

# The Role of SEW and TMT Behaviours in Family Business Innovation: Evidence from China

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## **Abstract**

Innovation is the lifeblood of a family business and plays an important role in developing the firm's competitiveness and achieving sustainable growth. As the majority of Chinese private firms and the main foundation of China's private sector, Chinese family businesses are an emerging force for innovation. This thesis attempts to unravel the innovation “black box” of family firms by exploring the mechanisms of how and why family firms are more efficient during the innovation process. Drawing upon stewardship theory and upper echelon theory, this study investigates how socioemotional wealth (SEW) influences the innovation inputs, the relationship between innovation inputs and outputs, and the role of top management team (TMT) behaviours during the conversion from innovation inputs to outputs.

Based on a mixed-method study, this thesis investigates the mechanism of the innovation process using quantitative survey data from 473 Chinese family-controlled small and medium-sized enterprises (SMEs) and qualitative interview data from 12 Chinese family-controlled SMEs. The key findings of this thesis revealed that different dimensions of SEW shape decision-making on innovation inputs for family firms in China. Specifically, the results indicate that family influence and control have negative implications for innovation inputs, while binding social ties, emotional attachment, and renew family bonds positively affect the innovation inputs. Moreover, this thesis finds that innovation inputs have indirect effects on innovation outputs through TMT behaviours. The use of knowledge and skills, trust, and cognitive conflicts by TMTs partially mediate the relationship between innovation inputs and outputs.

This research extends the understanding of the innovation process in the family businesses by exploring SEW-related innovation decision-making processes and administrative behaviour at the TMT level, which tackles the conundrum of

how family firms can win innovations with limited innovation inputs. Moreover, it also enriches the literature on Chinese family business innovation, which provides new insights about family business innovation in emerging economies, thus contributing towards a more holistic picture of family business innovation globally. Practically, this research provides a comprehensive understanding of the innovation process in Chinese family businesses. It juxtaposes the viewpoints of family owners, policymakers, and managers on how family businesses in China can innovate and thrive in an emerging market.

**Key words:** Family firm, Innovation, TMT behaviours, China, Socioemotional wealth

## Table of Content

<b>Abstract .....</b>	<b>II</b>
<b>Acknowledgement .....</b>	<b>XI</b>
<b>List of Tables .....</b>	<b>VIII</b>
<b>List of Figures .....</b>	<b>X</b>
<b>Chapter 1 Introduction .....</b>	<b>1</b>
1.1 Outline of the Research .....	1
1.2 Rationale of the Study .....	3
1.3 Aims and Objectives of the Thesis .....	7
1.4 Contributions to Knowledge .....	8
1.5 Organisation and Structure of the Thesis.....	10
<b>Chapter 2 Research Background-Chinese Context .....</b>	<b>12</b>
2.1 Introduction .....	12
2.2 The Evolution of Family Businesses Innovation in China.....	12
2.2.1 Vacuum period of Chinese family businesses (1949-1978) .....	13
2.2.2 The Formation of industrial clusters and the duplicative imitation mode (1979-1991) .....	14
2.2.3 Learning from international clients and accumulating technologies (1992-2001) ..	14
2.2.4 The imitative innovation and globalisation (2002-2014) .....	17
2.2.5 Mass innovation and entrepreneurship (2015-Present) .....	19
2.3 Three Models of Chinese Family Business Cluster and Their Innovation Development.....	22
2.3.1 Wenzhou Model .....	22
2.3.2 Sunan Model .....	25
2.3.3 Pearl River Delta Model .....	28
2.4 Conclusion .....	30
<b>Chapter 3 Literature Review .....</b>	<b>31</b>
3.1 Introduction .....	31
3.2 The Definition of The Family Business.....	31
3.2.1 The components of the involvement approach .....	32
3.2.2 The essence approach .....	36
3.2.3 The definition of family businesses in the thesis.....	42
3.3 The Evolution of Socioemotional Wealth .....	43
3.3.1 Resource-based view (RBV).....	44
3.3.2 Familiness .....	46
3.3.3 Socioemotional wealth .....	50

3.4 Innovation in Family Business .....	58
3.4.1 Innovation in family businesses .....	60
3.4.2 The paradox of family firm innovation .....	72
3.5 Summary .....	74
<b>Chapter 4 Theoretical Framework and Hypotheses Development .....</b>	<b>76</b>
4.1 Introduction .....	76
4.2 Stewardship Theory .....	76
4.3 Upper Echelon Theory .....	82
4.4 Background to the Conceptual Model .....	87
4.5 Hypothesis Development .....	92
4.5.1 Socioemotional Wealth and Innovation Inputs .....	92
4.5.2 Innovation inputs and outputs .....	99
4.5.3 Mediating effects of TMT behaviours on innovation inputs and outputs .....	101
4.6 Summary .....	107
<b>Chapter 5 Research Methodology .....</b>	<b>109</b>
5.1 Introduction .....	109
5.2 Research Philosophies/Paradigms .....	110
5.2.1 Positivism .....	113
5.2.2 Interpretivism .....	114
5.2.3 Critical Realism .....	115
5.2.4 Pragmatism .....	116
5.2.5 The philosophical stance of this study .....	118
5.3 Research Approaches .....	122
5.3.1 Inductive research approach .....	122
5.3.2 Deductive research approach .....	123
5.3.3 Abductive research approach .....	124
5.3.4 The justification of research approach .....	126
5.4 Research Design .....	127
5.4.1 Sequential explanatory design .....	129
5.4.2 Sequential exploratory design .....	129
5.4.3 Concurrent triangulation design .....	130
5.4.4 Justification of research method and designs .....	131
5.5 Sample Framework .....	133
5.5.1 The research population .....	133
5.5.2 Sampling criteria .....	134
5.5.3 Sampling technique .....	135
5.6 Data Collection Process .....	136
5.6.1 Piloting and screening .....	137

5.6.2 Quantitative data collection .....	138
5.6.3 Qualitative data collection .....	142
5.7 Ethical Consideration .....	143
5.7.1 Informed Consent .....	144
5.7.2 Confidentiality and Anonymity .....	144
5.8 Research Instruments.....	146
5.8.1 Structure of instruments.....	146
5.8.2 Variables Measurement .....	147
5.9 Validity and Reality Issues .....	152
5.10 Summary .....	158
<b>Chapter 6 Quantitative Research Findings.....</b>	<b>159</b>
6.1 Introduction .....	159
6.2 Demographic Statistics .....	159
6.3 Analysis of the Inter-Correlation Among the Variables .....	161
6.4 Results of Research Model Testing .....	164
6.4.1 The relationship between socioemotional wealth and innovation input.....	164
6.4.2 The relationship between innovation inputs and outputs.....	169
6.5 Summary .....	182
<b>Chapter 7 Qualitative Research Findings .....</b>	<b>184</b>
7.1 Introduction .....	184
7.2 Background.....	184
7.3 Findings on Socioemotional Wealth Influencing Innovation Inputs .....	189
7.3.1 Family control/influence and innovation inputs .....	189
7.3.2 Identification with the firm and innovation inputs .....	192
7.3.3 Binding social ties and innovation inputs .....	194
7.3.4 Emotional attachment and innovation inputs .....	196
7.3.5 Renew family bonds and innovation inputs .....	199
7.4 Innovation Inputs and Innovation Outputs .....	201
7.5 Findings on the mediating effects of TMT behaviours.....	203
7.5.1 Use of knowledge and skills.....	204
7.5.2 Trust .....	207
7.5.3 Cognitive conflicts .....	210
7.6 Summary .....	212
<b>Chapter 8 Conclusions and Recommendations.....</b>	<b>214</b>
8.1 Introduction .....	214
8.2 Findings and Conclusions of the Research.....	214
8.2.1 Socioemotional wealth and innovation inputs.....	217

8.2.2 The role of TMT behaviours between innovation inputs and outputs .....	219
8.2.3 Comparative assessment of research findings in Chinese family business .....	222
<b>8.3 Contributions to Knowledge .....</b>	<b>224</b>
8.3.1 Theoretical contribution of this study .....	224
8.3.2 Practical implication of this study .....	228
<b>8.4 Limitations and Recommendations for Future Research .....</b>	<b>232</b>
8.4.1 Research limitations.....	232
8.4.2 Directions for future research.....	234
<b>8.5 Conclusion .....</b>	<b>235</b>
<b>Reference .....</b>	<b>236</b>
<b>Appendix .....</b>	<b>333</b>
Appendix A- Ethical Approval.....	333
Appendix B - Survey Questionnaire (English version) .....	334
Appendix C - Survey Questionnaire (Chinese version).....	343
Appendix D - Interview Questionnaire (English version).....	351
Appendix E - Interview Questionnaire (Chinese version).....	355

## List of Tables

<b>Table 2.1</b> The main characteristics of the learning forms of family businesses .....	17
<b>Table 3.1</b> Overview of key definitions based on components of involvement approach .....	36
<b>Table 3.2</b> Overview of key definitions based on essence approach.....	40
<b>Table 3.3</b> Comparing components of involvement approach and essence approach. ....	41
<b>Table 3.4</b> Overview of selected articles on innovation inputs in family firms ..	63
<b>Table 3.5</b> Overview of selected articles on innovation outputs in family firms	70
<b>Table 5.1</b> Comparison of four research paradigms in business research management research .....	112
<b>Table 5.2</b> The comparison between deduction, induction and abduction.....	125
<b>Table 5.3</b> The Criteria of Chinese SMEs .....	135
<b>Table 5.4</b> Summary of respondents .....	140
<b>Table 5.5</b> The Distribution of the Sample .....	141
<b>Table 5.6</b> Summary of Variables.....	151
<b>Table 5.7</b> The Summary of Model Fit .....	155
<b>Table 5.8</b> The results of average variance extracted (AVE) and composite reliability (CR).....	156
<b>Table 5.9</b> Fornell–Larcker coefficients for Model One.....	157
<b>Table 5.10</b> Fornell–Larcker coefficients for Model Two .....	158
<b>Table 6.1</b> Sample demographic (N=473) .....	161
<b>Table 6.2</b> Correlations among key variables.....	163



<b>Table 6.3</b> Regression results for the relationship between SEW and innovation inputs .....	169
<b>Table 6.4</b> Regression results for the relationship between innovation input and output.....	170
<b>Table 6.5</b> Results of regression for the mediating effects of the use of knowledge and skills.....	173
<b>Table 6.6</b> Results of regression for the mediating effects of trust .....	176
<b>Table 6.7</b> Results of regression for the mediating effects of cognitive conflicts .....	179
<b>Table 6.8</b> Summary of Hypothesis Testing .....	182
<b>Table 7.1</b> Demographic Profiles.....	186
<b>Table 7.2</b> The nature of respondent companies.....	187
<b>Table 8.1</b> Summary of research findings.....	215

## List of Figures

<b>Figure 2.1</b> Location of Wenzhou .....	24
<b>Figure 2.2</b> Location of Sunan .....	26
<b>Figure 2.3</b> Location of Pearl River Delta .....	28
<b>Figure 4.1</b> The conceptual model of this research.....	107
<b>Figure 5.1</b> The Research Onion.....	109
<b>Figure 5.2</b> Geographical distribution of the sample .....	141
<b>Figure 5.3</b> The industry composition of the sample .....	142
<b>Figure 5.4</b> Model One .....	153
<b>Figure 5.5</b> Model Two.....	154
<b>Figure 6.1</b> The Mediating effect of use of knowledge and skills .....	175
<b>Figure 6.2</b> The Mediating effect of trust .....	178
<b>Figure 6.3</b> The Mediating effect of cognitive conflicts.....	181

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## **List of Abbreviations and Acronyms**

ANOVA – Analysis of Variance

CCP/CPC – Communist Party of China

CEO – Chief Executive Officer CGI

COI – Components of involvement approach

CMB – Common Methods Bias

FIBER – Family control and influence

Identification with the firm

Binding social ties

Emotional attachment

Renewal of family bonds through dynastic succession

GDP – Gross Domestic Product

OECD – Organisation for Economic Co-operation and Development

OEM – Original Equipment Manufacturer

R&D – Research and Development

SMEs – Small and Medium-Sized Enterprises

SOEs – Stated-owned Enterprises

POEs – Privately-operated enterprises

PRC – People's Republic of China

TMT – Top Management Team

TVOEs – Township and Village-owned Enterprises

UK – The United Kingdom

US/U.S. – The United States of America

WTO – The World Trade Organisation

EU – European Union

FDI – Foreign Direct Investment

RBV – Resource Based View

SEW – Socioemotional Wealth

SMEs – Small and Medium Sized Enterprises

SPSS – Statistical Package for Social Science

## **List of Key Definitions**

To clarify the scope of this thesis, the following terms are defined that will be used and referenced throughout this thesis.

### **Family Business**

A business that is “governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families” (Chua et al. 1999, p.25).

### **Socioemotional Wealth (SEW)**

Socioemotional wealth (SEW) is considered as a potential theoretical approach in family business research (Berrone, Cruz and Gomez-Mejia, 2012), which provided researchers with an integrated framework to explain various behaviours of family firms. SEW is defined as the “affective endowment of family owners” (Gómez-Mejía *et al.*, 2011; p. 654), which characterises the non-economic and emotional value associated with a family firm that serves to meet the family’s affective needs (Gómez-Mejía *et al.*, 2007; Gomez-Mejia, Makri and Kintana, 2010; Gomez-Mejia *et al.*, 2011; Berrone, Cruz and Gomez-Mejia, 2012; Zellweger *et al.*, 2012). By drawing from Berrone, Cruz and Gomez-Mejia (2012), this thesis focuses on the multidimensional nature of SEW, including family influence and control, identification of the family with the firm, binding social ties, emotional attachment of family members, and renew family bonds.

### **Innovation**

As innovations usually come in many shapes and forms, they usually do not have universally shared conceptualisation or operationalisation (Varis and Littunen, 2010). According to the OECD's (2005) definition of innovation, there are four types of innovation: product, process, market, and organisational

innovation. In contrast to large companies, serving attractive niches with innovative products is an important way that small and medium-sized companies stand out from the competition (Rosenbusch, Brinckmann and Bausch, 2011). As such, this thesis focuses on product innovation, which refers to the development of new functions or features in a product or service (Varis and Littunen, 2010).

### **Innovation Inputs**

Innovation inputs are considered as a set of activities used to exploit innovation opportunities and linked to generating new products, services, or production process (De Massis, Frattini and Lichtenthaler, 2013). Existing literature usually measures innovation inputs as investments. However, it might systematically underestimate innovation inputs for small and medium-sized companies as innovation inputs also relate to the expenditures on non-activities, such as expenditures on machinery, computer hardware and software. Therefore, this thesis measures innovation inputs that include expenditures on both investments and non-innovation.

### **Innovation Outputs**

Innovation outputs describe the outcomes resulting from innovation inputs (Leten, Belderbos and Van Looy, 2007; Czarnitzki and Kraft, 2009). Given that the expenses and efforts for applying for such patents and dealing with patent infringement are often beyond the capacity of small firms (Romijn and Albaladejo, 2002), the counting of patents could underestimate innovation outputs for family-controlled SMEs. As such, this thesis focuses on the new products or services in terms of innovation outputs.

### **TMT Behaviours**

TMT usually represents the most influential group at the top of firms (Hambrick, 2007) and the intersection between the family and the firm (Gersick *et al.*, 1999;



Binacci *et al.*, 2016; D'Allura, 2019). Especially for family-controlled SMEs, TMT's risk behaviours and willingness to innovate directly affect innovativeness in family firms due to their flattened hierarchies (Kraiczy, 2013). This thesis focused on three dimensions of behaviours related to the innovation process, including the use of knowledge and skills, trust, and cognitive conflicts.

## Chapter 1 Introduction

### 1.1 Outline of the Research

Family firms are ubiquitous and play a crucial role in the social and economic landscape (La Porta, Lopez-de-Silanes and Shleifer, 1999; De Massis, Frattini, *et al.*, 2015, 2018; Urbinati *et al.*, 2017; Arzubiaga *et al.*, 2018). They generally include not only privately held companies but also publicly listed corporations. According to PWC Global Family Business Survey (2021), family businesses employ about 60 per cent of the global workforce and generate over half of the world's GDP. In both developing and developed countries, family businesses significantly contribute to economic growth. For instance, in developed countries like the United States, family businesses account for one-third of S&P 500 firms, contribute 54 per cent of private sector GDP, 59 per cent of the private workforce, and 87 per cent of business tax returns (Pieper, Kellermans and Astrachan, 2021). In the Asian region, they are more prevalent and represent over 85 per cent of the private sector (Kiong, 2016; Loh, Thomas and Wang, 2017; Merchant, Kumar and Mallik, 2017). For example, around 67 per cent of companies in India are family businesses and make up 79 per cent of India's GDP (Kohli and Gill, 2019). Similarly, family businesses in Malaysia account for 80 per cent of the firms in the private sector, contributing 67 per cent to the national GDP (Cheng and Co, 2019).

Compared with other economies, the Chinese family business is also an important engine behind great economic growth and job creation (Wang, Pei and Liu, 2014; Li *et al.*, 2015; Wang and Beltagui, 2021). According to data from the State Administration for Industry and Commerce of China, by the end of March 2022, 92.1 per cent of entities in China were privately-operated enterprises (POEs), creating 67 per cent of the national GDP and 0.3 billion jobs in the market. Most of these POEs are indeed organised around the family,

with the family owning or governing (Tsui, Bian and Cheng, 2014; Wang, Pei and Liu, 2014; Li *et al.*, 2015). Despite the fact that family businesses have great economic value and considerable influence, the overall research on them surprisingly attracts limited attention (Deng, Hofman and Newman, 2013; Wang, Pei and Liu, 2014). On the one hand, family businesses in China have been regarded as distinctive entities by government agencies and academics not for a long time (Wang, Pei and Liu, 2014). On the other hand, many Chinese enterprises are reluctant to claim to be a family business or express their intention to transfer the business across generations although they are indeed controlled by the family (Chen, Zhu and Fang, 2021). China adopted a centrally planned economy between the 1950s to 1980s (Fan, 1992). During that period, entrepreneurial activities were viewed as a political taboo (Tan, 2002; Wang, Pei and Liu, 2014). Due to the concern over negative identity and ideological inertia, many private firms still deny their family ownership of the businesses (Wang, 2016). Additionally, the average life span of private companies in China is only 3.7 years (Kostka, Moslener and Andreas, 2013). The pressure of severe competition makes survival become the top priority for family businesses instead of passing the business to the next generation.

In the last four decades, China has experienced long-term rapid growth since the economic reform in the 1980s (He, Lu and Qian, 2019). From 2015, however, due to the sluggish demand in internal markets and trade tensions in international markets (Wang and Beltagui, 2021), China's growth has slowed down, and they start to seek a "new normal" of economic development (Zhou *et al.*, 2017). Innovation in this context becomes appealing, which may help sustain economic growth in the new era (Reshetnikova, 2018). Given the great importance of family business for China's economic and social development, it is, therefore, crucial to understand Chinese family businesses and their innovation.

## 1.2 Rationale of the Study

Innovation, as the key driver of economic prosperity and firms' survival, plays an important role in developing a firm's competitiveness and achieving sustainable growth (Surya *et al.*, 2021). In family businesses, innovation is their lifeblood (Scholes *et al.*, 2021) due to the main characteristics of the family business, such as the vision for continuity and the intentions to transfer the business to the next generation (Cruz and Nordqvist, 2012). Recently, research on innovation in family businesses has gained momentum, resulting in a growing body of publications on the top-ranked management journals (Becerra, Cruz and Graves, 2020; Bendig *et al.*, 2020; Rondi, Sciascia and De Massis, 2020).

The extant literature indicates that family innovation behaviour is likely to be different from their nonfamily counterparts because of the affective value derived from their firms (Block *et al.*, 2013; Carnes and Ireland, 2013). Such affective endowments are called SEW, which refers to the noneconomic benefits derived from pursuing family-centred noneconomic goals (Gómez-Mejía *et al.*, 2007; Berrone, Cruz and Gomez-Mejia, 2012). While previous studies applied SEW to investigate how and under what conditions family ownership affects innovation behaviours, the results are mixed. For instance, some studies suggested that protecting SEW might result in a conservative approach for family businesses to develop innovations (Block *et al.*, 2013; Sciascia *et al.*, 2015). Other studies, however, reported that the desire to protect SEW might manifest itself by developing innovation, ensuring the long-term prosperity of the firm (Cassia, Massis and Pizzurno, 2011; Mazzelli, Kotlar and De Massis, 2018). This is attributed to the intensive debate on whether treat SEW as a collective whole or as different independent non-economic goals (Calabrò *et al.*, 2018). Specifically, SEW used to be viewed as an umbrella concept that included different non-economic goals. While Chua,

Chrisman and De Massis (2015) argued that different non-economic goals might have different effects on family firms in terms of innovation decisions. Therefore, it is essential to understand how SEW influences innovation behaviours more accurately.

Moreover, although extensive research has shown that family firms differ from nonfamily firms in terms of innovation (Kraus, Pohjola and Koponen, 2012; De Massis, Frattini and Lichtenthaler, 2013; De Massis, Frattini, *et al.*, 2015), scholars have an intense debate on whether family firms are more innovative than their nonfamily counterparts (De Massis, Frattini and Lichtenthaler, 2013). Some scholars found that family firms usually adopt conservative strategies and are resistant to change (Nordqvist, Hall and Melin, 2009). At the same time, others believe that family businesses have a more competitive advantage in innovation, especially the conversion from innovation inputs to outputs (Souder, 1994; Gudmundson, Donald; Burk Tower; Hartman, 2003; Craig and Dibrell, 2006; McCann, Leon-Guerrero and Haley, 2019). Along with a substantial increase in such debates, De Massis *et al.* (2014) proposed “ability and willingness paradox” as a framework to explain the ambiguity surrounding this question. They claimed that family firms might have a superior ability to innovate, despite their deficient desire to innovate (De Massis *et al.*, 2014; Chrisman, Chua, *et al.*, 2015). Echoing their study, the seminal work of Duran *et al.* (2016), based on a meta-analysis of 108 primary studies, concludes that family businesses invest less yet enjoy greater innovation outputs from their investments.

Despite the knowledge about family business innovation having improved, the overall understanding is still limited (Rondi, De Massis and Kotlar, 2019; Wang and Beltagui, 2021). In particular, it is still unclear about the mechanisms that underpin the conversion from innovation inputs to outputs. Existing studies consistently suggest that family firms have the low intention to innovate

(Chrisman, Chua, *et al.*, 2015; Migliori *et al.*, 2020), invest less in innovation (Block, 2012; Chen and Hsu, 2009; Munari *et al.*, 2010; Röd, 2016; Sirmon *et al.*, 2008), and engage in incremental rather than radical innovation (Lee, Wu and Pao, 2014; De Massis, Frattini, *et al.*, 2015; De Massis, Audretsch, *et al.*, 2018). However, the investigation on the conversion from innovation inputs to outputs is limited. This is especially in examining the unique conundrum of family firms "doing more (innovation) with less (investment)" (Duran *et al.*, 2016). Additional research on how and why family firms are more efficient in their innovation process is needed (Duran *et al.*, 2016; De Massis, Audretsch, *et al.*, 2018; Rondi, De Massis and Kotlar, 2019).

Furthermore, extant research on innovation in family firms has primarily focused on large and listed companies (Manzaneque, Diéguez-Soto and Garrido-Moreno, 2018; Carney, Zhao and Zhu, 2019), whilst little attention has been paid to small and medium-sized family firms (Rondi, De Massis and Kotlar, 2019). Private SMEs are significantly different from large listed companies in terms of their managerial structure (Roffia *et al.*, 2021). Given to their ubiquity and idiosyncratic features, it is important to understand the specificity of innovation in family-controlled SMEs (Sciascia *et al.*, 2015; De Massis and Rovelli, 2018). For instance, they are usually more flexible to quickly adapt to a rapidly-changing environment (Rondi, De Massis and Kotlar, 2019), and the strong ties within family relationships and local community, business networks also shape their innovation activities (Classen *et al.*, 2014). While the small scale constrains their financial and human resources (Feranita, Kotlar and De Massis, 2017), family businesses could use their innovation investments more efficiently than their nonfamily counterparts (Chen and Hsu, 2009). Therefore, it is essential to unravel this "black box" (Sirmon, Hitt and Ireland, 2007) and develop insights into their specificity in innovation (De Massis and Rovelli, 2018).

What is more, previous studies have well established that the top management team (TMT) usually represents the most influential group at the top of firms (Gersick *et al.*, 1999; Hambrick, 2007; Binacci *et al.*, 2016; D'Allura, 2019). Even though, there remains limited research about TMT in family-controlled SMEs. In contrast to large and listed firms, they usually overlap with their board, which provides different governance and mechanisms (Brunninge, Nordqvist and Wiklund, 2007). Additionally, a high level of family involvement in the TMT could lead to increased identification and great stewardship (Arzubiaga *et al.*, 2018). Therefore, TMT behaviours in family businesses are able to shape their innovation process (Arzubiaga, Maseda and Iturralde, 2019). Given the high level of common understanding and the intense social relationships in a family firm context, it is interesting to look at TMT behaviours, including the use of knowledge and skills, trust, and cognitive conflicts. For instance, how does TMT's use of knowledge affect the efficiency of knowledge transformation? How does trust among TMT influence cooperation and coordination across departments? How do cognitive conflicts influence the generation of new ideas?

Finally, most previous studies on family business innovation were implemented in the Western environment (Chrisman, Chua, *et al.*, 2015; Duran *et al.*, 2016; De Massis, Audretsch, *et al.*, 2018) with inadequate inputs from emerging economies (Wang and Beltagui, 2021), such as China, India, and Southeast Asia. In contrast to developed countries, emerging markets have huge market potentials and production cost advantages due to their growing middle-class consumers and abundant skilled and low-cost labour forces (Mu, Peng and Tan, 2007). Given the different institutional environments, customer behaviours and cultural backgrounds, the previous findings on family business innovation in developed countries might not be applied to emerging markets (Tidd and Trehwella, 1997; Hadjimanolis, 2000).

### 1.3 Aims and Objectives of the Thesis

The main research objective of the thesis is to investigate the mechanism of how and why family businesses are more efficient during innovation, especially the unique conundrum of “doing more (innovation) with less “investments”. To unravel the innovation “black box” of family business innovation, this thesis focuses on SEW and TMT in family-controlled SMEs in China, attempting to provide a comprehensive picture of family business innovation from its antecedents to the resulting outputs. The thesis will answer the following two main research questions in particular:

***Research Question 1: What is the impact of SEW on innovation inputs?***

***Research Question 2: What is the relationship between innovation inputs and outputs? How do TMT behaviours, namely use of knowledge and skills, trust, and cognitive conflicts, influence the relationship between innovation inputs and outputs?***

To do this, the thesis employs a mixed-method study to investigate the role of SEW and TMT behaviours during the innovation process, using quantitative survey data from 473 Chinese family-controlled SMEs and qualitative interview data from 12 Chinese family-controlled SMEs. Specifically, the quantitative survey conceptualises and empirically examines the relationship between SEW and innovation inputs, innovation inputs and outputs, and the effects of TMT behaviours on the relationship between innovation inputs and outputs. Meanwhile, the semi-structured interviews with family owners and managers complement the quantitative findings, providing rich, detailed descriptions of the innovation process. Based on this, this study, therefore, offers a well-rounded picture of the phenomena of innovation in Chinese family businesses.



## 1.4 Contributions to Knowledge

By disentangling the innovation process of Chinese family businesses, this thesis yields several contributions to the research on family business innovation. Firstly, this study adds to the debate on the heterogeneity of family businesses regarding innovation and SEW. By drawing on the FIBER five dimensions model (Berrone, Cruz and Gomez-Mejia, 2012), the study conceptually and empirically demonstrates how different dimensions of SEW shape decision-making on innovation inputs for family businesses. Through this, the study strengthens the theoretical link between SEW and innovation, providing a nuanced picture of family business innovation.

Secondly, this thesis contributes to unrevealing the black box of innovation in family businesses. Specifically, this thesis extends the existing literature by showing how innovation inputs are leveraged by TMT, leading to innovation outputs. Whilst studies in the literature have documented that family businesses are able to achieve successful innovation with limited innovation inputs (Broekaert, Andries and Debackere, 2016; Duran *et al.*, 2016; Manzaneque, Diéguez-Soto and Garrido-Moreno, 2018; Asaba and Wada, 2019), the internal mechanisms of transforming innovation inputs to outputs have not been examined. By investigating the role of TMT behaviours between innovation inputs and outputs, this thesis tackles the conundrum of how family firms can win in innovations with limited innovation inputs.

Thirdly, this thesis extends the literature on empirical evidence of family business innovation, SEW, and TMT. Specifically, this thesis empirically corroborates how SEW influences innovation inputs and the indirect effects of TMT behaviours on the relationship between innovation inputs and outputs. It provides a more holistic picture of family business innovation, from its antecedents to the resulting outputs. Particularly, this thesis first examines the

indirect effects of TMT behaviours on innovation in family businesses, which provides new empirical evidence for the relationship between TMT and innovation in family firms.

Fourthly, this thesis extends previous research on stewardship theory and upper echelon theory in family firms. In particular, this thesis examines the SEW-related decision-making regarding innovation investment and the stewardship behaviours of the TMT, specifically the use of knowledge and skills, trust, and cognitive conflicts. The findings suggest that family businesses are able to develop a competitive advantage in the innovation process where stewardship pervades. Moreover, this thesis also enriches the application of upper echelon theory in family business research. By examining the indirect effects of TMT behaviours on innovation from upper echelon perspectives, this thesis explores how TMT leveraged innovation inputs and converted them into innovation outputs.

Finally, this study also enriches the discussion on family business innovation in Chinese context. Hitherto, limited research focused on innovation in an emerging market context. China has been experiencing rapid economic growth since the economic reform in 1978 (Cunningham, 2011). However, its GDP growth rate has considerably slowed down since 2015 (Liu *et al.*, 2017). Chinese Government has tried to rebalance its economy to achieve a “new normal”, which is a slower but more sustainable economic development (Zhang and Chen, 2017). Innovation in this context is crucial to help sustain economic growth in the new era (Reshetnikova, 2018). Using the sample of 473 family-controlled SMEs based in China, this study reveals insights into the role of SEW and TMT behaviours in Chinese family businesses. Thus, the study advances the knowledge about how family firms can operationalise innovation, especially those small and medium firms.

## **1.5 Organisation and Structure of the Thesis**

The overall structure of this thesis takes the form of nine chapters, including this introduction chapter. The chapters are structured as follows:

Chapter 2 provides the overall understanding of the background contextual frame of the thesis. This thesis focused on small and medium-sized family businesses in China. By reviewing the history of Chinese family firms and their innovation development, it helps to enhance the contextual understanding on how family businesses thrive and innovate in China. Moreover, China embraces a dynamic institutional and market landscape (Carney, Zhao and Zhu, 2019). In contrast to western countries, family businesses were relatively young, most of which were established after the economic reform in the past three decades (Wang, Pei and Liu, 2014). Chapter 2 introduces the research context, which helps develop a better understanding of innovation in Chinese family businesses.

Chapter 3 reviews the existing literature on family business research. This review includes an examination of family business definition, the evolution of SEW and key topics in family business innovation. The chapter then identifies the gaps in the literature on family business innovation.

Chapter 4 develops the theoretical framework and research hypotheses based on the research question. By drawing on stewardship and upper echelon theory, this study proposes a conceptual model to examine the impact of SEW and the role of TMT behaviours between innovation inputs and outputs. The model consists of two parts. The first part concerns the relationship between SEW and innovation inputs. The second part of the model is related to the relationship between innovation inputs and outputs, and the indirect effects of TMT behaviours on this relationship.

Chapter 5 discusses the research methodology and justifies the philosophical position, research approach, as well as research method and design for this thesis. In particular, the rationale for the mixed method is discussed. Furthermore, this chapter also describes the sample framework and data collection process, including an overview of the sample source, sampling procedure, and the steps of collecting both quantitative and qualitative data. Finally, this chapter presents the detailed instrument construction, variable measurement, and the piloting process.

Chapter 6 and Chapter 7 present a detailed analysis of the collected data and results, including a quantitative survey from 473 Chinese family-controlled SMEs and qualitative semi-structured interviews from 12 Chinese family controlled SMEs. Specifically, chapter 6 provides a detailed analysis of the survey data, including descriptive statistics, the testing of hypotheses, and the discussion of the results. Chapter 7 focuses on the qualitative data analysis from the semi-structured interviews, complementing quantitative findings.

The last chapter of the research, Chapter 8 concludes the research findings and highlights the theoretical and practical contributions to family businesses which emerged from this study. In addition, the limitations of the research acknowledged, and then followed by suggestions for avenues on future research.

## **Chapter 2 Research Background-Chinese Context**

### **2.1 Introduction**

The previous chapter provides an overall introduction, the problem statement and the scope of the current research. This study aims to investigate the role of SEW and TMT behaviours in the innovation of Chinese family firms. To understand the behaviours of Chinese family firms, it is important to review the growth of Chinese family firms from a historical perspective. This chapter is divided into three sections. Firstly, the chapter will provide an overview of Chinese family firms, attempting to present a comprehensive picture of family firms in China. Secondly, the chapter will evaluate the evolution of Chinese family business innovation. By dividing the evolution into five stages, this chapter will discuss the development of innovation in Chinese family firms from 1949 to 2022. Finally, this chapter will introduce three major industrial clusters of Chinese family businesses and their innovation development process.

### **2.2 The Evolution of Family Businesses Innovation in China**

After the foundation of the People's Republic of China (PRC), Chinese family businesses experienced a dramatic economy transition from central planning to market competition (Li and Li, 2007; Wang, Pei and Liu, 2014; Chenli *et al.*, 2019). During this period, China has grown from one of the most impoverished and underdeveloped economies to the second largest economy on the globe (Carney, Zhao and Zhu, 2019). Before 1978, due to the socialist ideology, entrepreneurship was a political taboo (Kshetri, 2007). As the economic reform and opening-up policies were introduced, the government started to encourage the development of the private economy, stimulating dramatic economic growth (Li *et al.*, 2015). The entrepreneurial behaviour of Chinese families has been considered as one of the driving factors behind the rapid economic growth

(Whyte, 1996; Wang, 2016). Private SMEs, particularly family businesses, have played a catalytic role in promoting technological innovation efficiency (Jia, Tang and Kan, 2020). From 1949 to the present, the evolution of family business innovation in China has experienced five key stages, including the vacuum period, the formation of industrial clusters, learning and accumulating knowledge, imitative innovation, and mass entrepreneurship and innovation. The next section will provide detailed discussions of these five stages.

### **2.2.1 Vacuum period of Chinese family businesses (1949-1978)**

The first stage is a vacuum period for family businesses. Due to the socialist ideology, private entrepreneurship was viewed as a “political taboo” (Kshetri, 2007; Wang, Pei and Liu, 2014). During this period, the state adopted a centrally planned administrative approach, and the family business economy was prohibited by the governing regime (Wang, Pei and Liu, 2014). From 1953 to 1956, China started the transition to socialism, transforming all private businesses into socialist state-owned enterprises (SOEs) (Li *et al.*, 2015). Through purchase, squeezing out, or exploitation of private enterprises, the regime virtually excluded the private economy by the end of 1956 (Dickson, 2007). Nearly all means of production were owned and controlled by the state, resulting in a stiff and inflexible environment against innovation (So *et al.*, 2007). In the next two decades, the family business economy was at an illegal status, and entrepreneurship was extremely limited (Wang, Pei and Liu, 2014; Li *et al.*, 2015). According to Dana (1999), private economic activities only operated in the cottage-type activities. A family could occasionally engage in “sideline” production, such as carpentry, construction, embroidery and fish farming (Chen, Zhu and Fang, 2021). Under this circumstance, any entrepreneurial innovation activities were interrupted, which created a vacuum period for family businesses.

### **2.2.2 The Formation of industrial clusters and the duplicative imitation mode (1979-1991)**

Family businesses started to re-emerge after the introduction of economic reform. The 11th Plenum of the Chinese Communist Party (CCP) in 1978 not only terminated the decade of the Cultural Revolution but also initiated economic reform (Wang, Pei and Liu, 2014). In the subsequent years, the state gradually released the constraints on the private economy. It issued the first regulation for private businesses in 1981, and then the 1988 Amendment to the Constitution also recognised the existence of private enterprises (Chow *et al.*, 2011). From that time, small family businesses began to operate legally.

During this stage, family businesses suffered from low absorptive capacity (Zahra and George, 2002) and weak technological capabilities (Chung and Tan, 2017). Also, they had limited opportunities to interact with leading international firms. As a result, it was difficult for them to understand the advanced products (Si, Wang and Welch, 2018). Thus, they tended to duplicate the advanced designs and produced with limited functionalities. By the 1990s, three models of SMEs had been formed, including Wenzhou Model, Sunan Model and Pearl River Delta Model. These three models later developed into different industrial clusters around the three regions and formed the foundation for family businesses. The section 2.3 will discuss the details of these three models.

### **2.2.3 Learning from international clients and accumulating technologies (1992-2001)**

After Communist Party patriarch Deng Xiaoping inspected Guangdong province and called for deepening the transition to a market economy in 1992 (Chen, 2007), the role of the state towards the private economy began to change from interference to fostering and promotion (Chow *et al.*, 2011). At the same time, with the industrial clusters having developed gradually, Chinese family businesses experienced dramatic growth. During this stage, Chinese

family businesses realised the importance of product quality and began to upgrade their technological capabilities (Sonobe, Hu and Otsuka, 2004). During earlier decades, due to the shortage of supply caused by the planned economy, the quality of products was not the major concern of Chinese consumers. With the rise of the income level, Chinese consumers became meticulous about the quality of products. The poor-quality products no longer meet the requirements of increasing demand and improving the quality of products became profitable (Sonobe, Hu and Otsuka, 2004). The technological capabilities of Chinese family businesses at the time were not able to meet the requirements of OEM orders. With the deepening of the opening-up policy, the Chinese government introduced greater flexibility in foreign direct investment (FDI) (Lau *et al.*, 2013). The spread of FDI in China was beyond the Pearl River Delta, and it was concentrated in the coastal provinces, including Zhejiang, Guangdong, and Shanghai (Arvanitis *et al.*, 2006).

The major approach to improving the technical capabilities of Chinese family businesses in this stage was learning from foreign clients. In contrast to western countries, technological learning was initially taking place in SMEs rather than through universities, technical centres or consultants (Arvanitis *et al.*, 2006). As FDI was introduced into industrial clusters of family businesses, its international mobility and capacity to diffuse innovation played a critical role in the Chinese family businesses (Hobday, 1995). On the one hand, overseas companies brought Chinese family businesses opportunities to access the standard of advanced products and understand their features, designs, functions and structures. On the other hand, they also provided them with technology, management and strategic thinking. Thus, many Chinese family businesses sought to actively cooperate with foreign clients in order to improve their technological capabilities. By learning from overseas clients, family businesses accumulated capital and technology, which laid a solid foundation for further development. During this period, there were three primary learning forms in



Chinese family businesses, including subcontracting OEM, contracting with clients and purchasing equipment. The following sections will describe these three forms.

