proposed a general model of organisational commitment based on existing research. They argued that employees commit not only to their organisation as a whole but also to certain aspects of the organisation, such as departments, supervisors, or specific organisational activities. Their model provided a theoretical basis for the proposal of the concept of commitment to change. Meanwhile, with the deepening of research on organisational change, employees' attitudes towards and reactions to organisational change have gradually attracted scholarly attention. Because employees are one of the subjects of organisational change, their attitudes

towards change have an important impact on its success. Thus, Herscovitch and Meyer (2002) expanded the targets to which employees commit and incorporated employees' commitment to organisational change into the organisational commitment model. They also proposed the concept of employees' commitment to change to more clearly and accurately evaluate employees' reactions to or attitudes towards organisational change than they had in their previous model.

Commitment to change is "a force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative" (Herscovitch & Meyer, 2002). To differentiate commitment to change from similar concepts, I compare it with resistance to change, willingness to change, readiness for change, and openness to change, as shown in the Table2-1. Employees' commitment to change reflects their willingness, motivation, and proactive behavioural intention to strive for organisational change. Therefore, employees' commitment to change represents a positive individual inclination towards organisational change and is a far more positive approach than merely failing to resist change or not regarding change negatively. Herold et al. (2008) argued that commitment to change "goes beyond just positive attitudes towards the change to include the intention to support it as well as a willingness to work on behalf of its successful implementation," such as employees' psychological connection or attachment to organisational change, willingness to support the change, and proactive demand for efforts to successfully implement the change. This positive attitude towards organisational change may have an impact on the effectiveness of organisational change through organisation-level or individual

variables. In organisations in which change has not yet taken place, employees'

commitment to change is a state of expectation or possibility, which reflects their

attitude towards possible organisational changes.

Table 2-1 Employees' Reactions to Organisational Change

Concept	Definition	Representative Study
Commitment to change	A force (mindset) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative	Herscovitch & Meyer (2002)
Resistance to change	Employees' negative reactions to change from the perspectives of cognitive, affective, and behavioural intentions	Oreg (2003)
Willingness to change	An employee's beliefs, attitudes, and intentions about the necessity of change and the organisation's ability to complete the change	Miller et al. (1994)
Readiness for change	Beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organisation's capacity to implement changes	Rafferty & Minbashian (2019)
Openness to change	Individuals' willingness to support change and personality traits that can positively influence the potential consequences of the change	Devos et al. (2007)

Source: Literature collected and collated by the author

(2) Classification of commitment to change

According to the three-factor theory of organisational commitment proposed by

Meyer and Allen (1991), employees' commitment to change is composed of affective

commitment to change, continuance commitment to change, and normative

commitment to change. These three components reflect the three levels of employee

psychological support for organisational change (Meyer & Allen, 1991). *Continuance*

commitment to change refers to employees' undesirable support for organisational

change driven by fear of losing their benefits. This is the minimum level of support,

which is passively provided by employees to maintain their status in the organisation.

Affective commitment to change reflects employees' expectations of and willingness to support organisational change. It is a moderate level of support in which employees recognise the value of organisational change and believe that the change is conducive to organisational development. Normative commitment to change reflects employees' sense of obligation and mission to support organisational change. It is the highest level of support, according to which employees feel obliged to support organisational change.

This classification of the dimensions of commitment to change has been confirmed by other studies. The three components of commitment to change are independent and different from the three components of organisational commitment. The measures that an organisation takes to implement changes, such as organising employee training and supporting employee participation and empowerment, enhance employees' affective commitment to change. Employees' normative commitment to change is high when they believe that organisational change meets the organisation's obligations to employees and that both the organisation and employees can benefit from that change. Employees' continuance commitment to change is high when the organisation rewards them for change-supportive behaviours and punishes them for reacting negatively to change. All three types of commitment to change represent employees' support for organisational change and can be based on employees' preferences and desires, the organisation's pressure, or employees' internalised norms.

(3) Causes and consequences of commitment to change

Research on commitment to organisational change represents a subdivision of research on organisational commitment, an exploration extending from organisational

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commitment at the macro level to individuals' commitment at the micro level, along with recent progress in research on employee commitment. The proposal to commit to change can enhance managers' understanding of employees' attitudes towards change in the process of organisational change. On this basis, managers can take measures to optimise the process of organisational change, promote employees' career development, and enhance their enterprise's competitive advantage. Today, we are witnessing both significant increases in the amplitude and frequency of environmental fluctuation and organisational change. Thus, in-depth research on employees' commitment to change is of important theoretical and practical significance.

The factors affecting employees' commitment to change can be divided into factors at the organisational level and factors at the individual level. These factors' antecedents at the organisational level include the content and implementation of organisational change and its impact on employees. The situation, process, and results of organisational change that the organisation communicates to its employees directly affect employees' reactions to change (Zhang Jie et al., 2013). In addition, some studies have found that the organisation's leadership style (especially transformational leadership) and change management ability in the process of organisational change affect employees' commitment to change (Stouten et al., 2018). The antecedents of commitment to change at the individual level include employees' personal characteristics, such as age, locus of control, and sense of change efficacy.

An organisation implementing change hopes to win maximum support from its employees, minimise their resistance to change and organisational cynicism, minimise

the negative impact of change on organisational commitment, reduce employee turnover, and improve organisational morale. As employees' attitudes towards change are extremely complex, a comprehensive theoretical framework is necessary to explore these attitudes. The proposed concept of commitment to change provides such a framework. Before the emergence of the concept of commitment to change, employees' reactions to or attitudes towards change were used to describe their psychological state concerning organisational change. However, these constructs are relatively vague, making their accurate operationalisation and measurement difficult. The proposed concept of commitment to change, which condenses employees' attitudes towards change and improves understanding of employees' reactions to change, represents a milestone in research on organisational change.
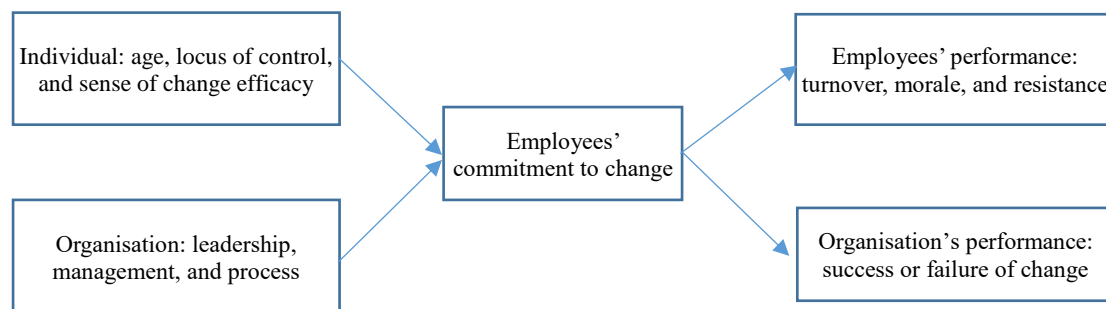
Figure 2-3 Framework for Research on Employees' Commitment to Change

In summary, studies of the antecedents of employees' commitment to change have focused on either the organisation or individual employees. These studies have not adequately considered the mutual dependence of individual and organisational factors determining commitment. Organisational change may affect employee commitment, and employee commitment may affect organisational change. Therefore, I explore the effect of psychological ownership on employees' commitment to change.

2.2.2 Job Positions

2.2.2.1 Division of Labour and the Birth of Enterprises

As mentioned earlier, studies of the antecedents of commitment to change have ignored the role of job positions. Therefore, I explore the impact of job positions on employees' commitment to change from the perspectives of both the organisation and individuals.

To explore job positions and their implications, it is necessary to cover the origin of division of labour theory and its role in the emergence of enterprises. Smith (1776) identified three reasons for the division of productive labour. First, different job positions require different skills, and the division of labour can lead to the better matching of personal skills with position requirements. Second, after the division of labour, everyone can focus on their work, thereby honing their work experience and improving their work efficiency. Third, the specialised technologies formed after the division of labour are easy to inherit and distribute, making it easy for organisations to access social benefits using the same methods as other organisations. Therefore, Smith (1776) argued that the division of labour not only improves individuals' work efficiency but also creates more wealth for society. However, Smith published his views on the division of labour before the emergence of large-scale mechanised industrial facilities. At that time, productivity levels were relatively low and enterprises were still in their infancy. Nevertheless, his division of labour theory had a profound impact on the development of modern enterprise management theories. Later theories about the specialised division of labour, the division of management functions, and the division

of work in society were all logically related to Smith's (1776) division of labour theory.

The division of labour laid a foundation for the birth of enterprises and the rise of large-scale enterprises. Typical early enterprises at this time had the following basic characteristics: First, they were small enterprises with a small workforce. Second, investors were directly engaged in the operation and management of enterprises and even directly participated in productive labour. Third, investors managed enterprises through direct contact with employees and various machines and other equipment, and they had the energy and time to inquire about various aspects of the business process. Fourth, most enterprises were only involved in producing one product or trading a few commodities. As enterprises were small, their production and operation scope was limited, so employees tended to do highly similar jobs. Because of these characteristics, each enterprise had to choose a simple organisational structure in its infancy, and there was no need to set up different functional departments within the enterprise. Collaboration and the division of labour depended on the owner's random allocation, so the division of labour among employees was unclear. Operators could do the work of accountants, and accountants could participate in the purchasing business. Moreover, an employee could concurrently serve as a purchaser, salesperson, and financial officer.

After the Industrial Revolution, great changes took place in the internal and external environments of enterprises. First, there was huge technological progress. Driven by the Industrial Revolution, Western developed countries replaced manual labour with large-scale mechanised production, which increased production efficiency several times over. Second, the labour supply grew. In the 19th century, life expectancy

increased and the population surged. Because many enterprises provided higher wages than traditional farming work, some farmers voluntarily gave up agricultural production and joined enterprises. For example, a large number of Chinese migrant workers moved to cities in this period. Because of this industrial expansion, many farmers lost their land and were forced to work for enterprises. Third, the accumulation of capital was massive. Early companies were operating in a seller's market, where their products could be sold as soon as they were produced. Thus, they could make handsome profits. The direct results of all these changes were as follows: the scale of enterprises increased; competition among enterprises appeared; and enterprises faced more risks than in the past.

With the gradual expansion of enterprise scale, some entrepreneurs ceased to be producers. Instead, they participated in the decision-making and daily management of their enterprises, and they even abandoned the direct management of routine work. Instead, enterprises created functional departments to complete certain management tasks. Thus, differences in employees' jobs began to emerge. These differences manifested in two main dimensions, namely function and level. First, as organisational size increased, organisations needed to implement a deeper division of labour among employees to improve organisational efficiency, allowing different employees to do the work corresponding to different functions. I define this phenomenon as *horizontal function expansion*. For example, when small electrolytic aluminium enterprises developed into large ones, they gradually established power, transportation, and sales departments. Second, within the same department, employees with the same function

were grouped into different levels to further improve organisational efficiency and motivate employees to devote more energy to their work. I define this phenomenon as *vertical function expansion*. Through this process, employees at different levels were allocated different responsibilities, powers, and duties, and lower-level employees worked under the management and guidance of higher-level employees. The two expansion models are shown below in Figure 2-4.
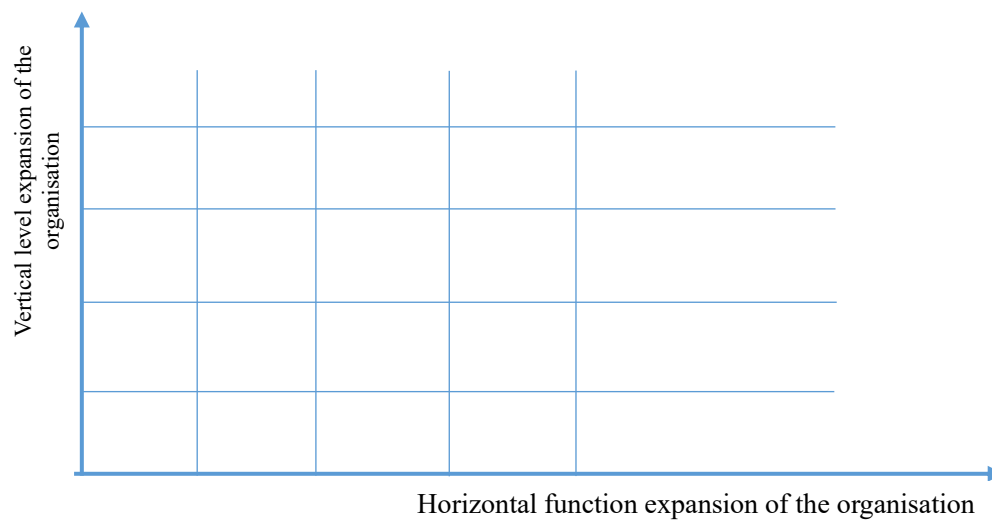
Figure 2-4 Expansion and Structure Formation of the Organisation

2.2.2.2 Positions in Organisational Structure and their Functions

Through the above-mentioned processes of horizontal and vertical expansion, a complex organisational structure is established. Employees occupy different positions in the organisational structure and perform specific functions at specific levels. Despite changes in the organisational structure, such as the emergence of vertical, flat, and matrix structures, the logic of organisational operation is stable: in the horizontal structure, there are cooperative relationships between different functional departments; in the vertical structure, subordinates are managed by their superiors. Given differences in job positions, one of the core tasks of corporate human resource management (HRM)

is position analysis, a process in which systematic data collection and analysis methods are used to determine the basic characteristics of each specific position in the organisation, such as objectives, performance standards, job content, staff requirements, responsibilities and authority, and working relationships. Three core issues are generally considered when conducting position analysis, namely the goals to be achieved by the organisation, the characteristics of the employees needed by the organisation, and methods of motivating employees to achieve the aforementioned goals. I argue that in addition to considering employees' short-term position requirements, organisations should consider employees' long-term needs, especially concerning their positions.

Positions are the most basic components of an organisation, regardless of its structure. An employee's position reflects (a) their functional position in the organisation, including the functional department to which they belong, the type of work performed, and the basic skills required; (b) their hierarchical position in an organisation, including their current level, the person to whom they report, their subordinates, and future development directions; (c) their rights and obligations, including the specific tasks to be completed and their corresponding rights and interests. Most related research has provided only a sectional or static view of employees' positions, regarding them as undifferentiated individuals. In reality, employees' positions in an organisation are always changing. Furthermore, employees' requirements of their organisation vary. Employees' requirements of their organisation indicate what the organisation should give them, whereas employees' roles indicate

what they should do for the organisation. For example, most employees in lower positions, like operators, are primarily concerned about their current earnings and future promotions, whereas mid-level managers are primarily concerned about keeping their current positions, and senior employees are primarily concerned about the company's development. As a Chinese proverb observes, an employee's position determines the requirements for that position.

Organisational change is vital to an organisation's survival and depends largely on employees' support. Although studies have explored employees' support for (or opposition to) change in relation to their personal characteristics or the company's characteristics (Armenakis & Bedeian, 1999; Burnes, 2005; Oreg, 2003), few have considered the links between personal and company characteristics. I supplement and improve on this line of research by exploring the impact of employees' job positions on their support for change.

2.2.3 Psychological Ownership

2.2.3.1 Definition of Psychological Ownership

From the perspective of psychological ownership, I explores the mechanism by which job positions affect employees' commitment to change. Relevant Western theories of psychological ownership provide new research perspectives for exploring commitment to change. With respect to self-concept, psychological ownership accounts for how organisational change affects employees' job satisfaction, organisational commitment, and job performance by influencing their primary motivation to achieve satisfaction in life.

Before defining psychological ownership, it is necessary to expound on the concept of ownership. Ownership is an important concept in private law, which originated in ancient Rome. In the ancient Roman legal system, a right *in rem* was a right that could be exercised directly by the right holder on the object. Its scope and type were defined by law and were not created by any person. There were five types of rights *in rem*, namely ownership, servitude (predial and personal), superficies, emphyteusis, and security interests (pledges and mortgages). Among them, ownership was a right *in re-propria* and the remaining four were rights *in re-aliena*. Rights *in rem* had the characteristics of absoluteness, exclusivity, and perpetuity, and they entailed possession, use, profit, and disposal. Such characteristics and content still apply today. For example, when describing the ownership of an asset, we usually describe the owner's right to possess, use, profit from, and dispose of the asset. In modern economic life, it is generally assumed that ownership equals property rights. It should be noted that when talking about ownership, we usually describe the concrete object, defining who owns it from the perspective of belonging. That is why it is difficult to describe the psychological attribution of abstract objects, such as the so-called *sense of mastery* and *psychological belonging*.