### **Subcontracting OEM**

The OEM was a well-known strategy under economic globalisation, where the international brands put the orders meanwhile a factory leverages on the local advantages (Arvanitis *et al.*, 2006). As OEM suppliers, Chinese family businesses could access the advanced products of OEM customers and learn from them (Wu and Hsu, 2001). When Chinese family businesses encountered difficulties during the process of producing, OEM customers also offered help in solving problems (Huang and Chu, 2010). Acquiring new knowledge through OEM customers, Chinese family businesses also gradually distributed, interpreted, shared, stored, applied and internalised new exterior knowledge, which laid the foundation for further imitative innovation and indigenous innovation (Hedlund, 2007).

### **Contracting with clients**

Another form of learning from international clients was contracting with foreign clients. In contrast to OEM, this relationship was market-based and unstable. There was no owned technology, but clients were technology providers. The contract providers were concentrated on some family businesses, which had relatively mature industrial foundations (Lemoine and Ünal-Kesenci, 2004). International clients gave them new blueprints and proposed improvements in quality. Thus, the quality of their products improved efficiently.

### **Purchasing equipment with technical documentation**

During this stage, a few family businesses accumulated wealth from pure imitation. To seize the national market quickly, they invested heavily in purchasing new manufacturing equipment and machinery from Europe and the

USA. The learning concentrated on the usage of the equipment.

Table 2.1 shows the main characteristics of the learning forms of the family business during this stage.

**Table 2.1** The main characteristics of the learning forms of family businesses

Learning forms	Main characteristics
Subcontracting OEM	<ul style="list-style-type: none"> <li>• Strong productive learning, design capabilities.</li> <li>• Different approaches have been developed to improve the value chain, including activities such as monitoring and learning, proposing new designs, and carrying out quality checks. These strategies help user companies to establish better relationships with their suppliers regularly, which leads to an expansion in the value chain.</li> </ul>
Contracting with clients	<ul style="list-style-type: none"> <li>• The relation is market-based and unstable.</li> <li>• The technology suppliers serve as end customers, providing quality specifications and production procedures, but there is no transfer of ownership of technology.</li> <li>• Based on family businesses which have industrial foundation.</li> </ul>
Purchasing equipment with technical documentation for installation	<ul style="list-style-type: none"> <li>• The interaction is based on a market relationship.</li> <li>• The supplier offers little support.</li> <li>• This relationship is not favourable for tacit knowledge.</li> </ul>

Note: Based on Tidd and Trewhella (1997), Huchet and Richet (2002)

#### **2.2.4 The imitative innovation and globalisation (2002-2014)**

At the end of 2001, China became a member of the World Trade Organization (WTO), which accelerated the integration of China into the international market (Kshetri, 2007). With a growing number of Chinese enterprises engaged in global competition, exports became one of the most significant factors pushing China's economic growth. During this period, the total value of exports experienced dramatic growth, increasing from \$445 billion in 2001 to \$2.37 trillion in 2014 (World Trade Organization, 2015). Most exported goods were

light industrial products, which were mainly produced by family businesses and other SMEs (Cunningham, 2011).

During this period, Chinese family businesses took steps to integrate into the international economy. They realised that relying on pure imitation was not enough to compete with others under globalisation. They began to improve their innovation capabilities through imitative innovation rather than pure imitation (Altenburg, Schmitz and Stamm, 2008). On the one hand, the profit margin of assembling components or taking OEM orders was too low, and it added the least tangible value in the value chain (Kanamori *et al.*, 2007). On the other hand, after joining the WTO, the Chinese government had to address the expectations and requirements of the WTO. Consequently, the government took stricter measures to act against counterfeiting and imitation of foreign products (Yu and Jensen, 2005). In the past decade, many Chinese family businesses have accumulated wealth from OEM contracts or pure imitation. To avoid punishment and further improve the competitiveness of products, many Chinese family businesses tried to enhance their abilities to innovate or upgrade their products (Kanamori *et al.*, 2007). Meanwhile, after decades of imitating advanced products and learning from international clients, many Chinese family businesses had accumulated basic technological capabilities during the pure imitation stage (Dobson and Safarian, 2008). In order to achieve better development, they established to enhance the brand building and started to adopt imitative innovation strategies (Si, Wang and Welch, 2018). Imitative innovation refers to the activity in which firms develop new products or improve existing products based on the innovation of other firms (Garcia and Calantone, 2002). It is a common strategy that was adopted by developing countries to improve their technological capabilities (Kim and Nelson, 2001). Generally, most of the imitative innovation in China was absorbing technology from western countries. The process of imitative innovation in Chinese family businesses has four primary phases, including Identifying position and

confirming innovation strategies, examining core competencies and exploring gaps in imitative innovation, deploying specific resources and complementary assets, and restructuring an industry's ecological environment (Huang, Chou and Lee, 2010).

The learning outcomes at this stage established the distinction between innovative family businesses and those that only kept on taking OEM businesses (Si, Wang and Welch, 2018). On the one hand, some family businesses kept learning from international clients and increasingly recruited more professionals. They set up team and their own brand. At the same time, they frequently visited foreign partners attended international exhibitions and sent their technicians for advanced training. Based on the accumulated technical capabilities and advanced equipment, these family businesses gradually added new functions and created new designs on the existing products. With the machining precision and quality control becoming stable, many family businesses expanded their business in the overseas market (Chung and Tan, 2017). However, some family businesses only concentrated on taking OEM orders and pure imitation of overseas products. With the recent increase in labour costs in China, these labour-intensive family businesses gradually lost their competitive advantages (Cunningham, 2011).

### **2.2.5 Mass innovation and entrepreneurship (2015-Present)**

Since Chinese Premier Li Keqiang put forward the concept of “mass entrepreneurship and innovation” in the government report of 2015, innovation has become the new national economic development strategy. Previous Chinese innovation policies mainly concentrated on SOEs and large companies rather than SMEs. As China initiated the strategy of “mass entrepreneurship and innovation”, the emphasis on promoting innovation across the company population, unleashed enthusiasm for innovation and the innovation of family businesses (He, Lu and Qian, 2019).

During this period, considerable heterogeneity exists within the innovation in family businesses. Some family businesses had a higher capability of knowledge acquisition, assimilation, transformation and exploitation after experiencing pure imitation and imitative innovation stages in the past (Chen *et al.*, 2016). Additionally, they also accumulated teams and collaborative networks during previous stages, which could help them gain resources and knowledge more accessible (Yang *et al.*, 2016). Meanwhile, most Chinese family businesses were still struggling to innovate, and they remained to compete globally with their advantages of low costs and imitation. However, such an imitation strategy trapped them in the current market position, and they had no ability to compete based on their innovation (Xie and White, 2006). At the same time, the growing labour costs in China would make these family firms more difficult to operate.

In line with the adoption of the “mass entrepreneurship and innovation” strategy, Chinese governments devoted considerable resources to innovation and entrepreneurship (Liu, Ye and Feng, 2019). A range of policies, initiatives and programs were implemented to improve the environment of innovation. These policies have five main aspects, including intellectual property, finance, talent, collaborative network and platform. For instance, the government set one-stop services for the protection of patents, including fast examination, fast confirmation of ownership, and fast protection of rights, which reduced the time for family businesses to apply for intellectual property. In terms of finance, the government developed patent-based collateral for loans, insurance and financial risk compensations. Overall, these policies significantly impacted the innovation of Chinese family businesses, which made a growing number of family businesses transition from imitative innovation to indigenous innovation. Table 2.2 below summarises the innovation characters and barriers in each stage.

**Table 2.2 History of Chinese family businesses innovation**

Stage	Period	Characteristics of innovation	Barriers of innovation
Vacuum period	1949-1978	<ul style="list-style-type: none"> <li>Family business was a political taboo.</li> <li>Stiff and inflexible economic environment.</li> </ul>	<ul style="list-style-type: none"> <li>Illegal status.</li> </ul>
The Formation of industrial clusters	1979-1991	<ul style="list-style-type: none"> <li>Three industrial clusters</li> <li>Gaining legal status</li> <li>Imitating with limited functionalities.</li> <li>Producing inferior products.</li> </ul>	<ul style="list-style-type: none"> <li>Weak technology capabilities.</li> <li>Few opportunities to interact with leading international firms.</li> </ul>
Learning from international clients and accumulating technological knowledge	1992-2001	<ul style="list-style-type: none"> <li>FDI enabled technology transfer.</li> <li>Taking original equipment manufacturer (OEM) orders.</li> <li>Improving the quality of product</li> </ul>	<ul style="list-style-type: none"> <li>Outdated equipment.</li> <li>Lack of skilled workers and professionals.</li> </ul>
The imitative innovation of family businesses under the globalisation	2002-2014	<ul style="list-style-type: none"> <li>Competing in the global market.</li> <li>Having accumulated amount of equipment and technologies.</li> <li>Developing own brand</li> </ul>	<ul style="list-style-type: none"> <li>Intellectual property infringement.</li> <li>Fierce market competition.</li> </ul>
Mass entrepreneurship and innovation	2015-Present	<ul style="list-style-type: none"> <li>National innovation-driven development strategy.</li> <li>Stimulated by a range of innovative policies, initiatives and programs.</li> <li>The coexistence of imitative innovation and imitation.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of skilled R&amp;D professionals.</li> <li>Weak brand promotion skill.</li> </ul>

## **2.3 Three Models of Chinese Family Business Cluster and Their Innovation Development**

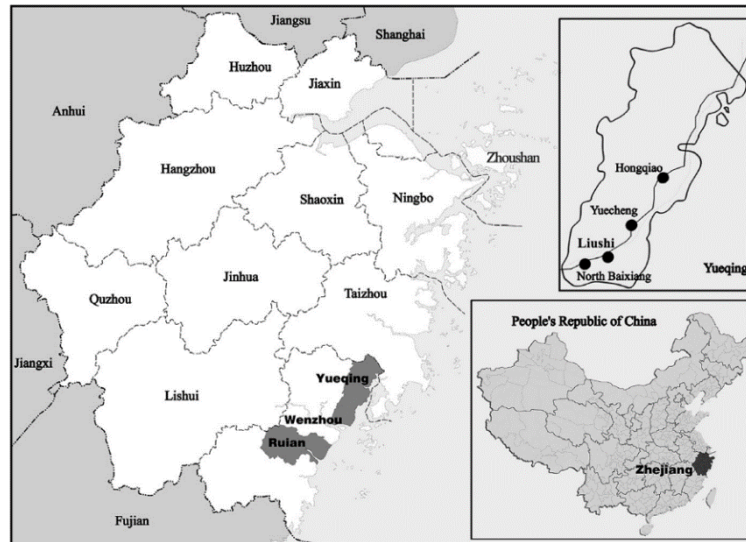
As mentioned above, the private economy in China has been growing at a rapid pace since the economic reform. Family businesses started to emerge and played a catalytic role during the swift development period (De Massis, Ding, *et al.*, 2018). It is worthwhile to highlight that three well-known models were established at that time and then gradually developed into industrial clusters around the regions. Enterprises in those clusters are mainly characterised by small and medium-scale family businesses (Xianping, 2004; Wei, Li and Wang, 2009; Strauss *et al.*, 2010), which form the foundation of family businesses. These three models include Wenzhou, Sunan, and Pearl River Delta models.

### **2.3.1 Wenzhou Model**

Wenzhou is a city in Zhejiang province, which leads the marketisation and development of China's private enterprises (Wei, Li and Wang, 2009). It is located in a mountainous region, which is remote from big cities and trading centres (Sonobe, Hu and Otsuka, 2004). Figure 2.1 shows the location of Wenzhou. Owing to Wenzhou's location close to Taiwan, the central government investment often skips this area to avoid military risks, which triggered the self-reliance of Wenzhou without relying on central government funds (Walcott, 2007). Wenzhou model stemmed from the household industry in the 1980s, based on individual household handicrafts and semi-mechanical production (Wei, Li and Wang, 2009). At that time, natives of Wenzhou used the leftover material of SOEs to produce small commodities that SOEs did not intend to manufacture (Liu, 1992). Due to the low technology and capital requirements, small-scale producers could easily master this production mode. Therefore, a large number of small enterprises in Wenzhou formed by families or relatives and friends emerged during the 1980s.

With the dramatic increase of small family businesses in the 1990s, many industrial products in Wenzhou got reputations (Strauss *et al.*, 2010). They were well known for their extremely low price, ranging from auto parts to zippers. These clusters of family businesses produced similar products and grabbed large market shares during that period, such as garments (North Baixiang), footwear (Ruian), cigarette lighters (Lucheng) and low-voltage electric appliances (Yueqing) (Sonobe, Hu and Otsuka, 2004). After joining the WTO, family businesses in Wenzhou went to the global market, enhancing both national and international labour mobility. At the same time, they established huge networks worldwide and continued to bring business and innovative communities back to China (Wang, 2014). Nowadays, with the development of international electronic commerce, local family-controlled SMEs have seized chances to expand their business to oversea markets (Li, Feng, and Lin, 2020). Compared to traditional industry, foreign trade e-commerce shortens the chains between manufacturers and consumers, providing more opportunities (Liu, 2017). Since 2015, Wenzhou has established electronic commerce industry park, which facilitates the eCommerce development of family businesses. Currently, Wenzhou has become one of the biggest centres of international e-commerce (Strauss *et al.*, 2010).





**Figure 2.1** Location of Wenzhou

Wenzhou model is featured by small-scale, family-controlled manufacturing firms (Wei, Li and Wang, 2009). Due to insufficient institutional support, it was difficult for family businesses to access state bank loans, while the operating capital of family businesses was often provided by extended families and/or “underground” financial institutions (Tsai, 2004). To be more specific, based on the strong local network, Wenzhou people created their own financial agencies to facilitate their businesses, such as private banks and underground lenders (Ma, 2009). One of the significant characteristics of the Wenzhou model was its specialisation market. Rooted in rural markets, family businesses in Wenzhou used towns as basic units of industrial districts to engage in specialised production, which was called “each village each commodity, each town each industry” (一村一品, 一乡一业) (Xianping, 2004). It means each village specialised in one product, and each township specialised in a particular industry. When they linked together, they formed a whole manufacturing supply chain (Du, Liu and Zhou, 2014). Moreover, geographic isolation and self-reliance triggered the impetus for local trust-based social networks. Based on the tight-knit social networks, Wenzhou people enjoyed credit and promised to underwrite each other, forming a unique cultural atmosphere of competition and

learning (Xianping, 2004). Moreover, the Wenzhou Model adopted the “door-to-door” across-country strategy to sell their products, which means thousands of Wenzhou people travelled across the country to sell their products (Walcott, 2007).

At the same time, due to their strong networks, successful Wenzhou people shared their business experiences with other natives and brought back advanced expertise, knowhow and capital, which fuelled the growth of local family businesses (Walcott, 2007). Interestingly, the Wenzhou model was also exported overseas. With China’s efforts to reintegrate into the global economy since the 1990s, a wave of Chinese immigrants arrived in Prato, a city near Florence, Italy. It is known for the production of textiles. Similarly, these Wenzhouers started their textile business in small garages, where they also lived in. Based on the family unit, they took business strategies and practices that were originally developed in Wenzhou, modifying them to fit the more open and fluid Italy (Tomba, 2014). By importing cheap cloth from China, they turned it into polyester shirts, plasticky pants and so on. These products were sold throughout the world at very low prices. With these small family businesses gradually expanding their niche, they made “fast fashion” products for middle-tiered brands (Lan and Zhu, 2014). Nowadays, they have become manufacturers of those luxury brands, such as Gucci and Prada.

### **2.3.2 Sunan Model**

Sunan model refers to the rapid growth of the rural economy in Suzhou, Wuxi, and Changzhou in southern Jiangsu from the 1980s (Shen and Ma, 2005). Figure 2.2 shows the location of Sunan. In contrast to the Wenzhou Model, the Sunan Model was characterised by township-village enterprises (TVEs). TVEs were a blended ownership form between POEs and SOEs. Thus, they enjoyed policy support and market flexibility while avoiding the rigidity of SOEs and the political risks of private enterprises (Wei and Gu, 2010). During the 1980s, due

to the pent-up demand and the locational advantage of proximity to Shanghai's markets (see Figure 2.2), supplies and human capital, many TVEs were established in Sunan and gave rise to the Sunan Model. It is worth highlighting that a considerable proportion of TVEs in Sunan were substantially private enterprises. To be more specific, in order to enjoy "public sector advantage", such as low transaction costs, easy access to bank loans, political protection and fewer restrictions in trade (Wank, 1999), some private enterprises disguised their private ownership by registering as TVEs, which was called "a red hat strategy". According to (Chen, 2007), 70 per cent of TVEs and urban collectively owned enterprises were red-hat enterprises during the 1980s.



**Figure 2.2** Location of Sunan

Family business innovation in Sunan Model relied on its geographic advantage and traditional industrial base. Compared with the Wenzhou Model, the Sunan Model had better transportation facilities and a higher-quality labour force. Before the economic reform, commune and team-run industries developed well, and they laid good industrial foundations. Moreover, because of Sunan's close proximity to Shanghai (see Figure 2.2), some TVEs in Sunan adopted the "Sunday engineers" strategy to attract senior engineers from SOEs in Shanghai

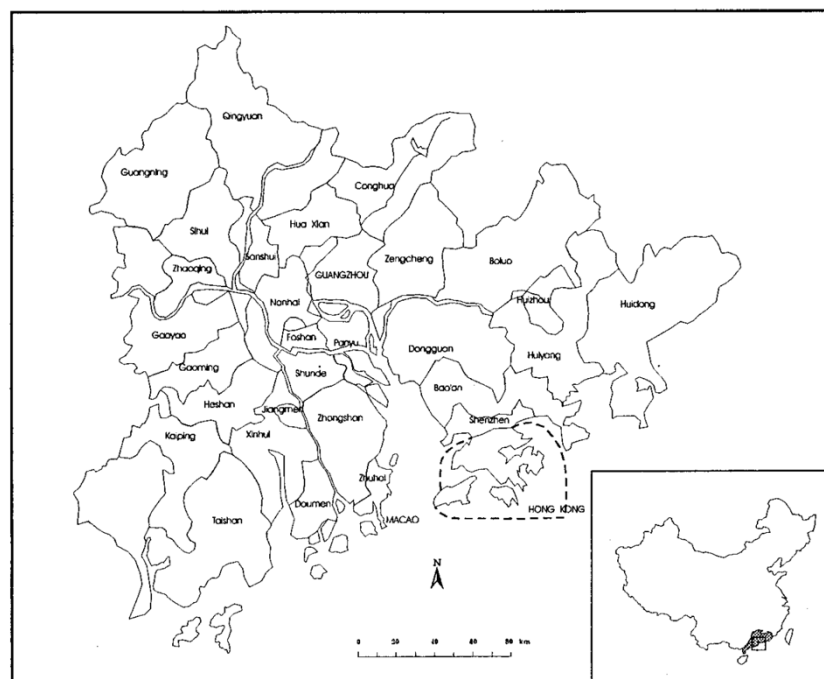
(Kostka, 2012). Specifically, TVEs paid high salaries to engineers from state-owned enterprises and invited them to work for TVEs at the weekends, which significantly improved the innovative capabilities of TVEs in Sunan at a low cost.

From the 1980s to the early 1990, the Sunan model witnessed the golden age of TVEs development, which supported the initial development and capital accumulation in Sunan (Dennis Wei, 2002). Since then, the Sunan model has experienced dramatic restructuring and adopted a new strategy of regional development (Wei, 2010). With the reforms towards marketisation and globalisation in early 1990, the government shifted its role from direct interfering towards fostering and promoting the private economy (Chow *et al.*, 2011). At the same time, large amounts of foreign investments poured into China, further intensifying the competition in the domestic and global markets (Yuan, Wei and Chen, 2014). Additionally, TVEs also occurred corruption, mismanagement and declining profitability inside the enterprises (Ho, Bowles and Dong, 2003). In that case, the previous Sunan model based on TVEs with ambiguous property rights gradually lost their advantages and failed to compete with foreign and private companies (Wei and Gu, 2010). In 1993, the government implemented a wave of industrial reforms, aiming to clarify property rights and transform TVEs into private and joint ownership forms (Wei, 2004). By 1999, the ownership transition from collective to privatisation was almost completed (Wei and Gu, 2010). A number of family-based private enterprises have thrived throughout the Sunan rural area, which formed the second speedy growth of the new Sunan model (Shen and Ma, 2005). After entering the 21<sup>st</sup> century, Sunan seized opportunities in Eastern Asia's IT industry adjustment to develop this high-tech industry (Xianping, 2004). Over the last decades, intensive industry chains of manufacturing have been formed around the Sunan area, which provides supply, processing, and distribution for transnational corporations. With the great efforts towards globalisation and infusion of FDI, the Sunan industrial cluster has been transformed into one of the biggest high-

tech and globalising production centres in China.

### 2.3.3 Pearl River Delta Model

The Pearl River Delta Model was characterised by its small-scale, labour-intensive manufacturing investment from overseas (Sit and Yang, 2016). Like the Sunan Model, the Pearl River Delta Model also benefited from its geographic location. Figure 2.3 shows the location of the Pearl River Delta. As seen in the figure, the Pearl River Delta was located along China's south coast, including Hong Kong, Macao, and two of the three Special Economic Zones, Shenzhen and Zhuhai, established because of new economic policies in 1979 (Johnson and Woon, 1997).



**Figure 2.3** Location of Pearl River Delta

At the beginning of economic reform, the Pearl River Delta region was designed as an "Open Economic Region" to seek FDI (Fewsmith, 1994). Under the influence of various preferential policies and flexible business environments, small private family enterprises in the Pearl River Delta attracted massive

investment from overseas ethnic Chinese, especially Hong Kong and Taiwan (Johnson and Woon, 1997). During the 1980s and the 1990s, those special economic zones attracted a huge amount of Hong Kong companies to relocate to the Pearl River Delta region, which contributed to the formation of industrial clusters (Sit and Yang, 2016). The traditional Pearl River Delta model termed as "front shop back factory", in which Hong Kong served as the headquarters (front shop) for connecting international markets and the Pearl River Delta region as a local branch plant (back factory) for producing products (Huang, Zhang and Liu, 2013). From 1979 to 2005, there have been established more than 57,000 factories in the Pearl River Delta (FHKI, 2007). Under the Pearl River Delta model, family business innovation was based on collaborating with foreign companies. The industry of the Pearl River Delta model concentrated on the manufacturing of apparel, textiles, electronics and toys (Baark and Sharif, 2014). Many family businesses in the Pearl River Delta engaged in original equipment manufacturing (OEM). Based on the low-cost material and labour, they produced the product designs provided by foreign clients (Eng, 2009). At the same time, family businesses absorbed technology, management skills and marketing channels through cooperation with foreign companies (Chung and Tan, 2017). This region has become a famous "world factory" due to the massive production capacity and full range of products. With the rise of labour costs and stricter environmental regulation, the original Pearl River Delta model witnessed a significant transformation since the mid-2000s (Liao and Chan, 2011). The role of the Pearl River Delta model shifted from an "enclave" serving the global market to a bridgehead to exploiting the domestic Chinese market. On the one hand, the manufacturing firms in the region transformed from OEM production of the international market towards both overseas and domestic markets (Yang, 2014). On the hand, the rising labour costs prompted firms to focus on innovation capabilities (Liu, 2017). From 2008 to 2020, the Pearl River Delta region attempted to domesticate globalisation and promote indigenous innovation (Lu and Wei, 2007). Meanwhile, the Chinese government further

integrated Hong Kong, Macao and Pearl River Delta region, promoting the construction of the Guangdong–Hong Kong–Macao Greater Bay Area. During this period, the interconnection of talents, R&D infrastructure and financial resources in this region provided SMEs with more opportunities to expand their business. Nowadays, this region has become a leading high-tech centre in China.

## **2.4 Conclusion**

This chapter has provided a comprehensive understanding of the contextual background of this research. It highlights the evolution of innovation in Chinese family firms from a vacuum to a flourishing period and innovation in three major family business clusters. China has sustained a long period of rapid economic growth since the economic transition from the 1980s (He, Lu and Qian, 2019). However, due to the sluggish demand in internal markets and exacerbated trade tensions in international markets since 2015 (Wang and Beltagui, 2021), China faced a slowing pace of expansion and sought a “new normal” of rebalancing growth (Zhang and Chen, 2017). Entrepreneurship and innovation have emerged as the new national economic development strategy to maintain sustained economic growth in China (Reshetnikova, 2018). Given the significant contribution of economic activities and innovation outputs from the family firms, it is essential to understand their innovation (Liang *et al.*, 2013). Additionally, studies of innovation in family businesses are mostly dominated by western countries. Far too little attention has been paid to the Chinese context (Wang and Beltagui, 2021). Therefore, investigating the innovation of Chinese family businesses and their innovation has become increasingly important.

## **Chapter 3 Literature Review**

### **3.1 Introduction**

The previous chapter discussed the background of Chinese family firms, especially the evolution of innovation in Chinese family firms. This chapter seeks to provide an overview of the literature in the family business research field by reviewing the literature on the definition of family firms, SEW, and innovation in family firms. The first part of the literature review is dedicated to reviewing different approaches to define family businesses, including the components of the involvement approach (COI) and the essence approach. By comparing these two approaches, this chapter will discuss why the component of the involvement approach suit for this research. The second part of the literature review addresses the homegrown framework in family business research, namely SEW (Berrone, Cruz and Gomez-Mejia, 2012). This will provide the underpinning of the dissertation. Finally, this chapter will be dedicated to a review of the mainstream literature on technological innovation in family businesses, which includes innovation inputs, innovation outputs, and the paradox of innovation in family firms.

### **3.2 The Definition of The Family Business**

For most social sciences, defining the object of study is a fundamental requirement (Chrisman *et al.*, 2012). Therefore, it is important to start with a common definition and distinguish family businesses through a hierarchical system of classification consistent with that definition (Chrisman, Chua and Sharma, 2005). However, although family business research has made remarkable progress in the past three decades, there is still no commonly acknowledged definition of family business within this research field. The lack of common definitions leads to different understandings of the family business.



When different definitions are applied, the proportion of family businesses in all companies could range from 79 per cent (Chrisman, Chua and Litz, 2004) to 96 per cent (IFERA, 2003) in the same context (United States). In the earlier family business research, the wide range of definitions usually caused confusion when comparing across investigations (Harms, 2014). Even the same research subject could lead to different results. Consequently, without a widely accepted definition of family business research, many empirical studies have difficulties in obtaining credible and reconcilable empirical results (Chrisman *et al.*, 2012).

Due to the significance of the definition, numerous scholars have tried to establish a basis for a unified definition (Davis and Tagiuri, 1989; Handler, 1989; Chua, Chrisman and Sharma, 1999; Astrachan, Klein and Smyrnios, 2002; Habbershon, Williams and MacMillan, 2003). In early 1988, Lansberg (1988) first raised the question: “what is a family business?” in the first issue of Family Business Review. They argued that family businesses need to be distinguished from other types of organisations systematically due to their unique problems, such as succession decisions and the interrelation between the family and the firms (Lansberg, 1988). Although they failed to provide a clear definition of the family business, they initiated a systematic discussion about defining family business (Harms, 2014). In the following years, although various scholars have tried to provide operational and theoretical definitions of the family business (Handler, 1989; Wortman, 1994; Litz, 1995; Shanker and Astrachan, 1996; Westhead and Cowling, 1998), there are still many possible definitions without consensus (Miller *et al.*, 2007). These definitions of family business are mainly based on two approaches: COI and essence approach.

### **3.2.1 The components of the involvement approach**

Researchers began defining a family business by identifying the components of involvement. In this approach, researchers generally agree that the primary

characteristic that makes family businesses different is a family's involvement in the company (Miller and Rice, 2013). In earlier studies, family involvement was seen in two dimensions: ownership involvement and management involvement (Chua, Chrisman and Sharma, 1999). A number of scholars defined family business based on these two dimensions (Barry, 1975; Daily and Dollinger, 2016 Barry, 1976; Alcorn, 1982; Davis and Tagiuri, 1985; Rosenblatt, deMik, Anderson, and Johnson, 1985; Daily and Dollinger, 1992; Beedhr, Drexler, and Faulkne, 1997). Some of them concentrated on ownership involvement and suggested the owners of a family firm should hold a substantial proportion of the equity, or it should be owned by one or more family members (Barnes and Hershon, 1976; Heck and Trent, 1999). Others focused on management involvement, and they emphasised at least two members of the founding family are involved as major executives, or the company is operated by the founding family (Tagiuri and Davis, 1996; McConaughy *et al.*, 1998). Churchill and Hatten (2017) also added generation transfer to the criteria of defining family businesses in addition to ownership involvement and management involvement. They argued that the succession process could change the strategy, the management and the control of firms (Churchill and Hatten, 2017). Based on this framework, if a firm has not transferred to the next generation or has no potential to transfer, it could not be defined as a family business. Furthermore, Handler (1989) identified four dimensions of the family business: ownership and management by family members, family involvement, generation transfer, and multiple conditions. He stated that "Family business is an organisation whose major operating decisions and plans for leadership succession are influenced by family members serving in management or on the board" (Handler, 1989, p, 262). Similarly, Chrisman, Chua and Sharma (2005) summarised COI has four core dimensions: family ownership, family control, the managerial role of family members, and generations involved in the business. These four core dimensions have been considered as "family involvement", which is a basic necessary condition to capture family effects on

the firm (Jiang and Peng, 2011; Mazzi, 2011; van Essen *et al.*, 2015).

The most significant advantage of the COI is eased operate (Chua, Chrisman and Sharma, 1999). By using this approach, a family's involvement is measured by its influence via ownership, management, governance and generation, definitions, which could be easier to identify, classify family firms (Chua, Chrisman and Sharma, 1999). As a result, many earlier empirical studies defined family business based on this approach (Chrisman, Fang, *et al.*, 2015). For example, Anderson and Reeb (2003) used the fractional equity ownership of the founding family and the presence of family members on the board of directors to identify family firms. In the same vein, Barth, Gulbrandsen and Schønea (2005) offered a definition in which at least 33 per cent of the shares of the firm are owned by one person or one family. Furthermore, Smith and Amoako-Adu (1999) focused more on voting rights. They defined a family business as a firm that the family that holds the largest voting block and at least 10 per cent of total votes (Smith and Amoako-Adu, 1999). Similarly, the definition of Claessens, Djankov and Lang (2000)'s study was a firm that family groups controlled more than 5 per cent of their vote rights.

While definitions based on COI may be operationally convenient, they have some limitations. The most serious disadvantage is that definitions based on this approach lack theoretical basis to explain why and how family involvement matters (Chua, Chrisman and Sharma, 1999). In other words, this approach fails to explain why and how family involvement could impact strategic processes. As Pearson, Carr and Shaw (2008) noted, the components involvement approach only considers the family's involvement in defining family business and ignores why family involvement leads to different behaviours and strategic progress, compared with nonfamily businesses. In addition, this approach does not account for the unique resources and capabilities resulting from the systematic interactions between the family and the firm (Habbershon

and Williams, 1999). It is unable to capture the unique characteristics that the family brings to the company (Zellweger, Eddleston and Kellermanns, 2010). Thus, Zellweger, Eddleston and Kellermanns (2010) argued that this approach is only a matter of convenience for empirical studies. Another limitation of the components of involvement approach is that the components of family involvement are not precise (Chrisman, Chua and Litz, 2003). Within the definitions based on this approach, there are no commonly accepted views on what components should be used for definition (Zellweger, Eddleston and Kellermanns, 2010). Different studies use different components of family involvement. The wide range of components limits the comparability of these empirical studies in family business research (Garcia-Castro and Casasola, 2011). Furthermore, this approach may lead to misclassification. For example, COI could exclude firms that owned by the family but without involved in the management (e.g. passive holding company) (Zellweger, Eddleston and Kellermanns, 2010). For these reasons, definitions based on COI only depict a family's potential to influence the company without explaining how the family contributes to the business (Zellweger, Eddleston and Kellermanns, 2010). Family involvement is only a necessary condition, which merely represents the first step to making the family business distinct from nonfamily business (Chrisman, Chua and Steier, 2005). Table 3.1 below summarises the primary definitions using components of the involvement approach.

**Table 3.1** Overview of key definitions based on components of involvement approach.

Author/s	Approach	Family business definition	Criteria
Astrachan and Shanker (2003)	COI	A firm is a family firm if: there is some family participation in the control over its strategic direction; the members of a descendent group and their affine control at least 5 per cent of the voting stock in a corporation; a family or an individual or unlisted firm on any stock exchange is considered the ultimate owner (20 per cent of either cash flow or	Control
Barnes and Hershon (1976)	COI	Controlling ownership is rested in the hands of an individual or of the members of a single family.	Ownership
Chrisman, Chua and Litz (2004)	COI	A firm meet these requirements at the same time: has certain percentage of the business owned by members of the family, the number of family members involved in managing the business, and the future successor as president of the business was expected to be a member of the family.	Ownership, management, and succession.
Davis and Tagiuri (1989)	COI	A business in which two or more extended family members influence the direction of the business.	Management
Handler (1989)	COI	An organization whose major operating decisions and plans for leadership succession are influenced by family members serving in management or on the board.	Multiple
Rosenblatt <i>et al.</i> (1985)	COI	Any business in which majority ownership or control lies within a single family and in which two or more family members are or at some times were directly involved in the business.	Ownership and management

### 3.2.2 The essence approach

Some scholars tried to develop another approach to define family businesses (Davis and Tagiuri, 1989; Litz, 1995; Chua, Chrisman and Sharma, 1999; Habbershon, Williams and MacMillan, 2003). They concentrated on different dimensions of family essence to capture the essence of family businesses.

Some scholars focused on a family's influence in setting the strategic direction of a firm (Davis and Tagiuri, 1989; Shanker and Astrachan, 1996). They argued that family businesses might differ from nonfamily businesses because of setting goals and the manner in which the process is carried out, and the participants in the process. For instance, family firms could influence every step of management progress (Sharma, Chrisman and Chua, 1997). Thus, the family's influence over the strategic direction of the family firm contributes to the essence of the family business (Chrisman, Chua and Sharma, 2005).

Several researchers defined family businesses based on the intention to maintain family control in the business (Barach and Ganitsky, 1995; Litz, 1995; Ward, 2011). For example, Litz (1995) argued that the previous definitions of family business are unable to capture the intra-organisational aspirations toward family-based relatedness, and family business must have the intention to transfer or have an actual generational movement (Litz, 1995). Based on this view, he integrated two conceptual approaches to clarify the boundaries of the family business. One approach is the structure-based approach, which uses ownership and management as the two core constructs. The other one is the intention-based approach, which focuses on the preferences of an intra-organisational member toward intra-organisational family-based relatedness (Litz, 1995).

Furthermore, Chua, Chrisman and Sharma (1999) defined family businesses based on their behaviours. They argued that an organisation could be a family business if its behaviours are distinct from those of a nonfamily business. The distinct behaviours of family business could be explained by the controlling family's vision and transgenerational intention (Chua, Chrisman and Sharma, 1999).

Moreover, Habbershon, Williams and MacMillan (2003) also defined family

businesses from a different dimension of family essence. They focus on the unique, inseparable, and synergistic resources and capabilities arising from family involvement and interactions (Wang, Poutziouris and Graves, 2015). In 1999, Habbershon and Williams proposed the “familiness”, which is identified as the bundle of resources and capabilities that are resulted from family involvement (Habbershon and Williams, 1999). Habbershon, Williams and MacMillan (2003) further developed a unified system model to link the resources and capabilities generated in the enterprising families system with their potential for transgenerational wealth creation. This study addressed the issues of how family involvement and systematic interactions could generate resources and capabilities that help family firms create value (Chrisman, Chua and Litz, 2003).

Chrisman *et al.* (2012) summarised various dimensions of family essence, including maintaining control, behaviour, transgenerational value creation and unique resources and capabilities arising from interactions between family and business. These four dimensions are complementary and could be integrated. They suggested that a family firm should consist of the following:

1. Intention to maintain family control of the dominant coalition.
2. Unique, inseparable, and synergistic resources and capabilities arising from family involvement and interactions.
3. A vision set by the family-controlled dominant coalition and intended for trans-generational pursuance.
4. Pursuance of such a vision.

In contrast to the components of the involvement approach, the essence approach has several advantages. The primary one is that this approach could describe different types of family businesses and behaviours, thus capturing the inherent heterogeneity of family business (Westhead and Howorth, 2007).

Specifically, due to the controlling vision and transgenerational intention, family members could have personal and social fulfilment, making them want to protect the benefits of firms (Arregle *et al.*, 2007). For example, within a family business, family members may provide knowledge, skills, resources, and financial support to the family firm (Danes *et al.*, 2009). In this way, the essence approach could capture the heterogeneity of family firms.

Furthermore, the essence approach is built on previous theories (Chrisman, Chua and Steier, 2005). Chua, Chrisman and Sharma (1999) pointed out both theoretical and operational definitions are needed in family business research. The theoretical definitions could be used to set the paradigm for the research field, and the operational definitions are able to identify measurable characteristics and conduct related empirical studies.

However, the fundamental problem associated with this approach is determining and measuring the essence of a family firm (Steiger, Duller and Hiebl, 2015). Compared with the components of the involvement approach, the essence of a family business is difficult to measure (Basco, 2013). For instance, the controlling family's vision and transgenerational intention cannot be measured as easily as ownership. That is the reason why the essence approach is seldom applied in empirical studies to define the family business (Steiger, Duller and Hiebl, 2015). The table below summarises the primary definitions using the essence approach.



**Table 3.2** Overview of key definitions based on essence approach

	Approach	Family business definition	Criteria
Chua, Chrisman and Sharma (1999)	Essence	The family business is a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families.	Behaviour
Litz (1995)	Essence	A business firm may be considered a family business to the extent that its ownership and management are concentrated within a family unit, and to the extent its members strive to achieve and/or intra-organisational family-based relatedness maintain.	Maintain control
Naldi <i>et al.</i> (2007)	Essence	Firms where one family group controls the company through a clear majority of the ordinary voting shares, the family is represented on the management team, and the leading representative of the family perceives the business to be a family firm.	Strategic direction
Craig and Moores, (2010)	Essence	A core essence statement encapsulates the values that serve as the foundation for the vision and mission	Vision
Lester and Cannella (2006)	Essence	Status in a community of family-controlled corporations provides a mechanism that, in addition to kinship ties, serves to extend and maintain family control and influence over their organisations and reduce the likelihood of firm failure	Familiness

Currently, the components of involvement and essence approaches are widely adopted in family business research. A major difference between them is how to define the sufficiency condition of the family business (Chrisman, Chua and Litz, 2003). To be more specific, COI viewed family involvement as a sufficient condition. In contrast, the essence approach only considers family involvement as a necessary condition (Chrisman, Chua and Litz, 2003). Family involvement must be directed toward behaviours that produce certain distinctiveness based

on a vision of the firm. The table below summarises the overview of the two approaches that we discussed above.

**Table 3.3** Comparing components of involvement approach and essence approach.

	<b>Components of involvement approach</b>	<b>Essence approach</b>
<b>Focus</b>	Focuses on degrees of family management, ownership, control.	Focuses on maintaining control, behaviour, transgenerational value creation and unique resources and capabilities arising from family involvement and interactions.
<b>Strengths</b>	<p>Easy to measure.</p> <p>Appropriate for research comparing family and nonfamily firms.</p> <p>More operational to be utilised to distinguish between family and nonfamily firms.</p>	<p>Comprehensive definition that encompasses a diverse range of family businesses.</p> <p>Focus on the mechanisms beyond ownership and management that generate competitive advantage.</p> <p>Recognises the intrinsic diversity among family businesses.</p>
<b>Challenges</b>	<p>Clarifies solely the family's capacity to affect a business. It does not capture the effects of family involvement on strategic processes that result in competitive benefits, which consequently restricts the method's theoretical validity.</p> <p>Misclassifications occur when firms are categorised as family (nonfamily) businesses, even though they are controlled by a family with minimal (significant) family involvement.</p>	<p>Difficult to measure the essence of family business.</p> <p>Essence definitions exclude business families that are willing to consider the sale of particular business asset and successive reinvestments.</p>

Source: Zellweger, Eddleston and Kellermanns (2010)

### **3.2.3 The definition of family businesses in the thesis**

Given the unique context of this study, the definition of family business needs to be suited to the Chinese condition. In Western countries, most privately-owned businesses consider themselves as family businesses (Poutziouris, Chittenden and Michaelas, 1999). However, some SMEs in China are reluctant to acknowledge their family ownership (Wang, Pei and Liu, 2014). This is due to ideological inertia and concern over the negative identity (Wang, 2016). As mentioned in Chapter 2, entrepreneurial activities had been viewed as a political taboo in a long-term (Tan, 2002). Even nowadays, some entrepreneurs still deny family ownership, which creates barriers to the definition problem of the family business. As such, the definition of family business in this study is based on COI. Compared with Western countries, family business in China is a relatively new but increasingly crucial organisational form (Wang and Beltagui, 2021). The essence of the family business, such as behaviours or transgenerational vision might not easy to capture (Chua, Chrisman and Sharma, 1999; Mazzi, 2011). Especially in a dynamic environment such as China, the intention of the family to keep control may change in the future. If owners of family-controlled firms change their minds on transgenerational respective due to external or internal factors, it is difficult to define them as family firms. In contrast, COI focused on family ownership and control (Zellweger, Eddleston and Kellermanns, 2010). Since family influence via ownership control determines strategic decisions (Hofmann *et al.*, 2009), it is important to focus on the control of ownership and voting rights. Additionally, COI is operational and measurable for this study. De Massis *et al.* (2012) examined the definitional criterion of the family business in past studies and found that 79 per cent of studies used the definition based on COI. Given it is widely used in previous empirical studies, it is easier for this study to compare with other investigations. Finally, this study used 50 per cent of family shares as the cut-off point to separate family and nonfamily businesses. Astrachan and Kolenko (1994) argued that listed family firms could use 10 per cent as

threshold. Given that this study focused on family-controlled SMEs, it therefore adopted the definition based on Leach *et al.* (1990). Thus, the family firm definition for this dissertation is:

*A family firm is a company where members of a kinship group hold at least 50 per cent of the equity in a company, and/or a single-family group effectively controls the business, and/or a significant proportion of the senior management is members from the same family (Leach et al., 1990).*

### **3.3 The Evolution of Socioemotional Wealth**

In 1964, the seminal work of Donnelley opened up the research field of the family business (Donnelley, 1988). After years of advancement, the understanding of how family businesses differ from others has progressed remarkably. In the 1990s, many scholars argued that family businesses have competitive advantages over nonfamily businesses (Moscatello, 1990; Brokaw, 1992; McConaughy *et al.*, 1998). For instance, McConaughy *et al.* (1998) found that, compared with their nonfamily counterparts, family firms have higher profit margins, faster growth rates and more stable earnings. Moscatello (1990) also argued that family businesses have a greater commitment to their mission, possess a greater capacity for self-analysis, and suffer less from managerial politics. While these studies made considerable progress in understanding the uniqueness of the family business, they were not able to understand why or how this competitive advantage exists in this particular type of organisation (Habbershon and Williams, 1999). In order to explain why family firms perform better than others, scholars investigated the uniqueness of family business (Goffee and Scase, 1985; Ward, 1988; Donckels and Fröhlich, 1991; Daily and Dollinger, 1992; Tagiuri and Davis, 1996). For example, Ward (1988) argued that a family business has a unique working environment, which could inspire

employees' loyalty. Donckels and Fröhlich (1991) noted that family businesses are more likely to pay higher salaries than nonfamily firms. Tagiuri and Davis (1996) pointed out that family members in family firms tend to have their own "family language", which makes communications more efficient. Visscher, Aronoff and Ward (2011) also suggested that due to the fact that family businesses are more willing to wait for the long-term outcome, they always have patient capital. Moreover, family businesses were deemed as having lower transaction costs (McConaughy *et al.*, 1998), a trustworthy reputation (Tagiuri and Davis, 1996), more creativity (Pervin, 1997), and more productivity (Rosenblatt *et al.*, 1985).

However, most of these studies focused on the descriptions of the unique characteristics of the family business and how this uniqueness can lead to a competitive advantage (Habbershon and Williams, 1999). There was no clear and cohesive theoretical framework that could provide a lens through which family firm performance and capabilities could be (Habbershon and Williams, 1999). To address this issue, Habbershon and Williams proposed a framework based on the resource-based view (RBV) to assess the specific behavioural and social phenomena within a family firm.

### **3.3.1 Resource-based view (RBV)**

In the late 1980s and 1990s, the resource-based view became the dominant framework for investigating company performance (Muñoz-Bullón, Sanchez-Bueno and De Massis, 2020). Earlier studies on the resource-based view see a firm as a heterogeneous entity that consists of bundles of idiosyncratic resources (Penrose, 1959). Based on this view, Wernerfelt (1984) advance the theory by suggesting that profitability is related to the development, nature, and methods of employing internal resources. Consequently, the resource-based view could isolate specific resources that are complex, intangible and dynamic (Priem and Butler, 2001). Moreover, Dierickx and Cool (1989) further developed

the resource-based view by arguing that instead of the flow of resources, only the accumulated resources could contribute to the competitive advantage. By the end of the 1990s, resource-based review played a significant role in the field of strategic management (Priem and Butler, 2001).

According to the resource-based view, bundles of resources and capabilities, rather than product markets, give firms opportunities to have a competitive advantage and superior performance (Wernerfelt, 1984; Barney, 1991; Grant, 1991; Peteraf, 1993; Penrose and Pitelis, 2009). Within this approach, firms are considered as a unique bundle of resources that are complex, intangible and dynamic rather than a range of activities in the product market (Cabrera-Suárez, De Saá-Pérez and García-Almeida, 2001).

Resource-based view argues that they are stocks of available factors which could be controlled or owned by companies (Amit and Schoemaker, 1993). Resources include both physical and intangible assets, various skills and knowledge, and organisational processes (Barney, 1991). They could be converted into final products or services by using tangible or intangible assets and bonding mechanisms (e.g. technology, management, information systems) of firms, thereby creating values for companies (Amit and Schoemaker, 1993). According to the resource-based view, capabilities refer to a capacity to deploy resources, usually in combination and organisational processes, to effect the desired end (Amit and Schoemaker, 1993). They are based on the specific progress of firms and will develop with interactions among resources (Cabrera-Suárez, De Saá-Pérez and García-Almeida, 2001). Resources and capabilities are unique to each firm because it is impossible for two firms to exist with the same set of resources, such as assets, skills or organisational cultures (Barney, 1991). Hence, the resource-based view plays an important role in understanding how these idiosyncratic firm resources create competitive advantages (Habbershon and Williams, 1999). However, having plenty of

resources may be a necessary but not sufficient condition for advantageous performance. According to Barney (1991), to achieve a sustained competitive advantage, resources must meet four conditions: they must be valuable, they must be rare, they must be imperfectly imitable, and they cannot be strategically substituted.

In summary, the resource-based view provides a framework for researchers to analyse the potential of a collection of resources in a firm (Habbershon and Williams, 1999). In addition, it also provided an important opportunity for researchers to advance the understanding of the relationship between a particular firm's resources and sustained competitive advantage. As was mentioned earlier, the resources of family business have been described as complex, dynamic and rich in tangible (Cabrera-Suárez and De Saá-Perez, 1996; Habbershon and Williams, 1999). The resource-based view provides a framework to analyse family businesses. Furthermore, within the resource-based view, a bundle of resources that holds the potential for performance advantage could be identified as idiosyncratic to a firm (Habbershon and Williams, 1999), which helps researchers investigate the uniqueness of family firms. Accordingly, based on this approach, Habbershon and Williams (1999) first proposed the concept of "familiness" in the family business research field.

### **3.3.2 Familiness**

According to Habbershon, Williams and MacMillan (2003), "familiness" refers to "[...] the idiosyncratic firm-level bundle of resources and capabilities resulting from the systems interactions" (Habbershon, Williams and MacMillan, 2003, p. 451). The resource-based view forms the foundation for familiness. As discussed above, the unique bundles of sources and capabilities serve as the source of competitive advantage for the firm (Barney, 1991; Habbershon and Williams, 1999; Makadok, 2001). As a result, Habbershon and Williams (1999) argued that the unique systemic family influence could be captured through an

analysis of resources and capabilities in firms.

The definition of familiness provides a unified systems perspective for researchers to investigate the relationship between the competitive advantage of family firms and their systemically produced resources (Habbershon and Williams, 1999). Moreover, by identifying these unique resources as familiness, family-specific resources and capabilities could link to the firm performance, enhancing the understanding of the entire continuum in family firms (Habbershon and Williams, 1999). Habbershon *et al.* (2003) developed a systemic model grounded on “familiness” to investigate how family influences can lead to a potential competitive advantage (Pearson, Carr and Shaw, 2008). This model focuses on the “enterprising families” (firms whose performance goal is transgenerational wealth and wealth creation potential) and links the resources and capacities of this type of family firm with their potential for transgenerational wealth creation (Habbershon, Williams and MacMillan, 2003).

Although Habbershon and his colleagues have provided important insight into understanding the role of familiness in creating a competitive advantage for the family business, they still have some limitations (Habbershon and Williams, 1999; Habbershon, Williams and MacMillan, 2003). First, Habbershon and Williams (1999) failed to explain the components of the familiness construct. Specifically, researchers have difficulties with regard to the identification of the specific characteristics and measurement of familiness. As Chrisman, Chua and Steier (2005) noted that “[...] we do not yet fully understand sources or types of familiness” (Chrisman, Chua, and Steier, 2005, p. 238).

Another problem with these studies is that researchers do not understand the conditions that give rise to familiness and the formation of family firms. For instance, questions like how ownership, management and transgenerational intentionality interact to create characteristics unique to family organisations



remain unanswered (Chrisman, Chua, and Steier, 2005). Based on these limitations, some scholars suggest that it is necessary to identify the unique family resources and capabilities that constitute familiness (Chrisman, Chua and Steier, 2005; Pearson, Carr and Shaw, 2008). Sirmon and Hitt (2003) argued that unique familiness resources and capabilities that differentiate family firms from nonfamily firms could be categorised as five components: human capital, social capital, survivability capital, patient capital, and governance structure.

Human capital represents the acquired knowledge, skills, and capabilities of a person that allows for unique and novel actions (Coleman, 1988). Given that family members take part in both family and firm relationships, the human capital in the family business has a duality (Sirmon and Hitt, 2003). On the one hand, it provides an extraordinary commitment and intimate relationships. On the other hand, it also leads to a lack of professionalism and limited potential for professional growth. In contrast to human capital, social capital focuses on the relationships between individuals or organisations (Burt, 1997). According to Sirmon and Hitt (2003), social capital consists of three dimensions: structural, cognitive, and relational. Each dimension is embedded within the family unit and in ties the family firm has with external stakeholders (Sirmon and Hitt, 2003). In terms of patient financial capital, it refers to a type of financial capital which is invested without the threat of liquidation for long periods (Dobrzynski, 1993). Compared with nonfamily businesses, family firms tend to have a longer time horizon and limited sources of external financial capital. Thus, family firms have more patient capital (Reynolds, 1992). Survivability capital represents the resources that family members are willing to contribute or share for the benefit of the family business (Le Breton–Miller, Miller and Steier, 2004). According to Sirmon and Hitt (2003), resources are based on the duality, warmth, dedication, and commitment of family members, which could be used to help sustain the business during a difficult time.

Concerning governance structure, scholars have two opposite views. On the one hand, Jensen and Meckling (1976) argued that family businesses have lower governance costs due to the lack of agency issues. On the other hand, Gomez-Mejia, Nuñez-Nickel and Gutierrez (2001) suggested that the altruism of family owners or managers increases agency costs; thus, family firms have similar governance costs as nonfamily firms. In family business research, several scholars continue to seek ways to describe how family businesses are differentiated from other businesses, and they attempt to fit them into the notion of familiness (Chrisman and Haskayne; Pramodita Sharma, 2003; Le Breton–Miller, Miller and Steier, 2004; Carney, 2005; Ensley and Pearson, 2005; Klein, Astrachan and Smyrnios, 2005; Nordqvist, Sharma and Chirico, 2014). For example, Carney (2005) tried to provide a foundation for the study of familiness from the corporate governance perspective. He argued that a firm's system of corporate governance could influence the nature of its competitive advantages and disadvantages. In terms of the family business, he identified three unique governance characteristics: parsimony, personalism, and particularism. Parsimony stems from the fact that family firms make decisions on resources with their own money (Carney, 2005). Therefore, they will use their funds carefully and frugally. Personalism comes from the unification of ownership and control (Carney, 2005). In family firms, the ownership and control concentrate on one person or one nuclear family. As a result, the firms may operate more efficiently than other organisations due to fewer internal bureaucratic constraints (Carney, 2005). Regarding particularism, it stems from the personalisation of authority (Demsetz and Lehn, 1985). Specifically, due to the ownership and control rights, family owners tend to have greater liberty in the exercise of authority. Sometimes families may employ decision criteria based upon altruism or nepotism (Carney, 2005). Overall, Carney (2005) identified important sources of advantage that are developed from these unique characteristics of family firms and explained how they could potentially give rise to competitive advantages and disadvantages (Chrisman, Chua and Steier,

2005).

Furthermore, Ensley and Pearson (2005) enhanced the understanding of familiness from the top management team perspective. They argued that with the development of family firms, the different top management teams might lead to differences in familiness (Ensley and Pearson, 2005; Nordqvist, 2005). In their paper, they found that family involvement in top management leads to a set of behavioural dynamics, which could impact the performance and evolution of family firms (Ensley and Pearson, 2005). In line with their views, Chrisman, Chua and Steier (2005) proposed that understanding the sources and types of familiness may be one effective way to distinguish populations of family firms.

Based on the resource-based view, previous scholars (Habbershon and Williams, 1999; Habbershon, Williams and MacMillan, 2003) proposed a significant construct in the family business. However, despite the fact that these studies above only analysed the potentially idiosyncratic characteristics and capabilities on firm-level and failed to illuminate the specific resources and capabilities of familiness, they began to link the resources with individual dimensions of family involvement and explain how these different dimensions of family involvement may create uniqueness and contribute to distinctive familiness (Chrisman, Chua and Steier, 2005).

### **3.3.3 Socioemotional wealth**

In the following years, with the field evolving, numerous scholars kept investigating the uniqueness of family business by using different paradigms (Habbershon, Williams and MacMillan, 2003; Le Breton-Miller and Miller, 2006; Cruz, Gómez-Mejía and Becerra, 2010). In addition to the resource-based view (Habbershon and Williams, 1999; Habbershon, Williams and MacMillan, 2003), some studies also employed agency theory, stewardship theory, and upper echelon theory (Miller and Le Breton-Miller, 2006; Kraiczy, Hack and

Kellermanns, 2015). Most studies noted above argued that the role of noneconomic factors in the management of family firms is different from that in other types of organisations. While these studies generated significant insights into family firms, the lack of paradigmatic coherence led to contradictory empirical results and fragmented theoretical interpretations in family business research (Berrone, Cruz and Gomez-Mejia, 2012). As the number of empirical studies on family business increased, the confusion of contradictory results amplified, which threatened the development of this research field (Gomez-Mejia *et al.*, 2011). Therefore, the research of family business needed to develop its own paradigm. To address this issue, Gomez-Mejia and his colleagues developed a new “homegrown” theoretical formulation within the family business research field, which is called the SEW model (Gómez-Mejía *et al.*, 2007; Berrone *et al.*, 2010; Gomez-Mejia, Makri and Kintana, 2010; Gomez-Mejia *et al.*, 2011).

From the traditional agency perspective, due to the highly concentrated risk in one single firm, family businesses tend to have risk-averse preferences (Fiegenbaum and Thomas, 1988). However, the behavioural agency theory argues that family firms make the decision depending on the context, and they allow for the possibility of varied risk preferences (Wiseman and Gomez-Mejia, 1998). According to the behavioural agency theory, the risk preference of a decision-maker changes with the framing of problems (Wiseman and Gomez-Mejia, 1998). Problems are framed as either positive or negative using a reference point to compare anticipated outcomes from available options. More specifically, risk preferences are shifting under different prospects, which is also called “loss aversion” (Wiseman and Gomez-Mejia, 1998).

Based on this view, Gomez-Mejia *et al.* (2007) argued that family principals are loss averse regarding SEW, which is defined as ‘the stock of affect-related value that a family derives from its controlling position in a particular firm’. In

fact, family owners tend to regard potential gains or losses in SEW as their primary reference point (Gómez-Mejía *et al.*, 2007). According to Gomez-Mejia *et al.* (2007), the SEW comes from a range of non-financial aspects related to the family business, including the ability to exercise authority (Schulze, Lubatkin and Dino, 2003), the satisfaction of needs for belonging, affect, and intimacy (Kepner, 1983), the perpetuation of family values through the business (Handler, 1989), the preservation of the family dynasty (Casson, 1999), the conservation of the family firm's social capital (Arregle *et al.*, 2007), the fulfilment of family obligations based on blood ties rather than on strict criteria of competence (Athanassiou *et al.*, 2002), and the opportunity to be altruistic to family members (Schulze, Lubatkin and Dino, 2003). Firms with family involvement are more likely to make strategic decisions that could preserve SEW, even at the expense of economic gains in the short term (Berrone, Cruz and Gomez-Mejia, 2012). Some scholars viewed this "SEW preservation logic" as a distinctive feature of family firms, which could be used to understand various policies and strategies of the family firm (Gómez-Mejía *et al.*, 2007; Berrone *et al.*, 2010; Gomez-Mejia, Makri and Kintana, 2010).

Gómez-mejía *et al.* (2007) also found support for their model by investigating 1237 family-owned olive oil mills in southern Spain during a 54-year period. They found that those family-owned olive oil mills are more likely to join the cooperative, which may preserve the family's SEW at the expense of increasing financial risks (Gómez-Mejía *et al.*, 2007)

Due to the depth and breadth of the SEW, it has the potential to be a dominant paradigm in the family business research field (Gómez-Mejía *et al.*, 2007; Berrone *et al.*, 2010; Berrone, Cruz and Gomez-Mejia, 2012). First, the SEW model is developed from the body of research in the family business. It stems from the reality of family business, which contrasts with agency-based research suggesting that family owners are concerned with financial goals

alone (Morck and Yeung, 2003). Furthermore, this model allows researchers to explain a range of seemingly disparate findings in the behaviours of family firms, which suggests that the key distinguishing feature that separates family firms from other businesses is non-economic factors. Last but not least, the SEW construct provides legitimacy and positions in the area of family business studies as a rigorous, distinctive, and solid field (Berrone, Cruz and Gomez-Mejia, 2012).

The SEW perspective provides a golden opportunity for researchers to understand various behaviours of family firms. Therefore, a growing number of empirical studies concentrate on how SEW impact a range of transitional area in organisational behaviours, including diversification (Gomez-Mejia, Makri and Kintana, 2010), compensation (Jones, Makri and Gomez-Mejia, 2008), innovation (Chen and Hsu, 2009; Chrisman and Patel, 2012; KRAICZY, HACK and KELLERMANNNS, 2015), internationalisation (Holt, 2012) and firm valuation (Zellweger *et al.*, 2012). For instance, Sciascia, Mazzola and Kellermanns (2014) investigated 233 Italian family firms to examine the relationship between family management and profitability. Based on the SEW perspective, they found that family management positively affects profitability at later generational stages (Sciascia, Mazzola and Kellermanns, 2014). In the same vein, based on the SEW model, Zellweger *et al.* (2012) investigated 5250 Swiss and German family firms and argued that family owners considered transgenerational control as their socioemotional endowment. As a result, selling the firm is an option only if family owners are commensurably compensated for the loss in SEW (Zellweger *et al.*, 2012).

Although the studies noted above draw upon SEW to explain different aspects of family firm behaviours, none has tried to measure SEW directly. Specifically, these studies measure SEW by indirect variables including family ownership and management (Berrone *et al.*, 2010; Chrisman and Patel, 2012; Block *et al.*,

2013; Cruz *et al.*, 2014), firm age (Dehlen *et al.*, 2014), generational stage (Stockmans, Lybaert and Voordeckers, 2010) and transgenerational control intentions (Zellweger *et al.*, 2012). However, some scholars have criticised that using indirect rather than direct proxies to measure SEW has its limitations, which shows a “mismatch between the theoretical construct and its empirical correlate” (Miller and Le Breton-Miller, 2014; Schulze and Kellermanns, 2015). As a result, developing a more precise, fine-grained, and multidimensional measure of SEW is necessary in family business research field (Kellermanns, Eddleston and Zellweger, 2012). At this point, Berrone, Cruz and Gomez-Mejia (2012) took a first step towards identifying the dimension of SEW, which makes a great contribution to the development and operationalisation of SEW. Accordingly, they proposed a direct multidimensional scale to measure the levels of SEW dimensions in surveys, which is called FIBER (Berrone, Cruz and Gomez-Mejia, 2012). The FIBER model includes the following five dimensions of SEW.

The first dimension is Family control and influence. It refers to the control and influence of family members (Berrone, Cruz and Gomez-Mejia, 2012). According to Chua, Chrisman and Sharma (1999), one of the most significant characteristics that distinguish family firms is that family members exert control over strategic decisions. They can shape the firm’s direction via family involvement. For most family businesses, the ability to exert authority comes from the control influence of family members (Berrone, Cruz and Gomez-Mejia, 2012). Hence, given that the control and influence over the firm is an significant part of SEW, family firms tend to focus on perpetuating family owners’ direct or indirect control and influence over the firm’s affairs as a way to build and preserve their socioemotional endowment, even sometimes at the expense of losing financial benefits (Cennamo *et al.*, 2012).

Family members’ identification with the firm is the second dimension. Family

identification with the firm stems from blurred family-firm boundaries (Stevens, Kidwell and Sprague, 2015). The intermeshing of family and business gives rise to an inherently unique identity within family firms (Berrone, Cruz and Gomez-Mejia, 2012). Existing empirical evidence suggests that family members social status becomes strongly tied to organisational identity, with the firm often carrying the family's name (Tagiuri and Davis, 1996). Therefore, the family firm is viewed as the extension of the family itself (Berrone, Cruz and Gomez-Mejia, 2012). Any threat to the business's reputation will appear as a hazard to individual identity and to the existence of the family itself (Zellweger, Eddleston and Kellermanns, 2010). The strong identification with the firms makes family firms exhibit a higher level of corporate social responsibility (Craig and Dibrell, 2006; Gibb Dyer and David Whetten, 2006; Berrone *et al.*, 2010) and take particular care to maintain a positive corporate image and reputation (Westhead, Wright and Ucbasaran, 2001). Any harm to the reputation of firms will lead to the loss of SEW (Deephouse and Jaskiewicz, 2013).

The third dimension is Binding social ties. In family firms, the SEW provides kinship ties with a range of same collective benefits that arise in a closed network, including collective social capital, relational trust (Coleman, 1990), and feelings of closeness and interpersonal solidarity (Uzzi, 1997). This kin network is not only between family members but also extends to nonfamily employees and external stakeholders (Miller *et al.*, 2009). The sharing of belonging, self, and identity promote a sense of stability and commitment to the firm (Miller and Le Breton-Miller, 2005).

The fourth dimension is Emotional attachment. Unlike nonfamily firms, family members are generally stuck in the company, and their emotional issues will not end with the employee contract. Therefore, emotions may play a stronger role in the family business. Family members' emotional attachment results from their shared history and knowledge of past events that influence how family



members act at present. These emotions are not static, because they may change with the significant events that emerge in the family business system, such as succession, divorce and illness (Shepherd, Wiklund and Haynie, 2009). According to Baron (2008), due to the blurred boundaries between family and firm, the family's emotions could have an impact on the decision-making progress. For instance, family members with intense emotional attachment tend to invest most of their wealth in the firm and have the power to move the organisation in the direction (Zellweger, 2007). Furthermore, this dimension could be particularly used to understand the altruistic behaviours in the family business (Cruz, Gómez-Mejia and Becerra, 2010). As a result of emotional attachment, family members are highly dedicated to the business and they have a joint family responsibility to see the business prosper (Eddleston and Kellermanns, 2007).

The last dimension is renewal of family bonds to the firm through dynastic succession. It reflects the family principals' intention to hand the business down to future generations (Berrone, Cruz and Gomez-Mejia, 2012). In fact, Zellweger, Sieger and Halter (2011) viewed this transgenerational sustainability as one of the central aspects of SEW. Evidence shows that maintaining the business for future generations has been considered as a key goal for family firms (Zellweger, Eddleston and Kellermanns, 2010), which leads to a long-term horizon (Li and Daspit, 2016). For family principals, firms are not just an asset, they also symbolise the family's heritage and tradition (Casson, 1999). Hence, preserving the family SEW implies adopting a long-term family investment to perpetuate this tradition to descendants (Berrone *et al.*, 2010; Zellweger, Sieger and Halter, 2011).

The "FIBER" makes a great contribution to the theoretical development and operationalisation of SEW. On the one hand, by using a multidimensional scale of SEW, FIBER can grasp the affective endowments directly and thus accounts

for the heterogeneity of families' endowments (Hauck *et al.*, 2016). On the other hand, FIBER can account for the positive and negative valences of the diverse socioemotional endowment (Hauck *et al.*, 2016). According to Kellermanns, Eddleston and Zellweger (2012), the dimensions of SEW can be both positively and negatively valenced. Most of the previous studies assume the SEW dimensions are associated with positive valence. However, they also have negative sides. For instance, family control and strong identification with the family firm can cause heirs to feel locked into and dependent upon the family and firm (Schulze *et al.*, 2001), suggesting potential negative valence for these SEW dimensions. These five dimensions of SEW in FIBER can have different weights depending on the preferences of the owning family, which consider both positive and negative valence (Hauck *et al.*, 2016).

Although Berrone's work reached significant achievement in the family business, few empirical studies validate the FIBER scales to feel locked into and dependent upon the family and firm (Schulze *et al.*, 2001), suggesting potential negative valence for these SEW dimensions. These five dimensions of SEW in FIBER could have different weights depending on the preferences of the owning family, which consider both positive and negative valence (Hauck *et al.*, 2016). Pearson and Lumpkin (2011) argued that poorly validated measures can lead to contradictory findings and erroneous conclusions. Therefore, only rigorously validated measures allow for the comparison of empirical results and for the progress of family business research as a discipline (Pearson and Lumpkin, 2011). As a result, to address the need for validation of FIBER, Hauck *et al.* (2016) validated the FIBER with a sample of 216 family-owned and -managed firms with up to 500 employees in the German-speaking area. The validation reveals that the dimension of F and B lack of validity. Consequently, Hauck *et al.* (2016) revised a short form called the REI scale that comprises nine items that measure the core affective endowments a family may derive from controlling a firm. The REI scale could disentangle the synergetic

relationships between the SEW dimension, and help researchers measure different dimensions of SEW in a finer-grained, and valid way (Hauck *et al.*, 2016). In the same vein, Naldi *et al.* (2013) condense the five original dimensions into three that influence the strategic behaviours of family firms: (1) keeping control and influence over the firm's operations and ownership, (2) perpetuating the family dynasty, and (3) sustaining family reputation.

Overall, SEW approach provided new insights into family business research and helped the field gain momentum (Berrone, Cruz and Gomez-Mejia, 2012). It has the potential to be the core of a theory of the family business research field. On the one hand, this approach depicts the uniqueness of the family firms' identity through the consideration of non-economic factors. On the other hand, it can enhance the shared identity, a quality necessary for developing a strong scientific community (Berrone, Cruz and Gomez-Mejia, 2012). However, measuring the influence of different noneconomic dimensions is still a challenge (Miller and Le Breton-Miller, 2014; Chua, Chrisman and De Massis, 2015). Although some scholars have provided instruments to measure different dimensions of SEW (Cennamo *et al.*, 2012; Naldi *et al.*, 2013; Debicki *et al.*, 2016). However, a further development is required before it can be considered as the dominant paradigm in the family business.

### **3.4 Innovation in Family Business**

As far back as the first study from Schumpeter and Nichol (1934), the term 'innovation' has found a broad appeal in literature. They stressed the novelty aspect, and suggested that innovation is reflected in novel outputs. To be more specific, innovation is a 'new good', a 'new source', a 'new method of production' etc., which could be summarised as 'doing things differently' (Schumpeter and Nichol, 1934). Based on established conceptualisation, innovation can be

broadly defined as a set of activities through which a firm generates, accepts and implements new ideas, processes, products, services or even business models (Freeman and Soete, 1997).

Due to the shortened product life cycles in current industries, innovation is considered as a firm's key driver of survival (De Jong and Vermeulen, 2006). On the one hand, innovation could be a powerful strategic tool to help companies acquire, nurture and maintain competitive advantage (Kleinschmidt and Cooper, 1991). On the other hand, innovation also involves a range of uncertain risks, such as inadequate investment, the uncertainty of future market performance in the future and potential imitation (Kirzner, Kirzner and M., 1978), which leads firms to operate in unpredictable domains. Moreover, it requires a large amount of resources and capabilities to produce tangible outcomes (De Massis, Frattini, *et al.*, 2015). As family business research has moved forward and gained momentum over the last decade (Sharma, Chrisman and Gersick, 2012), the topic of innovation in the family business has attracted interest in recent years. Given to the significant role of maintaining competitive advantage and overcoming financial downturns, it is essential to understand innovation in family firms (Gudmundson, Tower, and Hartman, 2003; Röd, 2016).

In the past, family firms were conventionally seen as conservative and reluctant to invest in innovation (Duran *et al.*, 2016). However, recent evidence shows that family firms have substantial heterogeneity in innovation (Chrisman and Patel, 2012; Kotlar, De Massis, *et al.*, 2014). Some family firms tend to be more innovative than their nonfamily counterparts (De Massis, Di Minin and Frattini, 2015). Although some recent studies have started to explore the paradox in family businesses (De Massis, Kotlar, Frattini, *et al.*, 2015; De Massis *et al.*, 2016; De Massis, Frattini, *et al.*, 2018), they are still at an infancy stage (Rondi, De Massis and Kotlar, 2019). Thus, more research is needed on this interesting topic to enhance the understanding of innovation in the family business.

### **3.4.1 Innovation in family businesses**

Over the past decade, most of the research on innovation of family businesses has focused on whether family firms have a different propensity toward innovation than nonfamily firms (Craig and Moores, 2006). However, they have reported conflicting propositions and evidence. According to De Massis, Frattini and Lichtenthaler (2013), most of these studies investigated the effect of family involvement on innovation inputs and outputs.

#### **Innovation inputs**

Earlier innovation and family business scholars inspired by agency theory suggested that family firms are expected to be risk averse due to their unification of ownership and management (Sciascia *et al.*, 2015). Most of the research on innovation inputs concentrates on the impact of family involvement on the level of research and development (R&D) investment (Schulze, Lubatkin and Dino, 2002; Naldi *et al.*, 2007). The findings from these studies are largely consistent, and they found that family firms invest less in R&D expenditure than their nonfamily counterparts. For instance, Munari, Oriani and Sobrero (2010) examined a sample of 1000 publicly traded firms from six European countries (France, Germany, Italy, Norway, Sweden and the UK) and found that due to risk aversion, family businesses tended to have a lower level of R&D investment than other types of organisations.

Similarly, Muñoz-Bullón and Sanchez-Bueno (2011) used a panel dataset of large and public Canadian companies and examined the relationship between family involvement and firms' R&D intensity. They found that firms with family involvement ownership have lower R&D intensity than nonfamily counterparts. In the same vein, Block (2012) examined a sample of 154 from Standard & Poor's 500 and found that the relationship between family ownership and R&D intensity is negative due to the less risky and conservative firm strategies. They

pointed out that the inner family conflicts increased the agency costs of family firms, resulting in a lower level of R&D intensity in these firms relative to others (Block, 2012).

However, other studies have questioned these findings predicting a negative relationship between family ownership and R&D intensity (Chrisman and Patel, 2012; Sciascia, Mazzola and Kellermanns, 2014). They argued that previous studies concentrated on the economic goals of firms and ignored non-economic goals that cause additional heterogeneity in family firm R&D decisions. For instance, Chrisman and Patel (2012) pointed out that publicly owned family firms usually invest less in R&D than nonfamily firms. However, when the economic performance is below a family's aspiration levels, the R&D investments of family firms tend to increase, and the variability of those investments will decrease in comparison with nonfamily firms. More recently, Kotlar, Fang, *et al.* (2014) provided a novel perspective on explaining the differences between family and nonfamily firms in making R&D investment decisions. Based on behavioural theory, they investigated 431 private Spanish manufacturing firms and found that, in addition to profitability goals, family managers used supplier bargaining power as the reference point to explain family decisions regarding R&D investment. Supplier bargaining power is often considered as an indicator of the costs of replacing a supplier (Porter, 1997). Increasing supplier bargaining power threatened the goals of maintaining control and managerial discretion of family firms. They found that family firms react to increasing supplier bargaining power more strongly when their profitability reference points have been reached. Another study by Kotlar, De Massis, *et al.* (2014) examined the effect of family involvement on strategic decisions about R&D investments in family and nonfamily firms. They argued that family firms are less likely to change their level of R&D investments across periods. In line with Chrisman and Patel (2012), Sciascia, Mazzola and Kellermanns (2014) examined the relationship between family ownership and

R&D intensity by using the behavioural agency model (BAM). They found that the relationship between family ownership and R&D intensity is determined by the way the family has invested its wealth. When there is a high overlap between family wealth and firm equity, in order to protect their SEW, family firms tend to have less R&D intensity. Conversely, if firm equity is just a small part of the total family wealth, the risk propensity of firms is greater, resulting in higher R&D expenditure (Sciascia, Mazzola and Kellermanns, 2014).

Moreover, while most previous studies focused on listed firms, research on privately held SMEs was also required. Given that firm size could have a significant impact on the innovative behaviours of family firms, it is essential to investigate innovation in family-controlled SMEs (Sciascia, Mazzola and Kellermanns, 2014). To summarise, earlier studies regarding innovation inputs and family businesses were primarily focused on the large, listed companies, and the findings are largely consistent in showing that family firms invest less in R&D than nonfamily businesses. Most of these empirical studies were rooted in the agency theory (Chen and Hsu, 2009; Munari, Oriani and Sobrero, 2010; Muñoz-Bullón and Sanchez-Bueno, 2011; Block, 2012), and they argued that wealth concentration leads to limited risk propensity of family firms. However, as Chrisman and Patel (2012) challenged the consistent findings of a negative relationship between family ownership and R&D intensity, more research began to consider the heterogeneity of R&D investment in family businesses and expand the research to private SMEs (Sciascia, Mazzola and Kellermanns, 2014). Table below summarises the key findings of selected articles on innovation inputs.

**Table 3.4** Overview of selected articles on innovation inputs in family firms

Author(s) and year	Sample	Theoretical framework	Aspect of innovation	Relevant findings
Ashwin, Krishnan and George (2015)	172 firms from the pharmaceutical industry in India.	Agency theory	R&D investments (Inputs)	Family shareholding and family control over both CEO and chairperson positions have a positive and significant influence on the firm's R&D investments.
Block (2012)	154 U.S. listed firms belonging to R&D-intensive industries.	Agency theory	R&D intensity (Inputs)	Family ownership could decrease the level of R&D intensity.
Chen and Hsu (2009)	369 Taiwanese listed firms in the electronic industries.	Agency theory	R&D investment (Inputs)	Family ownership is negatively related to R&D investment. Meanwhile, firms with high family ownership may use R&D investment more efficiently.
Chen, Ho and Hsu (2013)	516 Taiwanese listed firms from various industries.	Agency theory	R&D expenditures (Inputs)	Family ownership is positively associated with innovation
Choi <i>et al.</i> (2015)	298 South Korean listed family firm	Agency theory	R&D investment (Inputs)	family ownership is negatively related to R&D investment, but the relationship becomes positive



				when growth opportunities are present.
Chrisman and Patel (2012)	964 listed firms from the Standard & Poor's 1500 between 1998 and 2007.	BAM	R&D investments (Inputs)	Family firms usually invest less in R&D than nonfamily firms but it varies in firms' aspiration level.
Classen <i>et al.</i> (2014)	2,087 German SMEs	CDM model (the acronym of the three authors' names, Crépon, Duguet and Mairesse)	R&D investments (Inputs)	While family SMEs have a higher likelihood to invest in innovation, these companies do so less intensively than their nonfamily counterparts.
Gomez-Mejia <i>et al.</i> (2014)	610 U.S. high-technology firms	BAM	R&D investment (Inputs)	Family firms tend to invest less in R&D compared with nonfamily firms
Kotlar, Fang, <i>et al.</i> (2014)	431 private Spanish manufacturing firms.	Behavioral theory	R&D investment (Inputs)	Family firms react more strongly to increasing supplier bargaining power when their profitability reference points have been reached.

Llach and Nordqvist (2010)	151 Spanish manufacturing firms	Resource-based view (Familiness)	the role of human, social and marketing capital for innovation (Inputs)	family firms are more innovative than nonfamily firms
Matzler <i>et al.</i> (2015)	134 German publicly traded firms	Agency theory, Resource-based view	R&D expenditure (Inputs)	Family participation in management and governance has a negative impact on innovation inputs.
Munari, Oriani and Sobrero (2010)	1,000 public traded firms from several EU countries.	Agency and Institutional theory	R&D investment (Inputs)	Higher shareholding by families is negatively associated with R&D investment.
Muñoz-Bullón and Sanchez-Bueno (2011)	736 Canadian listed firms over the 2004 to 2009 time period.	Self-created (Differences in R&D intensity between family and nonfamily firms are explained based on key conditions, including time horizon, agency costs, resource	R&D intensity (Inputs)	Firms with family involvement ownership have lower R&D intensity than comparable, nonfamily firms.

		endowment, or risk-taking behavior)		
Nieto, Santamaria and Fernandez (2015)	15,173 Spanish manufacturing firms	Agency theory, Resource-based view	Innovation effort and collaboration (Inputs)	Family firms perform fewer innovation efforts and are less inclined to turn to external sources of innovation than nonfamily firms.
Schmid <i>et al.</i> (2014)	641 German listed firms	Agency theory	R&D intensity (Inputs)	R&D intensity is higher in firms that are actively managed by the family.
Sirmon, Gove and Hitt (2008)	2,531 French SMEs in manufacturing industries.	Resource-based view	R&D investments (Inputs)	When firms under threats of imitation, family influenced firms reduce less R&D and internationalization than nonfamily firms
Tsao, Lin and Chen (2015)	375 Taiwanese listed firms	Agency theory	R&D investment (Inputs)	The sensitivity of CEO compensation to R&D investment is higher for family firms than for nonfamily firms
Yoo and Sung (2015)	100 South Korean listed firms	Agency theory	R&D intensity (Inputs)	Family control is positively related to a firm's R&D investment when the firm's growth opportunity is low.