Logically, increasing employees' ownership of an enterprise is equivalent to increasing their right to possess, use, profit from, and dispose of the enterprise, which helps to enhance their sense of agency and control and thus improves enterprise performance. Since the 1970s, Western enterprises have given employees various forms of company ownership. A typical example is employee stock ownership. Enterprises

believe that employees who own company shares have a stronger sense of ownership and thus develop more enthusiasm for their work, which helps to increase attendance, improve job satisfaction, and reduce employee turnover, ultimately leading to better organisational performance (Rhodes & Steers, 1981). However, this is not always the case. For example, one study showed that giving employees ownership of shares did not necessarily improve their engagement or enhance their self-management (Hammer & Stern, 1980).

Given the limitations of the concept of ownership and the fact that it may not bring about the desired effect, scholars have proposed the concept of *psychological ownership* as a supplementary concept from a psychological standpoint. Pierce et al. (1991) first proposed the concept of psychological ownership based on the above conflicting findings. They believed that psychological ownership is an individual's psychological state regarding a target. They argued that formal ownership does not have a direct or independent impact on the attitudes, motivation, or behaviour of employees who have such ownership, but it does shape psychological ownership and thereby exerts an indirect impact on employees' work attitudes, motivation, behaviour, and work performance. This theoretically explains why companies see no improvement in employees' attitudes, behaviour, or performance after implementing employee stock ownership. This ownership is formal, not psychological, and therefore cannot change employees' attitudes and behaviours. In contrast, psychological ownership does affect employees' attitudes and behaviours, and an important outcome variable is organisational citizenship behaviour (Pierce et al., 2001).

The definition of psychological ownership has gradually been refined. Early researchers considered psychological ownership to be an individual's feeling about a target. For example, Dirks et al. (1996) defined psychological ownership as "a state in which individuals feel as though the target of ownership (or a piece of that target) is theirs." Pierce et al. (2001) described psychological ownership as "that state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is 'theirs.'" Studies of psychological ownership began in well-established Western enterprises, partially because their development was in line with the principles of the market economy, with the sophisticated modern corporate system taking shape. These enterprises were the first to try ownership transfers such as equity incentives and discovered the limitations of those transfers, which led to studies related to psychological ownership. However, there is a huge difference between Western contexts and the Chinese context, especially in terms of stock rights and culture. Therefore, further exploration is needed before applying the findings of psychological ownership studies to the Chinese context.

2.2.3.2 Antecedents of Psychological Ownership

Whereas early studies claimed that psychological ownership is triggered by physical ownership, such as property ownership, more recent studies have suggested that psychological ownership has both physical and psychological roots. From the physical point of view, the generation of psychological ownership requires objective targets, that is, the targets of psychological ownership. Generally, these targets include companies, departments, and workplaces. The targets can highlight the uniqueness of

individuals and satisfy their need for physical ownership. For example, employees may bind themselves to their company, viewing the company as their home.

From a psychological point of view, the generation of psychological ownership serves people's basic needs for self-identity, personal efficacy, and personalised space (Pierce et al., 2001). First, people need to clearly identify themselves. The self is the totality of "my" possessions, not only physical possessions but also psychological ones. Individuals' identification of "the self" includes both "my being" and "my possessions" (Van & Pierce, 2004). For example, the self-identity of an employee includes not only themselves and their position but also their responsibility and reputation. Second, people need to realise their value. Psychological ownership makes us feel a sense of ownership from the heart and drives us to prove our ability and value. For example, if an employee is skilled and wants to create value with their skills, their personal efficacy is best manifested by the advancement and respect they receive in the company. Third, having an independent space is an important human need, because "the soul feels isolated and lost without such a space" (Van & Pierce, 2004). Psychological ownership makes us feel that we possess a space that provides psychic comfort and security, satisfying our need for psychological space. For example, employees want independent office space with personalised decorations to satisfy their need for psychological space.

In addition to objective targets and subjective psychological needs, the generation of psychological ownership requires specific channels, including the individual's inputs into, familiarity with, and control of the target (Pierce et al., 2001). First, an individual's inputs into a physical or virtual target, which include not only energy and time but also

attention and emotion, give the individual a sense of integration with the target, as if they share in its success and failure, thus generating a feeling of possession of the target. The greater the inputs and the longer they last, the stronger this feeling. For example, if an employee involved in a major project spends a substantial amount of time and energy on the project and finally completes it despite facing difficulties, their psychological ownership of the project increases, as do their feelings of possessiveness towards the company. This explains why founders have stronger psychological ownership of their company than other employees do—they have invested more in the company than others. Second, people become familiar with the target connected to them and begin to feel that the target is theirs. The more information they obtain and the deeper the understanding they develop, the stronger this feeling. For example, new employees usually have lower levels of psychological ownership of their company than experienced employees do. However, as their length of service increases, employees' knowledge of and feelings of intimacy with the company increase, strengthening their psychological ownership. Third, control of a target eventually causes us to regard the target as though it is ours and generates a sense of ownership of the target. The greater our control of the target, the stronger this feeling. For example, Wagner et al. (2003) found that the deeper the level of employees' participation in equity incentives, the stronger the employees' psychological ownership and self-management. Pierce et al. (2004) also found that employees' sense of control of a target was positively related to their psychological ownership.

2.2.3.3 Consequences of Psychological Ownership

The formation of psychological ownership has many effects. In addition to inducing the desire for power, it results in a sense of responsibility. Employees' psychological ownership can trigger a sense of responsibility, leading them to invest more time and energy in the organisation than before, to protect and care for the organisation, to be willing to take risks for the organisation, and to be willing to make sacrifices for the organisation (Pierce et al., 2001). Furthermore, psychological ownership has an impact on organisational change, either supporting/promoting or hindering/opposing it. The theory of psychological ownership explains why employees support some organisational changes and oppose others (Dirks et al., 1996).

Psychological ownership also has negative effects. Employees with strong psychological ownership may refuse to share the targets of ownership (e.g., tools, computers, and workspaces) with their colleagues, which is not conducive to teamwork and information sharing. Managers whose psychological ownership is too strong may reject a reasonable level of authority. If psychological ownership is too strong, it can also cause abnormal behaviours that threaten both the organisation's normal operation and employees' work and lives (Robinson & Bennett, 1995). Individuals whose psychological ownership is too strong may also experience great frustration and stress due to the loss of or a change in the target of their psychological ownership, which may have adverse effects on their physical and psychological health (Cram & Paton, 1993). The Chinese scholars Chu Xiaoping and Liu Qingbing (2005) surmised that managers' misappropriation behaviour is related to their psychological ownership, which appears

when they exercise their rights to control and to know; if their need for psychological ownership is not satisfied, they may tend to engage in misappropriation behaviours.

When studying psychological ownership, most Chinese scholars have focused on its impact on organisations. For example, Xie Yao and Gu Qinxuan (2015) explored the relationship between psychological ownership and employee creativity and found that the diversity of work improves employee creativity, which is achieved by increasing employees' psychological ownership. He Qinghua et al. (2017) subdivided organisational ownership behaviours, including learning and making progress, exhibiting dedication and loyalty, and helping others and considering the interests of the whole. They found that psychological ownership had a significant positive effect on the first two but not the second two behaviours. Wang Yanzi and Wen Xiaobo (2018) found that employees with strong psychological ownership were more likely to develop negative emotions such as anxiety and irritability when their sense of ownership of a target was threatened and they were reluctant to share the target of their ownership with others, which was detrimental to a good interpersonal climate in the organisation. In recent years, some scholars have found that psychological ownership may be correlated with immoral behaviours that hinder organisational change and infringe on others' interests, thus impairing organisational performance.

2.2.3.4 Summary of Psychological Ownership Literature

In summary, psychological ownership is a psychological state in which individuals feel as though a target (material or immaterial) or a piece of it is "theirs." Studies of psychological ownership began in well-established Western enterprises. One reason for

these studies' Western roots was that the development of Western enterprises was in line with the principles of the market economy, with a sophisticated modern corporate system taking shape in that part of the world.

Whereas early studies claimed that psychological ownership, like property ownership, is triggered by physical ownership, recent studies have suggested that psychological ownership has both physical and psychological roots. From a physical point of view, the generation of psychological ownership requires objective targets. These targets may include companies, departments, and workplaces. The targets can highlight individuals' uniqueness and satisfy their need for physical ownership. For example, employees may bind themselves to their company, taking the company as their home. From a psychological point of view, the generation of psychological ownership serves people's basic needs for self-identity, personal efficacy, and personalised space (Pierce et al., 2001).

Employees' psychological ownership has multiple effects on organisations and employees. From the perspective of organisations, employees' psychological ownership affects not only organisational performance but also organisational change, either supporting or opposing such change. From the perspective of employees, psychological ownership affects employees' behaviours and attitudes, including employees' voice creativity, sense of mastery, spirit of cooperation, and tendency to engage in immoral behaviours.

The figure below shows the research framework of psychological ownership. The following issues should be emphasised. First, most studies exploring the antecedents of

psychological ownership have been conducted from an organisational or individual perspective, ignoring the individual's unique characteristics, such as position and level in the organisation. Indeed, as positions change, the psychological ownership of employees changes accordingly. Second, studies exploring the impact of psychological ownership on organisations and individuals have only taken into account the linear relationship, that is, the positive or negative influence of psychological ownership on organisational and individual attitudes and behaviours, ignoring more complex non-linear relationships.
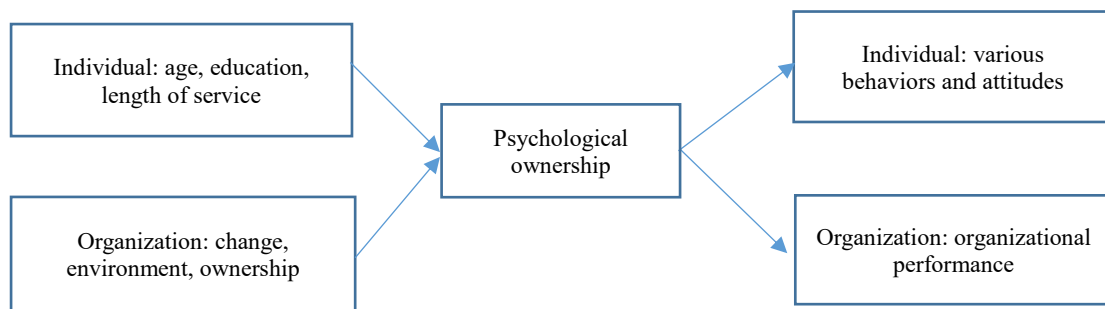
Figure 2-5 Research Framework of Psychological Ownership

Chapter 3 Theoretical Analysis and Hypotheses

3.1 Job Positions and Psychological Ownership

From a psychological point of view, the generation of psychological ownership serves people's basic needs for self-identity, personal efficacy, and personalised space (Pierce et al., 2001). First, people need to clearly identify themselves. The self is the totality of "my" possessions, both physical and psychological. Individuals' identification of "the self" includes both "my being" and "my possessions" (Van & Pierce, 2004). For example, the self-identity of an employee includes not only themselves and their position but also their responsibility and reputation. Second, people need to prove their ability and realise their value. Psychological ownership makes us feel a sense of ownership from the heart and drives us to prove our ability and value. For example, if an employee is skilled and wants to use those skills to create value, their personal efficacy is best manifested by the advancement and respect they receive in the company. Third, having an independent space is an important human need, because "the soul feels isolated and lost without such a space" (Van & Pierce, 2004). Psychological ownership makes us feel that we possess a space that provides psychic comfort and security, satisfying our need for psychological space. For example, employees want independent office space with personalised decoration to satisfy their need for psychological space.

That said, the research on antecedents of psychological ownership has continued to distinguish between organisations and individuals. There have been more studies on the antecedents at the organisational level (including organisational change, job

characteristics, and leadership) than on the antecedents at the individual level. For example, Yang Lianjie (2013) conducted research in the catering industry and found that the higher the employees' education level, the lower their psychological ownership. In other words, highly educated employees are more independent and rational, and have lower psychological ownership, than less-educated employees. Individuals are part of an organisation, and their responsibility and level in the organisation are changing. All of these factors affect their psychological ownership.

Positions are the most basic components of an organisation, regardless of its structure type. Positions determine (a) an employee's functional position in an organisation, including their functional department, the type of work performed, and the basic skills required; (b) an employee's hierarchical position in an organisation, including their current level, the person to whom they report, their subordinates, and their future development direction; and (c) an employee's rights and obligations, including the tasks to be completed in a specific position and the employee's corresponding rights and interests. Most of the research has only provided a sectional or static view of employees' positions and regards them as individuals that lack variations. In reality, employees' positions in the organisation are always changing. Furthermore, different employees have different requirements for the organisation. For example, most low-level employees, such as operators, are primarily concerned about their current earnings and future promotions, whereas mid-level managers are primarily concerned about keeping their current positions, and senior employees are primarily focused on company development. According to a Chinese proverb, the position of an

employee determines the requirements for that position. Job positions refer to the differences in responsibilities, powers, and obligations of employees holding different positions in the organisation. I focus on issues related to two job positions: position rank and position function. Position rank means the vertical level in which an employee is embedded, and position function means the horizontal department to which the employee belongs. However, although there has been research on the effect of job positions on employees' rights and obligations, few studies have explored the effect of job positions on employees' psychology.

3.1.1 Position Rank and Psychological Ownership

Position rank is the most prominent position characteristic. Whether in a flat or a vertical organisation, employees have specific levels that determine the work they should do, the responsibilities they should assume, and the rights and interests they enjoy. For example, compared to lower-level employees, higher-level employees have more rights to make decisions, allocate resources, and implement rewards and punishments. In addition, such employees often have larger and more personalised offices, a stronger desire to prove their ability and values and a strong demand for self-consciousness. However, although there has been research on the effect of job positions on employees' rights and obligations, few studies have explored the effect of job positions on employees' psychology. In contrast, organisational change is vital to the organisation's survival and depends largely on employees' support. Although a relatively large number of studies have focussed on employees' support for (and opposition to) change caused by their personal characteristics or the company's

characteristics, few have explored the links between the two. I intend to supplement these links and explore the impact of position rank on employees' support for change and the role of psychological ownership as a mediator.

In this dissertation, I argue that the impact of position rank on employees' psychological ownership lies in three aspects: having space, pursuing efficacy, and finding self-identity.

First, the higher the employee's position rank, the larger the independent and personalised office space they own and the stronger their psychological ownership of the organisation. Human beings have an important need for independent space because the soul feels isolated and lost without such a space (Van & Pierce, 2004). In modern workplaces, most employees have relatively independent and personalised office space. Even if it is only a cubicle, they decorate it imaginatively with family photos, mascots, and accessories, making them feel at home. Employees in higher positions generally have larger and more personalised office space, as evidenced in the Notice of the National Development and Reform Commission and the Ministry of Housing and Urban-Rural Development on Printing and Distributing the Construction Standards for Office Space of Party and Government Agencies[1]. This notice specifies the size of the office space of various Party and government staff at different levels (as shown in the following table), the limitations on decoration, and the criteria for internal facilities. Although the office-space standards for Party and government staff are different from those for company employees, it is obvious that higher-level employees have larger,

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[1] http://www.ggj.gov.cn/gzdt/ggjgzdt/hqzzs/zgjghq/2015/201501/201501/t20150122_20047.htm

more luxurious, and more personalised office space. In many enterprises, most entry-level employees work together, each with a similar small space. As they advance, they receive spaces that are larger and more personalised. Most middle and senior employees have independent offices, and almost all senior executives have large, luxurious, and highly personalised offices. This is particularly true for major entrepreneurs. Chinese entrepreneurs believe in *feng shui,* with strict requirements for the office's floor, position, orientation, layout, and decoration. They believe that the office is their home, the characteristics of which represent their personal characteristics, especially their entrepreneurship. In summary, higher-level positions come with larger, more personalised office space. The psychological experience of ownership meets the need for psychological space, provides psychic comfort and security, and gives people a sense of belonging. Therefore, the higher the employee's position rank, the larger and more personalised their office space and the stronger their psychological ownership (Pierce et al., 2001).

Table 3-1 Office Area of Public Officials at Various Levels

Position rank		Office area (m²/person)
Central agencies	Ministerial level	54
	Sub-ministerial level	42
	Department (bureau)-director level	24
	Deputy department (bureau)-director level	18
	Division-head level	12
	Below division-head level	9
Provincial agencies	Provincial level	54
	Sub-provincial level	42
	Department (bureau)-director level	30
	Deputy department (bureau)-director level	24
	Division-head level	18
	Deputy division-head level	12
	Below division-head level	9

Source: ZGFGTZ (2014).

Second, the higher an employee's position rank, the stronger their desire to realise their value and the stronger their psychological ownership of the organisation. The American psychologist Bandura (1977) proposed the concept of self-efficacy, referring to our confidence in our ability to reach specific goals. In short, self-efficacy is an individual's confidence in their success, that is, the sense that "I can do it." Lower-level employees lack the experience obtained in higher-level positions and are more concerned about whether they can assume greater responsibilities and solve more difficult problems in the future, so their self-efficacy is lower. Mid-level employees have been trained at the entry level and have stood out in their evaluations,

demonstrating their unique competence. In addition, promotion increases their confidence and gives them the desire to further prove their value. High-level employees have been trained and evaluated many times, and they have greater capabilities and confidence than the other employees. In summary, the higher the position, the stronger the employee's desire to demonstrate their abilities and prove their worth and the stronger their psychological ownership.

Third, the higher the employee's position rank, the stronger their need for self-identity and the stronger their psychological ownership. A man's self is the total of all that he can call "his," including "my being" and "my possessions" (Van & Pierce, 2004). The higher the employee's position in an organisation, the more they want to be unique in terms of their office space, reputation, ability, and potential, further enhancing their psychological ownership.

In conclusion, the generation of psychological ownership is driven by people's basic needs for space, personal efficacy, and self-identity (Pierce et al., 2001), and promotion to higher-level positions can satisfy the three needs of employees discussed above and improve their psychological ownership. Therefore, I propose the following hypothesis:

H1: The position rank of employees positively affects their psychological ownership.

3.1.2 Position Function and Psychological Ownership

In this dissertation, I further explore the relationship between position function and psychological ownership. An organisation includes both vertical position ranks and horizontal position functions. I focus on the two most important position functions in

45

an organisation, namely technical and managerial positions, which are different from each other.

First, according to human capital theory conceived by Becker (1960), technological skills are general human capital, which can easily be used in other enterprises, whereas managerial skills are specific human capital, which is difficult to use in other enterprises. Thus, technological skills have a higher market value than managerial skills acquired from work (Chang & Wang, 1995; Chang & Wang, 1996). Due to the broad applicability of technical skills, technical employees have more alternatives than do managerial employees, and their psychological ownership of the enterprise is relatively low. In contrast, management skills are more applicable to the enterprise than are technological skills. Employees in management positions have fewer alternative employment opportunities, so they pay more attention to the enterprise and have stronger psychological ownership than employees in technical positions.

Second, in terms of work content and abilities, the main tasks involved in technical positions are business research and development (R&D), production, and operation, and those positions' value primarily arises from the sophistication of the enterprise's technology. Technical workers mainly interact with machines and other equipment and improve production efficiency through R&D and innovation, with relatively little interpersonal communication. Because machines and other equipment are relatively standardised and impersonal, these physical elements bring relatively little psychological ownership to employees in technical positions.

The main task of managerial positions is business management and coordination, and the value of those positions mainly comes from the level of the employee's management ability. Managers mainly interact with people and improve production efficiency through communication, coordination, and incentives. Managers work for the enterprise's unique employees and business processes. In doing so, they form a unique spatial and interpersonal affiliation with the enterprise, and their psychological ownership is correspondingly stronger than that of non-managers.

In conclusion, compared with employees in technical positions, employees in managerial positions have fewer alternative employment opportunities due to their specific skills, and their work content and abilities help them form a unique spatial and interpersonal affiliation. Thus, compared with employees in technical positions, employees in managerial positions have stronger psychological ownership. I propose the following hypothesis:

H2: Employees in managerial positions have stronger psychological ownership than employees in technical positions.

3.2 Psychological Ownership and Commitment to Change

Employees' psychological ownership can trigger a sense of responsibility for investing time and energy in the organisation, protecting and caring for the organisation, being willing to take risks for the organisation, and being willing to sacrifice for the organisation (Pierce et al., 2001). Psychological ownership also has negative effects. Employees whose psychological ownership is too strong may refuse to share the targets of ownership with colleagues, a situation that is not conducive to teamwork. Managers whose psychological ownership is too strong may reject reasonable levels of authority.

If psychological ownership is too strong, it can also cause abnormal behaviours that threaten the organisation's normal operation and other employees' work and lives (Robinson & Bennett, 1995). Individuals whose psychological ownership is too strong may also experience great frustration and stress due to a loss of or change in the target of their psychological ownership, which may have adverse effects on their physical and psychological health (Cram & Paton, 1993). Meanwhile, psychological ownership has an impact on organisational change, either supporting/promoting or hindering/opposing it. The theory of psychological ownership explains why employees support some organisational changes while opposing others (Dirks et al., 1996).

The commitment to change is based on the theory of organisational change and organisational commitment. In the field of organisational behaviour, it is assumed that organisational commitment consists of affective commitment, continuance commitment, and normative commitment (Meyer & Allen, 1991), which reflect three levels of employee psychological support for organisational change. *Continuance commitment to change* refers to employees' undesirable support for organisational change when they fear losing their benefits. It is the minimum level of support and is passively provided by employees to maintain their status in the organisation. Affective commitment to change reflects employees' expectations of and willingness to support organisational change. It is a moderate level of support that involves recognising the value of organisational change and believing that the change is conducive to organisational development. Normative commitment to change reflects employees' sense of obligation and mission to support organisational change. This classification of

the dimensions of commitment to change has been confirmed in subsequent studies. The three components of commitment to change are mutually independent and different from the three components of organisational commitment.

There has been little research on which types of commitment are affected by psychological ownership. Therefore, I explore the effects of psychological ownership on continuance commitment, affective commitment, and normative commitment in turn.

3.2.1 Psychological Ownership and Continuance Commitment to Change

Commitment to change is "a force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative" (Herscovitch & Meyer, 2002). *Continuance commitment to change* refers to employees' undesirable support for organisational change for fear of losing their own benefits. It is the minimum level of support, passively provided by employees to maintain their status in the organisation (Meyer & Allen, 1991). In analysing the impact of psychological ownership on continuance commitment to change, one should consider the change-related gains and losses of employees with different levels of psychological ownership, especially in terms of having space, pursuing efficacy, and having self-identity.

Employees with low psychological ownership are less likely to have space, pursue efficacy, and find self-identity than employees with high psychological ownership, and they generally do not adopt the organisation as part of themselves. Because such employees are mentally dissociated from the organisation, their benefits, especially their psychological benefits, are not adversely affected by organisational change. In addition, the higher expectations brought by organisational change may increase their

benefits. Therefore, these employees show a low level of passive support for organisational change for fear of losing their benefits. In other words, their continuance commitment is low.

As the psychological ownership of employees increases, their motivation for having space, pursuing efficacy, and finding their self-identity increases. Such employees demand only to maintain and increase their benefits. However, their benefits are not stable and may be affected or even taken away by organisational change. For example, Haier Group's elimination of middle management had a huge negative impact on the benefits of mid-level employees, who lost both their office space and their titles. Employees with moderate psychological ownership are wavering onlookers; they are not yet followers of the organisation, and organisational change can cause them high uncertainty and affect their material interests. In most cases, organisational change comes with rewards for those who support change and punishments for those who impede change. Research has shown that employees have a higher continuance commitment to change when the organisation rewards behaviours that support change and punishes employees who respond negatively (Meyer & Allen, 1991). Therefore, in the face of organisational change, the main priority of employees with moderate psychological ownership is to avoid losing their benefits, and they will provide passive support to achieve this goal. Such employees have a relatively high continuance commitment to change.

As the psychological ownership of employees further increases, they regard the company as their home and become its faithful followers. Taking the company as their

own, these employees look forward to a better tomorrow for the company. Because the purpose of organisational change is to enhance organisational competitiveness, employees with relatively high levels of psychological ownership believe in any change implemented by the company. They neither doubt the direction of change nor worry about their own benefits, and therefore their continuance commitment to change is low.

In conclusion, for employees with relatively low psychological ownership, their benefits are not affected by organisational change, so they are less likely to resist. With increased psychological ownership, employees develop psychological resistance to organisational change that has a relatively large impact on their benefits. As psychological ownership further increases, employees take the organisation as their own and support organisational change in any way they can. Therefore, I propose the following hypothesis:

H3: There is an inverted U-shaped relationship between psychological ownership and employees' continuance commitment to change.

3.2.2 Psychological Ownership and Affective and Normative Commitment to Change

Affective commitment to change reflects employees' expectation of supporting and willingness to support organisational change. It is a moderate level of support that includes recognising the value of organisational change and believing that the change is conducive to organisational development. Normative commitment to change reflects employees' sense of obligation and mission to support organisational change. Both affective commitment and normative commitment reflect employees' psychological support for change. Research has found that change promotion measures such as

employee training, employee participation, and empowerment are conducive to enhancing employees' affective commitment to change (Meyer & Allen, 1991). When employees believe that organisational change conforms to the organisation's obligations to them and that both they and the organisation can benefit from the change, they show a higher normative commitment to change. However, there is little knowledge about how psychological ownership affects affective and normative commitment to change. Therefore, I examine the impact of psychological ownership on employees' affective and normative commitment to change.

Compared with employees with high psychological ownership, employees with low psychological ownership are less likely to have space, pursue efficacy, and find self-identity, and they do not psychologically consider the organisation a part of themselves. Organisational change does not greatly affect their material interests and feelings. However, the development opportunities brought by the change lead to higher expectations of benefits, such as better office conditions and higher self-efficacy. In an interview with Weiqiao Pioneering employees on their reaction to the group's factory relocation, A1, a young employee, said,

> *As a newcomer, I'm not familiar with the history and environment of*
> *the company. I'm not as attached to the company as the old employees*
> *are, but I support the relocation because this is the only way that the*
> *company can achieve greater development and our new employees*
> *can have more opportunities.*

Young employees are new to the organisation and have low psychological ownership. However, they have a high commitment to organisational change, which

can result in better treatment and more opportunities than those afforded to employees who have a low commitment to organisational change. Young employees have low psychological ownership because they have just joined the company. Some employees, despite their long tenure with the company, maintain low psychological ownership due to a lack of development opportunities, and they can also benefit from organisational change. For example, A2, an employee with a long tenure at Weiqiao Pioneering, said,

> *I have been here for years without being promoted or entrusted with important tasks. Weiqiao Pioneering is a traditional company in which promotion somewhat depends on interpersonal relationships. I don't fit in yet, so I don't have strong feelings towards the company. The relocation of the company to Yunnan is an opportunity for me. I am very supportive of the relocation.*

Therefore, for employees with low psychological ownership, organisational change causes little damage to their immediate interests while greatly increasing their future benefits. Such employees have higher affective and normative commitment to change.

Employees with moderate psychological ownership are onlookers. On the one hand, they partially consider the company as their own; on the other hand, they are concerned about the sustainability of their immediate interests. Organisational change will bring greater uncertainty to these employees. It provides numerous development opportunities for employees with low psychological ownership, which represents a substantial challenge for employees with moderate psychological ownership because they may have to relinquish their positions and benefits. In addition, organisational change imposes greater requirements of employees with moderate psychological

ownership, such as the need to increase their efforts and improve their skills, pushing them beyond their comfort zone. However, these employees' development is hindered by their inertia, capacity limits, and other factors. For example, employee A3 said,

> *I'm a mid-level employee. I'm used to the environment, my treatment is good, and my wife and children are in the city. Now the company is moving to a remote location in Yunnan. Honestly, I'm not happy with it. People at my age are unlikely to leave their families, and there is no other place to go if I quit my job. I'm embarrassed by the decision.*
> (A3)

The threat from competitors and their own inertia lead to greater resistance to organisational change among employees with moderate psychological ownership and lower affective and normative commitment to change.

Employees with high psychological ownership take the company as their own and are its faithful followers. Such employees will firmly support any change that is conducive to the company's development, even at a personal cost. For example, employee A4 said,

> *The former chairman laid a solid foundation for Weiqiao Pioneering's development. I owe everything to the company. I firmly believe that the new chairman will lead the company to a better future, so I support all of his proposed changes and initiatives.*

Employees with high psychological ownership take the company as their home and strongly support all measures that are conducive to the company's development. They have high levels of affective and normative commitment to change.

In conclusion, employees with low psychological ownership have high affective and normative commitment to change. With increased psychological ownership, their

affective commitment and normative commitment decrease. When their psychological ownership reaches a certain level, employees support organisational change at any price, and their levels of affective and normative commitment to change are high. I, therefore, propose the following hypotheses:

H4: There is a U-shaped relationship between psychological ownership and employees' affective commitment to change.

H5: There is a U-shaped relationship between psychological ownership and employees' normative commitment to change.

3.3 Summary

Organisational change is crucial to the development of enterprises. If an organisation wishes to implement a major change, it must first obtain support from its employees. When enterprises are implementing major changes, there are large differences in the attitudes and behaviours of employees in different positions. However, research on this topic is insufficient. To this end, I explore the impact of job positions on employees' psychological ownership during the implementation of major changes in enterprises, along with the role of psychological ownership in employees' continuance, affective, and normative commitment. I propose that both position rank and a managerial position can enhance employees' psychological ownership. There is an inverted U-shaped relationship between psychological ownership and continuance commitment, along with a U-shaped relationship between psychological ownership and affective and normative commitment, respectively, as shown in Figure 3-1.
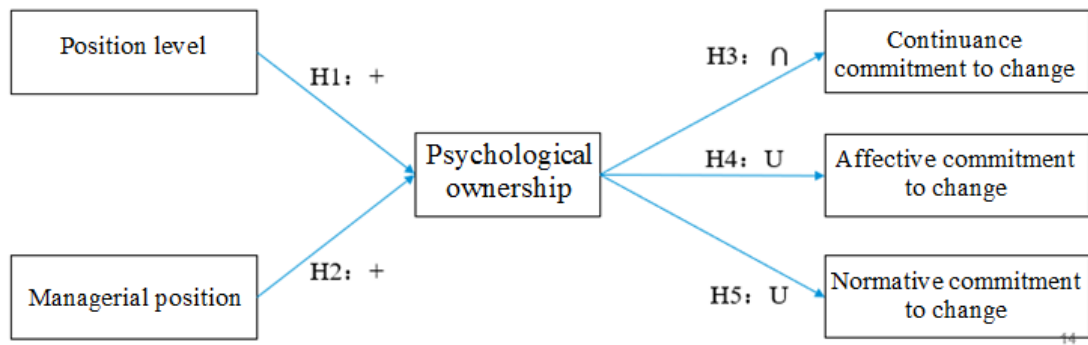
Figure 3-1 Research Framework of the Dissertation

Chapter 4 Study 1: Empirical Study

I explore the process (mechanism) of implementing organisational change in large enterprises and the impact of job positions on employees' commitment to change and its process (mechanism). In the context of Weiqiao Pioneering's factory relocation, a major organisational change, I used the questionnaire method to scientifically measure the degree of support for the relocation of employees with different functions and at different levels. I then used the results to study the relationship between job positions and change-supportive behaviours. This approach enriches research on job positions, psychological ownership, and commitment to change, providing references for management practices for Chinese enterprises.

4.1 Research Context and Sample Source

In this dissertation, data were collected from Weiqiao Pioneering. Located in Shandong, China, Weiqiao Pioneering was formerly a small oil and cotton processing plant. Since its establishment in 1981, Weiqiao Pioneering has experienced 40 years of innovation and development. It is now a super-large enterprise with three listed companies, 12 production bases at home and abroad, 100,000 employees, and total assets of RMB250 billion. It has a complete industrial chain that integrates spinning and weaving, dyeing and finishing, garment and home textiles, and a complete closed-loop industrial chain integrating thermal power, mining, alumina, primary aluminium, aluminium finishing, and recycled aluminium in the aluminium industry. As a cotton textile enterprise and aluminium production enterprise with global competitiveness, Weiqiao Pioneering has been listed in the Fortune Global 500 every year since 2012,

ranking 282nd in 2021. The Weiqiao brand has been ranked among the 500 Most Valuable Brands in China for 18 consecutive years, ranking 61st in 2021, and it has been selected as one of the world's top 500 brands for three consecutive years, ranking 462nd in 2021 [2]. In 2021, under the firm leadership of Party committees and governments at all levels, Weiqiao Pioneering maintained a stable, healthy, and high-quality development trend by accelerating the replacement of old growth drivers with new ones, despite various difficulties and challenges. With sales revenue of RMB413 billion (a year-on-year increase of 39%) and pre-tax income of RMB33.9 billion (a year-on-year increase of 49%), all of the company's major economic indicators hit record highs, making an important contribution to economic and social development.

Although Weiqiao Pioneering has achieved rapid, sustained, and stable development, the company is also facing considerable internal and external pressure, along with new development opportunities. Together, these threats and opportunities have led Weiqiao Pioneering to consider a change.