## **Innovation outputs**

In contrast to innovation inputs, research on the effect of family involvement on innovation outputs reported inconclusive findings. Some scholars found that family involvement of ownership is negatively associated with innovation outputs. For example, Chin *et al.* (2009) examined a sample of 317 Taiwanese-listed firms in the electronic industry and found a negative relationship between family involvement and patent quantity and quality. They suggested that the tight control structure of family firms could reduce firms' innovativeness. Similarly, Block *et al.* (2013) investigated 248 firms from S&P 500 and found that, in order to pursue SEW, family-managed firms receive fewer patent citations than nonfamily firms.

However, some scholars offered divergent perspectives. For instance, the findings of (Gudmundson, Tower and Hartman, 2003) ran contrary to conventional thinking that family firms are less innovative than nonfamily firms. They examined the relationship between ownership structure and innovation in U.S. SMEs and found that family firms tend to have more abilities to introduce new products and services. Similarly, based on the resource-based view, Llach and Nordqvist (2010) found that family firms are more innovative than nonfamily firms due to their unique resources. They analysed different innovative behaviours between family and nonfamily firms from three aspects, including human, social and marketing capital. They argued that while family firms suffered from a lack of financial capital, their "familiness" could be used to improve their entrepreneurial capabilities. Moreover, by using a sample of 427 independent unquoted U.K. companies, Westhead (1997) found that in order to achieve the competitive advantage, family firms tend to offer a broader range of product and service innovations than their nonfamily counterparts. Likewise, Craig and Dibrell (2006) investigated 391 U.S. SMEs and found that due to the flexible structure and decision-making process, family firms have a better capability to innovate by taking advantage of natural environment policies than

nonfamily firms.

Recently, some streams of family business research suggested that a range of distinctive traits in family businesses, such as formalisation, dependence on external capital providers, and political resistance, could affect their response to discontinuous technological changes (Urbinati *et al.*, 2017). For instance, König, Kammerlander and Enders (2013) used the “4Cs model” (command, continuity, community, and connections) to examine the effect of family influence on the adoption of discontinuous technologies. They asserted that despite highly family-influenced firms (e.g. high overlap of the family and business, high levels of command, focus on continuity, sense of community, and strength of connection) recognised discontinuous technologies later than less family-influenced firms, they tend to implement the adoption decision more rapidly once taken. Moreover, König, *et al.* (2013)’s work ignored the heterogeneity in family firms, and they advanced the research by arguing that non-economic goals, governance structures, resources and idiosyncratic situational factors could affect the adoption of discontinuous technologies.

In summary, compared with innovation inputs, the findings of the relationship between family involvement and innovation outputs remain largely inconsistent and controversial. On the one hand, different samples used different methods to measure innovation outputs (Röd, 2016). Specially, in the context of publicly traded firms, studies tend to use patent counts to measure innovation outputs (Chin *et al.*, 2009; Czarnitzki and Kraft, 2009; Block and Spiegel, 2013). However, studies in the context of SMEs typically use products, services, or processes to measure innovation outputs (Westhead, 1997)(Westhead, 1997; Gudmundson, Tower, and Hartman, 2003; Craig and Dibrell, 2006; Llach and Nordqvist, 2010). On the other hand, though in the same context (e.g. SMEs), some studies found a negative relationship between family ownership and innovation outputs (Gudmundson, Tower, and Hartman, 2003), others have

converse arguments (Llach and Nordqvist, 2010). Moreover, an increasing number of scholars have started to explore the effect of heterogeneity in family businesses on innovation outputs (Chrisman *et al.*, 2014). It implied that further work should be focused on searching approaches or factors that enable improve the innovation outputs in family firms rather than ascertaining whether family firms are more innovative than nonfamily firms. Table 3.5 below summarises the key findings of selected articles on innovation outputs.

**Table 3.5** Overview of selected articles on innovation outputs in family firms

Author(s) and year	Sample	Theoretical framework	Aspect of innovation	Relevant findings
Beck and Kenning (2015)	142 consumers of German retailers	Resource-based view	New product acceptance (NPA) (Outputs)	Family firms image (FFI) has a positive effect on New product acceptance (NPA).
Block and Spiegel (2013)	526 medium- to large-scale family firms in innovative industries	Resource-based view	The number of successful patent applications (Outputs)	Regions with a higher family firm density also show higher levels of innovation outputs
Block <i>et al.</i> (2013)	248 firms in the S&P 500	Behavioural agency theory	Patent citations (Outputs)	In order to pursue SEW, family-managed firms receive fewer patent citations than nonfamily firms.
Chang <i>et al.</i> (2010)	181 Taiwanese listed firms	Agency theory	Innovation announcements. (Outputs)	Firms with greater family control experienced significantly more negative stock market reactions to innovation announcements.
Chin <i>et al.</i> (2009)	317 Taiwanese listed firms in the electronic industry	Agency theory	Patent quantity and quality (Outputs)	Due to the tight control, family firms could reduce firms' innovativeness.
Craig <i>et al.</i> (2014)	532 Finnish firms.	Resource-based view	The share of total revenue created by new products. (Outputs)	Proactive family firms influence their innovation outputs more positively than proactive non-family firms.
Cucculelli <i>et al.</i> (2016)	220 Italian manufacturing SMEs	Agency theory	Patent citations (Outputs)	To control R&D spending, family-managed firms receive fewer patent citations compared with other firms.
Czarnitzki and Kraft (2009)	279 German joint-stock companies	Agency theory	Patent applications (Outputs)	Firms with broadly distributed capital shares have more patent applications than firms with concentrated capital ownership, like family firms

Kashmiri and Mahajan (2014)	107 publicly listed U.S. family firms	Agency theory	New product introductions (Outputs)	The presence of the founding family's name as part of a family firm's name acts as a valuable firm resource, increasing the abnormal stock returns surrounding the firm's new product introductions.
König, <i>et al.</i> (2013)	N/A	4Cs model (continuity, community, connections and command)	Discontinuous Technology (Outputs)	Although highly family-influenced companies recognize discontinuous technologies later than their less family-influenced counterparts, they implement adoption decisions more quickly and with more stamina.
Kraiczy <i>et al.</i> (2015)	114 German family SMEs in manufacturing industries	BAM	New product portfolio innovativeness (Outputs)	CEO risk-taking propensity has a positive effect on new product portfolio innovativeness, and it is stronger in family firms.
Matzler <i>et al.</i> (2015)	136 German listed firms	Agency theory, Resource-based view	Patent counts and the forward citation of patents (Outputs)	Family participation in management and governance has a positive influence on innovation outputs.
Westhead (1997)	427 U.K. independent unquoted companies	Resource exchange theory, Population ecology theory, Economic theory Traditional, Strategic management theory Strategic	Product and service innovations (Outputs)	Family firms tend to offer a boarder range of product and service innovations than their nonfamily counterparts.



### 3.4.2 The paradox of family firm innovation

As discussed above, decades of research on innovation of family firms has reported inconclusive findings. Consequently, a deeper understanding of family business innovation is required. To respond to this need, De Massis and his colleagues proposed the ability and willingness paradox (De Massis *et al.*, 2014; Chrisman, Chua, *et al.*, 2015). They argued that family firms have the superior ability but a lower willingness to innovate than nonfamily counterparts.

The paradox is concerned with two drivers of family firms' capacity to innovate: ability and willingness. These two drivers lead to the differences in performance and behaviour between family and nonfamily firms (Chrisman, Chua, *et al.*, 2015). Ability is defined as "the discretion to direct, allocate, add to, or dispose of a firm's resources" (De Massis *et al.*, 2014, p.345). The family owners' discretion stems from family involvement in ownership, governance and management. Generally, family firms tend to have more discretion to act than nonfamily counterparts, which could have an impact on firm behaviour. In contrast, willingness is defined as 'favourable disposition of family owners to engage in behaviours that influence the firms' behaviours and direction' (De Massis *et al.*, 2014, p.346). It includes families' idiosyncratic goals, intentions and motivations, which influence the direction of family firms (De Massis *et al.*, 2014). Compared with ability, willingness has a weaker relationship with family involvement. For instance, firms with the same family involvement may have different self-identification, different intentions to pass the company to the next generation, and different desires to preserve SEW (Schulze, Lubatkin and Dino, 2002). Thus, due to the weak relationship, willingness is not necessarily accompanied by family involvement.

The ability and willingness model was based on a general idea which indicated that although family involvement in ownership, management and governance

may provide firms with unique abilities and a broader range of goals (Chrisman and Patel, 2012), they will not necessarily lead to family-oriented particularistic behaviour (De Massis *et al.*, 2014). Put differently, family firms show family-oriented particularistic behaviour only if ability and willingness are present at the same time. One reason why previous studies reported mixed results is that their models ignored that ability and willingness are the necessary and sufficient conditions for family firms' behaviours. Overall, the ability and willingness paradox is a powerful framework to explain the heterogeneous innovation behaviour of family firms (Hauck and Prügl, 2015).

The ability and willingness paradoxical effect is echoed in many recent studies. Building on a meta-analysis of 108 primary studies from 42 countries, Duran *et al.* (2016) found that family firms invest less in innovation but have higher innovation outputs than nonfamily firms. They argued that idiosyncrasies of family firms (wealth concentration, high-level control of firms, focus on non-financial goals) not only affect the innovation inputs but also innovation outputs of family firms. In the same vein, Matzler *et al.* (2015) investigated 134 publicly traded German firms and found that family management and governance have a negative impact on innovation inputs but a positive impact on innovation outputs. Moreover, by using a sample of 551 Spanish manufacturing SMEs, Diéguez-Soto, Manzaneque and Rojo-Ramírez (2016) found that family management could serve as the driver of the willingness and ability to influence technological innovation efficiency. They found that family management increased the conversion rate of innovation inputs into innovation outputs.

The ability and willingness paradox provides researchers with a framework to examine the impact of family involvement on innovation in family firms. In line with Chrisman *et al.*'s (2015) study, a growing number of scholars started to investigate how to resolve this paradox and build a competitive advantage

through innovation. For instance, De Massis, Di Minin and Frattini (2015) proposed Family-Driven Innovation to overcome the innovation paradox in family firms. They argued that a close fit between the heterogeneity of innovation decisions and the heterogeneity of the family firm's idiosyncratic characteristics could resolve the paradox in family firm innovation.

Similarly, to resolve the willingness and ability innovation paradox of family businesses and unlock their innovation potential, Rondi, De Massis and Kotlar (2019) investigated the interaction between the family and their businesses, and they argued that it is important to attain a fit between family business innovation posture and the family system dimensions. Moreover, Dieleman (2018) also contributed to resolving the ability-willingness paradox. He used a longitudinal case study to examine how family firms could convert inputs into greater outputs and found that family governance could facilitate the conversion rate of innovation inputs to outputs.

### **3.5 Summary**

This chapter has provided a comprehensive literature review on family business definitions, SEW and the emergent topics on innovation in family firms. Although the increasing understanding is developed, the knowledge of family business innovation is still limited (Röd, 2016; Manzaneque, Diéguez-Soto and Garrido-Moreno, 2018; Martínez-Alonso, Martínez-Romero and Rojo-Ramírez, 2019). It is unclear about distinctive innovative behaviours and the underlying mechanisms of family businesses, especially the conversion of innovation input to output. Moreover, most of the current studies on family business innovation focused on large organisations rather than family businesses (Matzler *et al.*, 2015). By reviewing the gaps in the literature, it is essential for this research to identify the need for the development of a new model to investigate the “black

box” of innovation in family businesses. The next chapter will build the theoretical framework to facilitate the development of the conceptual model for guiding the research.

## **Chapter 4 Theoretical Framework and Hypotheses Development**

### **4.1 Introduction**

The previous chapter discussed the understanding of the research context and the research gaps in the literature. Given that it is unclear about innovative behaviours and the underlying mechanisms in Chinese family firms, the purpose of this chapter is to develop the hypotheses regarding the impact of SEW and TMT behaviours on innovation in family businesses based on the adopted theoretical framework. As discussed above, the primary objective of this research is to further the current understanding of innovation in family firms, especially the conversion from innovation inputs to outputs. Stewardship theory and upper echelon theory are adopted by the study to explain the organisation behaviours. By drawing upon these two theories as the theoretical framework, this doctoral research proposes a conceptual model and develops nine hypotheses (H1a,b,c - H3a,b,c), examining how SEW influences innovation inputs, and the role of TMT behaviours between innovation inputs and outputs.

### **4.2 Stewardship Theory**

Stewardship theory defines a situation in which “managers are not motivated by individual goals, but rather are stewards whose motives are aligned with the objectives of their principals” (Davis, Schoorman and Donaldson, 1997, p.24). In family business research, stewardship theory has been intensively applied to explain governance and organisation-centred behaviours in family firms (Eddleston and Kellermanns, 2007; Davis, Allen and Hayes, 2010; Minichilli, Corbetta and MacMillan, 2010; Madison *et al.*, 2016; Arzubiaga *et al.*, 2018). According to Corbetta and Salvato (2004), stewardship theory is particularly

suitable for family firms to explain governance and organizationally centred behaviours in family firms. Stewardship theory suggests that organisational members tend to be collective, pro-organisational and trustworthy (Davis, Schoorman and Donaldson, 1997). Indeed, due to the deep emotional attachment and mutual trust among family members (Bubolz, 2001), family members are more likely to adopt the role of the steward in serving firms rather than being self-serving and self-centred. As a result, steward behaviours play a significant role in the organisational governance and outcomes of family firms.

According to stewardship theory, family owners tend to prioritise the family's best instead of the individual's interests (Davis, Schoorman and Donaldson, 1997). Therefore, they are more likely to subjugate personal goals to family goals (Chrisman *et al.*, 2007). Corbetta and Salvatto (2004) argued that the relationship between family owners and managers tends to be long-term and emotion-laden, which could motivate family managers to pursue owners' interests. Indeed, when stewardship is present in family firms, they tend to have a competitive advantage due to the organisational members' collectivistic attitudes, psychological commitment, and trustworthy behaviours (Corbetta and Salvato, 2004; Eddleston, Willi Kellermanns and Sarathy, 2007; Davis, Allen and Hayes, 2010), which could influence on innovation in family firms.

Indeed, many scholars applied the stewardship theory to investigate innovation in family firms. For instance, drawing on stewardship theory, Eddleston, Kellermanns and Zellweger (2012) investigated entrepreneurship in family firms. They found that family-to-firm unity, which refers to the bond a family has with the firm, could facilitate the innovative and proactive behaviours of family firms. According to stewardship theory, stewards typically serve their organisations with their best effort (Davis, Schoorman and Donaldson, 1997). They noted that a firm with strong family-to-firm unity tends to be proficient at matching jobs with

employee skills and abilities, which contributes to a better understanding of human capital and shares learning. As such, entrepreneurial activities could be facilitated. Moreover, the high level of family-to-firm unity could promote the steward environment, which supports employee collaboration and information exchange (Eddleston, Kellermanns and Zellweger, 2012). To be more specific, strong family-to-firm unity encourages employees to share their information and innovative ideas, enhancing the innovation efficiency in family firms. Similarly, Dibrell and Moeller (2011) examined why family firms are more successful at innovating than their nonfamily counterparts. They argued that stewardship culture is a composite operant resource (Zahra *et al.*, 2008), which improves the efficiency of organisational innovation in family firms through marketing efforts.

Zahra *et al.* (2008) argued that stewardship could lead to long-term orientation in family firms. Firms with long-term orientation tend to favour time-consuming activities, such as innovation (Zahra, Hayton and Salvato, 2004). According to stewardship theory, stewardship-orientated family members are more likely to pursue the long-term well-being of the firm rather than short-term gains (Corbetta and Salvato, 2004). On the one hand, long-term-oriented family firms have the potential to enhance research and development of new technology and products (Miller and Le Breton-Miller, 2005), which promotes entrepreneurial behaviours (Zahra, Hayton and Salvato, 2004). On the other hand, long-term orientation also leads to continuity concerns in family firms (Ford, Ford and D'Amelio, 2008). In that case, family firms may deter risky and uncertain actions regarding innovation, preferring predictable and cautious actions (De Massis, Kotlar, Frattini, *et al.*, 2015).

Another key component of the stewardship perspective in the family business is altruism (Eddleston and Kellermanns, 2007). According to Cabrera-Suárez,

De Saá-Pérez and García-Almeida (2001), family firms are characterised as altruistic. More specifically, compared with members of nonfamily firms, family members tend to have more commitments to their organisation and are highly dedicated to the business (Beehr, Drexler and Faulkner, 1997). Consequently, altruistic family members adopt the role of steward in family firms. In line with the stewardship theory (Davis, Schoorman and Donaldson, 1997), family firms with altruistic members are more likely to have a collectivistic orientation. In that case, family members are motivated to serve their organisation and consider the effect of their actions on the firm (Corbetta and Salvato, 2004). Additionally, Eddleston and Kellermanns (2007) argued that altruism could reduce relationship conflicts in family firms. Conflicts within the family firms typically lead to insufficient attention to business needs and reduce the efficiency of the decision-making process (Beckhard and Gibb Dyer, 1983). They found that the altruism of family firms may reinforce family members' interdependence and motivate them to place the firm's interests ahead of their own. Such commitment to the family and the firm may foster loyalty and strengthen family bonds among family members (Corbetta and Salvato, 2004). When family firms have a high level of altruism, family members tend to be considerate of each other, and the relationship conflicts could be minimised. In particular, TMTs of family firms are more trusting, more cooperative, and less suspicious when altruism is high (Ensley, Pearson and Amason, 2002). Accordingly, such TMTs may experience the least amount of relationship conflicts, which enhances the cohesion and effectiveness of TMTs in family firms. Moreover, altruism could enhance family involvement and participation in family firms (Zahra, 2003). According to stewardship theory, family firms with a high level of altruism tend to have collectivistic culture (Kellermanns and Eddleston, 2004), which suggests that family members should work jointly to achieve the firms' objectives (Zahra, 2003). Indeed, this collectivist culture enhances the degree



of cooperation and collaboration of family members in the decision-making processes (Zahra, Hayton and Salvato, 2004).

Moreover, family firms can develop a competitive advantage where stewardship pervades (Eddleston, Kellermanns and Zellweger, 2012). According to Davis, Schoorman and Donaldson (1997), businesses considered to exhibit a stewardship spirit are likely to be collectivist oriented. Stewardship theorists claim that staff members act as stewards, rather than agents, to work diligently to achieve organisational goals. Staff are also more likely to work closely together to define the strategic goals of the firm and develop efficient ways to accomplish them (Eddleston and Kellermanns, 2007), believing that “only through joint effort can the best solutions be identified and tested” (Zahra *et al.*, 2004, p. 365). Despite that not all family firms embrace stewardship culture in their organisations, those where stewardship permeates may develop competitive advantages (Eddleston, Kellermanns and Zellweger, 2012). For instance, family firms with a stewardship culture tend to pursue long-term benefits rather than short-term gains (Corbetta and Salvato, 2004). Family members are more willing to sacrifice and invest resources to maintain the sustainable development of the firm (Dibrell and Moeller, 2011). In that case, they enjoy patient capital investments (Sirmon and Hitt, 2003) and have the chance potential to enhance the research and to development of new technology and products (Miller and Le Breton-Miller, 2006). Additionally, social interactions usually provide family members with a better understanding of their human capital. As such, a stewardship culture may promote employee collaboration and information exchange, which enable family firms to capitalise on employee skills and abilities (Eddleston, Kellermanns and Zellweger, 2012).

Moreover, trust can be easily fostered in a stewardship pervasive setting. Interpersonal trust in businesses may trigger individuals to share their social

networks, whereas extended and enriched social networks are conducive to information absorption (Zahra and Sharma, 2004). Trust may further help in information inspection. High-quality personal relationships may create a collaborative atmosphere and enable the firm to analyse technological and market information through a comprehensive approach. In addition, trust may enable information assimilation and minimise information asymmetry, thus enhancing the effectiveness and efficiency of information dissemination across employees (Davis, Allen and Hayes, 2010). According to Davis, Schoorman and Donaldson (1997), trust could be viewed as a situational mechanism of stewardship, and it can be higher in family firms due to the “family language” that comes from tight family relationships (Tagiuri and Davis, 1996). Moreover, the commitment to the family and the firm may foster loyalty and strengthen family bonds among family members (Corbetta and Salvato, 2004). When family members adopt the role of steward, they tend to be considerate of each other and minimise relationship conflicts, which enhances cohesion and effectiveness (Zahra *et al.*, 2008). Furthermore, stewardship culture is not only demonstrated in family members, but it also can be cultivated in nonfamily managers in the organisation (Madison *et al.*, 2016). For example, Bormann, Backs and Hoon (2021) argued that dominant family values usually permeate the organisation. In that case, individuals’ stewardship behaviours, including family and nonfamily members, tend to be driven more strongly by stewardship culture across family firms than their nonfamily counterparts.

This thesis adopts stewardship theory as one of the theoretical frameworks to investigate innovation in Chinese family businesses. As mentioned in Chapter one, the first research question of this study is to investigate how SEW influences innovation inputs. According to Gómez-mejía *et al.* (2007), the desire to preserve and pursue family centred noneconomic goals is a key feature of family firms. The endowment derived by utilising these noneconomic goals is

SEW (Gómez-Mejía *et al.*, 2007; Miller and Le Breton-Miller, 2014). Chua, Chrisman and De Massis (2015) suggested that family firms are more likely to use SEW and the future flow of SEW-related resources as the reference points to evaluate major decision-making. Stewardship perspectives could provide novel insights into the decision-making process of innovation investments, explaining how family businesses make SEW-related decisions (Madison *et al.*, 2016). Additionally, the second research question of this study is regarding the role of TMT behaviours in the conversion from innovation inputs. Family firms can develop a competitive advantage where stewardship pervades (Eddleston, Kellermanns and Zellweger, 2012). Stewardship perspective holds that TMT members in a family firm often behave as stewards and treat the firm “as a means to benefit all the stakeholders” (Chirico and Bau, 2014, p. 211). In that case, TMT members act as stewards are more likely to work closely together to define the organisation’s strategic goals and develop efficient ways to accomplish it (Eddleston and Kellermanns, 2007). According to Davis, Schoorman and Donaldson (1997), the most recurring qualities of stewardship behaviour are trust, involvement, collectivism, commitment and long-term orientation. As such, employing the stewardship perspective could provide a comprehensive theoretical lens, enabling to better understand the impact of TMT behaviours during the conversion from innovation inputs to outputs.

### **4.3 Upper Echelon Theory**

Another theoretical framework for this thesis is the upper echelon theory. Over the last several decades, the research interests in top management executives of organisations have increased. The empirical study of this topic can be traced back to the seminal work of Hambrick and Mason (1984), who described organisational outcomes as "reflections of the values and bases of powerful actors" in organisations (Hambrick and Mason, 1984, p.193). They argued that

top executives play a crucial role in shaping organisation outcomes. TMTs, as the upper echelon of the firm, have the most influence on strategic decisions, culture and the overall tone of the organisation (Carpenter, Geletkancz and Sanders, 2004; Hambrick, 2007). Organisational actions could be the reflections of TMT behaviours, attitudes, and cognitive biases (Hambrick and Mason, 1984). As such, the effect of TMT-related factors on strategic decision-making is essential for understanding the behaviours of organisations and their impact on organisational outcomes (Alexiev *et al.*, 2010). Over the past three decades, considerable empirical research has grown in this area, confirming that managerial idiosyncrasies significantly influence organisations' strategic behaviours and outcomes (Zimmerman, 2008; Boone and Hendriks, 2009; Nielsen and Huse, 2010).

Upper echelon theory has also received considerable attention within the family business research domain. Because family involvement influences TMT processes significantly, behaviours of the upper echelon in family businesses differ from their nonfamily counterparts (Chrisman, Fang, *et al.*, 2015). As such, it is interesting to adopt the upper echelon perspective to provide new insights into the impact of TMT on organisational strategy and performance. Among early studies, the perspective of upper echelon theory suggests that behaviours and psychological attitudes of upper echelons are easily captured by demographic characteristics, such as age, education, and background (Hambrick and Mason, 1984). However, Pettigrew (1992) challenged this view and called for the explicit examination of the board process. He noted that there is no direct evidence of the link between structural board elements and performance measures. Given that the upper echelon group is usually complex and intertwined (Bammens, Voordeckers and Van Gils, 2011), it is necessary to move beyond board structure and investigate what matters for board process and mechanism. In terms of the board process, it usually has both

psychological (e.g. trust, conflict) and actual behaviour dimensions (e.g. debating, informing, questioning) (Bammens, Voordeckers and Van Gils, 2011).

Forbes and Milliken (1999) developed a model based on the behavioural perspective. They argued that the extent to which a board task succeeds in performing depends on the decision process, such as the use of knowledge and skills, cognitive conflicts and effort norms. Building on Forbes and Milliken's (1999) model, many studies began to explore the role of TMT behaviours in family businesses (Ensley and Pearson, 2005; Kellermanns and Eddleston, 2007; Bettinelli, 2011; Zona, 2015). The studies generally suggest that higher levels of board processes naturally and directly translate into higher efficiency and better decision outcomes. For instance, Zattoni, Gnan and Huse (2015) used a sample of 421 Norwegian non-public medium-sized and small firms to investigate the impact of internal board process on board task performance in family-controlled SMEs. They found that family involvement plays a significant role in the board internal process. Specifically, family involvement has a positive influence on the use of knowledge and skills, while a negative one is on cognitive conflicts. At the same time, they also found a positive relationship between the board processes and board effectiveness. Likewise, Zona (2015) examined a sample of 1000 Italian manufacturing firms and found that board processes are shaped by the life cycles of family firms. Specifically, they highlighted that higher cognitive conflicts could shape entrepreneurship in the company, which is beneficial to board outcomes. Moreover, drawing from upper echelon theory, Zona (2016) also examined how the impact of board processes on task performance is moderated by family versus nonfamily CEOs. He used a sample of 104 Italian family firms and found that the extent to which board process contributes to task performance depends on the cognitive frames of the CEO.

Furthermore, the extension of upper echelon theory research also applied to several additional facets of TMT behaviours, including TMT advice seeking (Alexiev *et al.*, 2010), TMT behavioural integration (Simsek *et al.*, 2005), TMT entrepreneurial drive (Wood and Michalisin, 2010), and TMT risk-taking (Kraiczy, Hack and Kellermanns, 2015). Collectively, these studies support a strong influence of TMT behaviours on organisational outcomes. For example, Alexiev *et al.* (2010) examined the influence of advice-seeking behaviours in TMT on organisational outcomes. By using a sample of 705 family-controlled SMEs in the Netherlands, they suggested that both external and internal advice seeking is an important determinant for a firm's innovation. Particularly, the heterogeneity of TMTs could facilitate firms to combine diverse perspectives and develop new products and services. In the same vein, van Doorn, Heyden and Volberda (2017) developed a model based on the upper echelon theory, investigating how TMT can enhance entrepreneurial orientation. They argued that combining external advice seeking with absorptive capacity could achieve a higher level of entrepreneurial orientation.

Additionally, Rosenkranz and Wulf (2019) introduced behavioural integration of the TMT as a relational governance mechanism in family firms. Behaviour integration draws on upper echelon theory and includes three types: collaborative behaviour, information exchange, and joint decision-making (Hambrick, 1994). They argued that behavioural integration could foster mutual trust, commitment, and goal alignment among family TMTs, which has a positive effect on firm performance. To be more specific, the transgenerational control and altruism in family firms could have a positive effect on knowledge exchange and task conflict (Eddleston and Kellermanns, 2007), which makes the effect of behavioural integration further enhanced in family firms. Moreover, Allen, George and Davis (2018) explored the underlying process through which trust within family firm leadership contributes to firm performance. Drawing from

the upper echelon perspectives, they argued that trust within the leadership significantly influences the firm performance.

The theoretical foundation of this study situates upper echelon perspective for several reasons. Firstly, the upper echelon theory highlights the role of management discretion, which is important for family businesses (Carney, Zhao and Zhu, 2019). Especially in family-controlled SMEs, the effect of TMT behaviours on firm outcomes is significant due to the high level of family involvement in TMTs (Kraiczy, Hack and Kellermanns, 2014). In that case, it gives TMT more discretion to convert innovation inputs into new products or services. According to upper echelon theory, the strategic decision-making of TMT is based on their personal cognitions and interpretations of the environment. Therefore, investigating the effect of TMT behaviours in family businesses is essential to understand the innovation process. Secondly, upper echelon theory implies that TMTs are decision-makers and function through determining a firm's strategic decisions (Hambrick, 2007). However, few studies explore the role of TMT during the innovation process, especially the conduits by which TMT behaviours work during the innovation process. Additionally, the dynamic group process of TMTs might not simply be inferred from structural board elements. As such, the upper echelon perspective is appropriate for this study to explore TMT behaviours pertaining to the innovation process. Finally, upper echelon theory has been extensively applied to investigate the strategic decision-making of family businesses based on Western environments (Craig, Dibrell and Garrett, 2014; Ndofor, Sirmon and He, 2015; Tretbar *et al.*, 2016). Nonetheless, limited research on family businesses applied upper echelon perspective to investigate innovation in Chinese family businesses, resulting in a scarcity of empirical knowledge about TMT behaviours in this particular setting. Hence, it is imperative to probe how the internal behaviours of TMT influence innovation in Chinese family businesses.

#### 4.4 Background to the Conceptual Model

As it is mentioned in Chapter 3, the literature indicates that innovation in family businesses differs from that in nonfamily businesses (De Massis, Frattini and Lichtenthaler, 2013; De Massis, Kotlar, Campopiano, *et al.*, 2015). Overall, family firms seem to have the low intention to innovate (Chrisman, Chua, *et al.*, 2015), invest less in innovation (Röd, 2016), and engage in incremental rather than radical innovation (De Massis, Frattini, *et al.*, 2015). However, some researchers recently pointed out that family businesses invest less yet enjoy greater innovation outputs from their investments (Matzler *et al.*, 2015; Duran *et al.*, 2016; Diéguez-Soto, Garrido-Moreno and Manzaneque, 2018). For instance, the seminal work of Duran *et al.* (2016), based on a meta-analysis of 108 primary studies, concluded that family businesses invest less yet enjoy greater innovation outputs from their investments. They attributed this efficiency to superior monitoring, advanced tacit knowledge, and trusted external networks (Duran *et al.*, 2016). Similarly, De Massis, Frattini, *et al.* (2015) claimed that family firms tend to have a dual nature as both conservative and innovative. They are less willing to innovate while having more ability to do so.

Echoing Duran *et al.*'s (2016) studies, there has been an increasing interest in exploring the paradox of family business innovation (Matzler *et al.*, 2015; Sciascia *et al.*, 2015; Diéguez-Soto, Manzaneque and Rojo-Ramírez, 2016; Diéguez-Soto, Garrido-Moreno and Manzaneque, 2018). For example, Diéguez-Soto, Garrido-Moreno and Manzaneque (2018) proposed a model to examine the process of innovation and the mediating role of family management in the relationship between innovation inputs and outcomes. They found that family management could increase the conversion rate of innovation inputs into outputs. Likewise, Matzler *et al.* (2015)'s model focused on the influence of family firm heterogeneity on innovation inputs and outputs. They deconstructed family influence into ownership, management and governance,



testing how these three components predict innovation inputs and outputs. The results show that family influence has a negative impact on innovation inputs but a positive on innovation outputs. Moreover, Sciascia *et al.* (2015) built their model based on the BAM and investigated the relationship between family ownership and R&D intensity in family businesses. They found that long-term orientation increases the ability to invest in R&D in family firms while they are not willing to do so. Table 4.1 presents the key findings of the innovation paradox of family businesses.

While the recent stream has been made to investigate the innovation paradox in family businesses, it is still unclear about the unique conundrum of "do more with less" (Duran *et al.*, 2016). More researchers call for an in-depth understanding of the mechanism of how and why family business seems more efficient in their innovation. By critically reviewing the literature, a conceptual model has been drawn in this doctoral research. This model aims to investigate the relationship between innovation inputs and outputs of family firms from the SEW perspective. Compared with the models in the literature, this conceptual model has some unique characteristics. Firstly, although the ability and willingness is a powerful framework to explain the heterogeneity of innovation behaviours in family firms (Hauck and Prügl, 2015), there are few models that investigate how non-economic goals, and specifically SEW, drive innovation management (Padilla-Meléndez, Dieguez-Soto and Garrido-Moreno, 2015; Li and Daspit, 2016; Fitz-Koch and Nordqvist, 2017). The model of this study investigates the paradox of innovation from the SEW perspective and attempts to explore how SEW influences the innovation behaviour of family firms. Secondly, previous models are more likely to focus on only innovation inputs or outputs. A more fine-grained understanding of the conversion from innovation inputs to outputs still needs to be developed (Patel and Chrisman, 2014). This conceptual model attempts to present the process of transforming innovation

inputs into outputs, investigating what factors influence the process. Thirdly, some previous models simplify family management as the ownership of the family, which ignores the heterogeneity between family owners. This conceptual model explores the role of TMT behaviours in family business innovation, including the use of knowledge and skills, trust and cognitive conflicts. Based on the above justification, the various hypotheses are discussed and presented below.

**Table 4.1** Key findings of the innovation paradox of family businesses.

Author, year	Journal	Sample	Focus	Input	Output	Findings
Broekaert, Andries and Debackere (2016)	Small Business Economics	2604 European firms	The relationship between family ownership and R&D and organizational flexibility, and on how this translates into successful innovation.	Less	More	Family firms engage less in R&D but are more flexible in the way they organize and that this organizational flexibility enables them to successfully develop new products and even outperform nonfamily owned businesses when it comes to process innovation.
Diéguez-Soto, Garrido-Moreno and Manzaneque (2018)	Journal of Family Business Strategy	of 922 Spanish manufacturing firms.	Examine process innovation and the ultimate impact of family management on the relationship between innovation inputs and outputs.	Less	More	Family management increases the conversion rate of innovation inputs into process innovation outcomes.
Matzler <i>et al.</i> (2015)	Journal of Product Innovation Management	of 832 Germany firms	Examine how family ownership, management and governance impact on the innovation input and output.	Less	More	Family participation in management and governance has a negative impact on innovation input and a positive influence on innovation output.
Sciascia <i>et al.</i> (2015)	Journal of Product Innovation Management	of 240 small- and medium-sized Italian firms	Examine the relationship between family ownership and R&D intensity in privately held small- and medium-sized enterprises (SMEs)	Less	More	The relationship between family ownership and R&D intensity is negative when there is a higher overlap between family wealth and firm equity.
De Massis,	Journal of	N/A	Investigate how highly innovative family	Less	More	Niche focus and customer collaboration,

Audretsch, <i>et al.</i> (2018)	Product Innovation Management			firms flourish and achieve high innovation performance despite the severe financial and human capital resource constraints they face as compared with larger corporations.			globalisation strategy, preference for self-financing, long-run mindset, superior employee relations, and community embeddedness are the major six traits to allow German Mittelstand to efficiently orchestrate their resources to innovate and outcompete their competitors in the global market
Veider and Matzler (2016)	Journal of Family Business Strategy	of	N/A	Examine how the ability and willingness paradox of family firms shape organisational ambidexterity via the pursuit of both exploratory and exploitative innovation.	Less	More	The ability of family-controlled firms to arrive at organisational ambidexterity (OA) is contingent on their willingness to face family-related disadvantages via activities that allow for the reduction of flaws arising out of family-related particularistic constituencies.

## 4.5 Hypothesis Development

### 4.5.1 Socioemotional Wealth and Innovation Inputs

According to Miller, Le Breton-Miller and Scholnick (2008), firm-owning families usually process both financial dependence and affective attachment to their firms because of the intense connections between the family and the firm. Owing to the effective value that derives from family owners, family firms tend to behave in a different way compared to their nonfamily counterparts (Carnes and Ireland, 2013). Specifically, the dominant reference point for family members to make decisions could be the “family first” rather than “economic goals” first. These noneconomic endowments were captured by the concept of SEW, which is a unique home-grown theory of family business (Zahra, 2016). SEW refers to the noneconomic values and affective endowment of families obtained from their ownership or management position (Gómez-Mejía *et al.*, 2007). It focuses on the behaviour dimensions that are unique to family firms (Berrone, Cruz and Gomez-Mejia, 2012), which could help explain the heterogeneity of innovation in family firms.

As such, this study starts to investigate the variability of innovation inputs which are influenced by multiple dimensions of SEW, including (1) family influence and control, (2) identification of family members with the firm binding, (3) binding social ties, (4) emotional attachment, (5) renewal of family bonds (Berrone *et al.*, 2010; Berrone, Cruz and Gomez-Mejia, 2012). Below, this study will discuss the relationship between the different dimensions of SEW and innovation inputs in more detail.

#### ***Family influence and control***

Family influence and control of family members represent the extent of family members’ control over the decision-making in family firms (Ng, Dayan and Di

Benedetto, 2019). According to Berrone, Cruz and Gomez-Mejia ( 2012), family owners exert their influence and control over the firms through direct or indirect ways. For example, family owners may tighten their control over the firm through appointing family members to the key position or concentrating on the ownership of the firm.

Innovation inputs are usually considered the main determinants of technological innovation (Block and Spiegel, 2013). However, because innovation entails uncertain risks and needs continuous inputs to produce tangible outcomes (Kleinschmidt and Cooper, 1991), a high level of family influence and control may have a significant influence on the innovation inputs in family firms. Indeed, tight control in family firms is more likely to amplify conservative and risk behaviours associated with innovation inputs (Chirico and Bau', 2014), resulting in a low level of innovation inputs. Especially in family-controlled SMEs, the constraints on innovation inputs might be even more present (Gast *et al.*, 2018). In family business, maintaining control and influence over strategies and operations is a major priority (Chrisman and Patel, 2012). Family owners tend to maintain family control and influence over the decision-making process through concentrated ownership. Therefore, family firms are more likely to avoid any decisions that may put the family's control and influence at risk, which significantly impacts the behaviours of family owners (Cruz *et al.*, 2014).

To maintain a high level of family control and influence over the firms, family owners are more likely to invest their personal wealth in their firms (Carney, 2005). Therefore, family owners would be extremely cautious when jeopardising most of their financial stake in favour of innovation. Due to such loss aversion, family owners might adopt a conservative stance on innovation, which may lead to a low level of innovation inputs. Furthermore, tight family

control might result in group-thinking (De Massis, Frattini and Lichtenthaler, 2013) and strategic inertia (Minichilli, Corbetta and MacMillan, 2010), thereby lowering their willingness to innovate. Family members usually have common behavioural norms and similar backgrounds (Arzubiaga, Maseda and Iturralde, 2019). The overrepresentation of family management could lead to a lack of diversity and external points of view, which amplifies myopic and path-dependent behaviours in family firms (Chrisman, Chua and Litz, 2004). As such, the path-dependent behaviours and organisational routines may cause them to become less explorative, reducing their willingness to pursue continuous innovation. Based on the abovementioned, the following hypothesis is suggested:

*H1a: In family firms, family influence and control have a negative effect on innovation inputs.*

### ***Identification of family members with the firm***

The identification of family members with the firms stems from the blurred boundaries between the family and the firm (Stevens, Kidwell and Sprague, 2015). According to Berrone, Cruz and Gomez-Mejia (2012), a family firm tends to be viewed as the extension of the family. In most cases, family members inevitably are tied with firms, especially when they carry the family's name. The intermeshing of family and firm could create a unique identity within family firms (Berrone, Cruz and Gomez-Mejia, 2012). When family members obtain vocational fulfilment, economic dependence and socioemotional connection from family firms (Miller, Le Breton-Miller and Scholnick, 2007), they tend to have a strong identification with the firms. Such identification could have an influence on the family owners' attitudes towards risk, which may lead to a low level of innovation inputs.