First, Weiqiao Pioneering faces pressure from within the company. Weiqiao Pioneering's businesses, such as electrolytic aluminium, alumina, and textiles, require a substantial amount of electricity. For a long time, thermal power generation was Weiqiao Pioneering's main source of power. The annual electricity consumption of its electrolytic aluminium business alone is 70 billion kWh, making it highly dependent on coal. In recent years, with the increasing global consensus on energy saving, emission reduction, and sustainable development, more and more international leading

[2] http://www.weiqiaocy.com/cn/

manufacturing enterprises have committed to the goal of achieving zero carbon emissions, as well as meeting targets for increasing the proportion of green and low-carbon raw materials. There is a growing demand for green products, and non-green products are subject to consumer discrimination. Compared with aluminium companies such as Rusal and Hydro, Weiqiao Pioneering consumes a larger proportion of fossil energy and a smaller proportion of green products. This has made it less competitive in the international market, meaning there is an urgent need to optimise the company's energy structure, reduce its coal consumption, and increase its green energy consumption.

Second, Weiqiao Pioneering is under pressure from both the government and the industry. Weiqiao Pioneering is located in Shandong province, a large consumer of coal. In 2017, the province consumed nearly 400 million tons of coal, ranking first in China. Coal reduction is an urgent requirement for adjusting the province's energy structure and its air pollution prevention and control. Departments such as the State Environmental Protection Administration of China and the National Development and Reform Commission have always stressed the importance and urgency of reducing coal consumption and optimising the energy structure in Shandong. Because the electrolytic aluminium industry is a large energy consumer, Weiqiao Pioneering has become an important target enterprise for coal reduction in Shandong. Statistics show that 13,500 kWh of electricity are required to produce each ton of electrolytic aluminium. Because this amount already represents limited energy consumption in the current electrolytic aluminium production process, it is difficult to significantly decrease this amount.

Therefore, aluminium is also known as "solid electricity." China is the world's largest producer of electrolytic aluminium. The industry's annual electricity consumption currently exceeds 500 billion kWh, accounting for approximately 7% of China's total consumption. This consumption is five times the annual output of the Three Gorges Dam hydropower station on the Yangtze River. In September 2020, with the exhaustion of fossil fuels and the advancement of the global consensus on energy saving and emissions reduction, China proposed to achieve "peak carbon dioxide emissions by 2030" and "carbon neutrality by 2060." To complete the tasks of energy saving and emissions reduction, the Chinese government has made great efforts to reduce the capacity of the electrolytic aluminium industry. One important measure involves limiting the industry's new capacity and optimising its existing capacity. In August 2022, the National Development and Reform Commission issued the Notice on Improving the Step Tariff Policy of the Electrolytic Aluminium Industry, which required local governments to improve the industry's step tariff policy and to further promote the green price mechanism. According to the document, the cost of electricity accounts for more than 40% of the production cost of electrolytic aluminium. For the electrolytic aluminium industry, the implementation of the step tariff policy helps to advance the leverage effect of electricity prices, promote improved energy efficiency and the transformation and upgrading of the industry by economic means, accelerate the adjustment of the economic structure, and serve green development.

Third, Weiqiao Pioneering also faces new development opportunities. To make the company more competitive and to enable its pursuit of high-quality development, there

is an urgent need for Weiqiao Pioneering to adjust its energy structure, reduce its consumption of fossil energy, and increase its consumption of renewable energy resources, the best of which are Yunnan's rich hydropower resources. After a full investigation by many parties, Weiqiao Pioneering found that Shandong province lacked sufficient power and redundant capacity at that time. Therefore, the company faced the difficult problem of how to make good use of redundant resources and achieve coordinated development. It was not feasible at that time to add new power resources (including green power) in Shandong province or transfer power resources across provinces. An important feature of China's power distribution is that power resources are distributed in the west; for example, a large number of coal and hydropower companies are located in western provinces such as Xinjiang and Inner Mongolia, along with southwestern provinces such as Yunnan. However, a large number of power consumers are concentrated in southeastern coastal provinces. As a result, China has taken energy regulation measures such as "West to East" transmission projects for electricity, gas, and coal. Because the introduction of electricity is not feasible, one of the company's important alternative approaches involves diverting redundant capacity within Shandong to places with surplus power. Therefore, the coal-powered provinces in the western and southwestern provinces rich in hydropower become alternative sites. Considering that aluminium products in the international market have expanded from quality and price competition to brand competition, green aluminium (produced using renewable green electricity) is favoured by customers and has obvious competitive advantages. Thus, Weiqiao Pioneering chose Yunnan province, which is rich in

hydropower resources, as the destination of its capacity transfer. Yunnan and Weiqiao Pioneering complement each other, as the former is rich in green hydropower resources and the latter has a huge capacity for electrolytic aluminium production. In addition, the electrolytic aluminium industry is labour-intensive and needs more workers, whereas Yunnan has a relatively low level of economic development and abundant labour resources. By relocating part of its production capacity to Yunnan, Weiqiao Pioneering not only realised the coordinated development of Shandong and Yunnan provinces but also promoted local employment, tax revenue, and the development of upstream and downstream industrial chains in Yunnan, thus making a substantial contribution to alleviating poverty.

Given the above considerations, Weiqiao Pioneering launched its official capacity relocation action in 2019. That year, it signed a cooperation agreement with the People's Government of Yunnan province to jointly build a Green Aluminium Innovation Industrial Park, where some of the company's production facilities are located. Capacity relocation was a major strategic change for Weiqiao Pioneering based on full consideration of the current internal and external environments. This change affected not only its future development but also its employees' future earnings, provoking a substantial response within the company. Because Shandong and Yunnan are 3,000 km apart, they have very different levels of economic development and customs, and thus there were large differences in employees' attitudes towards this major organisational change. There were voices both for and against the change, posing a great challenge to business managers. This was the first time that Weiqiao Pioneering had undertaken such

a large-scale capacity relocation, and it had no proven experience to follow. There was also no way to have detailed knowledge of who was for and who was against the change. With a follow-up capacity relocation plan on the agenda and staff management problems after relocation, it is a matter of great practical significance to clearly understand the factors that affected the employees' change-supportive behaviours.

I aim to address this problem. I hope to understand the different attitudes and behaviours of employees in different positions at Weiqiao Pioneering towards the relocation in Yunnan through the use of a questionnaire survey. To this end, I began work on a questionnaire design in June 2021 in the hope of gaining a comprehensive understanding of employees' psychological ownership and commitment to change. To overcome employees' reluctance to fill in their true thoughts due to work concerns, the questionnaire was conducted anonymously. To avoid an impact on accuracy due to bias caused by material incentives, no material or moral incentives were used. To avoid single-source bias, questionnaires were distributed at several subsidiaries in Binzhou, Zouping, and Beihai to obtain a comprehensive picture of the company's employees. To prevent the respondents from copying each other and filling in the same numbers, some of the questions were asked in reverse.

In August 2021, the first version of the questionnaire design was completed, and I conducted a pre-survey management expert review and questionnaire. First, I invited five management experts to review the rigour and scientificity of the questionnaire design and to propose modifications. Then, based on the proportion of employees in different positions in the company, I randomly selected 17 employees for a pre-survey

(three, five, and nine individuals who were senior, middle, and junior employees, respectively) to better understand the respondents' comprehension of the survey questions. In response to the shortcomings that I found, I made improvements to the first version of the questionnaire, especially to resolve the incomprehensibility of some of the questions due to inaccurate translation. Based on these improvements, I developed the second version of the questionnaire.

In early 2022, I submitted the questionnaire to my university's ethics committee for review and further refined it according to the committee's feedback. Finally, I decided to use an anonymous survey research scheme, removing traceable information about personal characteristics from the questionnaire. After doing so, the third version of the questionnaire was created. In February 2022, I distributed 301 copies of the third version of the questionnaire at Weiqiao Pioneering for a large-scale survey so that I could understand the jobs, psychological ownership, and commitment to change of employees in different positions. Overall, 301 questionnaires were returned, with a feedback rate of 100%. Among them, 300 were valid, for an effective rate of 99.7%.

4.2 Variable Measurement

4.2.1 Dependent Variables

Commitment to change. Commitment to change is "a force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative" (Herscovitch & Meyer, 2002). Commitment to change is the dependent variable in this dissertation. Meyer and Allen (1991), in a comprehensive analysis and review of the findings of many previous researchers on organisational

commitment, defined organisational commitment as "a psychological state that (a) characterizes the employee's relationship with the organization, and (b) has implications for the decision to continue or discontinue membership in the organization." They developed a three-component model (TCM) of commitment based on their empirical research, including (a) affection for job, namely affective commitment; (b) fear of loss, namely continuance commitment; and (c) sense of obligation to stay, namely normative commitment. All three types of commitment to change have different antecedents and different effects on work behaviour. Based on the company's 2019 relocation event, and with reference to the studies of Herscovitch and Meyer (2002) and Meyer and Allen (1991), I adopted an already established scale to measure employees' continuance, affective, and normative commitment to change. See Table 4–1 below for the questionnaire items measuring commitment to change.

"Since 2019, Weiqiao Pioneering has cooperated with the People's Government of Yunnan Province to build the Green Aluminium Innovation Industrial Park and moved some of Shandong's production capacity to Yunnan. How do you see this change by the company? Please provide a score from 1 to 7 (1 means *strongly disagree* and 7 means *strongly agree*)."

Table 4-1 Measurement Questions for Commitment to Change

Items	Score
Affective commitment to change	
	1 – strongly disagree, 7 – strongly agree
I firmly believe that the change is worthwhile	
This change is a good strategy for Weiqiao Pioneering	
I think the management is wrong to make this change (reverse-coded)	
This change serves an extremely important purpose	
It would have been better if we had not made this change (reverse-coded)	
This change is totally unnecessary (reverse-coded)	
Continuance commitment to change	
I have no choice but to accept this change	
I feel stressed about accepting this change	
My stakes in the company are too high for me not to accept this change	
It would be too costly for me to resist this change	
It would be risky to publicly oppose this change	
Resisting this change is not a viable option for me	
Normative commitment to change	
I feel a responsibility to work for this change	
I do not think it is right to oppose this change	
I do not feel bad about opposing this change (reverse-coded)	
It would be irresponsible for me to resist this change	
I feel guilty about opposing this change	
I do not feel obligated to support this change (reverse-coded)	

After collecting the data, I tested the homogeneity and dimensionality of all of the items measuring commitment to change using confirmatory factor analysis (CFA), maximum likelihood estimation, and listwise deletion (Anderson & Gerbing, 1988). The test results supported the homogeneity and one-dimensionality of the measurement

items for commitment to change. Therefore, I used the mean scores for the corresponding items to measure affective commitment, continuance commitment, and normative commitment.

Psychological ownership: Given the limitations of the concept of ownership and the fact that it may not bring about the desired effect, scholars have proposed the concept of psychological ownership as a supplement from a psychological point of view. Pierce et al. (1991) first proposed the concept of psychological ownership based on the literature's conflicting findings. They believed that psychological ownership is an individual's psychological state regarding a target object. They argued that formal ownership does not have a direct or independent impact on the attitudes, motivation, or behaviour of employees who have such ownership, but it does generate psychological ownership and thus exerts an indirect impact on the work attitudes, motivation, behaviour, and work performance of employees. Psychological ownership's definition has gradually been refined. Early researchers considered psychological ownership to be individuals' feelings regarding a target. For example, Dirks et al. (1996) defined psychological ownership as "a state in which individuals feel as though the target of ownership (or a piece of that target) is theirs." Pierce et al. (2001) described psychological ownership as "that state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is 'theirs.'"

With reference to studies by Pierce et al. (1991), Dirks et al. (1996), and Van Dyne and Pierce (2004), I measured employees' psychological ownership using seven questions (Table 4–2). To help the respondents better understand the questions, I

provided the following scenario instructions: "Think about a house or a vehicle that you own or co-own, and the experiences and feelings associated with the statement "This is my (our) house (vehicle)!" Please provide a score from 1 to 7 (1 means *strongly disagree* and 7 means *strongly agree*) for each of the following questions related to your 'sense of ownership' of Weiqiao Pioneering."

Table 4-2 Items Measuring Psychological Ownership

	1 – *strongly disagree*, 7 – *strongly agree*
This is my company	
I feel that this company is our company	
I have a high sense of ownership of this company	
I feel like this is my company	
This is our company	
Most people in the company think they own the company	
I find it hard to regard Weiqiao Pioneering as my company (reverse-coded)	

Similarly, in addition to the maturity scale, I tested the homogeneity and dimensionality of all of the items measuring psychological ownership using CFA, maximum likelihood estimation, and listwise deletion (Anderson & Gerbing, 1988). The test results supported the homogeneity and one-dimensionality of the measurement items for psychological ownership. Therefore, I used the average score for the above seven items to measure an employee's psychological ownership.

4.2.2 Independent Variables

I treated job position as the independent variable. Horizontal function expansion and vertical level expansion create a complex organisational structure within a company. Each employee is embedded in a different position in the organisational structure and

performs specific functions at specific levels. Despite changes in the organisational structure, such as the emergence of vertical, flat, and matrix structures, the logic of the operation of organisations remains stable. In a horizontal structure, there are cooperative relationships among different functional departments, and in a vertical structure, subordinates are managed by their superiors. Differences in job positions make position analysis one of the core tasks of corporate HRM. Position analysis is the process of using systematic data collection and analysis methods to determine basic factors such as objectives, performance standards, job content, staff requirement, responsibilities and authority, and working relationships related to a specific position in an organisation.

In this dissertation, I focused on two issues related to typical job positions. The first was position rank, which determines the vertical level at which an employee is embedded, and the second was position function, which determines the horizontal department to which the employee belongs. There were seven position ranks in the sample enterprise. From low to high, these ranks were as follows: ordinary employees, team leaders (operation heads), shift supervisors, directors, factory managers, branch managers, and group leaders. During the questionnaire survey, an employee's position rank score was based on their position. For example, if the employee was a shift supervisor, then their position rank equalled 3. In the sample enterprise, there were also managerial positions and technical positions. If the employee was in a managerial position, then the variable managerial position equalled 1, and if not, it was 0. The measurement questions for job position in the questionnaire were as follows:

"What is your current position rank? Please select one of the following options. 1 – Ordinary employee; 2 – Team leader (operation head); 3 – Shift supervisor; 4 – Director; 5 – Factory manager; 6 – Branch manager; 7 – Group leader."

"Is your current position a managerial or a technical position? 1-Yes; 2-No."

4.2.3 Control Variables

I selected demographic factors at the individual and family levels as control variables affecting psychological ownership and commitment to change. The individual factors included employees' gender, age, race, education, and whether they were only children. In terms of family, the control factors included marriage, children, house ownership, and *hukou*. The selection basis and measurement method of each control variable are detailed below.

Gender: Gender has an impact on psychological ownership and commitment to change. In general, women are more inclusive and more likely to treat the company as their home than men. As a result, women may have stronger psychological ownership than men. In addition, compared with male employees, female employees are more compliant and are less likely to resist corporate change. For example, Vakola and Nikolaou (2005) found that men had a lower commitment to change. Therefore, I used gender as a variable. If the employee was male, then the score for gender equalled 1, and if the employee was female, then the score for gender equalled 0.

Age: As an important demographic indicator, age has an important impact on employees' psychological ownership and commitment to change. Older employees have been with the company longer and are more likely to see the company as

connected to them, so older employees have stronger psychological ownership than younger employees. Age influences commitment to change through a complex mechanism. On the one hand, older workers are less able to learn and adapt and they prefer conformity to innovation, so they may show a lower commitment to change than younger workers (Kanfer & Ackerman, 2004); On the other hand, older workers have a deeper attachment to the company and a greater desire to keep it healthy, so they may show a greater commitment to change than younger workers. I used an employee's year of birth to measure their age.

Race: China is a multi-ethnic country. According to China's seventh national census, the Han people account for 91% of China's population and another 55 ethnic groups account for 9%. With their unique cultures, customs, and traditions, employees from different ethnic groups also demonstrate different levels of performance at work. However, scholars still have not researched whether there are differences in psychological ownership and commitment to change among employees of different ethnic groups. Therefore, I used race as a variable. If the employee was Han Chinese, then the score for race equalled 1; otherwise, the score was 0.

Only child: One-child families are the product of the Chinese government's system to curb excessive population growth. Compared with non-only children, only children score lower for personality traits such as risk tolerance, competitive spirit, and trust (Wang Xueli et al., 2014). Only children have a greater preference for personalised office space and have a stronger motivation for self-identification. In addition, when faced with organisational change, only children may have a lower commitment to

change, as they tend to prioritise their own interests. Therefore, I used only child status as a variable. An employee who was an only child scored 1; otherwise, the score was 0.