According to the stewardship perspective, managers and owners of family firms are driven by more than purely individualistic and economic interests. Identification with and achievement of the firm's strategic mission could provide family members with intrinsic satisfaction and motivations, which facilitates their steward behaviours (Davis, Schoorman and Donaldson, 1997). Indeed, when family members have a strong identification with family firms, they tend to be sensitive about firms' reputations because their fortune and personal stratification are closely tied to the business (Le Breton-Miller and Miller, 2009). As such, family members are more likely to value the public image of the firm. Any threat to the firms' reputation could be a hazard to individual identity and the existence of family firms (Zellweger, Eddleston and Kellermanns, 2010). However, innovation often carries uncertain risks and the failure of innovations could damage the firm's reputation (Gast *et al.*, 2018). A high level of innovation inputs may put family's financial wealth, reputation, and its status at a high risk (Filser *et al.*, 2018). For example, an unsuccessful innovative product cannot guarantee the quality of products, disrupting customer's experience. In that case, family owners that identify with family businesses are more likely to preserve the status quo and have a less proactive attitude towards innovation inputs. Drawing on the line of argumentation, the following hypothesis is proposed:

*H1b: In family firms, family members' identification with the firm has a negative effect on the innovation inputs*

### ***Binding social ties***

Binding social ties refers to the social relations of family firms (Berrone, Cruz and Gomez-Mejia, 2012). According to Berrone, Cruz and Gomez-Mejia (2012), kinship gives rise to some collective social capital, relational trust, feelings of closeness and interpersonal solidarity in the closed network. Such close



bonding ties tend to expand to nonfamily employees as well as internal and external stakeholders in family firms (Miller and Le Breton-Miller, 2005), which facilitate access to knowledge and accelerate knowledge-sharing among network members (Sirmon and Hitt, 2003). By means of binding social ties, family members and diverse internal and external stakeholders encourage to share information, experience and social capital to enhance the level of innovation (Gast *et al.*, 2018). As such, the owners of family firms who assign a high priority to binding social ties are more likely to invest in innovation.

A high level of binding social ties may provide family firms with more opportunities to innovate, which could increase the willingness of family owners to invest in innovation. To be more specific, strong social ties with regulatory authorities, financiers and business communities could bring more opportunities for the development of firms, including access to contracts, policy supports, and softer financing terms (Arya and Salk, 2006). In that case, the capability of innovation in family firms could be improved, reducing the risk of innovation. Moreover, strong binding social ties tend to create an open attitude towards social capital and networks, which is advantageous for joint innovation with internal and external partners (Filser *et al.*, 2018). Especially in family-controlled SMEs, due to constraints on financial and human resources, they are more likely to rely on external collaborative partners to conduct innovation projects. Therefore, a high level of binding social ties could not only bring more opportunities for innovation but also enhance the firms' attitudes towards social capital, which may stimulate the willingness of family owners to invest in innovation. Based on the above arguments, this study proposes the following:

*H1c: In family firms, binding social ties have a positive effect on innovation inputs.*

### ***Emotional attachment***

A family's emotional attachment is determined by shared emotions, knowledge, history, and a range of jointly experienced events that influence how family members act at present (Gast *et al.*, 2018). Due to the blurred boundaries between the family and the firm, emotions tend to permeate the organisation, influencing the decision-making process of family firms (Baron, 2008). To be more specific, emotions are complicated and often give rise to a range of thoughts, motivations and behaviours, which sometimes outweigh rational considerations (Basco, 2013). When the emotional factors originating from family intermingle in the operation of the business (Eddleston and Kellermanns, 2007), they may have a significant influence on the decision-making process of family firms, including innovation.

According to stewardship theory, responsible devotion is one of the most significant aspects of stewardship (Le Breton-Miller, Miller and Lester, 2011). The intense emotional attachment to the firm usually reveals a strong sense of responsibility for the prosperity and continuity of the business (Lumpkin, Brigham and Moss, 2010). In that case, family firms are more likely to focus on the long-run survival of the firm (Miller, Le Breton-Miller and Scholnick, 2007). The setting for this study is China, which has a highly dynamic environment (Carney, Zhao and Zhu, 2019). Dynamic markets are characterised by changes in technologies and highly demanding the development of new products (Jansen, Van Den Bosch and Volberda, 2005). In that case, the application of the long-term horizon could drive family firms to be more entrepreneurial to support competition and survive in the market (Aragón-Correa and Sharma, 2003). To summarise the abovementioned reflections, the following hypothesis is suggested:

*H1d: In family firms, emotional attachment has a positive effect on innovation*

*inputs.*

### ***Renewal of Family Bonds Through Dynastic Succession***

The renewal of family bonds through dynastic succession refers to the desire to transfer the firm to further generations and protect the values, beliefs, as well as traditions over generations (Berrone, Cruz and Gomez-Mejia, 2012).. Indeed, such intentions to keep transgenerational sustainability is one of the central aspects of SEW, which involves transferring firm ownership and control to the next generation (Chrisman and Patel, 2012). According to Zellweger, Sieger and Halter (2011), maintaining the business for further generations is a key goal for family firms, which has significant implications for family firms' strategic decisions.

The stewardship perspective argues that family members view themselves as stewards of the firm and view the firm as something that could be bequeathed to their descendants (Chirico and Bau', 2014). As such, they are willing to sacrifice extra efforts and invest resources to make the firm healthy and survive. The desire to transfer the firm to the next generations could create greater incentives for family firms to improve their ability to deal with the uncertainty, complexity and change emanating from the external environment (Arzubiaga *et al.*, 2021), especially in the context of China. In that case, a high level of renewing family bonds through intrafamily succession could boost innovation inputs to ensure the firm's future sustainability and competitiveness (Hermundsdottir and Aspelund, 2021). Furthermore, innovation investment usually requires years to pay off (De Massis *et al.*, 2013). The long-term orientation could enhance family firms' propensity to commit resources to innovation. As such, this study proposes the hypothesis:

*H1e: In family firms, the renewal of family bonds through dynastic succession*

*has a positive effect on the innovation inputs.*

#### **4.5.2 Innovation inputs and outputs**

As innovations come in many shapes and forms, it is difficult to find a universally shared conceptualisation or operationalisation (Varis and Littunen, 2010). According to the OECD's (2005) definition of innovation, there are four types of innovation: product, process, market, and organisational innovation. In contrast to large companies, serving attractive niches with innovative products is an important way that small and medium-sized companies stand out from the competition (Rosenbusch, Brinckmann and Bausch, 2011). Therefore, this study focuses on the development of new functions or features in a product or service in family businesses, which also refers to product innovation (Varis and Littunen, 2010).

Innovation inputs are concerned with a range of resources of a firm that is engaged with innovation (Lumpkin and Brigham, 2011), such as financial and human capital resources that are dedicated to innovation (Galende and De La Fuente, 2003). They are usually considered as the precondition to innovation outputs because they bestow on firms a range of resources that is necessary to turn the research projects into new products and services (Hambrick and Macmillan, 1985). For instance, innovation inputs could be investments in acquiring knowledge and technologies from external sources, including clients, suppliers, competitors, universities, or research institutes (Miller, Le Breton-Miller and Scholnick, 2007). For family-controlled SMEs, this could be an essential resource for them to innovate due to the wobbling technological infrastructure (Guo, Zheng and Liu, 2017). Especially in the emerging market, given the technologically disadvantaged position and the concern about intellectual property (Swike, Thompson and Vasquez, 2008), acquiring technologies from foreign countries is relatively common in China. By doing so,

family-controlled SMEs can swiftly apply new technologies to their existing products or services and adjust flexibly (Chen and Huan, 2022).

Moreover, recruiting highly skilled innovation personnel is also a crucial type of innovation inputs (Kohli and Gill, 2019). Especially in the early stage of new product development, highly skilled professionals are essential for new product innovation (De Jong and Vermeulen, 2006). Their deep expertise could enhance information absorption, assimilation and integration within family firms, which provides opportunities for new ideas on the products or services (Farace and Mazzotta, 2015). Given that family owners are more likely to appoint family members to key positions, such external innovation manpower compensates for the lack of internal innovation talents pool to a greater extent and enhances the level of mutual learning, which promotes the introduction of new products and services (De Massis, Frattini, *et al.*, 2015).

Another essential innovation inputs for family-controlled SMEs are expenditures on innovative activities. Expenditures on innovation activities usually focus on what is directly feasible (Arundel, Bordoy and Kanerva, 2008), including the purchase of advanced machinery, computer hardware and software; the acquisitions of patents and licenses; the training in relation to the introduction of new products or processes, the obtaining market research and feasibility studies, and so on (Lopez-Rodriguez and Martinez-Lopez, 2017). By investing in such innovation activities, family businesses can easily engage in product innovations pertinent to their existing products or services (Santamaría, Nieto and Barge-Gil, 2009).

In short, integrating these three types of innovation inputs builds the conversion process of innovation inputs into outputs (Diéguez-Soto, Garrido-Moreno and Manzaneque, 2018) By recombining and bundling these resources, a high level

of innovation inputs allows family-controlled SMEs to accumulate more innovation competencies (Caloghirou, Kastelli and Tsakanikas, 2004) and external knowledge, turning these resources into new products and services. To summarise the abovementioned reflections, the following hypothesis is postulated:

*H2: In family firms, innovation inputs are positively associated with innovation outputs.*

#### **4.5.3 Mediating effects of TMT behaviours on innovation inputs and outputs**

Although innovation inputs are the key determinant of innovation outcomes, the influence of innovation inputs on outputs is not immediately effective (Diéguez-Soto, Manzaneque and Rojo-Ramírez, 2016). Specifically, there are also some indirect effects between innovation inputs and outputs. Because innovation is associated with great risk, tedious processes, and uncertain outcomes (Chen, Ho and Hsu, 2013), merely processing isolated resources of innovation inputs alone does not guarantee the corresponding innovation outputs (Sirmon *et al.*, 2011). Resources attributed to innovation must be effectively managed to produce innovative outcomes (Diéguez-Soto, Garrido-Moreno and Manzaneque, 2018). According to the upper echelon theory, TMT usually represents the most influential group on top of firms (Hambrick, 2007) and the intersection between the family and the firm (Gersick *et al.*, 1999; Binacci *et al.*, 2016; D'Allura, 2019). Especially for family-controlled SMEs, TMT's risk behaviours and willingness to innovate directly affect innovativeness in family firms due to their flattened hierarchies (Kraiczy, 2013). Given the leading role of TMT in family firms (D'Allura, 2019), it is essential to understand how TMT behaviours shape the innovation process of family firms. Therefore, the following section explores the role of TMT behaviours in the conversion of

innovation inputs to outputs. Based on the high level of common understanding and the intense social relationships in a family firm context, this study focuses on three dimensions of TMT behaviours, namely, the use of knowledge and skills, trust, and cognitive conflicts.

### ***TMT's use of knowledge and skills***

TMT's use of knowledge and skills refers to the TMT's ability to tap into the knowledge and skills available and apply them to specific tasks (Forbes and Milliken, 1999). Family businesses often suffer from resource inadequacy and disadvantaged technological stances (Arzubiaga *et al.*, 2018). On the other hand, they have to update their knowledge and technological competency regularly to survive in the dynamically changing environment (Guo, Zheng and Liu, 2017; Wang and Beltagui, 2021). In this context, family businesses often rely on external technology from suppliers, research institutions, and even competitors to achieve innovation. In the past few decades, more and more innovation projects have spread throughout cross-organisational networks rather than remaining exclusively in individual firms (Manzaneque, Diéguez-Soto and Garrido-Moreno, 2018). According to Pérez-Luño *et al.* (2011), a single company cannot easily command the full range of expertise to satisfy the needs of innovative activities in a dynamic market. Therefore, it is liable for firms with complementary knowledge reserves to interact and combine their expertise and technological knowhow.

During the innovation process, continued innovation inputs help develop TMT's abilities in analysing external knowledge, recognising innovation related opportunities, and incorporating new external knowledge into existing products and services (Jansen, Van Den Bosch and Volberda, 2005). Lampert and Semadeni (2010) found that innovation investments can broaden the sources of obtaining external knowledge and skills and improve the opportunities to

identify new external knowledge bases. Similarly, Fleming and Sorenson (2001) argued that expenditures on acquiring external technologies can enrich firms' internal knowledge and technology base, allowing reconfiguration of diversified knowledge and technological knowhow.

Moreover, the TMT of a family business plays the “gatekeeper” role for knowledge inflow (Moilanen, Østbye and Woll, 2014). As innovation inputs improve the use of knowledge and skills in the TMTs, the potentials of the acquired external technology and knowledge can be better exploited (Rammer, Czarnitzki and Spielkamp, 2009; Kang, Jo and Kang, 2015). Through connecting, integrating and recombining diverse technologies (Galunic and Rodan, 1998), TMTs can combine existing technology knowhow in original patterns, achieving product innovations. For instance, by using their knowledge and skills, TMTs can analyse and understand new external knowledge, thereby recognising opportunities to apply to their existing products. By doing this, family businesses could build an efficient conversion process from innovation inputs to outputs. Therefore, this study hypothesises that:

*H3a: In family firms, the top management team's use of knowledge and skills positively mediates the relationship between innovation inputs and innovation outputs.*

### ***Trust within the TMT***

Given the added family value, trust is usually depicted as a unique characteristic of the family business (Corbetta and Salvato, 2004; Sundaramurthy, 2008; Eddleston *et al.*, 2010). In family businesses, family members usually occupy key managerial positions and served as stewards in the business (Corbetta and Salvato, 2004; Davis, Allen and Hayes, 2010). As such, superior trust between TMT members is more likely to be kindled due to



the shared history and kinships in the family (Carney, 2005). Trust is often viewed as “a key source of competitive advantage” (Steier, 2001). According to Discua Cruz, Howorth and Hamilton (2013), trust plays a significant role in intra-family cooperation as well as in promoting networks and collaborations. Specifically, the trust could form cooperation within the TMTs, which encourages TMT members to coordinate and accomplish the collective goals effectively (Zahra, Neubaum and Larrañeta, 2007).

During the innovation process, when family members develop a common understanding of reckoning innovation as their core business, they are more likely to allocate their efforts and work towards the collective goals for innovation. As such, the increased innovation inputs might lead to the collective efforts of TMTs, which foster stronger ties and reciprocity, as well as trust, among TMT members (Downe, Loke and Sambasivan, 2012). As a result, coordination and cooperation among cross-functional teams occur, enabling information flows, and prompting proactive ideas and problem solutions in the innovation process (Fulmer and Gelfand, 2012). In fact, innovation, due to its complexity (Welter, 2012), demands coordination across functional divisions. Trust among TMT members activates cooperation across divisions and reduces interdivisional conflicts (Griffin and Hauser, 1996; Brettel *et al.*, 2011). For example, trust among TMT could enhance the cooperation and communications between marketing and production departments. In that case, family firms could access more information on customers’ preferences or requirements, therefore developing more innovative products (Ying *et al.*, 2021). Based on this analysis, this study proposes the following hypothesis:

*H3b: In family firms, the trust within the top management team positively mediates the relationship between innovation inputs and innovation outputs.*

### ***Cognitive conflicts***

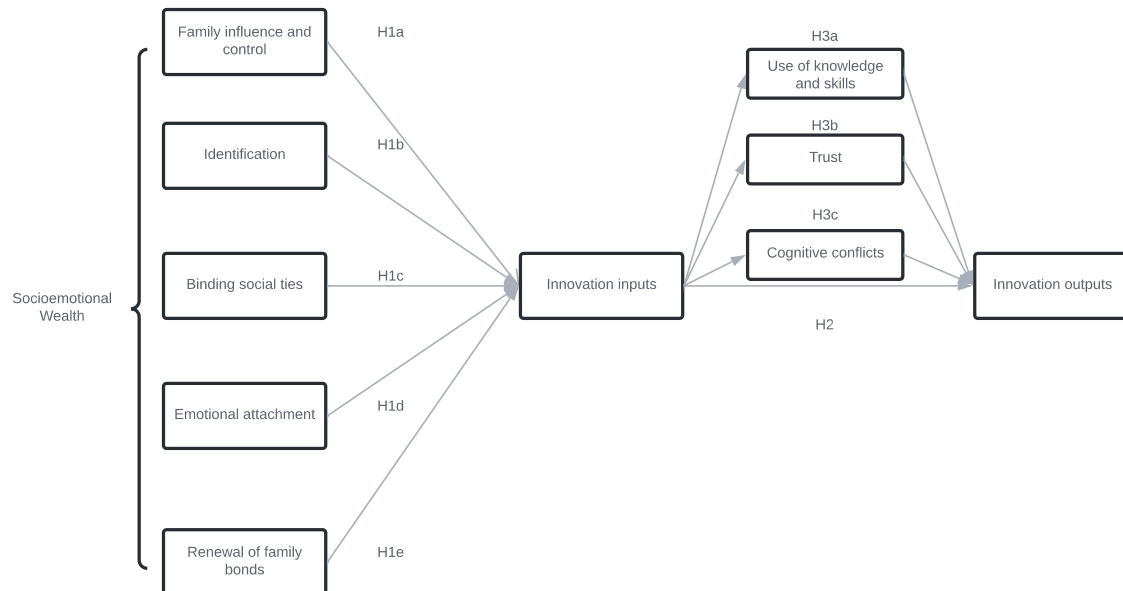
Cognitive conflict is generally "task-oriented and focused on judgmental differences about how best to achieve common objectives" (Amason and Sapienza, 1997, p.127). According to Ensley and Pearson (2005), cognitive conflicts are likely to arise between TMT members. Due to long-term interactions and family relationships, family members in TMT have developed an effective way to communicate, and they are likely to express their opinions openly (Tjosvold, Wong and Feng Chen, 2014). In that case, cognitive conflicts of TMT members could be viewed as an opportunity to exchange perspectives and debate on innovation inputs and outputs.

A high level of innovation inputs enables family firms to access diverse perspectives and trigger TMT cognitive conflicts. As indicated earlier, expenditures on innovation can help family firms broaden the sources of diverse perspectives, which can then be applied to new products and services (Rietzschel, Carsten and Nijstad, 2009). In this process, cognitive conflicts can easily occur within the TMT (Chai *et al.*, 2020). In the process of transforming innovation inputs into outputs, it is essential to modify and develop capabilities to match arising market opportunities quickly. The cognitive conflicts among TMT could be "an antidote to core rigidities", which forces the TMT to constantly to re-examine and challenge dominant perspectives within the firm (Leonard-Barton, 1995, p. 89). As such, TMT members with a high level of cognitive conflicts is more likely to express their differences openly and integrate them into new alternatives of action (Tjosvold, 2008; Tjosvold, Wong and Feng Chen, 2014), promoting changes (Claßen and Schulte, 2017) and innovation (De Clercq and Belausteguigoitia, 2015). In family businesses, common behavioural norms and similar backgrounds of family members usually lead to group thinking (De Massis, Frattini and Lichtenthaler, 2013). Cognitive conflicts in this context can help family businesses overcome confirmation biases in

decision-making (Leonard-Barton, 1995). Taken together, the following hypothesis is suggested:

*H3c: In family firms, cognitive conflicts positively mediate the relationship between innovation inputs and innovation outputs.*

**Figure 4.1** The conceptual model of this research



## 4.6 Summary

This research draws on the perspectives of stewardship theory and upper echelon theory to investigate the impact of SEW on innovation inputs and how TMT behaviours influence the conversion of innovation inputs to outputs. Stewardship perspectives claim that emotional attachment and identification with the firm can foster a sense of “togetherness” in the family context (Ng, Dayan and Di Benedetto, 2019), which positively motivate TMT behaviours in family firms (Le Breton-Miller and Miller, 2009; Zattoni, Gnan and Huse, 2015). Upper echelon theory suggests that organisational strategies and effectiveness are the reflections of values and cognitive bases of upper echelons (Vandekerckhof *et al.*, 2015). By combining these two theoretical perspectives, this doctoral research proposes a conceptual model, examining how SEW influences innovation inputs, and the role of TMT behaviours between innovation inputs and outputs. In the first section, the model draws SEW as the

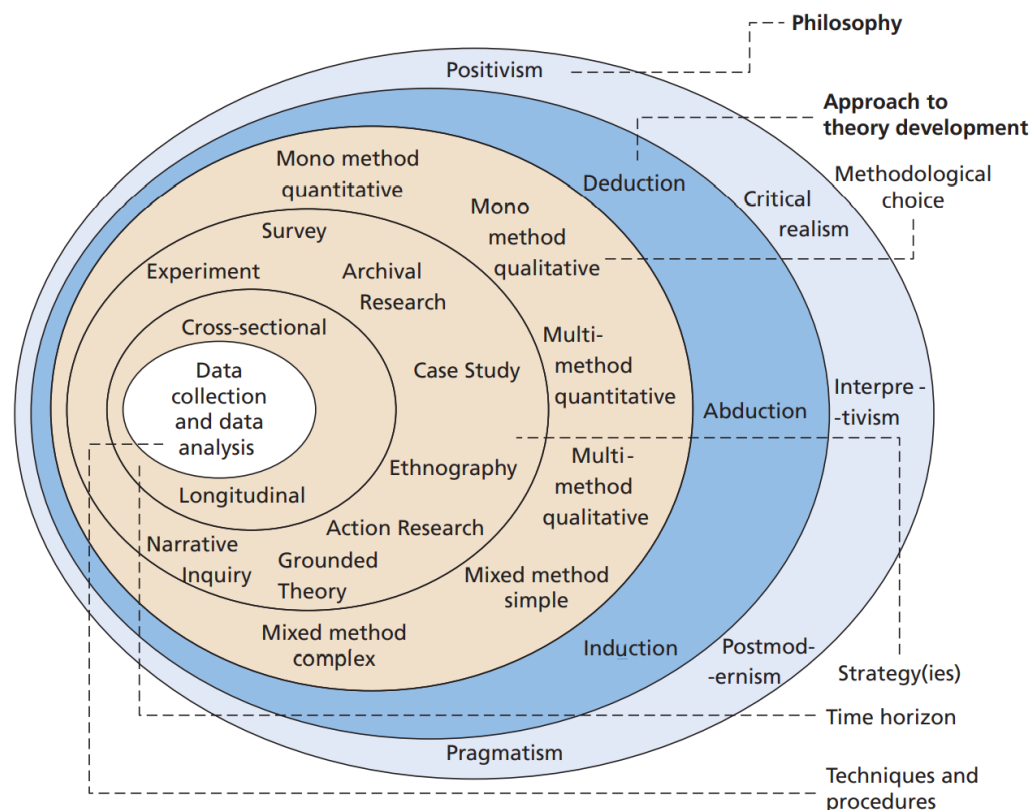
starting point, investigating how different dimensions of SEW impact the innovation inputs. Secondly, this model focused on the unique conundrum of family firms "doing more (innovation) with less (investment)" (Duran *et al.*, 2016). By examining the mediating effects of TMT behaviours during the conversion from innovation inputs to outputs, this research further unravels the "black box" of innovation. The next chapter will outline the methodology and methods used to test the model and the hypotheses outlined in this chapter.

## Chapter 5 Research Methodology

### 5.1 Introduction

The previous chapter discusses the conceptual model and hypothesis development of this study. By drawing on the extant literature review regarding the innovation paradox of family firms, this study develops the theoretical framework and the conceptual model further to investigate the complex relationship between innovation and family firms. This chapter discusses the research design, research approaches, research strategies and research methods, justifying the choices of this research. Furthermore, this chapter also focuses on the methods employed, including selecting respondents, collecting and analysing data. Figure 5.1 below shows the research onion.

**Figure 5.1** The Research Onion



Source: Saunders, Thornhill and Lewis (2012)

## 5.2 Research Philosophies/Paradigms

Research philosophy is defined as “the development of knowledge and the nature of knowledge” (Saunders, *et al.*, 2009, p.127). According to Bajpai (2011), research philosophies involve the source, nature and development of knowledge, determining the way in which data about a phenomenon should be gathered, analysed and used in a study. Therefore, identifying research philosophies/paradigms is an essential step for researchers to design their research and answer research questions (Easterby-Smith, Thorpe and Jackson, 2012).

Denzin and Lincoln (2005) argued that the assumptions that are relevant to the research philosophy are: ontology, epistemology, and axiology. Specifically, ontological assumption relates to the nature of reality (Bawden, 2004), which clears the difference between reality and the reality that people are perceived (Saunders, Thornhill and Lewis, 2012). Crotty (1998, p.10) defined it as "the science or theory of being", which helps researchers to know what the reality is and how it affects the environment, shaping the way in which they see and study the research objects (Goddard and Melville, 2004). With respect to assumptions about epistemology, it concerns what constitutes general acceptable knowledge and how it can be acquired objectively or subjectively (Burrell and Morgan, 1979). In social science, different types of knowledge could be considered legitimate, including numerical data, visual data, facts to interpretations, and stories (Saunders, Thornhill and Lewis, 2012). Epistemological assumptions could govern the legitimacy of the research (Crotty, 1998). In terms of axiology, Heron (1996) defined it as the role of values and ethics within the research process, which reflects the basis of researchers for making the judgement on the choices within the research. According to him, our values are the guiding reason for all human action.

Indeed, these philosophical assumptions are applied in the research through the use of paradigms, which are “basic set of beliefs that guides action” (Guba, 1990, p.17). In social science, they have given rise to a range of research paradigms, determining the entire course of the researcher’s project (Creswell, 2009). Prominent among these paradigms are positivism, realism, pragmatism and interpretivism (Saunders, Thornhill and Lewis, 2012). The section below will describe specifically each of them and justify the most appropriate one in this doctoral research.



**Table 5.1** Comparison of four research paradigms in business research management research

	Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)
<b>Positivism</b>	Reality is real; Facts exist and can be revealed	Scientific method; Observable and measurable facts; Law-like generalisations Numbers; Causal explanation and prediction as contribution;	Value-free research; Researcher maintains objective stance; Researcher is detached, neutral and independent of what is researched
<b>Interpretivism</b>	Complex, rich; Socially constructed through culture and language; Multiple meanings, interpretations, realities; Flux of processes, experiences, practices	Focus on narratives, stories, perceptions and interpretations, New understandings and worldviews as contribution	Value-bound research; Subjective; Researcher interpretations key to contribution; Researcher reflexive
<b>Critical Realism</b>	Satisfied/layered (the empirical, the actual); External, independent; Objective structures	Knowledge historically situated and transient; Facts and social constructions; historical casual explanation as contribution	Value-laden research; researcher acknowledges bias by work views; Minimise bias and errors; Objective
<b>Pragmatism</b>	Reality is the practical consequences of ideas; Flux of processes, experiences and practices	Practical meaning of knowledge in specific contexts; Focus on problems, practices and relevance; Problem solving and informed future practice as contribution	Value-driven research; Both objective and subjective view

Adapted from: (Creswell *et al.*, 2011; Saunders, Thornhill and Lewis, 2012; Bryman, 2016)

### **5.2.1 Positivism**

Positivism originated from “positivist philosophy” in the 19th century (Comte and Martineau, 1858), which attempts to explain what happens in the world by investigating the causal relationships between its constituent parts (Burrell and Morgan, 1979). As a philosophical research choice, positivists believe that all the acceptable knowledge is discovered and enquired by scientific process, which is supposed to be deterministic, mechanistic, independent, empirical and methodical (Baker, 2003). Remenyi (1998) emphasised that research should be limited to an objective and observable manner, which can reduce the dilution of excessive human engagement in the conduct of research. Therefore, positivist researchers are expected to focus on facts, formulate hypotheses based on a developed theory, and carefully decide on appropriate methodology.

According to Guba and Lincoln (2000), ontological assumptions of positivism argues that there is an external and objective reality in which inquiry can occur. In terms of epistemology, positivism assumes that investigators and the phenomenon are independent. These two different entities should not influence each other's results (Saunders, Lewis and Thornhill, 2009). Finally, positivism is value-free. As Crotty (1998) noted, positivists are trying to remain neutral and avoid influencing their findings. Due to the independent and objective stance, research must be conducted in a value-free way (Saunders, Lewis and Thornhill, 2009).

However, some researchers criticised positivism as it fails to consider human behaviours' influence (Campbell, 1978; Gould, 1981; Gill, Johnson and Clark, 2010). For instance, Campbell (1978) argued that positivism ignores the ontological differences between social sciences and natural sciences. The views of positivism towards the nature of social reality are inadequate, and fail

to construct or maintain social reality.

### **5.2.2 Interpretivism**

Saunders, Thornhill and Lewis (2012, p.142) defined interpretivism as “the way we as humans attempt to make sense of the world around us”. In contrast to positivism, interpretivism argues that research involving a social phenomenon is different from that of natural sciences (Bogdan and Taylor, 1975; Bryman and Bell, 2011). According to McCutcheon and Jung (1990), positivists explain events by real causes, while interpretivists understand them through transactions between one's mental work and the external context. The interpretivists believe that social situation is complex and ever-changing, which should get inside of research subjects' situations to understand their views (De Vaus, 2013).

Regarding the ontological assumptions of interpretivism, interpretivists argued that reality is perceived through intersubjectivity (Saunders, Thornhill and Lewis, 2012). They assumed that reality is subjective and can differ considering different individuals. Guba and Lincoln (2000, p.110) described the realities as "apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals and even across cultures), and dependent for their form and content on the individual persons or groups holding the construction". From the epistemological standpoint, Neuman (2000) argued that knowledge is based not only on observable phenomena but also on subjective beliefs, values, reasons, and understandings. Therefore, researchers should adopt an empathetic stance, attempting to understand the world of their research subjects (Saunders, Thornhill and Lewis, 2012). In terms of axiology, interpretivists believe that research is value laden. Smith (1983)

highlighted that it is unlikely for researchers to achieve complete objectivity in a study. Therefore, their value and beliefs play an essential role in interpreting complex, rich and multiple research materials and data.

However, Bogdan and Taylor (1975) pointed out that the interpretivism paradigm is less likely to generalise findings to a large population. To gain a deep understanding of phenomena within its complexity of the context, interpretivism tends to focus on the specific context of the research rather than generalise results to other people or contexts (Cohen, Manion and Morrison, 2013). Moreover, the objective ontological view of interpretivism could affect the interoperation of the research (Ryan, 2018). The belief system and cultural preferences of researchers may cause bias, which leaves a gap in verifying the validity and usefulness of research outcomes.

### **5.2.3 Critical Realism**

Realists asserted that there is a reality whose existence is independent of people's knowledge, experiences and perception (Sayer, 2000). Therefore, they argue that researchers should separate examining and finding the reality from their own experience (Bell, Alan and Harley, 2022). According to Reed (2005), critical realism argues that there are two steps to understanding the world. Firstly, using the sensation to experience the object or people. The second step is starting the mental process after the experience, trying to backwards the experience to understand underlying reality. For researchers, understanding the social structure that given risen to the phenomena could help investigate what is going on in the social world (Bhaskar and Varadan, 1989). Therefore, critical realist research tries to look into the underlying causes and mechanisms of the social structure that shapes everyday life, explaining observable events.

Regarding ontology, although critical realism and positivism both believe in the existence of an external and objective reality (Saunders, Thornhill and Lewis, 2012), critical realism further noted that, “we will only be able to understand- and so change- the social world if we identify the (unobservable) structures at work that generate those (observable) events and discourses....” These structures are not spontaneously apparent in the observable pattern of events; they can only be identified through the practical and theoretical work of the social scientists” (Bhaskar, 1975, p.150). Therefore, researchers could systematically identify the entities responsible for an event and describe the generative mechanism (Johnston and Smith, 2010). From the epistemological stand views, critical realists argued that it is unlikely to reveal completely and lead to a full understanding of any social situation (Woodside and Wilson, 2003). Therefore, Sharpe and Bhaskar (1976) pointed out that researchers could identify what we don’t see through practical and theoretical processes of social science. Indeed, critical realism tends to rely on employing different researchers to view data through different. In terms of axiology, realist against the positivist value-free. They argued that the real reality tends to be different from that of people’s perception. Therefore, realism focuses more on the values of human systems and of the researchers.

#### **5.2.4 Pragmatism**

Pragmatism is based on the notion of “what works”. Specifically, pragmatism is oriented toward solving practical problems in the real world rather than focusing on the nature of knowledge (Shannon-Baker, 2016). For instance, Patton (1990) pointed out that pragmatism tends to concentrate on what is applicable to finding a solution for a research problem. It attempts to reconcile “both objective subjectivism, facts and values, accurate and rigorous knowledge and different contextualised experiences” (Saunders *et al.*, 2009, p.203). In contrast to other

research paradigms, pragmatism represents a more flexible position (Babbie, 2020). According to pragmatism, researchers could combine various strategies, approaches and methods that serves to answer the research questions (Creswell, 2014; Biddle and Schafft, 2015).

The ontological stance of pragmatism argues that reality is external and multiple. Morgan (2014) pointed out that pragmatism is being subjective and objective simultaneously, which means it accepts both the existence of one reality and that individuals have multiple interpretations of this reality. Consequently, although it is important for pragmatists not to be affected by the phenomenon, understanding the social actors' points of view also plays a significant role (Johnson and Christensen, 2012). With the perspective of epistemology, pragmatists could deal with all sources of knowledge using suitable type of methods. Researchers could switch between being objective and subjective and in consequence switch between accepting observable and unobservable knowledge (Maarouf, 2019). For instance, on the one hand, researchers could describe reality in like-law generalisations for practical benefits. On the other hand, they can examine the research objective's perceptions for a deep understanding of this reality. Regarding axiology, pragmatic researchers argue that adopting any paradigms will not avoid biases. As a result, they are more likely to focus on their research objectives and use their values and experiences to enhance research results. However, some researchers criticised pragmatism for its underlying assumptions. For instance, Sale, Lohfeld and Brazil (2002) pointed out that pragmatism fails to address the issue of the differing assumptions of the quantitative and qualitative paradigms. They argued that the underlying assumptions of pragmatism might suggest that quantitative and qualitative methods are not studying the same phenomenon.

### **5.2.5 The philosophical stance of this study**

As discussed above, research paradigms define a researcher's philosophical orientation and have significant implications for every decision made in the research process. The previous sections have discussed four major paradigms in social science. Each of them provides researchers with beliefs and dictates, influencing how researchers design their research and answer research questions (Easterby-Smith, Thorpe and Jackson, 2012).

Pragmatism argues that human thoughts are intrinsically linked to action (Goldkuhl, 2012). People take actions based on the possible consequences of their actions, and they could use the results of their actions to predict the consequences of similar actions in the future (Kaushik and Walsh, 2019). Therefore, pragmatists believe that the world is not static, and it is changed through actions (Maxcy, 2003; Morgan, 2014). This study investigates innovative behaviours in family businesses. Specifically, this study attempts to look at the impact of SEW on innovation input and how top management team behaviours influence the transformation from innovation input into output. By focusing on how family firms' behaviours influence the innovation results, this study seeks to enhance the understanding of the innovation paradox in family firms. Based on the research objectives, this study chooses pragmatism as the philosophical stance. Specifically, the ontological, epistemological and axiological assumptions of pragmatism constitute the underlying philosophy upon which the study is based.

Ontology examines the underlying belief system of researchers about the nature of being and existence, which is concerned with the essence of the social phenomenon that is being investigated (Guarino, Oberle and Staab, 2009). From the ontological position of pragmatism, Morgan (2014) argued that

pragmatism accepts both the existence of one reality and that individuals have multiple interpretations of this reality. Similarly, Saunders, Thornhill and Lewis (2012) also noted that pragmatism recognised reality as external and multiple, and there is no single reality. As a result, pragmatists argue that there are many different ways to interpret the world and undertake research. Innovation in family businesses is a complicated social phenomenon. According to Nieto, Santamaria and Fernandez (2015), innovation is characterised by a high level of risk, the significant expenditure of resources and finance as well as complexity and duration. The implementation of innovation projects requires a range of entities that participate in it simultaneously (West and Gallagher, 2006). Therefore, a single point of view cannot provide the entire picture of innovation in family businesses. Combining family members' perceptions and attitudes towards innovation and the practical behaviours of family firms are more likely to understand the innovation paradox in family firms. Consequently, such multiple realities fit into this study context.

Furthermore, Cassell, Cunliffe and Grandy (2017) argued that pragmatism's ontological commitment is built within conceptual frameworks, and its continuing relevance relies on the pragmatic value. In particular, continuity and process are unifying themes in pragmatism. According to Simpson (2017), pragmatism rejects the foundationalist assumptions about knowledge, which is built on justified beliefs and immutable laws of nature. These laws are essential parts of revealing the complexities of nature. However, if nature is perpetually evolving, there is no enduring laws, entities or any other pre-determined stabilities. Therefore, pragmatists attempt to understand the continuity of nature through the dynamic interplays between each aspect (Mormann, 2012). In an ever-changing probabilistic world, family firms operate in an environment of uncertainty, where the economic and political conditions are constantly



changing (Casillas, Barbero and Sapienza, 2015). To understand the innovative behaviours of family firms, it is essential to adopt a more dynamic view of reality rather than immutable points.

From the perspective of epistemology, pragmatists argue that all knowledge of the world is based on experience (Ormerod, 2006; Biesta, 2010; Yvonne Feilzer, 2010; Goldkuhl, 2012; Morgan, 2014). Pragmatists believe that one's perceptions of the world are influenced by our social experiences. Therefore, each individual's knowledge is unique and created by socially shared experiences (Morgan, 2014). Such a view of epistemology draws from Dewey's concept of inquiry, which connects beliefs and actions through a process of inquiry. Instead of using dualism defining 'thing', Dewey recognised them as unfolding and interweaving histories, or trajectories (Dewey, 1938). He argued that inquiry is an investigation to understand some part of reality and create knowledge to bring change in that reality.

In contrast to traditional epistemic principals, pragmatism rejects the traditional philosophical dualism of objectivity and subjectivity (Biesta, 2010). It focuses more on the research problem and then uses all relevant and necessary research paradigms, approaches and methods to comprehensively understand the research problem (Rossman and Wilson, 1985; Patton, 2005; Creswell, 2014). Therefore, the epistemological stance of pragmatism attempts to reconcile both objectivism and subjectivism, which fits into the position of this study. This study primarily focuses on understanding innovation in family businesses. On the one hand, this study acquires objective knowledge regarding innovation by examining empirical evidence and hypothesis testing. Specifically, it is important to examine how five dimensions of SEW impact on innovation input and how behaviours of top management team moderate the

transformation process from innovation input and output. On the other hand, it is also essential for this study to create an understanding of what occurs, and what makes family owners engage in innovative activities. Their experiences, feelings and perceptions regarding innovation are relevant to their decision to engage in the innovation. Such thoughts and feelings are subjective in nature and less likely to obtain the whole picture via questionnaires. Therefore, both observable phenomena and subjective meanings can provide acceptable knowledge in this study, which suits the epistemological views of pragmatism.