Education: Education affects not only a person's knowledge and skills but also their learning attitude and ability. Typically, more educated employees are more independent than less educated employees. They want to show off their unique knowledge and abilities, and compared with less educated employees, they desire a larger, more personalised office space. Accordingly, their level of psychological ownership may be higher than that of less educated employees. In addition, more educated employees may be more innovative and have better learning abilities and greater adaptability than less educated employees. They tend to obtain greater benefits from organisational changes. Therefore, more educated employees are likely to have a greater commitment to change than less educated employees. Therefore, I used education as a control variable, with a value of 1 indicating junior high school or below, 2 indicating high school/secondary school, 3 indicating junior college, 4 indicating undergraduate study, and 5 indicating graduate study.

Marriage: Marriage marks a watershed in an employee's career. On the one hand, marriage takes up employees' time and energy, so married employees may have lower psychological ownership of the company than do unmarried employees. On the other hand, marriage increases employees' motivation to work and put more effort into work for the sake of their families, so their psychological ownership may be higher than that of unmarried employees. Marriage may also affect employees' commitment to change. Married employees, who shoulder greater family burdens than unmarried employees,

may value their immediate interests more and show more resistance to organisational change than do unmarried employees. Therefore, I used marriage as a variable. A score of 1 indicated that an employee was married, and a score of 0 indicated that an employee was unmarried.

Children: Children's impact on employees' psychological ownership and commitment to change is similar to that of marriage. On the one hand, children occupy employees' time and energy, and so employees with more children may have lower psychological ownership of the company than do employees with fewer children. On the other hand, children increase employees' motivation to work and increase their work efforts for the sake of their families, so the psychological ownership of employees who are parents might be stronger than that of employees who are not. Children may also affect employees' commitment to change. Employees with more children face greater family burdens than do employees with fewer children, and they may value their immediate interests more and show more resistance to organisational change than do employees with fewer or no children. Therefore, I used children as a control variable, which means how many children an employee has.

House ownership: Owning one's own home is of great significance to Chinese people. On the one hand, house prices in China are generally high. House ownership is an important symbol of employees' status and sense of belonging to the local area. On the other hand, Chinese people are generally reluctant to relocate, and owning a house is a major factor that prevents them from moving to another company. As a result, employees who own a house in the place where they work have stronger psychological

roots in the local area than employees who do not. Being part of an enterprise is an important way to put down roots, and so such employees may have stronger psychological ownership than employees who do not own a house locally. In addition, owning a house locally hinders such employees from working offsite, so their commitment to change may be lower than that of employees who do not live locally. Therefore, I used house ownership as a variable. If the employee owned a house in Shandong, the headquarters of Weiqiao Pioneering, then the variable took a value of 1; the score for other household locations equalled 0.

Hukou: *Hukou*, a system of household registration, is an important governmental system for managing residents in different regions. The system determines where residents can enjoy public services such as education and medical care. It also restricts residents' cross-regional mobility. Compared with employees with non-local *hukou*, employees with local *hukou* are more likely to regard the local area, including their workplace, as their home. This means that employees with local *hukou* have stronger psychological ownership than employees with non-local *hukou*. *Hukou* limits the mobility of residents, and changes such as a company's relocation to another province will impede their access to public services, so such workers may have a lower commitment to change than workers with non-local *hukou*. Therefore, I used *hukou* as a variable. If the employee had local *hukou*, then the score for this variable equalled 1; if not, the score was 0.

4.3 Descriptive Statistics

See Table 4–3 for descriptive statistics of the sample data. In terms of core

variables, the sampled employees covered all employees from the most basic level to the most senior level, and the average position rank was 4.45 (SD = 0.92), showing good representativeness. Employees in managerial positions accounted for a relatively large proportion of the sample (83%). This is because most of the technical personnel worked on the production line, and this survey was more aimed at office staff than the front-line production workshop staff. The employees generally showed a high level of psychological ownership ($M = 6.12$, $SD = 0.97$), indicating that most of them regarded the factory as their home and psychologically saw the company as part of themselves. In addition, they had a low continuance commitment to change ($M = 2.79$, $SD = 1.39$), a high affective commitment to change ($M = 6.55$, $SD = 0.64$), and a high normative commitment to change ($M = 5.86$, $SD = 0.91$), indicating that they demonstrated a high degree of support for change.

In terms of control variables, 90% of the employees were male, which is related to the high proportion of male employees in traditional manufacturing enterprises. Their average age was 41, a representative figure that is close to the overall situation of the company's employees. Of the employees, 99% were Han, a figure close to the 91% of China's population that is Han. In addition, 17% were only children, indicating that the one-child policy has had a far-reaching impact. Most of the employees were junior college graduates ($M = 3.26$, $SD = 0.76$). This reflected the positioning of the company within the traditional manufacturing industry and indirectly indicates that it needs to further improve its employees' educational level to enhance its innovation ability. Married employees made up 99% of the sample, with an average of 1.65 children, so

the company should consider employees' families when relocating. In addition, 74% of the respondents owned a house in the company's current location and 91% of the respondents had *hukou* in Shandong. All of these factors may affect employees' support for the company's relocation.

Table 4–3 Descriptive Statistics of Variables (N = 300)

Variable	*M*	*SD*	Minimum	Maximum
Continuance commitment	2.79	1.39	1.00	6.40
Affective commitment	6.55	0.64	3.67	7.00
Normative commitment	5.86	0.91	3.17	7.00
Psychological ownership	6.12	0.97	1.14	7.00
Position rank	4.45	0.92	1.00	7.00
Managerial position	0.83	0.38	0.00	1.00
Gender	0.90	0.30	0.00	1.00
Age	1981.35	5.34	1961.00	1992.00
Race	0.99	0.08	0.00	1.00
Only child	0.17	0.38	0.00	1.00
Education	3.26	0.76	1.00	5.00
Marriage	0.99	0.08	0.00	1.00
Children	1.65	0.59	0.00	3.00
House ownership	0.74	0.44	0.00	1.00
Hukou	0.91	0.28	0.00	1.00

After obtaining the preliminary descriptive statistics, I further analysed the correlations between the variables, as shown in Table 4–4. The correlation coefficient between the variables was generally less than 0.4, indicating that there was no high multicollinearity between the variables used in this dissertation. I also conducted a

variance inflation factor (VIF) test and found that all of the mean values of the VIFs were less than 2. Accordingly, there was no serious multicollinearity in this dissertation's regression model (Chatterjee & Hadi, 2006). Recent studies have suggested that the validity of the VIF test may be insufficient. For this reason, I used incremental model specifications to introduce the focal variables one at a time and to watch for sign flips on other focal variables and control the variable coefficient estimates with reference to Kalnins (2018). Similarly, the results showed that there was no multicollinearity.

Table 4–4 Variable Correlation Analysis (*N* = 300)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Continuance commitment	1.00														
Affective commitment	-0.33	1.00													
Normative commitment	-0.28	0.40	1.00												
Psychological ownership	-0.25	0.11	0.19	1.00											
Position rank	-0.12	0.20	0.26	0.25	1.00										
Managerial position	-0.05	0.03	0.10	0.16	0.27	1.00									
Gender	0.07	-0.05	0.06	-0.08	0.00	-0.15	1.00								
Age	0.02	-0.11	-0.11	-0.21	-0.56	-0.14	0.05	1.00							
Race	0.09	0.00	-0.05	0.00	0.00	-0.04	0.11	0.01	1.00						
Only child	0.05	-0.03	-0.04	-0.01	-0.18	-0.06	0.12	0.22	0.04	1.00					
Education	-0.10	0.11	0.16	0.06	0.37	0.01	-0.08	-0.04	-0.03	0.01	1.00				
Marriage	0.04	0.00	-0.02	-0.05	0.13	-0.04	-0.03	-0.15	-0.01	0.04	0.03	1.00			
Children	0.12	-0.09	-0.06	-0.01	-0.01	0.03	0.04	0.09	0.09	0.00	-0.06	0.23	1.00		
House ownership	-0.04	0.05	0.06	0.14	0.11	0.09	-0.03	-0.02	-0.05	0.03	-0.05	0.04	0.06	1.00	
Hukou	0.03	0.03	0.01	0.01	0.07	0.08	-0.07	-0.08	0.12	-0.02	-0.02	0.12	0.08	0.35	1.00

4.4 Regression Analysis

Because my dependent variables of psychological ownership and commitment to change were both continuous variables, I used ordinary least squares for the regression analysis.

4.4.1 Job Positions and Psychological Ownership

I first examined the relationship between job positions and psychological ownership. First, the control variables were put into the model. The results are shown in model M1 in Table 4–5. In model M1, there was a significant negative correlation between the employee's birth date and psychological ownership (β = -0.04, $p < 0.01$), indicating that the older the employee, the stronger the psychological ownership. The reason for this outcome was that these employees had been with the company longer and had deeper feelings for the company than younger employees. Accordingly, their psychological ownership was stronger than that of younger employees. In addition, employees who owned a house in the company's current location had stronger psychological ownership (β = 0.36, $p < 0.01$). This outcome was consistent with my prediction. On the one hand, house prices in China are generally high, and house ownership is an important symbol of employees' status and sense of belonging in the local area. On the other hand, Chinese people are generally reluctant to relocate, and owning a house locally is a major factor that prevents them from changing their workplace. As a result, employees who own a house in the place where they work have stronger psychological roots in the local area than employees who do not own a house locally. Working for an enterprise is an important aspect of putting down roots, so

employees with local households may have stronger psychological ownership than other employees. In contrast, the negative impact of *hukou* on psychological ownership was not significant, indicating that *hukou* had ceased to be the main obstacle to population mobility.

When the independent variable position rank was added to model M2, I found that the effect of position rank on psychological ownership was positive and significant (β = 0.20, p < 0.05), indicating that the higher the position rank, the stronger the psychological ownership of employees. Psychological ownership increased by 20% for each increase in position rank, verifying Hypothesis 1. By adding the independent variable managerial position to model M3, I found that the impact of managerial position on psychological ownership was positive and significant (β = 0.28, p < 0.1). This outcome indicated that the psychological ownership of employees in managerial positions was greater than that of employees in technical positions, verifying Hypothesis 2. Both position rank and managerial position were added to model M4, and I found that the two independent variables continued to have a positive and significant impact on psychological ownership.

Table 4–5 Job Positions and Psychological Ownership

Variable	M1	M2	M3	M4
	DV: Psychological ownership			
	Method: Ordinary least squares			
Position rank		0.20**		0.18**
		(0.08)		(0.08)
Managerial position			0.28*	0.20*
			(0.15)	(0.15)
Gender	-0.23	-0.27	-0.18	-0.23
	(0.18)	(0.18)	(0.18)	(0.18)
Age	-0.04***	-0.02*	-0.04***	-0.03*
	(0.01)	(0.01)	(0.01)	(0.01)
Race	0.26	0.23	0.29	0.26
	(0.68)	(0.68)	(0.68)	(0.68)
Only child	0.11	0.15	0.11	0.15
	(0.15)	(0.15)	(0.15)	(0.15)
Education	0.07	-0.01	0.07	-0.00
	(0.07)	(0.08)	(0.07)	(0.08)
Marriage	-1.15	-1.22*	-1.04	-1.14
	(0.70)	(0.70)	(0.70)	(0.70)
Children	0.05	0.03	0.04	0.03
	(0.10)	(0.10)	(0.10)	(0.10)
House ownership	0.36***	0.31**	0.34**	0.30**
	(0.13)	(0.13)	(0.13)	(0.13)
Hukou	-0.23	-0.22	-0.24	-0.23
	(0.21)	(0.21)	(0.21)	(0.21)
Constant	92.26***	55.07**	85.89***	55.75**
	(21.35)	(25.63)	(21.51)	(25.61)
Observations	300	300	300	300
R-squared	0.087	0.107	0.098	0.112
Adj R-squared	0.058	0.076	0.067	0.078

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.4.2 Psychological Ownership and Commitment to Change

I further examined the relationship between psychological ownership and commitment to change, as shown in Table 4–6.

Models M5 and M6 show the relationship between psychological ownership and continuance commitment to change. All of the control variables were added to model M5, and I found that the higher the position rank of employees, the lower their continuance commitment to change (β = -0.22, p < 0.1), and the greater the number of children in the family, the higher the employee's continuance commitment to change (β = 0.27, p < 0.1). Adding the independent variable of psychological ownership and its squared term to model M5 revealed that the coefficient of psychological ownership's squared term was negative and significant (β = -0.10, p < 0.1), as shown in model M6. This indicated an inverted U-shaped relationship between psychological ownership and continuance commitment to change, verifying Hypothesis 3.

Models M7 and M8 show the relationship between psychological ownership and affective commitment to change. All of the control variables were added to M7, and I found that the higher the position rank of employees, the higher their affective commitment to change (β = 0.14, p < 0.05). Adding the independent variable of psychological ownership and its squared term to model M7 revealed that the coefficient of psychological ownership's squared term was positive and significant (β = 0.09, p < 0.01), as shown in model M8. This indicated a U-shaped relationship between psychological ownership and affective commitment to change, verifying Hypothesis 4.

Models M9 and M10 show the relationship between psychological ownership and

normative commitment to change. All of the control variables were added to model M9, and I found that the higher the position rank of employees, the higher their normative commitment to change ($\beta = 0.23$, $p < 0.01$). Adding the independent variable of psychological ownership and its squared term to model M9 revealed that the coefficient of psychological ownership's squared term was positive and significant ($\beta = 0.11$, $p < 0.01$), as shown in model M10. This indicated a U-shaped relationship between psychological ownership and normative commitment to change, verifying Hypothesis 5.

Table 4-6 Psychological Ownership and Commitment to Change

	Continuance commitment		Affective commitment		Normative commitment	
			Method: Ordinary least squares			
VARIABLES	M5	M6	M7	M8	M9	M10
Psychological ownership (PO)		0.76		-0.87***		-1.08***
		(0.577)		(0.266)		(0.370)
Po*Po		-0.10*		0.09***		0.11***
		(0.053)		(0.025)		(0.034)
Position rank	-0.22*	-0.15	0.14**	0.12**	0.23***	0.19**
	(0.122)	(0.119)	(0.056)	(0.055)	(0.078)	(0.077)
Managerial position	-0.04	-0.03	-0.05	-0.02	0.11	0.14
	(0.227)	(0.223)	(0.104)	(0.103)	(0.145)	(0.143)
Gender	0.27	0.16	-0.09	-0.05	0.25	0.32*
	(0.273)	(0.266)	(0.124)	(0.123)	(0.174)	(0.170)
Age	-0.02	-0.03	0.00	0.00	0.00	0.01
	(0.019)	(0.019)	(0.009)	(0.009)	(0.012)	(0.012)
Race	1.07	1.16	0.06	0.05	-0.53	-0.56
	(1.005)	(0.975)	(0.459)	(0.450)	(0.640)	(0.625)
Only child	0.12	0.14	0.01	0.03	-0.03	-0.01
	(0.222)	(0.216)	(0.101)	(0.100)	(0.141)	(0.138)
Education	-0.06	-0.09	0.03	0.05	0.09	0.12*
	(0.118)	(0.116)	(0.054)	(0.053)	(0.075)	(0.074)
Marriage	0.23	-0.26	-0.13	-0.00	-0.37	-0.11
	(1.039)	(1.014)	(0.474)	(0.468)	(0.662)	(0.650)
Children	0.27*	0.30**	-0.09	-0.10	-0.08	-0.10
	(0.142)	(0.138)	(0.065)	(0.064)	(0.091)	(0.088)
House ownership	-0.13	-0.00	0.05	0.02	0.08	0.02
	(0.198)	(0.194)	(0.090)	(0.089)	(0.126)	(0.124)
Hukou	0.19	0.15	0.03	0.01	-0.02	-0.03
	(0.311)	(0.303)	(0.142)	(0.140)	(0.198)	(0.194)
Constant	44.30	59.61	4.05	5.06	-3.45	-6.55
	(38.01)	(37.22)	(17.34)	(17.18)	(24.22)	(23.85)
Observations	300	300	300	300	300	300
R-squared	0.048	0.111	0.053	0.094	0.087	0.138
Adj R-squared	0.012	0.071	0.017	0.053	0.053	0.099

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.4.3 Robustness Test of Relationship between Psychological Ownership and Commitment to Change

More tests are needed to define the U-shaped relationship, including the independent variable and curve turning point distribution range test, exclusion of high-order curve test, and endpoint slope test. I conducted these robustness tests in turn.