According to Heron (1996), values are the guiding reason for all human action. Consistent with ontology and epistemology, the axiological stance of pragmatism focuses more on improving practice. Pragmatists adopt a wide range of research strategies, the choice of which is driven by the specific nature of their research problems (Morgan, 2014). This study is value-driven research, which initiated and sustained by concentrating on innovation paradox in family businesses. This study's purpose is to open the black box of innovation in family businesses, trying to find out how SEW impact on innovation input and what factors influence the transformation of innovation input into the output. Unlike natural sciences, the social sciences phenomenon is meaningful prior to the research process (Johnson and Onwuegbuzie, 2004). Such pre-understanding makes the foundation of quantitative research and directs every stage of the research process, including research topic, objectives, data collection, analysis and interpretation. On the one hand, the variables of this research reflect the pre-understanding of reality. For example, SEW reflects the major driver of key behaviours. On the other hand, the value-laden principle also adds more insight into the process of innovation, which enriches the subjective side of this research. Therefore, the axiology of pragmatism is suitable for this study, which focuses on research objectives and uses researchers' value to meet the

research requirement.

### **5.3 Research Approaches**

Given the discussion on the research philosophy above, it was evident that pragmatism is suitable for this study. Due to the strong link between research philosophy and research approach, understanding the underlying philosophical basis could help select the research approach of this study. According to Bryman and Bell (2011), a research approach involves a general orientation regarding theory and research. It is relevant to the process by which theories are generated and tested in social science research (Saunders, Thornhill and Lewis, 2012). Generally, there are three major research approaches, namely the inductive approach, the deductive approach, and the abductive approach. The section below discusses these three approaches.

#### **5.3.1 Inductive research approach**

An inductive approach is a bottom-up approach where a theory is developed from an initial data observation to determine theory explanation (Bryman and Bell, 2011). Bernard (2001, p.7) described it as an approach that "involves the search for pattern from observation and the development of explanations – theories – for those patterns through a series of hypotheses".

According to Neuman (2000), the inductive approach begins with detailed observations of the world, which moves towards more abstract generalisations and ideas. The inferences of the inductive approach are heavily dependent on the limited observable data (Hall and Hall, 1996). Making reference to Hempel and Oppenheim (1948), Bryman and Bell (2011) argued that one advantage of the inductive approach is to draw general conclusions based on very limited

observations. Moreover, Rowlands (2005) also noted that the inductive research approach provides a basis for the researcher to enjoy the freedom of not being constrained by prior theory, but the researcher instead makes the development of theory, propositions, and concepts constitute a research purpose to be pursued. This reflects the connections between the inductive research approach and the qualitative research method.

Furthermore, it is worthwhile to highlight that it is quite relevant in the context of understanding interpretivism. As Saunders, Thornhill and Lewis (2012) noted, due to its connection to humanities and its emphasis on the importance of subjective interpretations, the inductive approach is most likely to be informed by the interpretivism philosophy.

### **5.3.2 Deductive research approach**

In contrast to the inductive approach, the deductive approach is top-down research, moving from a general issue to a specific instance (Bryman and Bell, 2011). Hussey (1997, p19) defined deductive research as “a study in which a conceptual and theoretical structure is developed which is then tested by empirical observation; thus, particular instances are deducted from general influences.” According to Rowlands (2005), the deductive approach involves the development and testing of hypotheses. The research process with the deductive approach is based on existing theory, testing whether it still applies (Hyde, 2000). Therefore, the deductive approach is suitable for establishing the relationships between variables. Based on such characteristics, Dudovskiy (2018) pointed out that the deductive approach could help explain casual relationships between concepts and variables, generalising research findings to a certain extent. Such advantages of the deductive approach provide the basis for positivists and postpositivists (Creswell, 2003). Nevertheless, the

deductive approach has been criticised for lack of clarity in terms of how to select the theory to be tested via formulating hypotheses (Bryman, 2016b).

According to Rothchild (2006), the logic of the deductive approach could be stated as “inference by reasoning from generals to particulars,” or “the process of deducing from something known or assumed....” (Rothchild, 2006, p3). Given that the strong basis for conferring a given inquiry as scientific by the positivists and post-positivists, the deductive approach is usually associated with the quantitative research method. However, Trochim *et al.* (2006) challenged the dualist view that quantitative research is always deductive while qualitative research is inductive. They emphasised that qualitative research also can be used to confirm specific deductive hypotheses.

### **5.3.3 Abductive research approach**

The abductive approach is set to address weaknesses associated with deductive and inductive approaches. As noted above, the deductive approach aims to develop hypotheses based on existing theory (Wilson, 2010), while the inductive approach attempts to draw on a general conclusion based on limited observation (Bryman and Bell, 2011). However, the distinction between both two approaches may place the research process continuum at the opposite extremes (Parvaiz, Mufti and Wahab, 2016). Instead of moving from theory to data or from data to theory, the abductive approach “move back and forth between induction and deduction—first converting observations into theories and then assessing those theories through action” (Morgan, 2014, p71). With the abductive approach, both the inductive and the deductive approaches could be combined in the research to compensate for the weaknesses identified in each other (Dubois and Gadde, 2002). When following the abductive approach, researchers could combine numerical and cognitive

reasoning, seeking the best choice of explanation (Dudovskiy, 2018).

Moreover, Mitchell (2018) noted that the logic of abductive approach has basic links with pragmatic philosophy. They argued that by following a pragmatists perspective, the abductive approach takes incomplete observations from experience and reality that may lead to the best prediction of the truth and perhaps even to a new theory.

Table 5.2 below presents a comparison between three approaches.

**Table 5.2** The comparison between deduction, induction and abduction

	Induction	Deduction	Abduction
Logic	In an inductive inference, known premises are used to generate untested conclusions.	In a deductive inference, when the premises are true, the conclusion must also be true.	In an abductive inference, known premises are used to generate testable conclusions.
From/To	Generalise from the specific to the general.	Generalise from the general to the specific.	Generalise from the interactions between the specific and the general.
Use of data	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to evaluate propositions or hypotheses related to an existing theory.	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth.
Theory	Theory generation and building.	Theory falsification or verification.	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory.

Adapted from: Dudovskiy (2016); Saunders, Lewis, and Thornhil, 2005

#### **5.3.4 The justification of research approach**

Given the discussion above, each type of research approach works in the different research context and could lead to differences in research logic, data collection, and generalising. Therefore, the choice of the most appropriate research approach is based on understanding the research context.

This study focuses on investigating innovation in family businesses. The purpose of this study is to explore real-life information on the impact of SEW on innovation input and how TMT behaviours influence on the conversion from innovation input into the output. According to Kovács and Spens (2005), the abductive approach often starts with observing “surprising facts” or “puzzles”. In this study, the research begins with the surprising fact that there is a paradox in the innovation of family firms, which indicates that family firms might have the superior ability but lower willingness to innovate. This study builds up a conceptual model and develops nine hypotheses. The primary purpose of this study is to test and validate these hypotheses and explain them, which suits the abductive approach. Both the deductive approach and inductive approaches are suitable for this study. The deductive approach usually starts with a theory, followed by hypotheses, and research strategy (Bryman and Cramer, 2012). It is suitable for testing existing theory and possibly discover causal factors. On the other hand, the inductive approach begins with data collection and will be followed by the development of theoretical frameworks or explanation of data (Timmermans and Tavory, 2012).

As noted earlier, this study adopts the pragmatism as the research paradigm. Morgan (2014) argued that researchers with pragmatism typically employ the abductive approach, which indicates the links between the philosophy of pragmatism and abductive approach. The positivist research uses deductive

reasoning to confirm a well-established theory by employing data analysis (Saunders, Thornhill and Lewis, 2012). In contrast, interpretivism usually aims to develop a theory by adopting the inductive approach (Bryman and Bell, 2011). However, researchers with pragmatism refuse the opposite extremes on a research design and adopted abductive approach (Morgan, 2014). The abductive approach is typically “move back and forth between induction and deduction” (Morgan, 2014, p.71), which combines both approaches in a single study to compensate for the weaknesses identified in each other (Saunders, Thornhill and Lewis, 2012). According to Blaikie and Priest (2019), the deduction process is more likely to answer “what” questions. In this study, the deductive approach could help answer “what” questions, such as the impact of SEW on innovation input and what factors influence the transformation from innovation input into the output. This could build the foundation for the proceeding to study the structural relationships among SEW, innovation inputs and outputs. Additionally, due to the complication of innovation in family businesses, this study requires a flexible strategy and method to conduct a deep investigation of innovation paradox in the family business context. The inductive approach allows researchers to employ a flexible method, such as semi-structured interviews (Harding, 2018).

#### **5.4 Research Design**

Quantitative and qualitative research have always dominated mainstream in management research. According to Celo, Braakmann and Benetka (2008), quantitative and qualitative research clearly differ in terms of how data are collected and analysed. The quantitative research focuses upon the measurement in data collection and analysis, employing theory testing in which the relationship between theory and research is deductive (Bell and Bryman,



2007). As Leedy and Ormrod, 2001, p.102) states: "Quantitative researchers seek explanations and predictions that will generate to other persons and places. The intent is to establish, confirm, or validate relationships and to develop generalisations that contribute to the theory". By contrast, qualitative research emphasises the use of words over measurement during both data collection and analysis. The research findings tend to provide descriptive details and a contextual understanding of a particular social behaviour (Johnson and Onwuegbuzie, 2004b). Over time, some scholars realised that the qualitative and quantitative methods should complement rather than rival each other (Denzin, 1970; Jick, 1979; Tashakkori and Teddlie, 2003a). They developed the mixed method, which combines quantitative and qualitative methods and enhances validity through multiple complementary data.

Bryman (1984) argued that the choice of quantitative or qualitative research could be ascribed to the underlying philosophical and methodological assumptions. As discussed earlier, this study will adopt pragmatism as a philosophical stance. According to Tashakkori and Teddlie (2003), pragmatism is the best paradigm for mixed method research. They linked pragmatism and mixed method research and pointed out that research questions are more important than either the method or the theoretical lens, or paradigm, that underlies the method. Therefore, both quantitative and qualitative could be used in a single study. As Onwuegbuzie and Teddlie (2003) noted, the mixed method allows the researcher to use the strengths of both quantitative and qualitative analysis techniques to better understand phenomena. Therefore, this study will adopt a mixed method.

In implementing the mixed method, scholars have identified three main designs: sequential exploratory, sequential explanatory design, and concurrent

triangulation design (Creswell and Pioano Clark, 2007; Bergman, 2008). The section below entails these designs and justifies the appreciation for this study.

#### **5.4.1 Sequential explanatory design**

The sequential explanatory design is a two-phase mixed design. According to (Creswell *et al.*, 2011), the overall purpose is to obtain quantitative results, and then build or explain them using additional qualitative data. Specifically, in the first stage, researchers collect and analyse the quantitative data. In the following stage, researchers followed up with an in-depth qualitative study to explain why these results occurred. Tashakkori and Teddlie (2003) argued that such a design could provide a general understanding of the research problem. By exploring the views of participants, researchers could refine and explain those statistical results (Rossman and Wilson, 1985; Creswell and Pioano Clark, 2007).

Regarding the strength and weaknesses of the sequential explanatory design, a number of studies have been discussed in the previous literature (Ivankova, Creswell and Stick, 2006; Creswell and Clark, 2017). For instance, Morse (1991) argued that the explanatory design seeks to provide a better understanding of quantitative data, especially for those unexpected results. However, it also challenges the time consumption, the feasibility of resources, and the unequal sample size for each stage (Ivankova, Creswell and Stick, 2006).

#### **5.4.2 Sequential exploratory design**

The sequential exploratory design is opposite to the explanatory design. The sequential exploratory design begins with exploring the topic qualitatively and developing themes from their qualitative data. Building on the result of the qualitative phase, the purpose of the second stage is to develop an instrument,

identify variables, or state propositions for testing based on an emergent theory or framework (Creswell and Clark, 2017). The sequential exploratory design is usually used to explore a phenomenon, then quantitatively test elements of an emergent theory resulting from the qualitative phase in order that qualitative findings can be generalised (Morse, 1991; Morgan, 2014). According to Creswell and Piaoano Clark (2007), the sequential exploratory design is suitable for researchers to develop and implement quantitative instruments based on qualitative findings. This design is time-consuming, and the unequal sample size at each stage of the process is a weakness of this strategy (Creswell, 2014).

#### **5.4.3 Concurrent triangulation design**

In contrast to the sequential explanatory and the sequential exploratory design, the concurrent triangulation design is a one-phase design in which researchers implement both quantitative and qualitative methods during the same timeframe and with equal weight (Creswell and Piaoano Clark, 2007). The purpose of the concurrent triangulation design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) to best understand the research problem. In the process of triangulation, the data collection of quantitative and qualitative data typically occurs separately and concurrently (Creswell and Piaoano Clark, 2007). To merge qualitative and quantitative data sets, the concurrent triangulation design typically brings separate results together to interpret or transform data to facilitate the integrating process. Flick (2002, p.227) states that “triangulation is less a strategy for validating results and procedures than an alternative to validation which increases scope, depth and consistency in methodological proceedings”.

According to Howe (2012), the concurrent triangulation design not merely looks at the differences between quantitative and qualitative data sets, but also puts

different data sets into a more comprehensive explanatory framework. Moreover, collecting and analysing both quantitative and qualitative data in the same timeframe could achieve analytical convergence, confirmation (cross-validation), and corroboration in a single study (Creswell *et al.*, 2011). However, triangulation has been criticised for “subscribing to a naïve realism that implies that there can be a single definitive account of the social world” as well as for assuming that “sets of data deriving from different research methods can be unambiguously compared and regarded as equivalent” (Bryman, 2004, p.3).

#### **5.4.4 Justification of research method and designs**

Onwuegbuzie and Leech (2015) noted that the research method design should be based on the nature of the research problem. As stated earlier, this study focused on the innovation process in Chinese family businesses. The role of SEW and TMT behaviours in innovation are complex and multidimensional, especially in the context of an emerging economy like China. When determining the impact of SEW on innovation inputs and how TMT behaviours influence the innovation process, it is important to get information about quantitative and qualitative data. On the one hand, this study needs to investigate the relationships between five dimensions of SEW and innovation input, innovation input and output, and the mediating effects of TMT’s use of knowledge and skills, trust, as well as cognitive conflicts. On the other hand, this study also requires a comprehensive understanding of family owners’ attitudes towards innovation, which provides an in-depth understanding of the conceptual model.

According to Creswell *et al.* (2011), the concurrent triangulation design collected quantitative and qualitative data at roughly the same time and merged the two data into one overall interpretation. Such design overcomes the weakness of a single study, mitigating against their bias (Bryman and Cramer,

2012). As Creswell and Zhang (2009, p.213) observed, “This traditional mixed method model is advantageous because it is familiar to most researchers and can result in well-validated and substantiated findings.” In this study, the qualitative data, including relationships among SEW, innovation input, innovation output, and TMT behaviours, could be measured by applying the instruments or indicators that were gathered on a 5-point scale. The qualitative data, such as the family owners’ attitudes towards SEW and innovation, can be collected through semi-structured interviews. By employing multiple methods combining a survey instrument with qualitative interviews, this study could gain a deep understanding of innovation in Chinese family businesses.

Furthermore, the concurrent triangulation design is more suitable for the philosophical assumptions of this study. As discussed earlier, this study adopts the pragmatism paradigm. According to Creswell and Clark (2007), the assumptions of pragmatism are suited for guiding the work of merging both quantitative and qualitative data, which provides an umbrella worldview for the research study. The concurrent triangulation design typically involves collecting, analysing, and merging quantitative and qualitative data and results at one time, which may raise confusion regarding mixed philosophical assumptions. Pragmatism could solve this issue and provides an umbrella worldview for integrating the two sets of results (Creswell and Piao Clark, 2007).

Moreover, the concurrent triangulation design is an efficient design in which the collection of both quantitative and qualitative data occurs concurrent. This study focuses on innovation in Chinese family businesses. During the pandemic, health risks and travel restrictions have severely limited traditional mechanisms of data collection. According to the policy of the Chinese government, restrictions on movement and quarantine arrangements remain for travel

between different parts of China. Some cities and provinces need travellers from high to medium risk areas to undergo 14 days of isolation in their place of residence or in centralised observation. By applying the concurrent triangulation design, researchers can collect quantitative and qualitative data in one stage, enhancing efficiency and reducing risks for the study.

## **5.5 Sample Framework**

Sampling plays a significant role in the research process. According to Onwuegbuzie and Collins (2017), sampling design is a fundamental component of the research process. The inappropriate sampling design could lead to a lack of legitimization in the subsequent interpretation. In the mixed method research, the role of sampling is more complex because it must be chosen for both quantitative and qualitative components as well as their interface points (Collins, 2010). The population of this research is family businesses in China. The below section will entail the specific strategies of sampling in this doctoral research.

### **5.5.1 The research population**

According to Denzin (2010), a research population refers to all subjects with similar characteristics that meet the eligibility criteria in a study. In this doctoral research, the research population is family-controlled SMEs in China. The aim of this study is to investigate innovation in Chinese family businesses, especially for family-controlled SMEs. Family businesses are ubiquitous around the world and dominate the economic landscape in most countries (Schulze and Gedajlovic, 2010; De Massis, Frattini, *et al.*, 2018). Over the past four decades, the world has witnessed the rapid growth of the Chinese economy. The entrepreneurial behaviours of Chinese families were considered as one of the key driving forces (Whyte, 1996; Wang and Beltagui, 2021). According to Family Business Survey (Deloitte, 2020), more than 85 per cent of Chinese

private enterprises is family-owned, generating more than 50 per cent of the GDP and 80 per cent of jobs. The sample of this research is formed of Chinese family businesses, especially family-controlled SMEs. In China, the majority of enterprises are SMEs, which contribute to 80 per cent of the economy (Zhu, Wittmann and Peng, 2012). With the launch of the “SMEs promotion law” in 2003, understanding innovation became more important. Therefore, the sample of this research is formed of small and medium-sized family firms.

### **5.5.2 Sampling criteria**

This study focuses on how SEW influences innovation inputs and the role of TMT behaviours between innovation inputs and outputs in China. As such, the sample consists of family-controlled SMEs from China. The sampling criteria of this study include a) it must be a family business and b) it should be a small or medium-sized enterprise. This study identifies the sampling criteria through the definitions of family businesses and family SMEs.

As discussed in Chapter 2, this study adopts the COI approach to define the family business. Consistent with Leach *et al.*'s (1990) definition of the family business, this study relies on the following criteria: Families account for more than 50 per cent of the ownership of the firm, and/or a single family group effectively controls the business, and/or a significant proportion of the senior management is members from the same family.

The second sampling criterion relies on the definition of Chinese SMEs. According to SME Promotion Law of China (2003) and other regulations, the specific criteria of SMEs in China are applied across different industries (Zhang *et al.*, 2017). Table 5.3 below shows the Chinese criteria of SMEs in different sectors.

**Table 5.3** The Criteria of Chinese SMEs

Size Category	Industry	Chinese employment-based criteria of SMEs (number of employees)
Small	Industry	< 300
	Construction	< 600
	Wholesale	< 100
	Retail	< 100
	Transport	< 500
	Post	< 400
	Hotel & Restaurant	< 400
Medium	Industry	300- 2000
	Construction	600-3000
	Wholesale	100-200
	Retail	100-500
	Transport	500-3000
	Post	400-1000
	Hotel & Restaurant	400-800

Sources: SME Promotion Law of China (2003)

### 5.5.3 Sampling technique

This study follows a snowball sampling procedure. According to Johnson (2014), snowball sampling, also known as chain referral sampling, is a nonprobability of survey sample selection. It begins with a convenience sample of the initial subject. Then the initial subject serves as a seed, providing the link to subsequent participants, who in turn, also provide further links to further participants (Heckathorn, 2011). Finally, the snowball continues to expand until its numbers meet the requirement of the study (Patton, 1990).

The snowball sampling procedure has been widely used in research areas, including the family business research (Fiegener *et al.*, 1996; van der Merwe, Venter and Ellis, 2009; Bettinelli, 2011; Björnberg and Nicholson, 2012; Farrington, Venter and Boshoff, 2012). Biernacki and Waldorf (1981) noted that the advantage of snowball sampling is helping researchers locate members of



hidden populations via referral by network contacts. Noy (2008) emphasised that snowball sampling essentially used social networks to collect data. The participants are willing to take part in the research and make referrals to other potential participants because somebody they revere has referred them to the researcher. Therefore, they are more likely to provide rich and real information. Moreover, snowball sampling is a cost-effective approach that saves both time and money (Etikan, 2016). In many settings, this sampling procedure could be deployed to collect data in an efficient way. Nevertheless, Cohen and Arieli (2011) criticised the non-random nature of snowball sampling. They argued that the nominations of informants are subjective, which introduces potential bias.

In this study, both quantitative and qualitative sampling followed the snowball sampling procedure. The choice of snowball sampling was based on the context of this study. Due to the lack of an official database regarding Chinese family firms, attaining reliable information, and a priori identification of private family firms is challenging. Therefore, it is difficult to replicate the conventional representative sample survey used in the West (Wang, 2016). Moreover, according to the definition of the family business and TMT in this study, detecting a priori is difficult. Employing the snowball sampling could help to mitigate the challenge of access to the potential study participants, locating members of special hard-to-find populations via referral by network contacts (Saunders, Thornhill and Lewis, 2012).

## **5.6 Data Collection Process**

To achieve the objectives of this study, this study operates two major processes: quantitative data collection and qualitative data collection. As noted earlier, this study adopts the triangulation research design, which collects both quantitative

and qualitative data in the same timeframe. The associated data collection methods for methodological triangulation are a semi-structured interview, questionnaires, survey, observation, in-depth interview, visual and text analysis of data. The level of flexibility enjoyed in methodological triangulation helps researchers to mitigate against the weaknesses of other methods (Tashakkori and Teddlie, 2010).

In a time of unprecedented change and disruption due to COVID-19, researchers face unique challenges in data collection. Social distancing mandates are restricting traditional ways of carrying out investigations (Lobe, Morgan and Hoffman, 2020). Therefore, this study transit both quantitative and qualitative data collection to an internet-based way.

#### **5.6.1 Piloting and screening**

Pilot studies for both questionnaire survey and semi-structured interviews were conducted from June 2021 to July 2021, including three different SME managers and three academic researchers who focused on business management. This research applied the double translation (Douglas and Craig, 2007) to translate the questionnaire between English and Chinese. The survey questionnaire was first developed in English and then back-translated between English and Chinese. This process served to make sure the similarity of the two original language versions. As De Vaus (2013) noted, the wording of the questionnaire could impact the response reliability and validity of the response. Therefore, the survey questionnaire was reviewed by three researchers who focused on business management (one from the UK, two from China) to ensure the words and meanings of concepts were clear and appropriate. Moreover, the self-administered questionnaire used the previously developed and validated scale, with modifications to adapt Chinese context. The semi-structured

interview questionnaire integrated the specific secondary documents regarding the firms interviewed into the questionnaire to enhance the validity of the research, including information from the Tianyancha website (a large data technology service website with a vast repository of Chinese enterprise information), industrial reports, and news. Before the final administration of the survey questionnaire, a pilot study of three Chinese family firm CEOs was performed. Before the final administration, the questionnaires were revised based on the feedback from the pilot study, the length of the questionnaire was reduced, and some unclear questions were revised accordingly.

### **5.6.2 Quantitative data collection**

In the quantitative data collection phase, this study used a self-administered questionnaire to gather data from the family business owners operating in China. According to Denscombe (2008), the self-administrated questionnaire can be conducted faster and cheaper compared to other methods of primary data collection, such as observation and experiments. Moreover, the data gathered through surveys are relatively easy to analyse (Nagarajan, 2016). Therefore, the quantitative data was collected via a cross-sectional survey approach by sending the survey questionnaire to senior managers or CEOs of firms.

As it discussed earlier, the researcher executed a questionnaire survey using the snowball sampling procedure to approach family businesses. The questionnaire was designed on the Wenjuan website (<https://www.wenjuan.com>), which is one of the largest online research service providers in China. By generating the QR code and the link, questionnaires were sent to the subjects via WeChat and emails between July 2021 and March 2022. Firstly, the author used his private contacts in two Chinese universities

and one local Chamber of Commerce to distribute questionnaires. These universities have multi-dimensional connections with businesses because of their teaching and research activities, such as MBA education. Initially, three groups of family businesses were approached in Gansu Province, China. After filling out the questionnaire, each group of family businesses were requested to further forward the questionnaire to other firms they were familiar with. The expected participants were either senior managers or CEOs of firms with sufficient knowledge and experiences in the industry, which guaranteed the reliability of the information provided.

To ensure the sample were family firms, in the questionnaire, a definition of family business based on Leach *et al.* (1990) was provided on the first page (see Appendix B). The respondents could continue to fill out the questionnaire only if they meet the definition of the family business (a company where members of a kinship group hold at least 50 per cent of the equity in a company, and/or a single-family group effectively controls the business, and/or some senior management is members from the same family).

According to the statistics of the Wenjuan website (the platform of the questionnaire), this questionnaire was viewed by 3828 times between July 2021 and August 2021. Of the total 3828 times of views, 1140 questionnaires were returned. As a result, the response rate is 29.78 per cent.

Before performing the empirical analysis, a data-cleaning procedure was important. The respondents deemed inappropriate were excluded from the final sample, including either because the number of employees was larger than the criteria of Chinese SMEs (Table 5.3) or because there were incomplete responses in the questionnaire. Further, those questionnaires completed in less

than 5 minutes were not counted because of the concern about completion authenticity. Therefore, 197 out of 670 firms in the collected dataset were excluded from the analysis.

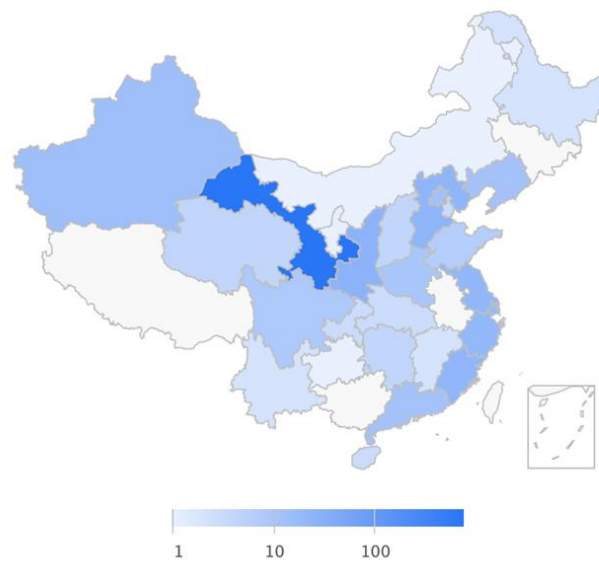
Due to the limitations of international travel during the Covid-19 pandemic in 2021, the questionnaires were sent via electronic method instead of the face-to-face collection method. Although this method has a high speed of response (Evans and Mathur, 2018), participants are less likely to stay fully engaged in the survey. To minimise such influences, this study removed the respondents who completed within five minutes. After removing those, the final sample size for analysis in this research is 473. Table 5.4 below shows the summary of respondents.

**Table 5.4** Summary of respondents

Questionnaire Sent		No. of companies
Nos. of participants		3828
Nos. of respondents		1140
Nos. of respondents	Family Business	670
	Nonfamily Business	470
Response rate (per cent)		29.78
Incomplete response, non-SMEs, without TMTs, complete less than 5 minutes		197
<b>Final Sample</b>		<b>473</b>

Figure 5.2 and Table 5.5 display the specific distribution of the sample. As shown in the table and the figure, a total of 1140 responses were received from companies located in 28 different provinces or municipalities directly governed cities in China. However, due to the lack of a database of Chinese family businesses, it is difficult for the author to access the contacts all over China. Therefore, the respondents were concentrated in the middle area of China, which is also the start point of the snowball sampling procedure.

**Figure 5.2** Geographical distribution of the sample



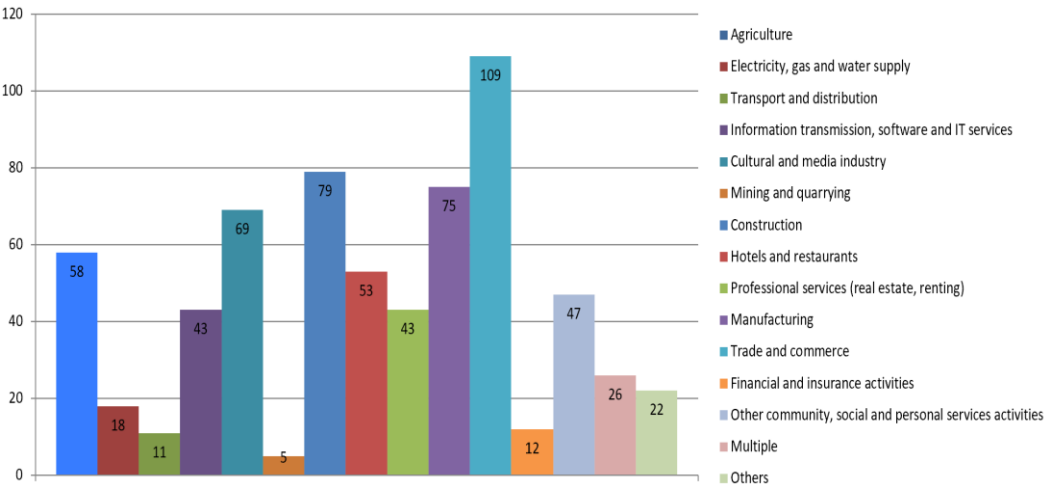
**Table 5.5** The Distribution of the Sample

Location	Amount	Location	Amount
Anhui	2	Qinghai	3
Beijing	19	Shandong	2
Fujian	21	Shanxi	3
Gansu	481	Shaanxi	18
Guangdong	14	Shanghai	5
Guangxi	1	Sichuan	13
Guizhou	1	Tianjin	4
Hainan	2	Xinjiang	14
Hebei	17	Yunnan	2
Henan	11	Zhejiang	11
Hubei	1	Chongqing	2
Hunan	2	Jiangxi	1
Jiangsu	14	Liaoning	5
Ningxia	1		
<b>Total</b>	<b>670</b>		

In terms of industry composition, the companies in the sample were active in wholesale and retail trade (16.27 per cent), manufacturing (11.19 per cent), cultural and media industry (10.30 per cent) and agriculture (8.66 per cent).

Figure 5.3 shows the industrial composition of the sample.

**Figure 5.3** The industry composition of the sample



### 5.6.3 Qualitative data collection

In the phase of qualitative data collection, the data were collected through semi-structured interviews because it will help the researcher to focus on the topic and enhance the ability to describe research processes. Unlike structured interviews that are rigid, a semi-structured interview is a formal interview that is very flexible. According to Denzin, Lincoln and Giardina (2006), semi-structured interviews often start with an open-ended question which provides opportunities for identifying new ways of seeing and understanding the topic at hand.

This research seeks to understand the process of innovation in family firms by obtaining the family owners’ accounts of their innovation experience, aims at learning more about the details of the innovation process. As Harding (2018) noted, the semi-structured interview is better to control over question order, the opportunity to ensure that respondents answer all interview questions whilst also opening up space for their experiences. Moreover, the adoption of the semi-structured method of data collection will help the researcher achieve

validity because the researcher will be able to study participants' body language and compare both verbal and non-verbal communication of the participants to justify the validity of their responses (Harding, 2018).

With the growth of digital societies, and moreover during the COVID-19 pandemic, people are familiar with a range of applications and platforms for working and communicating remotely, making online research data collection easier (Lobe, Morgan and Hoffman, 2020). Therefore, this research used videoconferencing applications for online interviewing. The semi-structured interviews were conducted between July 2021 to March 2022 with family owners or senior managers of Chinese family businesses. Initially, the researcher contacted two groups of family businesses in Gansu, China. After each interview, interviewees were asked to recommend other suitable contacts, according to the defined criteria. The final sample of qualitative research is 12 family businesses. All interviews were conducted at a distance and were digitally recorded, using WeChat. The interviews were recorded and subsequently transcribed by the researcher. On average, each interview lasted more than 40 minutes. While structured questionnaires were developed prior to the interview, the interviewer was at liberty to advance the discussion into areas that appeared to provide additional value. Strict confidentiality and anonymity of all interviewees as well as their participant companies was maintained throughout the study.

## **5.7 Ethical Consideration**

Research involving human subjects must follow certain ethical standards to protect subjects from harm (Jonsen, 1991). Although sociological research does not cause death or severe illness, the ethic element still needs to be



considered due to the involvement of complex issues, including cultural, economic, and political phenomena (Broom, 2006). To ensure this study met the ethical standards, the researcher first secured ethical approval from the Faculty Ethics Committee within the University of Wolverhampton. Ethical Committee approval for details is attached as Appendix A. Specifically, there were three major ethical considerations in this research, including informed consent, confidentiality, and anonymity.

### **5.7.1 Informed Consent**

Informed consent involves ensuring that potential participants have a clear understanding of the research, such as study aims, organisers, and the use of the data (Ritchie and Lewis, 2013). As discussed above, this research adopted the mixed method strategy with a concurrent triangulation design. For the questionnaire survey, this research provided a detailed informed consent form at the beginning of the online questionnaire, which outlined the purpose of this research and how the data will be used. Written informed consent was implied via completing and returning of the questionnaire. For semi-structured interviewees, the researcher obtained informed consent by providing forms signed by the research participants. Although this research adopted the snowball sampling procedure to access the family businesses, the participation was based on voluntary principals. All of the participants were given the free to exclude themselves from the research at any time.

### **5.7.2 Confidentiality and Anonymity**

Confidentiality and anonymity are important ethical practices for protecting the privacy of human subjects during the data collection and data management process (Allen, 2017). Confidentiality stressed that identifiable information about the participants collected during the process of the research would not

be disclosed (Wiles *et al.*, 2008). Such information could be protected through a range of processes designed to anonymise them. In contrast, anonymity commonly refers to collecting data without obtaining any personal, identifying information (Burns and Burns, 2008). It implies that the researcher or the readers cannot identify a given response with a specific respondent in the final paper or report.

For the questionnaire survey, this research was based on an online platform, which could promote anonymity (Buchanan and Hvizdak, 2009). Compared to traditional face-to-face contact, the online platform does not have to be given participants' postal addresses or phone numbers. In this research, all participant survey responses were kept on the University OneDrive and the Wenjuan website password-protected during data collection. Once the data collection was completed, the data saved on the Wenjuan website would be removed. All the participants' responses were organised, and ensure that any potentially identifying information was removed prior to data analysis. After the data analysis, the results were archived on a password protected encrypted external drive.

For semi-structured interviews, the researcher stated the aim of the study and how to use the data at the beginning of each interview. Confidentiality and ethic issues were cleared and explained to each interviewee before conducting the interview. During the pandemic, health risks and government measures have severely constrained traditional data collection. Because of such restrictions, all of the semi-structured interviews in this research were conducted via WeChat. Furthermore, the interview conversations were recorded with permission from the participants. The transcription from audio to the text was done manually and verbatim, storing in the university OneDrive, and a

password protected encrypted external drive.

Furthermore, the collected data would not be divulged to third parties without participants' consent. Also, there will be no disclosure of respondent identities in any other academic publication. Any means of linking them to participants records stored internally will be destroyed.

## **5.8 Research Instruments**

The survey questionnaire for this research was designed based on the hypothesis development. As noted earlier, the conceptual model of this research proposed three hypotheses to examine two major research questions: 1) What is the impact of SEW on innovation input? 2) The mediating effects of TMT behaviours on the relationship between innovation input and output. To test the three hypotheses, this research developed a self-administrated questionnaire.

### **5.8.1 Structure of instruments**

The questionnaire for the survey consists of four major sections, including business profile, SEW, innovation input and innovation output, and the mediating effects. The first section gathered information about the profile of the company, including its age, industry, the number of full-time and part-time employees, the ratio of family members in the TMT. Secondly, the questionnaire measured the five proposed FIBER dimensions of SEW, which were adapted from Berrone, Cruz and Gomez-Mejia (2012). The third section measured the innovation inputs and outputs of each family business. Finally, the questionnaire collated information on TMT behaviours. All constructs were measured with borrowed scales that have been tested in the literature.

### 5.8.2 Variables Measurement

As the previous chapter noted, the conceptual model for this research consists of two models. Model one examines the impact of SEW on innovation inputs. Model two focuses on the mediating effects of TMT behaviours on the relationship between innovation inputs and outputs. All the items are Likert-type scales with a five-point response format from 1 = 'strongly disagree' to 5 = 'strongly agree' (See Appendix B).

#### Independent variables

For model one, listed in Chapter 4 Theoretical Framework and Hypotheses Development, SEW is the independent variable. Following the seminal work by Berrone, Cruz and Gomez-Mejia (2012), many studies have used five FIBER dimensions to measure SEW (Hauck *et al.*, 2016; Filser *et al.*, 2018; Gast *et al.*, 2018; Cleary, Quinn and Moreno, 2019; Weimann, Gerken and HÜlsbeck, 2021). As it has been empirically validated by those studies, this study also measured SEW through such five multi-item constructs. The first construct represents family control and influence on the firm. The family owners or managers were requested to consider the level of the family in the company, and access on a five-point Likert scale (ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'). For example, they were asked to indicate their agreement with items, such as "In my family business, family members exert control over the company's strategic decisions" "In my family business, most executive positions are occupied by family members" "In my family business, nonfamily managers and directors are appointed by family members". The second dimension of the construct represents the identification of family members with the firm. For example, the items are "Family members have a strong sense of belonging to my family business", "Family members feel that the family

business's success is their own success.". The third dimension focused on binding social ties, such as "My family business is very active in promoting social activities at the community level", "In my family business, nonfamily employees are treated as part of the family". The fourth dimension represents the emotional attachment of family members. The respondents were asked to rate the level of their emotional attachments on the firm, such as "Emotions and sentiments often affect decision-making processes in my family business", "Protecting the welfare of family members is critical to us, apart from personal contributions to the business". The last dimension of SEW focused on the renew of family bonds to the firm through dynamic succession. For example, the items include "Continuing the family legacy and tradition is an important goal for my family business", "Family owners are less likely to evaluate their investment on a short-term basis", and so on.

For model two, innovation inputs served as the independent variable. Innovation inputs are usually measured by the ratio of R&D expenditures to sales (Lee and O'Neill, 2003; Chrisman and Patel, 2012). However, this indicator may underestimate innovation inputs (Sundbo, 2006), given that it is difficult to ascertain the expenditure on innovation activities in family businesses. Thus, this study measured innovation inputs by using a five-item scale developed by Lefebvre, Lefebvre and Talbot (2003). Family owners or managers were asked to assess the level of innovation inputs like "Our company has adequate and useful equipment for innovation".

### **Dependent variable**

For model one, the dependent variable is innovation inputs. As noted above, the innovation inputs is also the independent variable in model two, which is measured by five items scale derived from Lefebvre, Lefebvre and Talbot

(2003). For model two, the dependent variable is the innovation outputs. Previous studies often used patent counts as intermediate measures to capture innovation output (Leten, Belderbos and Van Looy, 2007; Czarnitzki and Kraft, 2009). While the such measure is easy to access due to the abundance of publicly available information (De Jong and Vermeulen, 2006), they may underestimate SME's efforts to innovation. As noted by Romijn and Albaladejo (2002), the expenses and efforts of applying for patents and dealing with patent infringements tend to be beyond the limited capacity of small firms. Therefore, many innovations that come from small firms are never patented. This research focused on innovation in family-controlled SMEs. To avoid underestimating their innovation outcomes, this research followed Martín-de Castro *et al.* (2013) to measure innovation output with a 5-item Likert scale comprising 3 items. For instance, the items are "In the last three years, the number of product innovations developed by our company is higher than our competitors", "The percentage of sales, with respect to new products, in the total of sales, is higher than our competitors".