4.4.3.1 Variable Distribution Range Test

The turning point of a U-shaped curve should be within the reasonable value range of the independent variable X. The slope of a U-shaped curve shows the rate at which the dependent variable changes as the independent variable changes. When the slope is zero, the curve reaches its lowest (highest) point, and the corresponding value of the independent variable is the turning point of the U-shaped curve. If all of the independent variables are located on one side of the turning point, the distribution of the independent variables is only one part of the U-shaped curve, and the curve is a monotone convex/concave function (e.g., it is in a logarithmic/exponential functional form). The independent variable's ideal distribution is roughly symmetrical on both sides of the turning point (Haans et al., 2016). To make the U-curve test more rigorous, it is necessary to further test whether the turning point is biased towards the value boundary of the independent variable X to avoid a misleading inference if the estimated extremum point is too close to the endpoint of the data range (Lind & Mehlum, 2010). Presenting the empirical test results in the form of images is the most intuitive way to authenticate the U-shaped relationship and to have a visual understanding of the value range of the independent variables and the U-shaped curve profile. To visualise the relationship

between psychological ownership and the three types of commitment to change, I included the relationship graphs shown in Figures 4–1, 4–2, and 4-3. In all three graphs, the independent variable of psychological ownership is distributed on both sides of the turning point and is roughly symmetric, and the turning point is also within the reasonable value range of the independent variable: At the turning point of the three curves, the values of independent variable psychological ownership are 4, 5 and 5, respectively, which are within the value range of psychological ownership [1.14, 7.00].
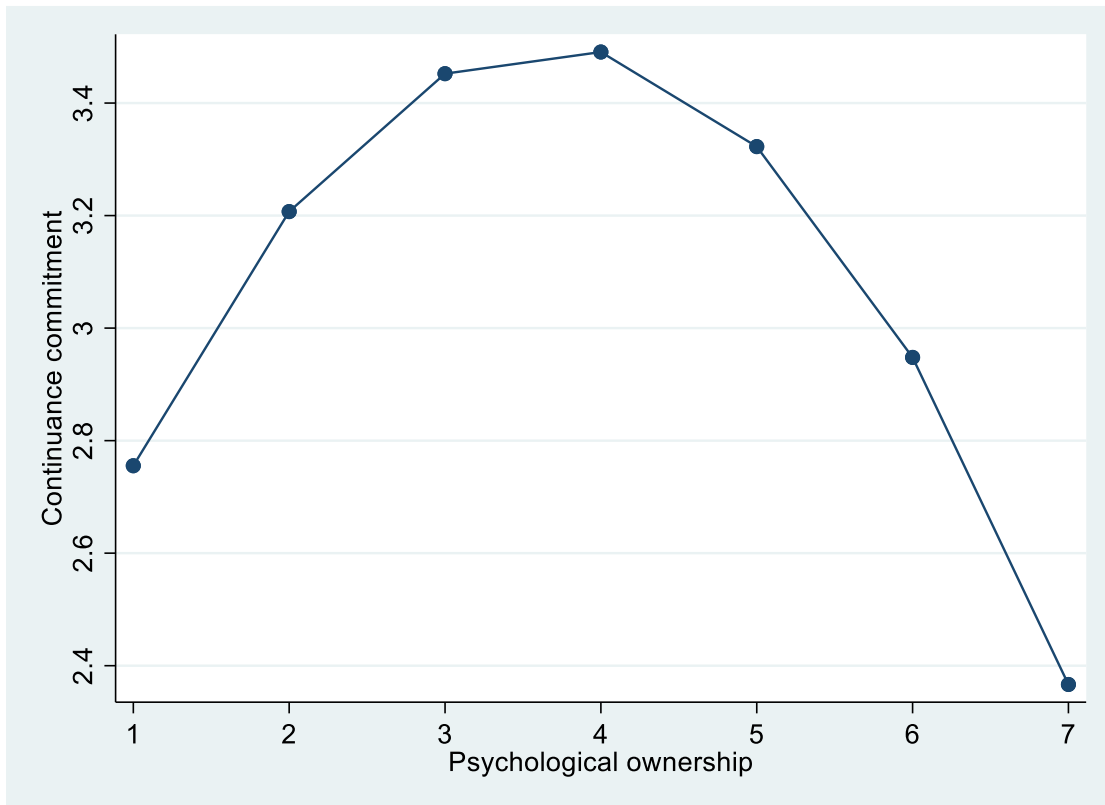
Figure 4–1 Psychological Ownership and Continuance Commitment
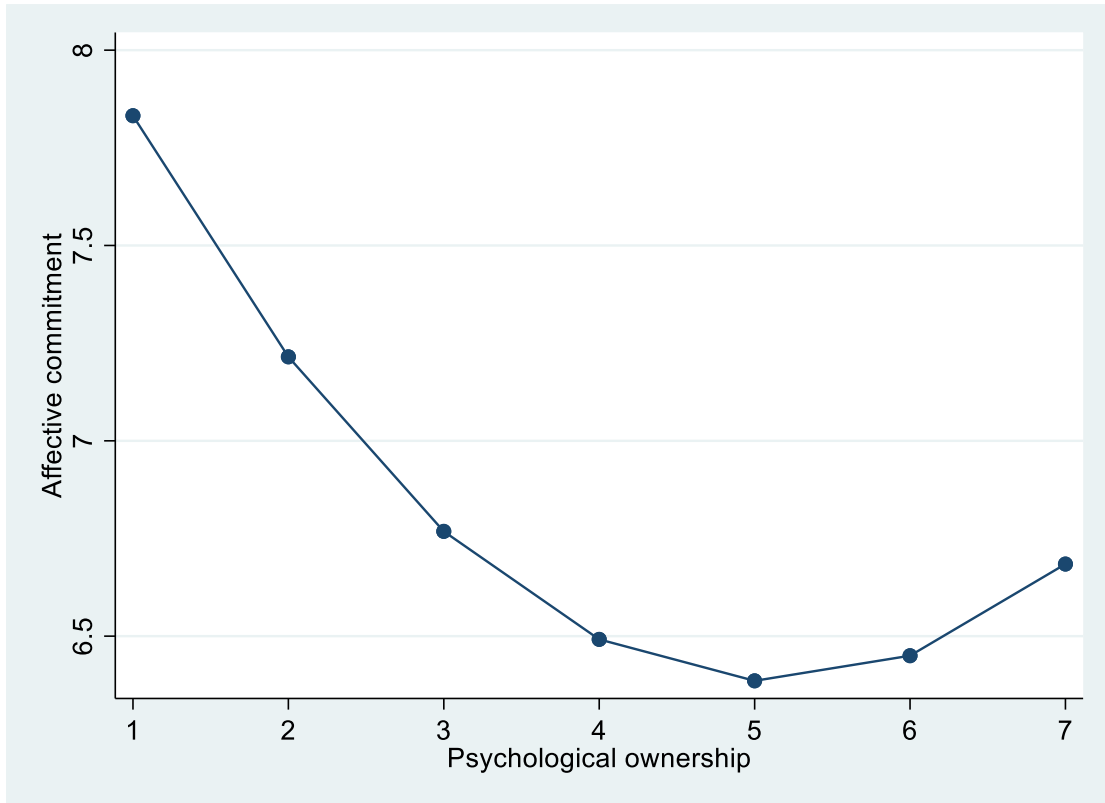
Figure 4–2 Psychological Ownership and Affective Commitment
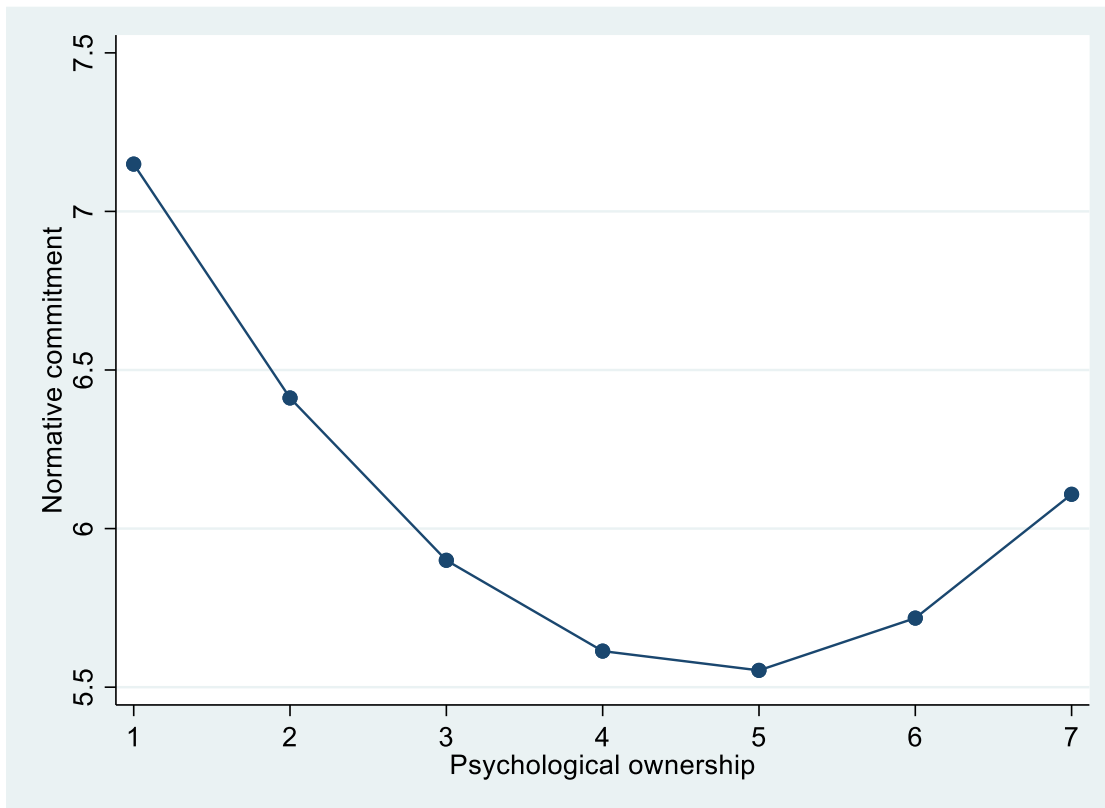
Figure 4–3 Psychological Ownership and Normative Commitment

4.4.3.2 Exclusion of High-order Curve Test

To verify the U-shaped relationship, it is first necessary to ensure that the squared term's coefficient of the independent variable X is significant. If the coefficient is greater than zero, the independent variable X and the dependent variable Y may be in a positive U-shaped relationship; if the coefficient is less than zero, the independent variable X and the dependent variable Y may be in an inverted U-shaped relationship (Cohen et al., 2014). The significant squared term's coefficient of the independent variable X is a necessary but not sufficient condition for a U-shaped relationship. Because there may be a third-order (S-type) or higher-order relationship between X and Y, it is also necessary to ensure that the coefficient of the higher-order term (generally the cubic term) of X is not significant (Qian et al., 2010). Therefore, I further examined the relationship between psychological ownership and the three types of commitment to change. I found that the cubic curves between psychological ownership and continuance commitment to change, and psychological ownership and affective commitment to change, were not significant, but the cubic curve between psychological ownership and normative commitment to change was significant. The results are shown below in Table 4–7.

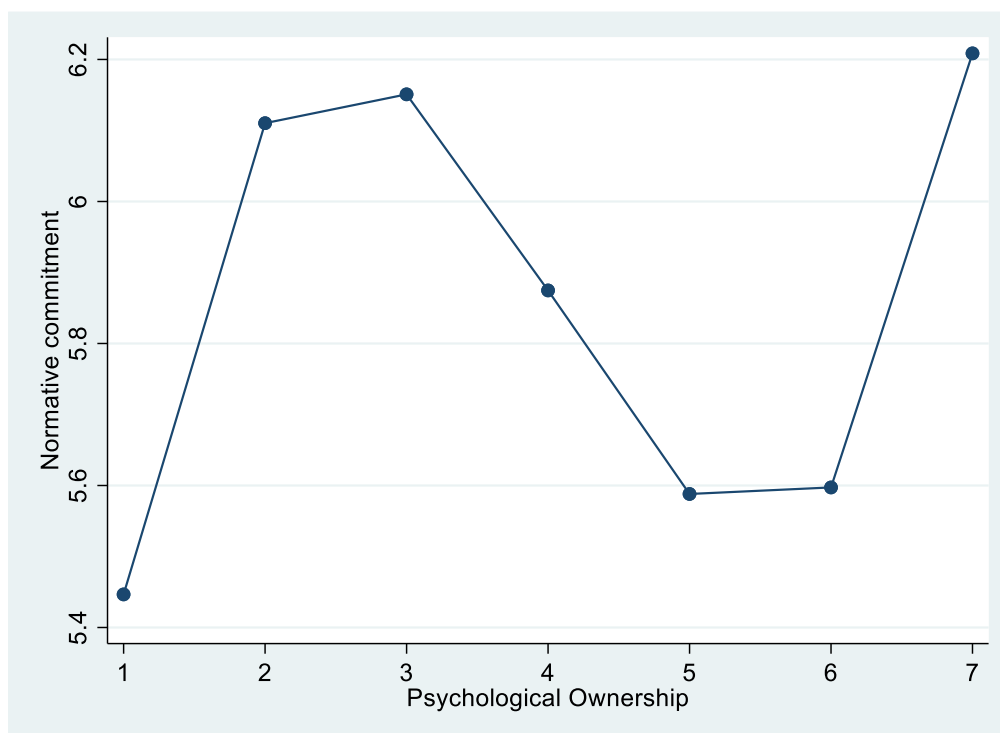**Table 4–7 Psychological Ownership and Commitment to Change**

	Method: Ordinary Least Squares		
	Continuance commitment	Affective commitment	Normative commitment
VARIABLES	M11	M12	M13
Psychological Ownership (PO)	-1.45	0.49	2.16*
	(1.947)	(0.897)	(1.234)
PO*PO	0.40	-0.22	-0.62**
	(0.423)	(0.195)	(0.268)
PO*PO*PO	-0.03	0.02	0.05***
	(0.029)	(0.014)	(0.019)
Controls	Y	Y	Y
Observations	300	300	300

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Control variables not reported

I plotted a graph, as shown in Figure 4–4, to visualise the significant cubic curve relationship between psychological ownership and normative commitment to change. According to the graph, employees with very low psychological ownership (Psychological Ownership = 1) had a low normative commitment to change. The reason for this outcome could be that they are new employees who have not been with the company long enough to fully embrace the corporate culture and have not seen it as their mission to support change. To verify this speculation, I divided the sample into two parts based on the employee's length of service and conducted separate tests of the cubic curve relationship between psychological ownership and normative commitment to change. I found that the cubic curve relationship was non-significant in the old employee sample and significant in the new employee sample. This outcome further confirmed the speculation of this dissertation. The results are shown in Table 4–8.

Figure 4–4 Cubic Curve Relationship Between Psychological Ownership and Normative Commitment to Change

Table 4–8 Psychological Ownership and Normative Commitment to Change

	Method: Ordinary least squares	
	DV: Normative commitment	
	Junior staff	Senior staff
VARIABLES	M5	M9
Psychological Ownership (PO)	2.51*	-0.30
	(1.510)	(4.779)
PO*PO	-0.70**	-0.09
	(0.344)	(0.918)
PO*PO*PO	0.06**	0.02
	(0.025)	(0.057)
Controls	Y	Y
Observations	151	149

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Control variables not reported to save space

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4.4.3.3 Endpoint Slope Test

Even if the quadratic term coefficient of the curve is significant and the higher term coefficient is not significant, the curve cannot be guaranteed to be U-shaped, as the J-shaped curve also satisfies the conditions. Therefore, when defining the U-shaped curve, it is also necessary to ensure that the slope of the curve at both ends of the independent variable is steep enough (STATA: utest). If the slope is significant on only one side, the curve is a monotonic convex/concave function rather than a U-shape or an inverted U-shape. Referring to Lind and Mehlum (2010), I used Stata's utest command for the endpoint slope test to exclude the case of J-shaped curves. According to the test results, the inverted U, U, and U-shaped relationships between psychological ownership and continuance commitment, affective commitment, and normative commitment all have significant slopes at the endpoints. This can exclude J-shaped cases, as shown in the table below.