### **Mediating variables**

For hypotheses H3a, H3b, and H3c, model two measures the mediating effects of TMT behaviours, including the use of knowledge and skills, trust, and cognitive conflicts. To measure use of knowledge and skills among TMT, this research relied on a previously validated scale which was developed by Van Doorn, Heyden and Volberda (2017). Instead of concentrating on managerial knowledge and skills, this research focused more on whether TMT members can help companies learn new knowledge and skills and transform them into new products and services. The constructs for the use of knowledge and skills were adapted from Van Doorn, Heyden and Volberda (2017). The respondents were asked to indicate the agreement with each of the 5 items on a scale from

1 to 5, 1 being 'strongly disagree' and 5 being 'strongly agree'. For example, "Our TMT is in tune with the state-of-the-art in our field of business ", "Our TMT is able to quickly integrate and/or apply new knowledge and skills."

The second mediating variable is trust. To access trust among TMT members, this research adopted Curado and Vieira (2019)'s scale. Respondents were asked to indicate the extent to which TMT members experience trust in their relationships with each other. For instance, "Our TMT members are generally trustworthy.", "Our TMT members have reciprocal faith in other members' intentions and behaviours."

Finally, the cognitive conflict was measured using an instrument developed by Song, Dyer and Thieme (2006). The measure of cognitive conflicts within TMT members was adapted from the work of Barker, Tjosvold and Andrews (1988). Song, Dyer and Thieme (2006) developed a four-item scale to measure cognitive conflicts among TMT members. Examples of cognitive conflict measurement items include "We know each other better because of the way conflicts are handled" and "We feel energised and ready to get down to work after a conflict." (For details, see Appendix B).

### **Control variables**

Following previous studies on firm innovation (e.g., Deng, Hofman and Newman, 2013; Gast *et al.*, 2018), this research controlled a number of variables which could potentially influence the relationship between the dependent and independent variables. These variables include firm size, firm age, and the number of TMT members.

Regarding the firm size, this research used logarithm of the number of full-time

employees to measure. As noted by Eddleston and Kellermanns (2007), larger companies tend to have more slack resources to attribute to innovations. Moreover, firm age was measured by the number of years since a firm's foundation. The empirical results of Zahra, Neubaum and Larrañeta (2007) indicated that older companies are less likely to devote numerous resources to innovation activities due to their strategic conservatism. Moreover, De Massis *et al.* (2014) also pointed out that family firms' efforts to innovate or grasp new opportunities decline with age. The last control variable in this research is industry. Innovation opportunities vary between different industries (Zahra and Nielsen, 2002), and some particular industries may encourage companies to innovate (Sciascia *et al.*, 2015). Therefore, it is important to control the industry in this study.

**Table 5.6** Summary of Variables

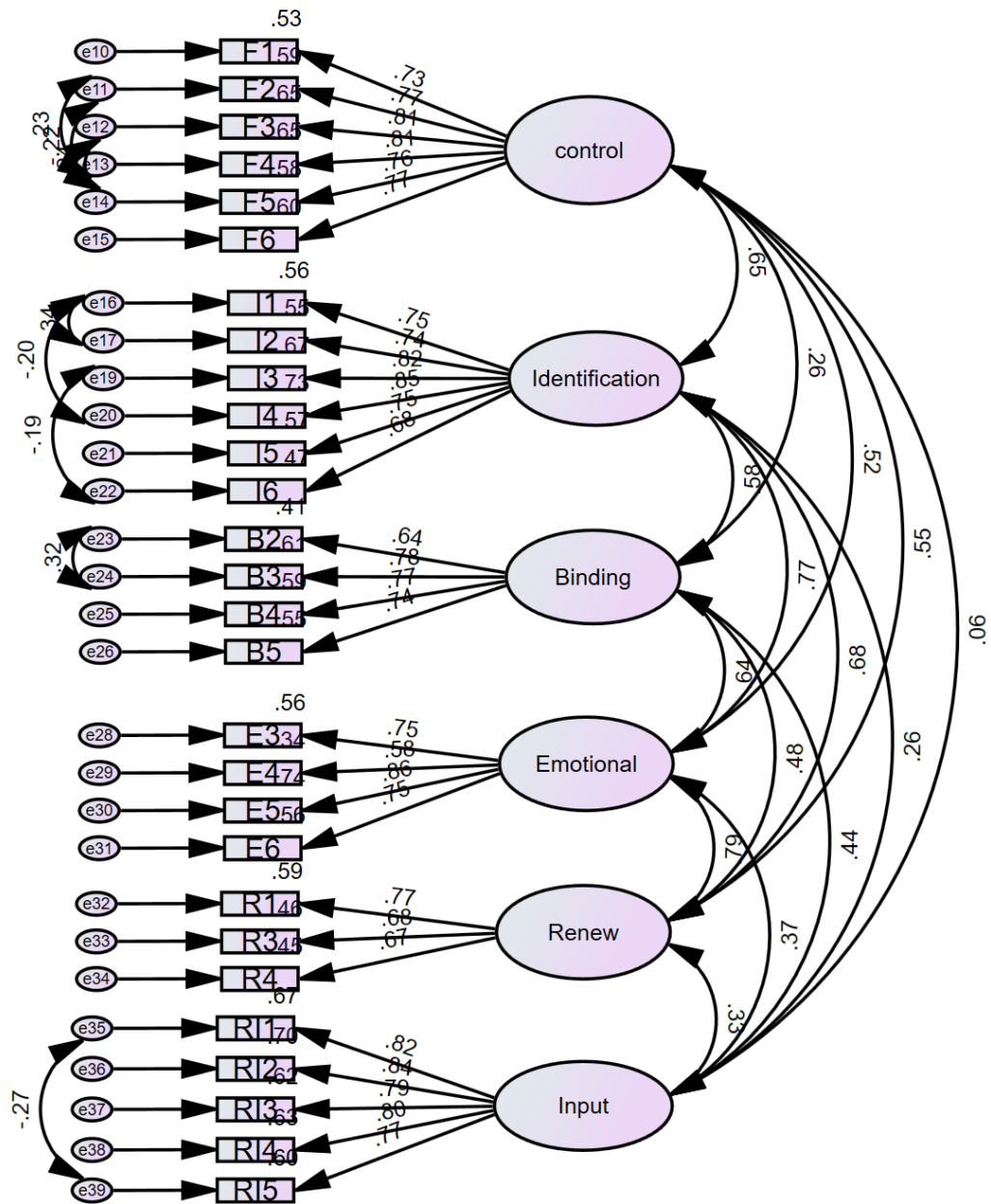
Construct and item	Model 1	Model 2
Independent Variables	Family Control and Influence	Innovation Inputs
	Identification of Family Members with the Firm	
	Binding Social Ties	
	Emotional Attachment of Family Members	
	Renewal of Family Bonds to firm Through Dynastic Succession	
Dependent Variables	Innovation Inputs	Innovation Outputs
Mediating variables		TMT's use of knowledge and skills
		Trust
		Cognitive Conflicts
Control Variables	Firm size	
	Firm age	
	Industry	



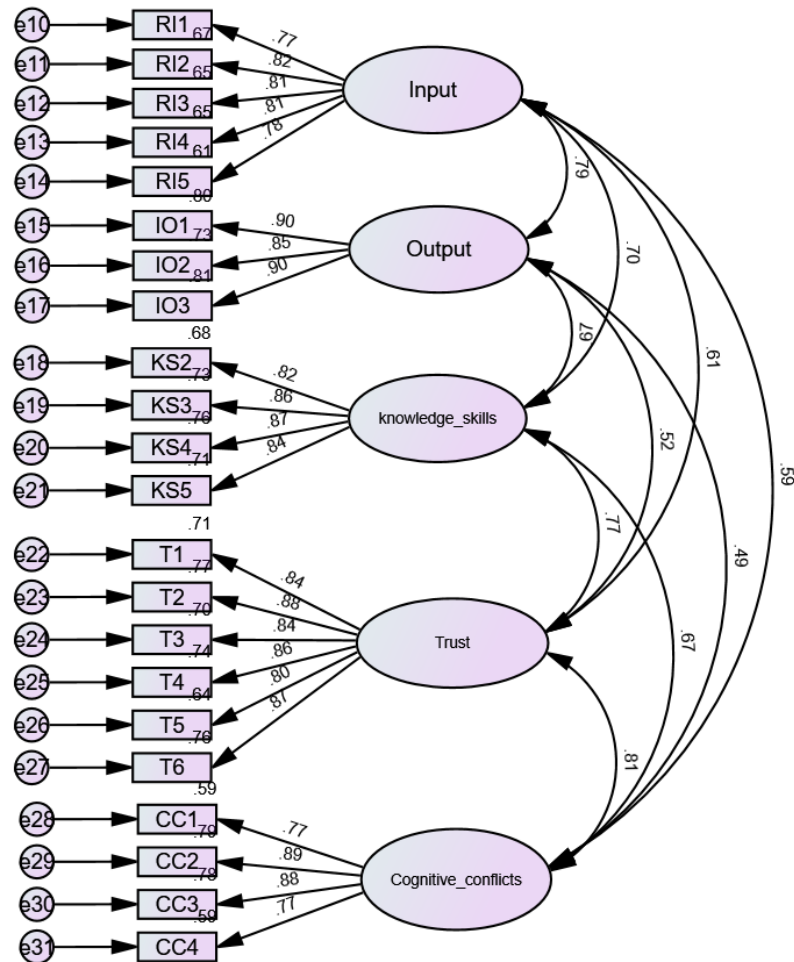
## 5.9 Validity and Reality Issues

This research took several steps to determine the validity and reliability of the measures employed in the survey. Firstly, the construct items were borrowed from previous studies which have been tested (Lefebvre, Lefebvre and Talbot, 2003; Song, Dyer and Thieme, 2006; Berrone, Cruz and Gomez-Mejia, 2012; Martín-de Castro *et al.*, 2013; van Doorn, Heyden and Volberda, 2017; Curado and Vieira, 2019). Secondly, the constructs were further filtered and rephrased based on the context of Chinese family businesses. Finally, this research analysed the reliability and validity by confirmatory factor analysis with AMOS software (Version 26). Figure 5.4 and Figure 5.5 present the two conceptual models in AMOS.

Figure 5.4 Model One



**Figure 5.5** Model Two



By using confirmatory factor analysis (CFA), this research tested the hypothesised two measurement models to assess whether the models were fit or whether each item would load significantly onto the scales. As shown in Table 5.7, the overall model fit indices were acceptable. By using multiple criteria (Bentler, 1990; MacCallum, Browne and Sugawara, 1996; Kline, 2004; Hu and Bentler, 2009), the results showed that two conceptual models had a good fit for the data. Specifically, CMIN/DF, the ratio of model explanation to parsimony (chi-squares per degrees of freedom), is 2.127 (Model one) and 2.555 (Model two), respectively. Both of them are below 3, which shows a good descriptive fit (Kline, 2004). Similarly, the values of root mean square error of approximation (RMSEA) (<.08), the goodness-of-fit indices, as well as comparative fit index (CFI) and incremental fit index (IFI) (both>.90), indicate the overall fit for the two models is good. Furthermore, following Hair *et al.* (2010), the standardised factor loadings of items should be higher than .50 to assure the significance. By examining the standardised factor loadings generated in the CFA, all model one and model two items received standardised factor loadings above .50.

**Table 5.7** The Summary of Model Fit

Model Fit	Model 1	Model 2	Acceptable value
CMIN/DF	2.127	2.555	<3 (Kline, 2004)
GFI	0.902	0.911	≥0.90 (Bentler, 1990)
RMSEA	0.049	0.057	<0.08 (MacCallum et al, 1996)
CFI	0.951	0.965	≥0.90 (Bentler, 1990)
IFI	0.952	0.965	≥0.90 (Hu and Bentler, 1999)
TLI (NNFI)	0.944	0.959	≥0.90 (Bentler and Bonett, 1980)
NFI	0.913	0.943	≥0.90 (Hair <i>et al.</i> , 2006)

The reliability of the scales was tested by the composite reliability (CR).

According to Bagozzi and Yi (2017), a higher CR coefficient of the latent variable (greater than .70) indicates that the latent variable has higher consistency and reliability. It can be seen from the data in Table 5.8 that the CR for each item is greater than .70, which shows each scale for model one and model two has higher consistency and reliability.

In terms of validity, it usually includes convergent validity and discriminant validity (Hair *et al.*, 2010). For convergent validity, this research was assessed through the average variance extracted (AVE). As shown in Table 5.8, the AVE of the two models ranged between .500 to .779, which meets the suggested threshold of .50 (Anderson and Gerbing, 1988; Hair *et al.*, 2010). Therefore, the convergent validity of the two models can be considered acceptable.

**Table 5.8** The results of average variance extracted (AVE) and composite reliability (CR)

	Average variance extracted (AVE)	Composite reliability (CR)
<b>Model 1</b>		
Family control and influence (F)	0.594	0.897
Identification of Family Members with the Firm (I)	0.590	0.896
Binding Social Ties (B)	0.564	0.838
Emotional Attachment of Family Members (E)	0.550	0.827
Renewal of Family Bonds to firm Through Dynastic Succession (R)	0.500	0.749
Innovation Input (RI)	0.635	0.897
<b>Model 2</b>		
Innovation Input (RI)	0.635	0.879
Innovation Output (IO)	0.779	0.914
Use of knowledge and skills (KS)	0.721	0.912
Trust (T)	0.722	0.940
Cognitive Conflicts (CC)	0.689	0.898

The discriminant validity of the scales is assessed using a procedure outlined by Fornell and Larcker (1981). According to Fornell and Larcker (1981) and Hair *et al.* (2010), all the constructs demonstrated discriminant validity if the square root of AVE is always greater than the largest latent variable correlation. Table 5.9 and 5.10 provide the descriptive statistics of the square root of AVE, and correlations. According to the testing results, the square roots of the AVE in each latent variable are greater than the largest corresponding squared inter-construct correlations. For instance, the square root of AVE in the family control and influence is 0.773, which is greater than the largest corresponding squared interconstruct correlation (0.588). Therefore, the scale for this research has good convergent validity and discriminant validity.

**Table 5.9** Fornell–Larcker coefficients for Model One

<b>Model 1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Family control and influence (Factor 1)	<b>0.773</b>					
Identification of Family Members with the Firm (Factor2)	0.588	<b>0.763</b>				
Binding Social Ties (Factor3)	0.191	0.497	<b>0.752</b>			
Emotional Attachment of Family Members (Factor4)	0.486	0.650	0.470	<b>0.727</b>		
Renewal of Family Bonds to firm Through Dynastic Succession (Factor5)	0.447	0.557	0.361	0.624	<b>0.709</b>	
Innovation Input (Factor6)	0.056	0.238	0.401	0.306	0.282	<b>0.796</b>

Note: The square roots of AVE are presented in bold font.

**Table 5.10** Fornell–Larcker coefficients for Model Two

<b>Model 2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Innovation Input (Factor1)	<b>0.797</b>				
Innovation Output (Factor2)	0.717	<b>0.882</b>			
Use of knowledge and skills (Factor3)	0.636	0.614	<b>0.849</b>		
Trust (Factor4)	0.561	0.484	0.719	<b>0.849</b>	
Cognitive Conflicts (Factor5)	0.530	0.452	0.629	0.767	<b>0.831</b>

Note: The square roots of AVE are presented in bold font.

### Common Method Bias

To further check the common method bias, this research traditionally employed Harman's single-factor test (Podsakoff and Organ, 1986; Aulakh and Gencturk, 2000). The single factor explained less than 50 per cent of the overall variance (33.05 per cent). Furthermore, the results of exploratory factor analysis also suggest that there is no dominant factor emerged to explain most of the variance in the two models. Therefore, it is concluded that common method bias is not a major concern in this research.

### 5.10 Summary

This chapter discussed the philosophical stance, research approach, research design and data collection for this study. The rationale for the choice of research context and methods were presented. Based on the research questions, the researcher adopted pragmatism as the research paradigm. Given this philosophical stance, the abductive approach was followed. Moreover, this study was designed to adopt the mixed method. As such, questionnaires and semi-structured interviews were conducted to collect data for the study. The chapter provided a summary of the data collection and analysis procedure.

## **Chapter 6 Quantitative Research Findings**

### **6.1 Introduction**

The preceding chapter discussed the research methodology. The chapter will report the results and the factor analysis and reliability test conducted on the model one and model two constructs. This chapter describes the sample descriptive statistics as well as the processes of analysing the data to test the null hypotheses and the results of such analysis. Furthermore, an in-depth discussion on the major questions of this study will be provided, including the relationship between SEW and innovation input, innovation inputs and outputs, and the mediation effects of TMT behaviours.

### **6.2 Demographic Statistics**

The demographic description was based on explicit data and statistical distribution, which was acquired through online survey instruments. The demographic profile, including firm age, firm size, the rate of family members in TMT, and industry, is presented in Table 6.1.

Firm size was measured as the number of full-time employees, which ranged from 2 to 980 full-time employees in this sample. It reflected the sample specification of Chinese SMEs. As indicated in Table 6.1, the majority of the sample consists of small businesses with 20-300 full-time employees, while the micro-businesses (less than 20 full-time employees) and medium-sized businesses (300 to 1000 full-time employees) comprised 27 per cent and 10 per cent respectively.

Regarding the firm age, Chinese family businesses are relatively young



compared to their European counterparts due to the recent rejuvenation of the Chinese private sector. Table 6.1 indicates that the firm age of the sample ranged from 1 to 42 years, with an average of 12.23 years. Compared with previous studies by De Massis, Kotlar, Campopiano, *et al.* (2015) and Arzubiaga *et al.* (2018) on European family businesses, the average firm age of the responded firms are relatively young. This is understandable due to the late start of the development in the Chinese private sector. As mentioned in the background chapter, Chinese family businesses were primarily established only after the economic reform in 1978. It is comparable to Wang (2016)'s study of 628 Chinese family firms where the average firm age was 11.629. Furthermore, the average percentage of family members in TMT is 56 per cent, which indicates the family ratio in TMTs. It is also comparable to De Massis, Kotlar, Campopiano, *et al.*'s (2015) study of 787 family businesses in Bergamo, where the average number is 49 per cent. With respect to the sectoral distribution, this study followed Chua *et al.* (2011) to classify Chinese family firms into five categories, including retail and wholesale, manufacturing, construction, service, and others. As shown in Table 6.1, family firms in the sample are mainly concentrated in service (42.28%), followed by others (18.6%), wholesale and retail (15.43%), construction (12.47%), and manufacturing (11.21%).

**Table 6.1** Sample demographic (N=473)

	N	Percentage
<i>Firm size (Number of full-time employees)</i>		
Micro (<20)	126	27%
Small (20-300)	300	63%
Medium (301-2000)	47	10%
<i>Firm age (Years)</i>		
1-5	85	18%
6-10	114	24%
11-15	150	32%
16-20	51	11%
>20	73	15%
<i>Percentage of family members in TMT (%)</i>		
0-20	64	14%
21-40	113	24%
41-60	105	22%
61-80	84	18%
>80	107	23%
<i>Industry</i>		
Wholesale and retail	73	15%
Manufacturing	53	11%
Construction	59	12%
Service	200	42%
Others	88	19%

### 6.3 Analysis of the Inter-Correlation Among the Variables

Table 6.2 displays the means, standard deviations, and correlations for the key variables, including five dimensions of SEW, innovation input, innovation outputs, and the use of knowledge and skills, trust and cognitive conflicts. As revealed in the table, four dimensions of SEW are significantly correlated with innovation inputs. Specifically, identification ( $r= 0.238$ ,  $p<0.01$ ), binding social ties ( $r=0.401$ ,  $p<0.01$ ), emotional attachment ( $r=0.306$ ,  $p<0.01$ ) and renew family bonds ( $r= 0.624$ ,  $p<0.01$ ) were positively and significantly linked to innovation inputs. Additionally, there is also a significant relationship between innovation inputs and outputs ( $r=0.717$ ,  $p<0.01$ ). Both innovation inputs and

outputs are significantly linked to TMT behaviours, including the use of knowledge and skills ( $r=0.649$ ,  $r=0.636$ ,  $p<0.01$ ), trust ( $r=0.561$ ,  $r=0.484$ ,  $p<0.01$ ), and cognitive conflicts ( $r=0.530$ ,  $r=0.452$ ,  $p<0.01$ )

**Table 6.2** Correlations among key variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Family control and influence	3.49	1.00	1											
2. Identification	3.82	0.80	0.588**	1										
3. Binding social ties	4.21	0.65	0.191**	0.497**	1									
4. Emotional attachment	3.55	0.80	0.486**	0.650**	0.470**	1								
5. Renew family bonds	3.60	0.85	0.447**	0.557**	0.361**	0.624**	1							
6. Innovation inputs	3.53	0.88	0.056	0.238**	0.401**	0.306**	0.282**	1						
7. Innovation outputs	3.29	0.93	0.016	0.133**	0.306**	0.243**	0.233**	0.717**	1					
8. Use of knowledge and skills	3.77	0.75	0.053	0.242**	0.431**	0.294**	0.271**	0.649**	0.636**	1				
9. Trust	3.98	0.70	0.100*	0.342**	0.521**	0.349**	0.300**	0.561**	0.484**	0.733**	1			
10. Cognitive Conflicts	3.82	0.70	0.078	0.321**	0.456**	0.334**	0.309**	0.530**	0.452**	0.637**	0.767**	1		
11. Firm size <sup>a</sup>	3.79	1.26	-0.113*	-0.086	-0.060	-0.105*	-0.013	0.161**	0.104*	0.055	-0.076	-0.075	1	
12. Firm age	12.23	7.20	0.052	0.042	0.013	0.004	0.003	0.105*	-0.030	0.043	0.004	0.021	0.338**	1

Note:  $n=473$ . <sup>a</sup>Natural Logarithm of the number of full-time employees \*  $p<0.05$  \*\*  $p<0.01$

Dummy variables of industry are excluded, including retail and wholesale, manufacturing, construction, service, and others.

## **6.4 Results of Research Model Testing**

This section reports regression analysis results from testing the hypotheses presented in Chapter 4 Theoretical Framework and Hypotheses Development. Based on the conceptual model of this research, the regression analyses were divided into two stages. In the first stage, a multiple regression was conducted to test the relationship between five dimensions of SEW and innovation input, including hypothesis 1a, 1b, 1c, 1d, and 1e. Secondly, this study further tested the relationship between innovation inputs and outputs, and the mediating effects of TMT behaviours, including TMT's use of knowledge and skills, trust, and cognitive conflicts.

### **6.4.1 The relationship between socioemotional wealth and innovation input**

The results presented in Table 6.3 provide the outcomes of the first stage. In model 1, the control variables were introduced as independent variables, including firm size, firm age, and industry. The dependent variable was innovation input as measured by five items of five-point Likert scales. Model 1 is significant ( $F=3.604$ ,  $p<0.01$ ), and it explained 3.4% of the variation in the extent of innovation input. Furthermore, firm size ( $\beta=0.129$ ,  $p<0.01$ ) and manufacturing ( $\beta=0.133$ ,  $p<0.01$ ) were significantly and positively related to innovation input.

In model 2, the independent variables (five dimensions of SEW) were brought to test hypothesis 1a, 1b, 1c, 1d, and 1e. As shown in Table 6.3, the independent variable, family control and influence was significantly and negatively correlated with innovation input ( $\beta=-0.123$ ,  $p<0.05$ ). More precisely, a higher level of family control and influence would be related to lower

innovation input in family firms, thus supporting hypothesis 1a. This is consistent with previous findings, which suggest that the centralised control of the family can have a detrimental effect on innovation (Chen and Hsu, 2009; Chin *et al.*, 2009; Block, 2012). For instance, Chin *et al.* (2009) examined a sample of Taiwan electronic industry companies and found that tight control by the family tends to inhibit the innovativeness of the firm. Similarly, Block (2012) also suggested that the control of family ownership creates new agency costs associated with R&D spending, which could lead to lower levels of R&D intensity. Innovation is strongly associated with the diversity of skills and experience (Damanpour, 1991). Family members tend to have common behavioural norms and similar backgrounds, which may result in group-thinking (De Massis, Frattini and Lichtenthaler, 2013) and strategic inertia (Minichilli, Corbetta and MacMillan, 2010). Therefore, the tight control of the family could lead to the absence of external points of views, and a lack of knowledge and diversity in decision-making (Arzubiaga *et al.*, 2021), which hinders the firm from engaging in technological innovation. On the other hand, innovation is usually associated with high-risk exposure, high fixed costs and high minimum investment (Rammer, Czarnitzki and Spielkamp, 2009). To control over the decision-making of the firm, family members often invest most of their personal wealth in their firm (Carney, 2005). In that case, they tend to reinforce the status quo and diminish the pursuit of risky opportunities (Kellermanns *et al.*, 2012), which could restrain investment in innovation. Especially in the context of Chinese family firms, the relatively weak intellectual property protection (Carney, Zhao and Zhu, 2019) further lower their risk-taking intensity, hindering the innovation input of family firms.

As shown in Table 6.3, model 2 found no significant effect of family members' identification with the firm on innovation input ( $\beta=-0.030$ ,  $p=0.635$ ). Hypothesis

1b proposed that family members' identification with the firm may have a negative impact on innovation input. However, the results shown in this sample do not support this hypothesis. The argument for this hypothesis is based on the assumption that a family's identity has a strong link with the firm reputation. Previous studies, for instance, Beck and Prügl (2018) argued that a family's social status often ties to the organisational identity, especially when the firm carries the family's name. The uncertain risk of innovation projects could threaten the firm's reputation and status (Filser *et al.*, 2018). However, the non-significant results in this sample may be explained by the context of Chinese family firms. In China, people usually consider family firms as tiny-scale and low-skilled workshops. Therefore, there is a social norm here, and owner-managers do not intend to acknowledge they are family businesses due to the concern over the negative identity of the family business (Wang, Pei and Liu, 2014). Such situations might be more present in Chinese family businesses. In that case, they are less likely to pay much attention to their identity as a family business. As such, family members' identification with the firm may not affect innovation input.

Hypothesis 1c posited that the family's binding social ties have a positive effect on innovation input. As seen in model 2 (Table 6.3), the binding social ties was significantly and positively related to innovation input ( $\beta=0.317$ ,  $p<0.01$ ), suggesting that the stronger family's social ties the more innovation input. As such, hypothesis 1c is supported. This finding is in line with previous research on social capital (Adler and Kwon, 2002; Sirmon and Hitt, 2003; Carney, 2005; Spriggs *et al.*, 2013). For instance, Sanchez-Famoso, Maseda and Iturralde (2014) argued that the strength of a broader social network might transform a family firm's knowledge base. In the same vein, Zaefarian, Eng and Tasavori (2016) found that family firms' number of ties with external stakeholders has a

positive effect on opportunity recognition. By means of binding social ties between family members and diverse stakeholders, family firms may facilitate efficient information flow and knowledge sharing among network members (Sirmon and Hitt, 2003). Such open attitudes toward social capital and network allow family businesses to identify more opportunities to innovate. Especially family-controlled SMEs, they are more likely to seek external collaboration to access new expertise and technologies for innovation due to the limited resources (Gast *et al.*, 2018). Interestingly, the coefficient of binding social ties is highest among the five SEW dimensions ( $\beta=0.317$ ,  $p<0.01$ ), which may indicate its crucial role in influencing innovation input.

Hypothesis 1d is also substantiated by the study. Hypothesis 1d stated that the emotional attachment between family and the firm is positively related to innovation input. The results show that the relationship between emotional attachment and innovation input was significant ( $\beta=0.166$ ,  $p<0.01$ ), which indicated that a stronger family's emotional attachment could result in greater innovation input. This is consistent with the stewardship theory perspective, which suggests that family members are more willing to sacrifice and invest resources to build a robust enterprise and enhance value for all stakeholders (Chirico and Bau', 2014). In a highly dynamic and ambiguous business environment, intensified competition speeds up the firms' innovations (Li and Mitchell, 2009). Chinese family businesses have to pursue innovations to survive. In that case, the strong emotional attachment could drive family firms to invest more in innovation, sustaining the long-term viability of the firm.

Hypothesis 1e argued that the renewal of family bonds has a positive effect on innovation inputs. In model 2, the coefficient of renewal family bonds also being positively related to innovation inputs ( $\beta=0.130$ ,  $p<0.05$ ), which indicates the



intentions to transfer the business could lead to higher innovation inputs. Therefore, hypothesis 1e is also supported. This finding is consistent with recent research on investigating the relationship between innovation and SEW (Filser *et al.*, 2018; Gast *et al.*, 2018). For instance, Filser *et al.* (2018) argued that the strong desire to renew family bonds through intrafamily succession positively affects family SME innovativeness. This may be explained by a similar logic as the dimension of emotional attachment. The intention to transfer the firm to the next generation might be associated with the tendency to embrace a long-term orientation on decision-making (Miller, Le Breton-Miller and Scholnick, 2007). Family owners with such desires have more incentives to improve the firm's capability to deal with the highly dynamic market, which increases the tendency for family businesses to invest in innovation (Classen *et al.*, 2014).

Furthermore, as evident from Table 6.3, the inclusion of five dimensions of SEW can explain the variance in innovation inputs by 22.5% ( $R^2 = 0.243$ , adjusted  $R^2 = 0.225$ ). The F-value for model 2 was statistically significant at the 1% level, with  $F(11,461) = 13.471$ . This indicated that the inclusion of five dimensions of SEW could significantly predict innovation inputs.

In sum, four out of five hypotheses in the first stage found statistical support. However, given the fact that the SEW construct was found to be multidimensional and that specific dimensions may affect innovation inputs differently. As such, hypotheses 1a, 1c, 1d, and 1e were supported. The theoretical and practical implications of the finding will be further discussed in the next chapter.

**Table 6.3** Regression results for the relationship between SEW and innovation inputs

	Innovation inputs	
	Model 1	Model 2
<i>Control variable</i>		
Firm size <sup>a</sup>	0.129**	0.159**
Firm age	0.039	0.039
Wholesale and retail	0.039	0.047
Manufacturing	0.133**	0.098*
Construction	0.030	0.040
Service	0.015	0.043
Others		
<i>Independent variable</i>		
Family control and influence		-0.123*
Identification		-0.030
Binding social ties		0.317**
Emotional attachment		0.166**
Renew family bonds		0.130*
R <sup>2</sup>	0.044	0.243
Adjusted R <sup>2</sup>	0.032	0.225
F value	3.604	13.471

*Note:* N=473; \*  $p < 0.05$  \*\*  $p < 0.01$ ; Standardised regression coefficients ( $\beta$ ) are shown in each equation; <sup>a</sup>Natural Logarithm of the number of full-time employees.

#### 6.4.2 The relationship between innovation inputs and outputs

The second stage tested the relationship between innovation inputs and outputs. Hypothesis 2 argues that innovation inputs have a positive effect on innovation outputs. Table 6.4 presents the results of the regression analysis.

**Table 6.4** Regression results for the relationship between innovation input and output

	Innovation outputs	
	Model 1	Model 2
<i>Control variable</i>		
Firm size <sup>a</sup>	0.122*	0.028
Firm age	-0.083	-0.111**
Wholesale and retail	0.035	0.007
Manufacturing	0.080	-0.016
Construction	-0.052	-0.074*
Service	-0.070	-0.081*
Others		
<i>Independent variable</i>		
Innovation input		0.725**
R <sup>2</sup>	0.033	0.535
Adjusted R <sup>2</sup>	0.021	0.528
F value	2.657	76.441

*Note:* N=473; \*  $p < 0.05$  \*\* ; Standardised regression coefficients ( $\beta$ ) are shown in each equation; <sup>a</sup>Natural Logarithm of the number of full-time employees.

As seen in Table 6.4, model 1 only included control variables, including firm size, firm age, and industry. In m, model 1 only included control variables, including firm size, firm age, and industry. In model 2, the independent variable, innovation input, was positively and significantly associated with innovation outputs ( $\beta=0.725$ ,  $p < 0.01$ ), which implies a higher level of innovation input could lead to more innovation outputs. Furthermore, the F-value of this model was significant ( $F(7,465) = 76.441$ ). The adjusted  $R^2 = 0.528$ , which indicated that the model could explain 52.8% of the variance of innovation outputs. The results reveal that innovation inputs have a positive relationship with innovation outputs, suggesting that higher innovation inputs result in greater innovation outcomes. Investing resources in innovation is considered as the starting point of product innovation (Lee, Wu and Pao, 2014). Specifically, continued innovation inputs allow firms to gain useful external knowledge sources (Escribano, Fosfuri and

Tribó, 2009), obtain new machines, equipment, and software (Rosenbusch, Brinckmann and Bausch, 2011), and pay for licensing fees or recruit highly skilful employees (Escribano, Fosfuri and Tribó, 2009). This finding is consistent with previous studies, suggesting that a higher innovation input can result in greater innovativeness (Caloghirou, Kastelli and Tsakanikas, 2004; Huang *et al.*, 2015). For instance, Diéguez-Soto, Manzaneque and Rojo-Ramírez (2016) asserted that investments in innovation is a prerequisite for creating new or improved products/technologies. Matzler *et al.* (2015) also investigated 136 German family firms and found that innovation inputs have a positive influence on innovation outputs. As such, innovation inputs have a positive effect on innovation outcomes, supporting hypothesis 2.

### **The mediating effects of TMT behaviours**

Further, following the approach outlined by Baron and Kenny (1986), this study tested the mediating effects of TMT behaviours between innovation inputs and outputs. A mediating effect exists when the three conditions are satisfied (Baron and Kenny, 1986). First, the independent variable should be correlated with the dependent variable. Second, the independent variable and mediator are correlated. Third, as the mediating variable is added, the effect of the independent variable on the outcome variable must be significantly diminished or entirely eliminated (Williams, Vandenberg and Edwards, 2009). The results are shown in Table 6.5, Table 6.6, and Table 6.7.

### **Use of knowledge and skills**

Hypothesis 3a proposed that TMT's use of knowledge and skills mediate the relationship between innovation inputs and innovation outputs. Table 6.5 provides the testing results of mediation for the use of knowledge and skills via Baron and Kenny (1986)'s method. In model 1, it tested the first condition, which

stated that the independent variable is significantly associated with the dependent variable. The results show that innovation inputs were significantly and positively related to innovation outputs ( $\beta=0.725$ ,  $p<0.01$ ). In model 2, the independent variable, innovation inputs were regressed against the mediating variable, use of knowledge and skills ( $\beta=0.663$ ,  $p<0.01$ ). Therefore, innovation inputs were associated with the use of knowledge and skills, which confirmed the second condition. In model 3, it tested whether the relationship between innovation inputs and outputs remains significant when the mediator, use of knowledge and skills, was introduced into the initial relationship. The results showed that while the initial relationship between innovation inputs and outputs continues to be significant ( $\beta=0.526$ ,  $p<0.01$ ), the effect of innovation inputs on outputs decreased when the mediator was introduced ( $\beta$  ranged from 0.725 to 0.526).

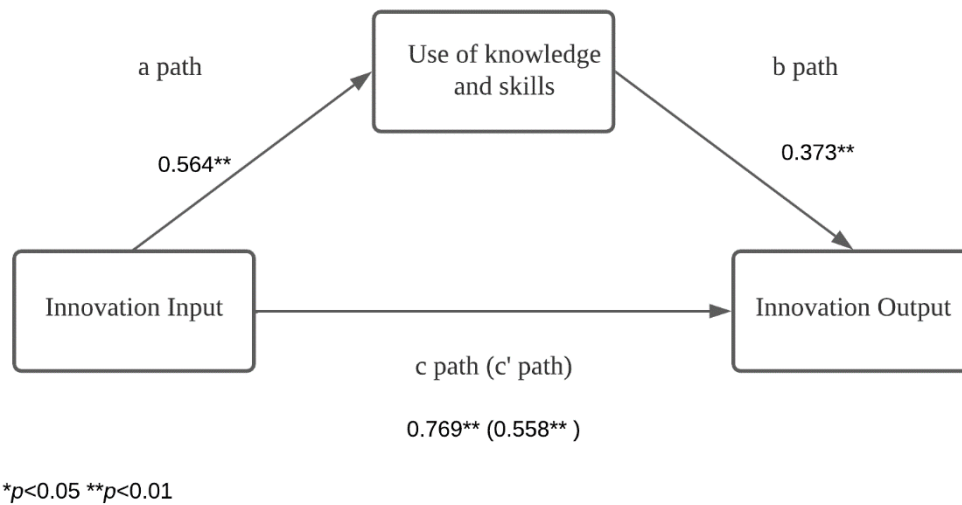
**Table 6.5** Results of regression for the mediating effects of the use of knowledge and skills

	Innovation outputs	Use of knowledge and skills	Innovation outputs
	Model 1	Model 2	Model 3
<i>Control variable</i>			
Firm size <sup>a</sup>	0.021(0.028)	-0.026(-0.044)	0.030(0.041)
Firm age	-0.014** (-0.111)	-0.001(-0.005)	-0.014** (-0.109)
Wholesale and retail	0.018(0.007)	-0.034(-0.016)	0.030(0.012)
Manufacturing	-0.046(-0.016)	-0.095(-0.040)	-0.011(-0.004)
Construction	-0.207*(-0.074)	0.068(0.030)	-0.232**(-0.083)
Service	-0.194*(-0.081)	-0.005(-0.003)	-0.192*(-0.080)
Others			
<i>Independent variable</i>			
Innovation inputs	0.769**(0.725)	0.564**(0.663)	0.558**(0.526)
<i>Mediator</i>			
Use of knowledge and skills			0.373**(0.299)
R <sup>2</sup>	0.535	0.427	0.586
Adjusted R <sup>2</sup>	0.528	0.419	0.579
F value	76.441	49.555	82.212

*Note:* N=473; \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ ; Both unstandardised regression coefficients (B) and standardised regression ( $\beta$ ) are shown in each equation; <sup>a</sup>Natural Logarithm of the number of full-time employees.

This research further calculated the indirect mediation effect and total effect. As shown in Figure 6.1, the impact of innovation inputs on outputs is exerted via two routes. The first is the direct effect of innovation inputs on outputs (path c'). The second is the indirect effect (path ab) through the use of knowledge and skills. The results show that the indirect mediation effect accounts for 27.37% of the total mediation effect ( $0.564 \times 0.373 / 0.769$ ), suggesting TMT's use of knowledge and skills partially and positively mediated the relationship between innovation inputs and outputs, which supports hypothesis 3a. This finding is consistent with previous studies (Huang *et al.*, 2015; Limaj and Bernroider, 2019). A high level of TMT's use of knowledge and skills enable family businesses to actively learn new knowledge and skills, absorb them and transform them into new products or services. The finding implies that innovation inputs positively affected innovation outputs through the use of knowledge and skills. Innovation in family-controlled SMEs usually suffers from resource constraints and technological weakness (Arzubiaga *et al.*, 2018). Meanwhile, they have to keep updating their knowledge base to survive due to the accelerating change in the external environment and increasing competition (Guo, Zheng and Liu, 2017). In that case, family-controlled SMEs tend to seek support from external knowledge and skills. Investing in innovation help develop TMT's abilities to analyse recognise and incorporate newly external knowledge into existing products and services (Jansen, Van Den Bosch and Volberda, 2005). Through assimilation, integration and reconfiguration of diverse technologies (Galunic and Rodan, 1998), TMTs can combine existing with new technology knowhow in original patterns, and achieve product innovations, enhance the efficiency of conversion from innovation inputs to outputs.