Table 4–9 Psychological Ownership and Commitment to Change

	Continuance commitment		Affective commitment		Normative commitment	
	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound
Interval	1.14	7.00	1.14	7.00	1.14	7.00
Slope	0.88	-0.47	-0.68	0.32	-0.82	0.50
t-value	2.21	-2.78	-3.22	3.55	-2.80	4.02
P > |t|	0.01	0.003	0.0007	0.0002	0.003	0.00003
Overall test for the presence of an inverse U shape	t-value = 2.21					
	P > |t| = 0.01					
Overall test for the presence of an inverse U shape			t-value = 3.22		t-value = 2.80	
			P > |t| = 0.0007		P > |t| = 0.003	

The definition of a U-shaped relationship is very complicated and a variety of cases need to be excluded. Accordingly, I conducted multiple robustness tests, including the distribution range test of independent variables, the exclusion of high-order curve test, and the endpoint slope test. All of the test results show that my conclusions were robust.

4.5 Research Findings

Organisational change is crucial to the development of enterprises. If an organisation is longing for a major change, it must first obtain support from its employees. However, when enterprises implement major changes, there are great differences in the attitudes and behaviours of employees in different positions towards those changes. However, scholarly research on this issue has been insufficient. Therefore, from the perspective of employees' psychological ownership, I explored the impact of job positions on employees' psychological ownership and the impact of psychological ownership on employees' continuance commitment, affective commitment, and normative commitment to change, proposing five corresponding research hypotheses.

I empirically tested the above research hypotheses based on 300 questionnaires collected from Weiqiao Pioneering and arrived at the following five findings. First, the higher the position rank, the stronger the employees' psychological ownership. Second, employees in managerial positions have stronger psychological ownership than employees in technical positions. Third, there is an inverted U-shaped relationship between psychological ownership and employees' continuance commitment to change. Fourth, there is a U-shaped relationship between psychological ownership and

employees' affective commitment to change. Fifth, there is a U-shaped relationship between psychological ownership and employees' normative commitment to change. For the above quadratic curve relationship, I conducted a series of robustness tests, including the distribution range test of independent variables, the exclusion of high-order curve test, and the endpoint slope test. According to all of the test results, my conclusions were robust and all of my hypotheses were supported.

Chapter 5 Study 2 Case Study

In the previous chapter, I described the empirical research method that I used to explore the impact of job positions on employees' psychological ownership and the impact of psychological ownership on employees' commitment to change from the perspective of employees' psychological ownership. Large-sample empirical research helps to show the quantitative relationship among job positions, psychological ownership, and commitment to change, but it cannot show the causal process mechanism among these variables. I used a confirmatory case study method to understand the process mechanism of organisational change through field interviews, overcoming the limitations of the empirical research method and supplementing and correcting its conclusions (Burgess, 2002; Jiangming et al., 2011).

The case study, as a form of field research, conducts an in-depth investigation and analysis of specific cases, summarising the knowledge of the regularity of things underlying an occurrence to improve our comprehension of and ability to foresee the laws and logical principles of things (Edmondson & McManus, 2007). Field research requires researchers to see how things evolve, and in social science research, researchers pay particular attention to the feelings of the participants in the process. As a result, the case study's strong correlation with actual events and participant traits stands out as a key aspect of the method. All things' growth and evolution occur within a specific, real-world context. An analysis of things and phenomena based solely on literature and abstract data will be divorced from reality and may result in erroneous study findings. Case analysis is a good method of resolving this issue. It objectively

analyses, comprehends and explains the causal relationship between complex social phenomena in a manner that is closer to reality than other methods by placing the research object back into its original environment.

5.1 Case Selection

To explore the process mechanism of organisational change, as a case study object, I analysed Weiqiao Pioneering's aluminium–electricity collaborative reform that was implemented from 2003 to 2006. Along with specific business changes, the aluminium–electricity collaborative reform also entailed management system improvement. For instance, the group company obtained full control over the business company's finances and employee management, and each business company's previously independent decision-making experienced significant adjustments. Aluminium–electricity collaborative reform can lower operating costs, increase operational efficiency and produce better results than carrying out aluminium reform and electricity reform separately (Ansoff, 1965; Itami & Roehl, 1992). Weiqiao Pioneering encountered many obstructions during the process, particularly when it attempted to gain the recognition and support of all employees. Employees in various positions demonstrated widely varying attitudes and behaviours concerning the reform. For instance, some employees thought the reform might help the business thrive and give them better opportunities and a bigger stage. Others felt that the reform would limit their independence and harm their vested interests, which was not good for their personal growth.

Why was an organisational change conducive to the company's growth unable to gain the recognition and support of all employees? The company's decision-makers

encountered a variety of opponents during the change process and even questioned the effectiveness of collaboration as the theoretical cornerstone of a diverse business strategy. However, they failed to comprehensively probe such due to the pressing work and limited time available during the aluminium–electricity collaborative reform. With the recent expansion and development of its business, Weiqiao Pioneering needs to make more decisions about change than in the past. The company is experiencing a significant challenge in drawing lessons from the past and optimising its current transformation.

To analyse the impact of job positions on employees' commitment to change and the process mechanism from the perspective of psychological ownership, I selected Weiqiao Pioneering's aluminium–electricity collaborative reform as the object of my case study. My goal in doing so was to advance the research of organisational change and provide references for other enterprises looking to make changes. My study not only enriches the theory of organisational change but also contributes to the practice of enterprise change through its significant theoretical and practical implications.

5.2 Data Collection

5.2.1 Understanding the Background of Aluminium–Electricity Collaborative Reform

The first step of the interview process was to understand the background, process, and results of the aluminium–electricity collaborative reform to determine the research context. To address the interviewees' concerns about company decision-makers conducting in-person interviews, I developed an interview framework in conjunction

with an independent third-party research group, which then conducted the interviews. All of the interviews were carried out anonymously, and the employees were encouraged to give their honest opinions and not to worry. I designed the following interview questions:

(1) The aluminium–electricity collaborative reform was one of the largest organisational changes in the company's history. What were the considerations for the change at that time? This question was designed to help me understand the context of the change, including the internal and external environment and how these factors were taken into account by the decision-makers, to determine why the change was made and what results were anticipated.

(2) What were the reactions of internal stakeholders, such as executives and employees at different levels and functions, to the organisational change? Internal stakeholders are both the objects directly influenced by the change and the carriers of the organisational change. This question had two objectives. The first objective was to identify the micro process of the organisational change by understanding internal stakeholders' attitudes towards the change, the disparities in attitudes among various groups, and their game processes. The second objective was to outline and validate the micro-process mechanism of the organisational change through typical examples.

(3) What were the reactions of external stakeholders (suppliers, customers, competitors, and governments) to the implementation of the change, and how did the company respond? Can you give some typical examples? External stakeholders are the objects indirectly influenced by the change. Due to their close ties to internal

stakeholders, they indirectly experience the change within the company and show their support or opposition through emotions and behaviours based on their various interest relations. Therefore, this question was designed to conduct a triangulation by confirming the attitude and behaviour differences among internal stakeholders through the reaction of external stakeholders.

(4) Based on your experience, what issues require special attention if new changes are implemented in the future, and why? Decision-makers' judgments of the success or failure of the company's changes provide a reference of great significance, and the experience and lessons they summarise usually involve the most critical problems encountered. As a result, this question's objective was to determine whether the decision-makers could convey the most significant experience of the change through recall and summarisation.

5.2.2 Understanding the Process of Aluminium–Electricity Collaborative Reform

Employees are the main implementers of enterprise change. Employees' attitudes and behaviours regarding enterprise change may vary depending on their functions and levels, which is another focus of this dissertation. Therefore, after collecting specific context for the enterprise's change through interviews, the second step was to conduct in-depth interviews with employees. The following topics are just a few examples of the interview questions.

1. When did you join Weiqiao Pioneering?

2. What was your career path after joining Weiqiao Pioneering?

3. Do you know about the aluminium–electricity collaborative reform

implemented by Weiqiao Pioneering from 2003 to 2006?

4. What were your job responsibilities during this change?

5. How has this change affected your work? Can you give specific examples?

6. How do you evaluate this change?

5.3 Case Analysis

5.3.1 Historical Development Process of Organisational Change

From March to July 2021, I conducted in-depth interviews with 20 senior, intermediate, and grass-roots employees regarding the aluminium–electricity collaborative reform of Weiqiao Pioneering implemented from 2003 to 2006. They collected interview transcripts totalling almost 300,000 Chinese characters. During the same period, I looked up archival data and gathered media report information totalling approximately 100,000 Chinese characters. By looking up the company's documents and speaking with a large number of its employees, I sorted out the historical development process of the aluminium–electricity collaborative reform, as shown in Figure 5–1.

Weiqiao Pioneering started as a textile business whose rapid development required a significant amount of electricity. In 1999, Weiqiao Pioneering built a thermal power plant to accommodate its electricity needs. After generating an electricity surplus, Weiqiao Pioneering founded a thermoelectric aluminium company in 2001 to develop an aluminium business that would consume the extra electricity. The thermal power plant and aluminium plant were nominally managed by the thermoelectric aluminium company to ensure cooperation between the thermal power business and the aluminium

business. However, to support the companies' rapid development, the thermoelectric aluminium company gave them the authority to operate independently of each other, enabling them to maintain their freedom. Due to the company's strong operational capacity, both the thermal power plant and aluminium plant developed rapidly in a short period of time and their business scale continued to expand.

The independent operation of the two businesses had the advantages of quick decision-making and high operational efficiency, but there were also many problems. For example, different business departments made very different bid-winning prices for the same infrastructure project. The companies needed to buy the same raw materials separately at significantly different prices, resulting in overall weak bargaining power. Furthermore, small companies that did not have bidding qualifications and could not undertake the company's outsourcing business were added to the supplier list. There were also various quality and scheduling issues, erecting obstacles to the company's development and causing potential safety hazards. For example, interviewee T1 mentioned,

In 2003, there was basically no connection between the aluminium plant and the power plant. They reported to their respective leaders, and their procurement, production, and sales were separate. Their employees were managed separately, along with bidding for infrastructure projects, materials, and equipment. This led to problems, and there were management loopholes due to our lack of experience. During the process of procurement bidding, some things might not have been strictly controlled. There is one thing that

impressed me deeply. I served as a co-ordinator in bidding on a steel structure

plant, and ** Company won. Although the company was incapable of building

a steel structure plant because it lacked sufficient funds, technologies, and

capabilities, it won the bid at a relatively low price. Because of our lack of

experience in bidding, their project experienced many serious problems,

delaying the company's progress.

The company's decision-makers were keenly aware of the problems with the independent operation of the thermal power business and the aluminium business. In 2003, after careful consideration, the company decided to implement the aluminium–electricity collaborative reform with the hope of decreasing operating costs and increasing the enterprise's overall competitiveness by pooling resources and minimising redundancy in its aluminium, power, and other businesses. Theoretically, the aluminium–electricity collaborative reform could not only reduce the two companies' operating costs related to bidding, procurement, sales, and other links but also help enhance the company's bargaining power with suppliers and customers and save substantial costs. In 2006, the aluminium–electricity collaborative reform was officially implemented. Weiqiao Aluminium & Power Group was established, under which there were two subordinate companies, namely Weiqiao Aluminium Company and Weiqiao Electric Power Company. The group had major financial and human resources, and the subordinate companies were in charge of specific business operations. The company finally achieved the results it had expected for the collaborative reform and significantly reduced its operating costs.
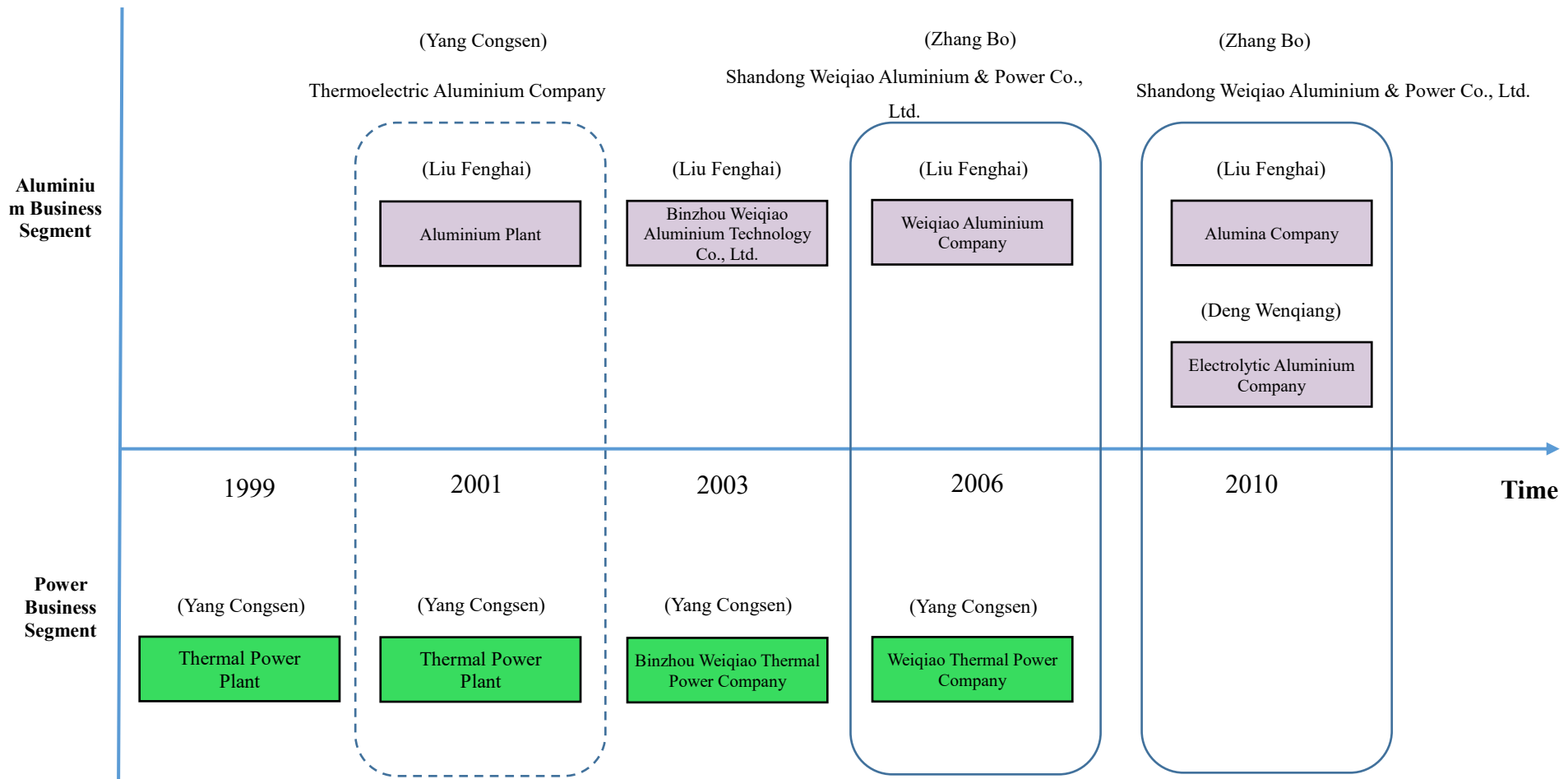
Note: The names in parentheses are the persons in charge of the companies

Figure 5–1 Timeline for the Aluminium–Electricity Collaborative Reform of Weiqiao Pioneering

5.3.2 Process Mechanism Analysis of Organisational Change

According to the process mechanism of empirical research, I applied the confirmatory case analysis research method to find examples of evidence for supplementary verification (Arlbjørn et al., 2011; Cui et al., 2016; Su & Cui, 2011). Accordingly, my confirmatory case study focussed on testing the process mechanism of the empirical research hypotheses.

The impact of job positions on the psychological ownership of employees was tested first. In the above-mentioned empirical research, I hypothesised that both position rank and managerial position positively affected employees' psychological ownership. When interviewing employees, the interview team focused on their position ranks and functions before the aluminium–electricity collaborative reform, The team then asked about the employees' psychological ownership (for example, by asking them to review their relationship with the company at that time and their sense of ownership) to determine the impact of job positions on psychological ownership.

The confirmatory case interview confirmed the inference of the relationship between job positions and psychological ownership, i.e., the higher the employee's position rank, the stronger their psychological ownership. Employees in managerial positions had stronger psychological ownership than those in technical positions. For example, employees D1 and D2 talked about how changes in their position ranks affected their psychological ownership. They clearly stated that after their position ranks were upgraded or changed to managerial positions, they got their own offices and started to think of the company as their home.

At that time (when the aluminium–electricity collaborative reform was implemented), I joined Weiqiao Pioneering (in a low position) after graduation and worked in the power plant... I worked in the workshop and had no office. At first, I didn't have a deep affection for the company. I did a good job and was later promoted to shift supervisor. I got an office desk, and I became more familiar with the environment. Gradually, I felt at home (D1).

I was also initially a grassroots employee at the aluminium plant. At that time, the aluminium plant and the power plant had started from scratch and developed rapidly. I was recognised by the plant leaders and was promoted to grassroots management. The company's conditions became more favourable, and I gained confidence (D2).

Employees D3 and D4 talked about a mechanism for position rank and managerial position that could improve psychological ownership by improving employees' self-efficacy. For example, they noted,

At that time, I was promoted to a leader for the first time. I really wanted to show everyone what I could do. I worked very hard, as if I were running my own business (D3).

I started as a technician, dealing with electrolytic cells every day, and the workshop was my stage. Later, I took a managerial position, and my horizon broadened. I began to consider things more from the company's perspective (D4).

Employees D5, M1, and T1 mentioned that position ranks and managerial positions influenced their psychological ownership by pursuing the efficacy mechanism.

For example, they mentioned,

I was transferred from another aluminium plant to Weiqiao Pioneering's aluminium plant, which was very small at that time. I was in charge of production technology in the workshop. I was not a leader and had no other ideas (D5).

At that time, I was a shift supervisor at the aluminium plant, and the company developed rapidly. I felt that I could do something big at Weiqiao Pioneering, so I worked very hard (M1).

Because Zouping Electric Power Bureau did not supply power to us, the former chairman said that we would build a power plant. I was one of the people in charge of building the power plant. I invested a lot of emotions (in the power plant), and I treated it like my own child (T1).

In conclusion, the confirmatory case study showed that position rank and managerial position improved employees' psychological ownership by giving them space, enabling their pursuit of efficacy, and facilitating the discovery of their self-identity, as shown in Table 5–1.

Table 5-1 Job Positions and Psychological Ownership

Core concept	Mechanism of position affecting psychological ownership	Examples of evidence (typical citation)
Position rank/managerial position	Having space	'At that time (when the aluminium–electricity collaborative reform was implemented), I joined Weiqiao Pioneering (in a low position) after graduation and worked in the power plant... I worked in the workshop and had no office. At first, I didn't have a deep affection for the company. I did a good job and was later promoted to shift supervisor. I got an office desk, and I became more familiar with the environment. Gradually, I felt at home' (D1). 'I was also initially a grassroots employee at the aluminium plant. At that time, the aluminium plant and the power plant had started from scratch and developed rapidly. I was recognised by the plant leaders and was promoted to grassroots management. The company's conditions became more favourable, and I gained confidence' (D2).
	Self-identity	'At that time, I was promoted to a leader for the first time. I really wanted to show everyone what I could do. I worked very hard, as if I were running my own business' (D3). 'I started as a technician, dealing with electrolytic cells every day, and the workshop was my stage. Later, I took a managerial position, and my horizon broadened. I began to consider things more from the company's perspective' (D4).
	Pursuing efficacy	'I was transferred from another aluminium plant to Weiqiao Pioneering's aluminium plant, which was very small at that time. I was in charge of production technology in the workshop. I was not a leader and had no other ideas' (D5). 'Because Zouping Electric Power Bureau did not supply power to us, the former chairman said that we would build a power plant. I was one of the people in charge of building the power plant. I invested a lot of emotions (in the power plant), and I treated it like my own child' (T1). 'At that time, I was a shift supervisor at the aluminium plant, and the company developed rapidly. I felt that I could do something big at Weiqiao Pioneering, so I worked very hard' (M1).

In addition, the dissertation examined the impact of psychological ownership on employees' commitment to change. In the above-mentioned empirical research, I hypothesised that there was an inverted U-shaped relationship between psychological ownership and continuance commitment to change, a U-shaped relationship between psychological ownership and affective commitment to change, and a U-shaped relationship between psychological ownership and normative commitment to change. During the interviews, the interview team focused on employees with different levels of psychological ownership and their commitment to the aluminium–electricity collaborative reform, such as whether they psychologically supported or opposed the change. According to the three-component conceptualisation of organisational commitment proposed by Meyer and Allen (1991), continuance commitment to change refers to employees' undesirable support for organisational change for fear of losing their own benefits. It is the minimum level of support, which is passively provided by employees to maintain their status in the organisation. Affective commitment to change reflects employees' expectations of and willingness to support organisational change. It is a moderate level of support that includes recognising the value of organisational change and believing that the change is conducive to organisational development. Normative commitment to change reflects employees' sense of obligation and mission to support organisational change. It is the highest level of support, at which employees feel obliged to support organisational change.

I learned from the interviews that employees with lower psychological ownership saw themselves as organisational outsiders, which could be attributable to timing or

their circles. When the organisation undergoes major changes, such changes will have great impacts on these employees' current state, especially if that state is positive. For example, employees D6 and D7 indicated

I had just joined Weiqiao Pioneering at that time and was not familiar with the company's situation. I heard about this (the aluminium–electricity collaborative reform). The reform would definitely be good, so I supported it very much (D6).

I still remember the merger of the aluminium plant and the power plant, which occurred under current Chairman Zhang Bo. At that time, I had worked at Weiqiao Pioneering for several years as an ordinary employee. The aluminium plant and power plant were managed together, and many opportunities emerged, which was a good thing for me. I supported it. (D7)

However, the attitudes of employees with a moderate level of psychological ownership towards the change were quite different. They had more concerns, most of which came from the worry about the harm to their immediate interests. For example, employees M2 and M3 stated,

The aluminium plant and power plant were operated independently, and bidding and procurement were carried out separately. I was in charge of the bidding, and I had the power to make decisions, right? You wanted to take away my power. Surely, I was unwilling to accept that (M2).

When the aluminium plant and power plant were first built and operated independently, it might have been easier to make adjustments. After we got

used to it, you suddenly said that our power should be taken away. The interests

of some departments would be influenced, and they were unwilling to support

the change. This was actually a matter of mindset (M3).

Employees with a high level of psychological ownership regarded the company as their home, and they unconditionally supported any change in the company. For example, employee T2 indicated,

I support any reform of Weiqiao Pioneering unconditionally. The chairman

said that the aluminium plant and the power plant should be managed together,

so let's do it as the chairman said (T2).

Table 5-2 Psychological Ownership and Commitment to Change

Core concept	Mechanism of psychological ownership affecting commitment to change	Examples of evidence (typical citation)
Psychological ownership	Low	'I had just joined Weiqiao Pioneering at that time and was not familiar with the company's situation. I heard about this (the aluminium–electricity collaborative reform). The reform would definitely be good, so I supported it very much' (D6). 'I still remember the merger of the aluminium plant and the power plant, which occurred under current Chairman Zhang Bo. At that time, I had worked at Weiqiao Pioneering for several years as an ordinary employee. The aluminium plant and power plant were managed together, and many opportunities emerged, which was a good thing for me. I supported it'. (D7)
	Moderate	'The aluminium plant and power plant were operated independently, and bidding and procurement were carried out separately. I was in charge of the bidding, and I had the power to make decisions, right? You wanted to take away my power. Surely, I was unwilling to accept that' (M2). 'When the aluminium plant and power plant were first built and operated independently, it might have been easier to make adjustments. After we got used to it, you suddenly said that our power should be taken away. The interests of some departments would be influenced, and they were unwilling to support the change. This was actually a matter of mindset' (M3).
	High	'I support any reform of Weiqiao Pioneering unconditionally. The chairman said that the aluminium plant and the power plant should be managed together, so let's do it as the chairman said' (T2).

Chapter 6 Conclusions and Discussions

6.1 Conclusions

Organisational change has always been an important topic in the field of strategic management research (Armenakis & Harris, 2009; Burnes, 2005; Hanelt et al., 2021). Only through continuous change can enterprises survive and develop in competition (Soparnot, 2011; Weick & Quinn, 1999). A large part of the research on organisational change has been focused on changes at the macro or individual level, such as the environment and organisational change (Buchanan & Badham, 2020; Suddaby & Foster, 2017) and personal traits and organisational change (Caldwell et al., 2004; Gilstrap & Hart, 2020; Idris et al., 2018). However, individuals are part of an organisation, and thus, a new challenge for scholars is to discover how to explore organisational change by considering both sides.

The empirical research has shown that the key to successful organisational change rests not only with whether the organisation has ambitious change strategies or detailed change plans but also with employees' cognition and attitudes towards organisational change (Furst & Cable, 2008). However, when enterprises are implementing major changes, there are great differences in the attitudes and behaviours of employees in different positions towards those changes. Scholarly research into this aspect of change has been insufficient. (Armenakis & Bedeian, 1999; Oreg et al., 2011). In recent years, scholars have found that psychological ownership has an impact on organisational change and is affected by job positions (Pierce et al., 2001). Therefore, I researched the problem of employees' commitment to change amid enterprises' organisational change.

I was committed to determining why employees in different positions engage in different change-supportive behaviours and confirming the role of psychological ownership in this process.

Using both quantitative and qualitative research methods, I conducted empirical research into the 2019 relocation of the Weiqiao Pioneering factory and carried out a questionnaire survey to explore the impact of job positions on employees' commitment to change during major changes in enterprises and the role of psychological ownership in that commitment. Based on the above-referenced studies, I found that both position rank and managerial position can enhance employees' psychological ownership. There was an inverted U-shaped relationship between psychological ownership and continuance commitment to change, and U-shaped relationships between psychological ownership and affective and normative commitments to change. To further verify the above process mechanism, I adopted the qualitative research method to study Weiqiao Pioneering's 2003 aluminium–electricity collaborative reform and conducted in-depth interviews to understand the psychological ownership and commitment to change of employees in different positions, further testing the robustness of the empirical conclusion.

In addition to enriching the studies on the commitment to change and psychological ownership, this dissertation provides a significant reference for enterprises' change practices. First, the literature on the antecedents of employees' commitment to change has been based on either the organisation or individuals, focussing less on the individual's position in the organisation. In reality, employees are

embedded in different positions and levels in a company. An employee may have different attitudes towards organisational change if they continually change positions. Therefore, I considered the impact of employees' commitment to change from the perspectives of both organisations and individuals. I found that employees at different levels and positions had significantly different levels of commitment to change, providing an important supplement to the literature on the commitment to change.

Second, most of the studies exploring the antecedents of psychological ownership have been conducted from an organisational or individual perspective, ignoring the unique aspects of individuals, such as their position and level in the organisation. As their job positions change, employees' psychological ownership changes accordingly. In this dissertation, I combined individuals and organisations with job positions and found that position ranks and managerial positions positively affected employees' psychological ownership, providing an important supplement to the literature on the antecedents of psychological ownership. Studies exploring the impact of psychological ownership on organisations and individuals have only considered the linear relationship, that is, the positive or negative influence of psychological ownership on organisational and individual attitudes and behaviours, ignoring the more complex non-linear relationship. I considered the more complex nonlinear relationship between the two, finding an inverted U-shaped relationship between psychological ownership and continuance commitment and U-shaped relationships between psychological ownership and affective and normative commitment, providing an important supplement to the literature. The non-linear relationship revealed the complex

mechanism by which the dependent variable changed with the independent variable.

Third, this dissertation is of important practical significance. With the rapid development of the world economy and technologies and the acceleration of globalisation, Chinese enterprises are encountering new challenges. Meanwhile, as the business environment of enterprises is becoming increasingly complex and changeable amid China's economic and social transformation, enterprises cannot thrive if they maintain their management mode unchanged. Therefore, rapidly changing international and domestic environments impose stricter requirements for the operations of Chinese enterprises, which need to make changes corresponding to their environmental changes. However, change is not easy, and one of its main difficulties is that employees have different attitudes towards change. Therefore, drawing organisational change experience from theoretical knowledge and practice provides a significant reference for enterprises' subsequent changes. Enterprise managers should try their best to improve employees' sense of belonging, especially their psychological ownership, and when implementing organisational change, enterprise managers need to consider the demands of employees in different positions and tailor their incentives accordingly.

6.2 Limitations and Future Directions

Despite all efforts to achieve academic rigour, this dissertation has limitations in this dissertation. First of all, in terms of empirical research, I collected data from only one enterprise: Weiqiao Pioneering. Although data from a single enterprise are helpful to reflect the enterprise's operations, the representativeness of the sample may be insufficient, thus limiting the universality of the research conclusions. Future studies

could collect more extensive data on enterprise change to enhance the representativeness of the sample data and improve the universality of the research conclusions.

Second, given that empirical research cannot show the causal relationships between variables, a case study method was adopted as a supplement. It should be noted that this dissertation was only a confirmatory case study of the hypotheses of the empirical research after I had drawn conclusions from the empirical research. Although I sought to ensure a rigorous and standardised research process, problems remained, such as insufficient representativeness and possible unexplored alternative interpretations. Future studies could carry out exploratory case studies and design opener questions, enabling them to draw more comprehensive conclusions.

Third, I attempted to explore the causal relationships between constructs. For this purpose, the natural experiment that occurred in the Weiqiao Group was selected as the research context. However, due to the limitations of the empirical research and case study methods, this dissertation mostly presents process correlations rather than strictly causal relationships. Future research should make additional efforts to explore causality, including using the structural equation method and the experimental method.

Fourth, this dissertation only explored the impact of job characteristics on psychological ownership and the impact of psychological ownership on a commitment to change from the perspective of economic effects without considering social effects. However, the social effects of the aforementioned relationships also have important theoretical and practical significance; future research could focus on this topic.

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Attachment: Questionnaire

Questionnaire

Dear employees,

To fully understand the state of Weiqiao Pioneering's operations and improve the quality of its operations, we attach the following survey.

This is an anonymous survey that will only be used for academic research. We will keep the information strictly confidential, and there are no right or wrong answers. You can quit the survey at any time.

Thank you for your support!

Part I Personal Information

1. Gender_____;

2. Date of birth_____;

3. Birthplace_____;

4. Race_____;

5. Place of domicile_____;

6. Highest education background_____ (1–Junior high school and below; 2–Senior high school and technical secondary school; 3–Junior college; 4–Undergraduate; 5–Graduate);

7. I joined Weiqiao Pioneering in_____(year);

8. Current position rank_____(1–Ordinary employee; 2–Team leader (operation head); 3–Shift supervisor; 4–Director; 5–Factory manager; 6–Branch manager; 7–Group leader);

9. Current position type_____(Technical/managerial);

10. Married or not _____;

11. Number of children_____;

12. Own a household in Shandong or not_____.

13. Please answer the following questions based on your actual work. (Please score from 1 to 7: 1 means '*Strongly Disagree*' and 7 means '*Strongly Agree*').

	1 – Strongly Disagree, 7 – Strongly Agree
I prefer fixed, pre-determined work content and processes to flexible work tasks and requirements	
I prefer specific, detailed work orders to general, rough guidelines	
I tend to become anxious when I do not know how things will turn out	
I feel stressed when I cannot predict consequences.	
When the results are unpredictable, I will not take risks.	
I do not think we should break the rules just for pragmatic reasons.	
I do not like ambiguous situations.	

Part II My Evaluation of Weiqiao Pioneering's Operations

Since 2019, Weiqiao Pioneering has cooperated with the People's Government of Yunnan Province to build the Green Aluminium Innovation Industrial Park and moved some of Shandong's production capacity to Yunnan. How do you see this change in the company? Please score from 1 to 7 (1 means '*Strongly Disagree*' and 7 means '*Strongly Agree*') in the table below. There are no right or wrong answers.

	1 – Strongly Disagree, 7 – Strongly Agree
I firmly believe that the change is worthwhile	
This change is a good strategy for Weiqiao Pioneering	
I think the management is wrong to make this change	
This change serves an extremely important purpose	
It would have been better if we had not made this change	
This change is totally unnecessary	
I have no choice but to accept this change	
I feel stressed to accept this change	
The stakes are too high for me to accept this change	
It would be too costly for me to resist this change	
It would be risky to publicly oppose such a change	
Resisting this change is not a viable option for me	
I feel a responsibility to work for this change	
I do not think it would be right to oppose this change	
I do not feel bad for opposing this change	
It would be irresponsible for me to resist such a change	
I feel guilty for opposing this change	
I do not feel obligated to support this change	

Part III Evaluation of My Relationship with Weiqiao Pioneering

Scenario instructions: Think about a house or a vehicle that you own or co-own with someone and the experiences and feelings associated with the statement 'This is my (our) house!' Please score from 1 to 7 (1 means '*Strongly Disagree*' and 7 means '*Strongly Agree*') in the following table your answers to these questions that relate to your 'sense of ownership' of Weiqiao Pioneering. There are no right or wrong answers.

	1 –Strongly Disagree, 7 – Strongly Agree
This is my company	
I feel that this company is our company	
I have a high sense of ownership of this company	
I feel like this is my company	
This is our company	
Most people who work for the company think they own the company	
I find it hard to regard Weiqiao Pioneering as my company	

This is the end of the questionnaire. Thank you again for your participation!