**Figure 6.1** The Mediating effect of use of knowledge and skills



## Trust

Hypothesis 3b proposed that trust acts as a mediator in the relationship between innovation inputs and outputs. As discussed above, three multiple regressions were conducted to test the mediation effects of trust between innovation inputs and outputs. Model 1 in Table 6.6 identifies a statistically significant relationship between innovation inputs and outputs ( $\beta = 0.725$ ,  $p < 0.01$ ). Next, model 2 shows that innovation input was positively and significantly related to trust ( $\beta = 0.590$ ,  $p < 0.01$ ), indicating a statistically significant relationship between the independent variable and mediator. Lastly, model 3 shows both innovation inputs ( $\beta = 0.650$ ,  $p < 0.01$ ) and trust ( $\beta = 0.127$ ,  $p < 0.01$ ). However, the coefficients of the effect of innovation inputs on outputs decreased from 0.769 to 0.689. It indicated that the significance of the relationship between inputs and outputs reduced after the trust was added to the analysis, which implies that trust partially mediated the relationship between innovation inputs and outputs.



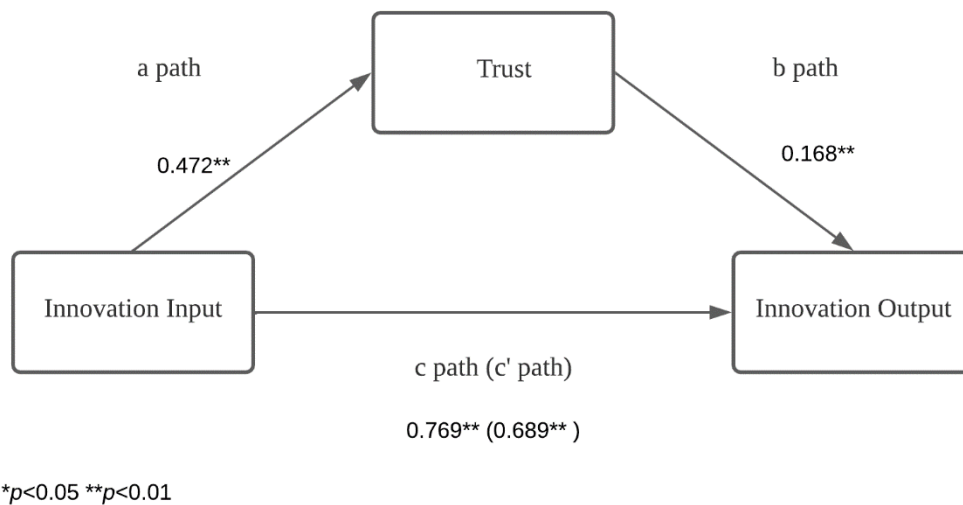
**Table 6.6** Results of regression for the mediating effects of trust

	Innovation outputs	Trust	Innovation outputs
	Model 1	Model 2	Model 3
<i>Control variable</i>			
Firm size <sup>a</sup>	0.021(0.028)	-0.092**(-0.166)	0.036(0.049)
Firm age	-0.014** (-0.111)	0.000(0.002)	-0.014** (-0.111)
Wholesale and retail	0.018(0.007)	0.027(0.014)	0.013(0.005)
Manufacturing	-0.046(-0.016)	-0.019(-0.009)	-0.043(-0.015)
Construction	-0.207*(-0.074)	0.081(0.038)	-0.220*(-0.079)
Service	-0.194*(-0.081)	0.028(0.016)	-0.198*(-0.083)
Others			
<i>Independent variable</i>			
Innovation inputs	0.769**(0.725)	0.472**(0.590)	0.689**(0.650)
<i>Mediator</i>			
Trust			0.168**(0.127)
R <sup>2</sup>	0.535	0.345	0.546
Adjusted R <sup>2</sup>	0.528	0.335	0.538
F value	76.441	34.954	69.646

*Note:* N=473; \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ ; Both unstandardised regression coefficients (B) and standardised regression ( $\beta$ ) are shown in each equation; <sup>a</sup>Natural Logarithm of the number of full-time employees; <sup>b</sup> Natural Logarithm of the firm age

As shown in Figure 6.2, the coefficient of the indirect mediation effect is 0.079 ( $0.472 \times 0.168$ ), which accounts for 10.27% of the total mediation effect. It indicated that innovation inputs are positively linked to innovation through trust among TMT, supporting hypothesis 3b. This finding is consistent with previous studies, which suggested that trust within the TMT is an important variable during the innovation process (Zahra, Neubaum and Larrañeta, 2007; MacCurtain *et al.*, 2010). In family businesses, the interpersonal trust within TMT may play a significant role in the daily management, particularly in their innovation process (Antoldi, Cerrato and Depperu, 2011; Discua Cruz, Howorth and Hamilton, 2013). The process of transforming innovation inputs into outputs is full of risks and uncertainties, demanding a high level of coordination and cooperation (Sarasvathy, 2001). When family members develop a common understanding of innovation, TMT trust could be fostered and strengthened during the process. Trust can serve as a "lubricant" or "adaptor" in this process (Shi, Shepherd and Schmidts, 2015), which facilitates resource orchestration and the use of entrepreneurial networks. Moreover, the interpersonal trust between TMTs also minimises relational conflicts, which otherwise may result in operational difficulties (Kraiczy, Hack and Kellermanns, 2014). Trust among TMTs can strengthen the bond of the family (Sharma, 2008), creating unique resources and wealth in the conversion of innovation inputs to outputs.

**Figure 6.2** The Mediating effect of trust



### Cognitive conflicts

Hypothesis 3c argued that cognitive conflict could mediate the relationship between innovation inputs and outputs. Followed by Baron and Kenny's (1986) method, the mediation for cognitive conflicts was tested. As shown in model 1 (Table 6.7), innovation inputs was significantly and passively related to innovation output ( $\beta = 0.725$ ,  $p < 0.01$ ). Model 2 also identified a significant and positive relationship between innovation inputs and cognitive conflicts ( $\beta = 0.550$ ,  $p < 0.01$ ). Model 3 tested whether the relationship between innovation inputs and outputs remains significant when the presumed mediator variable, cognitive conflicts, was introduced into the initial relationship. The results suggested that the relationship between innovation inputs continues to be positively and significantly related to innovation output, while the was significantly reduced from 0.725 to 0.665 ( $p < .001$ ). As such, cognitive conflicts positively and partially mediated the relationship between innovation inputs and outputs.

**Table 6.7** Results of regression for the mediating effects of cognitive conflicts

	Innovation outputs	Cognitive conflicts	Innovation outputs
	Model 1	Model 2	Model 3
<i>Control variable</i>			
Firm size <sup>a</sup>	0.021(0.028)	-0.090**(-0.163)	0.034(0.046)
Firm age	-0.014** (-0.111)	0.002(0.019)	-0.015**(-0.113)
Wholesale and retail	0.018(0.007)	0.141(0.073)	-0.003(-0.001)
Manufacturing	-0.046(-0.016)	0.081(0.037)	-0.058(-0.020)
Construction	-0.207*(-0.074)	0.125(0.059)	-0.225*(-0.080)
Service	-0.194*(-0.081)	0.052(0.029)	-0.201*(-0.084)
Others			
<i>Independent variable</i>			
Innovation inputs	0.769**(0.725)	0.437**(0.550)	0.705** (0.665)
<i>Mediator</i>			
Cognitive conflicts			0.145** (0.109)
R <sup>2</sup>	0.535	0.314	0.543
Adjusted R <sup>2</sup>	0.528	0.303	0.535
F value	74.377	30.404	68.962

*Note:* N=473; \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ ; Both unstandardised regression coefficients (B) and standardised regression ( $\beta$ ) are shown in each equation; <sup>a</sup>Natural Logarithm of the number of full-time employees.

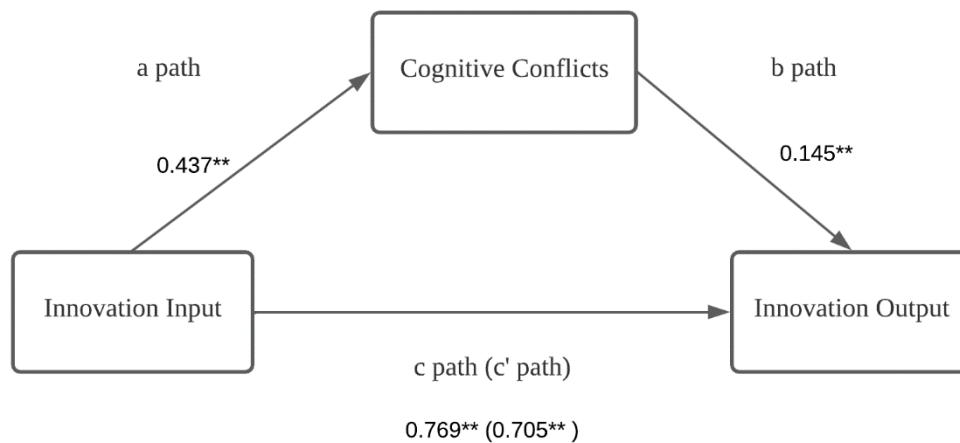
Moreover, Figure 6.3 also shows that the direct effect (path  $c'=0.768$ ) and indirect effect (path  $ab=0.064, 0.437*0.145$ ) of innovation inputs on outputs are significant. The results show that the indirect mediation effect accounts for 8.267% of the total mediation effect ( $0.064/0.769$ ), which further confirmed that cognitive conflict among TMT members partially mediated the relationship between innovation inputs and outputs. Thus, hypothesis 3c was supported.

This finding is consistent with previous studies, which found the positive role of TMT cognitive conflict in the innovation process (e.g., Qian, Cao and Takeuchi, 2013; Camelo-Ordaz, García-Cruz and Sousa-Ginel, 2015; Rong, Zhang and Xie, 2019; Lu *et al.*, 2022). Cognitive conflicts in TMT can bring about new ideas and trigger more innovative actions (Qian, Cao and Takeuchi, 2013). For instance, De Clercq, Thongpapanl and Dimov (2009) suggested that TMT cognitive conflict has strong innovation implications, which could be managed to foster innovation in firms. Research has shown that it is important to create synergistic coordination that underpins the highly motivated and effective exchange of information and ideas during the innovation process (Carmeli and Paulus, 2015).

As indicated earlier, expenditures on innovation can help family firms broaden the sources of diverse perspectives, which can then be applied to new products and services (Rietzschel, Carsten and Nijstad, 2009). By increasing investment in innovation, family-controlled SMEs are able to access more diverse knowledge and achieve knowledge transfer, which provides the resources for TMT to provoke cognitive conflicts. Cognitive conflicts enable TMT members to generate a wide variety of ideas and synthesise diverse perspectives (Rietzschel, Carsten and Nijstad, 2009), thereby generating innovation outputs. Especially in family-controlled SMEs, common behavioural norms and similar backgrounds of family members usually lead to group thinking (De Massis, Frattini and Lichtenthaler, 2013). Cognitive conflicts among TMT is “an antidote

to core rigidities”, which help family businesses overcome the confirmatory biases in the decision making (Leonard-Barton, 1995, p89).

**Figure 6.3** The Mediating effect of cognitive conflicts



\* $p < 0.05$  \*\* $p < 0.01$

To further confirm the mediation, the Sobel test was also conducted to confirm the significance of the mediated effect of the use of knowledge and skills, trust, and cognitive conflicts (Sobel, 1982; Baron and Kenny, 1986). The Sobel test works best with large samples ( $N > 200$ ). Therefore, 473 responses in this study are adequate for using the Sobel test in mediating data analysis. In the Sobel test, the mediated effect divided by its standard error yields a z-score of the mediated effect (Preacher and Kelley, 2011). This value was compared against a standard normal distribution to test for significance. If the z-score is greater than 1.96, it could conclude that the effect is larger than would be expected by chance and call the effect significant. The standard error can be used to obtain confidence intervals around the mediated effect. The results confirmed that the mediating effects of the use of knowledge and skills ( $z = 6.8 > 1.96$ ,  $p < 0.01$ ), trust ( $z = 3.16 > 1.96$ ,  $p < 0.01$ ), and cognitive conflicts ( $z = 2.75 > 1.96$ ,  $p < 0.01$ ).

**Table 6.8** Summary of Hypothesis Testing

Hypothesis	Variables	Result
<b>1</b>	<b><i>Socioemotional wealth and innovation inputs</i></b>	
1a	Family control and influence and innovation inputs (-)	Supported
1b	Identification and innovation inputs	Not supported
1c	Binding social ties and innovation inputs (+)	Supported
1d	Emotional attachment and innovation inputs (+)	Supported
1e	Renew family bonds and innovation inputs (+)	Supported
<b>2</b>	Innovation inputs and outputs (+)	Supported
<b>3</b>	<b>The mediation effect between innovation inputs and outputs</b>	
3a	The mediating effect of use of knowledge and skills (+)	Supported
3b	The mediating effect of trust (+)	Supported
3c	The mediating effect of cognitive conflicts (+)	Supported

## 6.5 Summary

This chapter has discussed the quantitative research findings based on the hypothesis development. In summary, this chapter presented the demographic statistic, correlations, and regression results of the quantitative research. By examining 473 Chinese family businesses, this study tested the impact of SEW on innovation inputs, and the mediating effects of TMT behaviours on the relationship between innovation inputs. According to the proposed conceptual model (Chapter 4), the analysis is based on two parts. In the first part, the results show that binding social ties, emotional attachment, and the renew family bonds are significantly and positively associated with innovation inputs, while family control and influence are significantly and negatively linked to innovation inputs. In the second part, the relationship between innovation inputs and outputs is positive and significant. Additionally, the use of knowledge and skills, trust, and cognitive conflicts could partially mediate the relationship

between innovation inputs and outputs. Taken together, the result in this chapter supports eight hypotheses of the proposed conceptual model Chapter 4. Specifically, H1a-e, H2, H3a-c are accepted, while H1b is rejected. The next chapter will further explore the conceptual model based on the qualitative findings of this study.



## **Chapter 7 Qualitative Research Findings**

### **7.1 Introduction**

The proceeding chapter discussed the findings of the quantitative research. Using a sample of 473 family businesses based in China, we investigated the relationship between SEW and innovation inputs and how TMT behaviours mediate the relationship between innovation inputs and outputs. This chapter examines the qualitative phase of the study in the mixed-method study. By conducting 13 semi-structured interviews (12 companies) with the owner-managers or senior managers of Chinese family businesses, the qualitative study attempts to provide a further in-depth understanding of the conceptual model in this research. The structure of this chapter is as follows: First, this chapter will introduce the background of the interviewed firms. Second, this chapter will be dedicated to a discussion of evidence from the interviews on the conceptual model. Finally, the chapter will be concluded with a summary of the qualitative findings.

### **7.2 Background**

Table 7.1 and Table 7.2 summarise the background of the interviewees of the qualitative research. Table 7.1 presents the demographic profile of the respondents and their companies. Table 7.2 shows the nature of respondent family businesses, including TMT members, family members of TMT, and the summary of SEW. Using snowball sampling, the author conducted semi-structured interviews with 12 Chinese family businesses. Each interview was digitally recorded (audiotaped) with their permission. On average, each interview lasted more than 40 minutes. Table 7.1 presents the demographic profiles of the respondents. As shown in the table, 12 family firms (13 interviewees) of Chinese family businesses were involved in the qualitative

study. Of the 13 interviewees, four of them are females, and the remaining are males. Concerning the sector, six companies are in manufacturing, four in construction, one in multiple industries, and one in trade and commerce. Moreover, the geographical locations of interviewed family businesses are from five provinces, including Jiangsu, Gansu, Shanxi, Fujian, and Yunan province. Additionally, the age of the firms ranged from 9 to 38 years. 9 out of 13 companies have been founded for more than 20 years.

**Table 7.1** Demographic Profiles

Company	Location	Industry	Foundation year	Position	Gender
A	Kunshan, Jiangsu	Manufacturing	2006	Executive Director/ General Manager (Family member)	Male
B	Lanzhou, Gansu	Construction	2005	Chairman (Family member)	Male
				Senior manager (Family member)	Female
C	Zhangye, Gansu	Manufacturing, Agriculture	1994	Executive Director/ General Manager (Family member)	Male
D	Taiyuan, Shanxi	Manufacturing	1998	General manager (Family member)	Female
E	Xianyou, Fujian	Manufacturing	2003	Senior manager (nonfamily member)	Male
F	Lanzhou, Gansu	Construction	2001	General manager (Family member)	Male
G	Lanzhou, Gansu	Trade and commerce	2000	Chairman (Family member)	Male
H	Lanzhou, Gansu	Manufacturing	2002	General manager (nonfamily member)	Male
I	Lanzhou, Gansu	Construction	2000	Vice-general manager (nonfamily member)	Male
J	Lanzhou, Gansu	Multiple	1998	Senior manager (Family member)	Female
K	Lanzhou, Gansu	Manufacturing	1984	Chairman (Family member)	Male
L	Wenshan, Yunnan	Construction	2013	Manger (Family member)	Male

**Table 7.2** The nature of respondent companies

Company	TMT members	Family members in TMT	Characteristics of Socioemotional wealth	Characteristics of TMT behaviours
<b>A</b>	5	3	Family owner, also founder-controlled, close relationship with customers and suppliers, niche market strategy, fair institutional environment	Family members have relevant knowledge and skills in the field. They are directly involved in the innovation process and play an essential role.
<b>B</b>	7	4	In operation in its 1st generation (founder of the company). Strong emotional attachment to the firm, put a lot of efforts to the long-term development. Concerns about family business identity.	A large number of family members in the firm, and a high level of trust within the TMT.
<b>C</b>	6	2	Initially focused on construction, then transferred to the donkey breeding industry. The father tightly controlled the company.	While the successor (the second generation) entered the company for years, the differences between the two generations triggered more conflicts.
<b>D</b>	6	4	High innovation capability, competitive research team; Although the second generation (daughter) currently works in the company, she still has intentions to hand the business to professional managers.	Professional TMT teams, with high-level abilities to learn and apply external knowledge and skills.
<b>E</b>	15	12	Founded by three brothers in the family, relatively low technology, the government being not very incentive	Most of TMT members are from family. However, due to the similar background and parental leadership, they have few cognitive conflicts
<b>F</b>	14	3	The majority of key position in the company are occupied family members. They have strong identification and emotional attachment with the firm.	TMT members are mainly family members. A high level of trust exists in the TMT.

<b>G</b>	13	3	The company's origins draw back to the current owner's father. The owner and his brother tightly control the company. Good relationship with government and banks. As a legacy from father, the owner has deep emotional connection with the firm.	Most of TMT members joined the company more than twenty years ago. Loyal to the family owner and have a high level of trust.
<b>H</b>	7	3	High-technology capability, close relationship with customers, government being very supportive by providing relevant policy; Collaboration between firms and universities	Building an external brain to introduce talents in the TMT, diverse backgrounds, and high education level.
<b>I</b>	5	2	A good relationship with the government, and customers. The family business owner and his wife tightly control the company. Innovation is based on existing lines, low-tech.	Cohesive climate in TMT. TMT members are old staff, and very loyal. More cognitive conflicts rather than relational conflicts.
<b>J</b>	6	2	Strong emotional attachment to the firm. The successors have strong intentions to maintain the business.	Family members in the TMT have very good relationships and a high level of trust. The communications among family members are efficient.
<b>K</b>	5	2	Family owners have strong desires to maintain the firm across generations. Keeping a good and long-term relationship with local government. Niche market strategy, close relationship with customers and parent firm.	Significant differences between the two generations due to their experiences and education, while they share their knowledge and engage in dialogue on innovation.
<b>L</b>	7	4	Tightly controlled by family owners, good relationship with local government. The successor is reluctant to take the company.	TMT members have great abilities to learn from external knowledge. TMT members have professional talents.

## 7.3 Findings on Socioemotional Wealth Influencing Innovation Inputs

### 7.3.1 Family control/influence and innovation inputs

According to Berrone, Cruz and Gomez-Mejia (2012), family control and influence over the firm is one of the key characteristics that distinguish family firms. The extent to which family control usually depends on the family members' power to control key strategic decisions (Block *et al.*, 2013). The evidence suggests that family owners usually tight their control over the firms by appointing family members to key positions or owning dominant shareholding (Le Breton-Miller and Miller, 2009). In that case, family owners' controlling power in strategic decision-making plays an important role in innovation investment. This situation might be more present in family businesses (Gast *et al.*, 2018). This is depicted in these quotes:

*"Our company is a group company with six subsidiaries, all of which are family-controlled. Among the legal persons and senior managers, 12 out of 15 are family members...The decisions on important innovation investments are mainly made by the chairman (family owner)."*  
(Company F)

*"Our company is small, with five TMT members. Three of them are family members. My wife and I controlled most of the company's shares... I have absolute voting rights on innovation investment, and other nonfamily TMT members only have the right to advise, but not to make decisions"* (Company A)

*"Our company has 7 TMT members, and three of them are family members. The shareholding is absolutely controlled by the chairman, but it is still cautious and concentrated in the decision-making of innovation investment. Everyone will democratically put forward various opinions, but in the end, it will be concentrated on one person, and that person must be the big boss"* (Company I)

The evidence from the above quotes shows that the tight control of the family's power over key strategic decisions, such as innovation investments, is prevalent in Chinese family businesses. Therefore, family influence and control have a significant impact on innovation investment. This is also consistent with previous studies, which suggested that family owners are more likely to appoint family members as CEO, members of the TMT, or board members to maintain control over key strategic decisions (Block *et al.*, 2013). In that case, the tight control by the family tends to have a detrimental effect on the innovation of family firms (Chen and Hsu, 2009; Chin *et al.*, 2009; Wang and Beltagui, 2021). On the one hand, to maintain tight control over the firms, family owners tend to invest most of their personal wealth in the firms (Carney, 2005). As such, they would be extremely cautious when they risk their existing wealth towards innovation. On the other hand, a high level of family members controlling power over decision-making tends to reduce the influence of nonfamily members (Wang and Beltagui, 2021), which could lead to group-thinking and strategic inertia on innovation (Minichilli, Corbetta and MacMillan, 2010; De Massis, Frattini and Lichtenthaler, 2013). Specifically, tight control in family business results in family owners hiring more family members in key positions instead of qualified nonfamily talents (Zellweger, Sieger and Halter, 2011). Given that family members usually share similar educational backgrounds and common behavioural norms (Arzubiaga, Maseda and Iturralde, 2019), the lack of external innovation talents could lead to group-thinking and strategic inertia, which hinder the willingness of family firms to invest in innovation. One of the interviewees commented that:

*"For us, the company is our home. Currently, all of my wealth is in the company. For instance, we have signed unlimited liabilities of contracts with the bank to get loans, which means the bank can execute my other properties if I cannot repay the debt. As such, if I make severe mistakes in decision-making that led to the bankruptcy of the company, my whole family members would be affected. The quality of their life will be significantly decreased. Therefore, I am relatively cautious about investing in innovation projects"* (Company G)

Another interviewee commented that,

*“My father tightly controlled the decision-making of the firms but never listened to others’ advice, which led to many issues during the development of the enterprise. For instance, our company started the animal farming industry without experience and accumulated knowledge base. Even though my father refused to seek advice from outside and followed his own ideas on raising donkeys, which are based on low-efficient and old-fashioned traditional countryside methods.” (Company C)*

The above quotes suggest that the tight family control over the firm could have a detrimental effect on innovation inputs. The comments of company G show that the family owners are extremely cautious when they invest in innovations. To maintain tight control over the decision-making, family owners usually invest most of their personal wealth in the company, especially in family-controlled SMEs (Carney, 2005). Due to the uncertainty of innovation projects, higher innovation inputs may put the family’s financial wealth at risk (De Massis, Kotlar, Frattini, *et al.*, 2015; Filser *et al.*, 2018). Therefore, the risk of losing personal wealth could give rise to family businesses adopting a conservatism strategy for innovation investment. Moreover, the discussion with company C revealed that the family’s tight control over the firm tends to reduce the influence of nonfamily members, which leads to the lack of diversified ideas from outside. According to the respondent’s description, family members of company C lack related experience and knowledge of breeding donkeys. However, family owners still followed old-fashioned ways rather than adopting more innovative ideas and methods, such as building archives for donkeys to monitor their health. As the respondent noted, the tight family control over the firm could lead to the lack of external points of view, which might give rise to lead group-thinking and strategic inertia on innovation (Arzubiaga *et al.*, 2021). In that case, family firms could reduce their proactive attitude towards innovation inputs. The findings of qualitative interviews resonate with extant literature, which indicates that tight control in family firms could have a negative impact on innovation inputs (Chin *et al.*, 2009; Block, 2012; Chrisman and Patel, 2012).



### 7.3.2 Identification with the firm and innovation inputs

Due to the blurred boundaries between the family and the firm, family members tend to inevitably tie with firms, especially when they carry the family's name (Stevens, Kidwell and Sprague, 2015). Such close ties may create unique belonging and fulfilment for family members with a shared identity (Stevens, Kidwell and Sprague, 2015). In that case, the identification with family firms plays an important role in the innovation because any threat to the firm's reputation could be viewed as a hazard to its identity (Zellweger, Eddleston and Kellermanns, 2010). However, in contrast to Western countries, family business as a business entity is relatively new in China (Wang and Shi, 2021). In China, most family businesses were established after the beginning of economic reform in 1978. Due to the long-term planned economy and ideological concerns, many Chinese family firms still struggle with the family icon (Wang and Shi, 2021). As such, even today, many family owners are reluctant to acknowledge they are family businesses due to the concern over the identity of the family business. In that case, family identity may not be the major concern when family firms invest in innovation. For example, one interviewee said:

*"I think that family identity has few influences on our innovation investment. The major factor that we considered is the potential and risk of the innovation projects. Family identity may help enhance the cohesion in the company, but I cannot see too much influence on our innovation investment."* (Company F)

The evidence from the interview of company F indicated the limited influence of family identity on innovation inputs, which is not consistent with previous family business research based on the context of Western countries. This discrepancy could be attributed to the context of China. Family businesses in China are usually small-scale and low-tech companies. There is a social norm that owner-managers do not intend to acknowledge they are family businesses due to the concern over the negative identity of the family business (Wang, Pei and Liu, 2014). In that case, they are less likely to pay much attention to their identity as a family business. As such, the influence of family members' identification with the firm on the innovation inputs could be limited. These

findings from the interviews also are helpful in explaining the inconclusive results of H1b in the quantitative analysis.

Whilst there were also some comments about the negative effect of identification with the firm on innovation inputs. They suggested that nonfamily employees may have concerns about the negative impact of nepotism, which leads to the lack of innovation talents for family firms. For instance, one of the interviewees commented:

*"When I employed innovation expertise from outside, sometimes, the family identity could have some negative effect. Once they heard we are a family business, they would probably think of some questions: Whether it is difficult to manage subordinates who are family members? Whether my advice could be accepted? These concerns could affect their decisions to join us." (Company B)*

Similarly, another interviewee talking about this issue said:

*"Because family members always had a sense of superiority, they may think the company belongs to their family. Anything in the company should be decided by the family themselves. Therefore, they could be a little hostile to external nonfamily members. Sometimes they are not very respectful to the hired innovation talents." (Company K)*

The above evidence is consistent with previous findings (Schulze *et al.*, 2001; Fiegenger, 2010; Allen, George and Davis, 2018). The interviews of company B indicated that nonfamily job seekers might have concerns over the family's identity in the firm. The strong identification within the family business could restrict their promotion opportunities. It could reduce family businesses' abilities to compete for top innovation talents, which leads to a shortage of innovation expertise in family businesses. Likewise, the case of company K also shows that the blurred family-firm boundaries (Stevens, Kidwell and Sprague, 2015) might limit the influence from external perspectives and make the organisation more difficult to change and innovate.

### 7.3.3 Binding social ties and innovation inputs

Binding social ties refers to social relationships with their internal and external stakeholders, including employees, suppliers, the government, and the community (Le Breton-Miller and Miller, 2006; Berrone, Cruz and Gomez-Mejia, 2012). Previous studies indicated that the interactions with these stakeholders strongly influence innovation in family firms (Llach and Nordqvist, 2010; Filser *et al.*, 2018; Gast *et al.*, 2018; Arzubiaga *et al.*, 2021). For instance, Gast *et al.* (2018) argued that binding social ties could create an open attitude toward external resources, capabilities and skills, which allows family-controlled SMEs to identify more opportunities to seek to advance the tendency to innovate. Similarly, Arzubiaga *et al.* (2021) also suggested that placing a greater emphasis on developing social ties could bring more diverse ideas into companies, therefore influencing the decisions on implementing new technologies. Consistent with the previous perspectives above, the interviews of this study revealed that binding social ties could enhance the innovation inputs in family firms. Below are quotes from family owners of company A, G, H, who observed that a high level of social ties tends to encourage family firms to invest in innovation projects.

*“Our company have very good relationships with the local government, suppliers, and technology institutions. Like our suppliers, we have built long-term cooperation with them and commit to prompt payment practices. At the same time, they give us full support and always share with us the latest industry information, which brings new ideas for our new product development.” (Company A)*

*“Our company started some innovation projects because of the local government's introduction and support. In 2013, our company undertook a model project in Lanzhou regarding Intelligent Transport System. This is a technological innovation project, which involves applications and development of a range of information and communication technologies, such as car navigation, traffic signal control systems, automatic number plate recognition or speed cameras*

*to monitor applications. This innovation project gets full support from the local government, including legislation, cooperation between government departments, and commercialisation. In other words, without the government's support, this innovation project was unable to carry out, not to mention such a scale investment.” (Company H)*

*“In my opinion, private enterprise in China should especially pay attention to the relationships with banks and the government. For instance, our company has built very good relationships with them. Therefore, once we encounter problems in new product developments, we can search these relationships to address it [...] Although my father passed away several years, the resources of the social network he left are still a precious legacy for the company.” (Company G)*

The above excerpts from the interview indicate that building strong and stable social ties with banks, government, suppliers, or research institutions plays a significant role in the new knowledge acquisition capital funds obtained for Chinese family firms, thereby influencing innovation inputs. For example, the respondent of company A noted that a good relationship with their suppliers makes them more willing to share the latest information in the relevant industry, thereby allowing them to identify more opportunities to innovate. Similarly, company H also revealed that support from the local government significantly influences their long-term strategy and innovation investment decisions. Such institutional support provides favourable policies and regulations that foster the development of technological innovation. Moreover, the quotes from “company G” also confirmed the essential role of binding social ties on knowledge acquisition and capital funds obtaining. Even the social ties that transferred from the last generations continue affecting the company's development. These findings are consistent with previous research (Chong and Zhou, 2014; Wang, Zhao and Voss, 2016; Yang *et al.*, 2016; Zhang *et al.*, 2016). For Chinese family firms, innovation faces the lack of clearly defined and routine private property rights (De Massis, Ding, *et al.*, 2018c). Because of the legal inadequacy and enforcement efficiency (Sheng, Zhou and Lessassy, 2013; Wang *et al.*, 2015), private companies in China usually experience some problems that lead to

difficulty in protecting intellectual property rights, such as copyright violations, appropriation of intellectual, and copying mechanisms (Zhang *et al.*, 2017). In that case, social interactions and networks could be used to overcome the inadequacies in the institutional environment, facilitating information sharing (Zhang and Hartley, 2018). Family firms could access more information regarding innovation, which leads to more opportunities to innovate.

Additionally, only a small number of those interviewed suggested that strong social ties may not have expected effects on innovation. As one interviewee put it:

*“Our company has a very good relationship with the local government. But I don’t think they could provide us with help on innovation investment and technology development. These areas are mainly depended on ourselves. The ties with government could only give us some convenience on administrative affairs, such as the inspections of the workplace.” (Company E)*

The above excerpts from the interview indicate that stable ties with the government may not have a direct impact on innovation inputs. As a shoe manufacturing enterprise, the introduction of new technologies or equipment is largely based on the external market, and their customers are overseas. The local government is less likely to involve in their innovation projects, therefore influencing their innovation inputs.

#### **7.3.4 Emotional attachment and innovation inputs**

According to Gast *et al.* (2018), a family’s emotional attachment is typically shaped by their common emotions, knowledge, history, and jointly experienced events. The intense emotional attachment usually reveals a strong sense of responsibility for the continuity and prosperity of their firms (Lumpkin, Brigham and Moss, 2010). Such a strong desire to ensure the longevity and prosperity of the firms could motivate family owners to embrace the long-term orientation and make sustainable decisions, thereby influencing their tendency to invest in innovation (Classen *et al.*, 2014). The findings of the qualitative interviews

resonate with the above argument, which confirms the influence of a family's emotional attachment on innovation inputs. As one of the interviewees put it:

*"I have a strong emotional attachment to the firm. After the reform and opening up, my father came out to be a migrant worker with no special skills. Through his hard work, he founded this company. Since my father passed away, this company is not only wealth but also a responsibility. This company is the result of our two generations' combined efforts, especially the first half of my life and the second half of my father's life. Therefore, I must keep the firm continuing [...] In recent years, the external environment is not good. To make the firm survive, we gradually shut down our real estate business and focused on improving our original business- the steel trade. We are trying to explore the new business model and combine new technologies into the traditional industry. For instance, this year we build a new steel logistics park, which introduced the internet of things (IOT) technologies."* (Company G)

Similarly, another participant commented:

*"I have worked in the company for more than twenty years. Also, most of TMT members are from my family. I have deep emotions with the firm and will try my best to keep it continued. In recent years, the construction and real estate industry in China suffered a severe slump due to government restrictions. We think that it is no longer sustainable. To maintain the long-term survival of the business, the company must find another way. As China's innovation-driven development strategy, we have decided to transform into a high-tech information industry and increase the relevant investment scale, achieving sustainable development."* (Company F)

From another perspective, company B confirmed that strong emotional attachment tends to foster a sense of "togetherness" in the family context (Ng, Dayan and Di Benedetto, 2019), which could extend to a stewardship culture

in the firms (Kellermanns, Eddleston and Zellweger, 2012). Within such an atmosphere, family firms' members are more willing to sacrifice and invest resources to make the firm long-survival. The interview excerpt below attests to this.

*“Because I have a deep affection for this company, I devoted much more time and energy to the work. For example, I usually work overtime initiatively. Specifically, if my work is not completed today, I will consider finishing the work before going to dinner. Therefore, our daily work always is overloaded, and sometimes it often exceeds 12 hours. Especially for the current situation, the economy is not good. I have to raise the whole family and pay the salary of all the employees. In that case, I have to consider a long-term orientation and explore a way for the company.” (Company B)*

As shown in the above excerpts from the interviews, the intense emotional attachment to the firm leads to a strong desire to make the firm survive. Such strong intentions to maintain the business tend to create incentives for family firms to innovate, gaining a competitive advantage. This finding is inconsistent with previous family business innovation research, which suggested that the high level of emotional attachment may amplify concerns about the future and thereby hinder innovation (Gast *et al.*, 2018; Dayan, Ng and Ndubisi, 2019; Arzubaga *et al.*, 2021). This discrepancy could be attributed to the highly dynamic environment in China. Due to the large and dynamic market, Chinese family firms usually face rapid changes in technologies, variations in customer preferences, and fluctuations in product demand (Jansen, Van Den Bosch and Volberda, 2005). Thus, they need to be more entrepreneurial and respond rapidly to competitors' actions to make the firm survive in uncertain business environments (Chirico and Bau', 2014). This has been seen in the case of company G and company D. Specifically, the intense emotions towards the firm and their last generations reveal a strong responsibility towards the survival of their companies. When the external market changed significantly, they increased their inputs on new technologies or transferred to innovative industry, improving the capabilities to cope with the dynamic

environment and maintain the firm survival. Therefore, the evidence clarifies the positive impact of emotional attachment on innovation inputs.

### **7.3.5 Renew family bonds and innovation inputs**

Renew family bonds refers to the intention to transfer the firm ownership and control to the next generation (Berrone, Cruz and Gomez-Mejia, 2012), which has important implications for the time horizons of firms' strategic decisions. For instance, De Massis *et al.* (2013) argued that the desire to hand the business down to the next generation could extend the timeframe of strategic decisions, which makes them more likely to commit the resources to the innovations that require a long-term horizon to pay off. Similarly, Gast *et al.* (2018) also confirmed the positive impact of intentions to maintain the business across generations on innovativeness. Given the intentions to pass the business to the next generations and to build a lasting family legacy (Ward, 2011), family businesses usually have a long-term orientation, which may affect their entrepreneurial efforts (Lumpkin, Brigham and Moss, 2010). Consistent with the above perspectives, the interviews indicate that the intentions to transfer the business to the next generation could encourage family businesses to invest more in innovation, ensuring their sustainability and competitiveness in the future. The interview excerpt below attests to this.

*“This company was established by my father in 1984, which has been more than 40 years. Recently, I handed the business to my son because I want to continue the business and create a century-old enterprise. I always told my son: ‘It Takes a Good Blacksmith to Forge Good Tools’. The most important thing to keep the business competitive is exploring new knowledge and skills and improving our products. As you know, the clothing industry has fierce competition, and there is no advantage in northwest China regarding fabrics and technical personnel. To remain competitive, our company went to Shanghai to participate in the leading textile machinery exhibition every year. This is China's most important textile event. We attend it every year to follow up latest technologies and equipment.” (Company K)*



The above excerpt from the interview shows that the family's desire to hand the business down to the next generation tends to create motivations for improving the firm's ability to deal with the uncertain future. In that case, family owners are more likely to invest resources in the innovation based on the long-term orientation (Arzubiaga *et al.*, 2021). In the case of company K, constantly investing in textile technology and equipment for decades significantly improves its competitiveness in northwest China. Even company K has suffered waves of impacts from E-commerce and competitors from Yangtze River Delta city, it still accounts for a certain market in the local area for many years. Therefore, the evidence suggests that when family owners have intentions to transfer the business to the next generation, they are more willing to invest in innovation to achieve sustainable development for the company.

However, some Chinese family businesses also face challenges in succession. For instance, some of the comments from the respondents are highlighted in the followings:

*"I have worked in the company for five years. But I think I would give the company to professional managers in the future. Because I did not study this medical area. Also, I am not very interested in this field. I have my own interests. So, in the future, I may find some professionals to run this company." (Company D)*

*I only have one child, and she is a girl. I don't think she can suffer hardship like me. She is not suitable to deal with this stuff in the company. As a result, I may handle the company to professional managers in the future (Company A).*

The above evidence suggests that some Chinese family businesses might have concerns over their succession. In the past decades, China experienced intense economic, social, and technological reforms (Wang, Pei and Liu, 2014). Due to the large distance between the two generations and the single-child policy, some younger generations are reluctant to lead an "old-fashioned" family

business (Wang and Beltagui, 2021).

#### **7.4 Innovation Inputs and Innovation Outputs**

As discussed in the previous chapters, this study focused on product innovation, which refers to the development of new functions or features in a product or service (Varis and Littunen, 2010). Innovation inputs are usually considered as the preconditions to innovation outputs because they bestow on firms' a range of resources that is necessary to turn the research projects into new products and services (Hambrick and Macmillan, 1985). According to Caloghirou, Kastelli and Tsakanikas (2004), the amount of investment for a firm's innovation could determine the accumulation of its technological competencies, which in turn determine the opportunities to generate innovation outcomes. Moreover, as the majority of family-controlled SMEs are directly or indirectly affected by the constraints of financial resources and human capital resources, they are more likely to resort to less structured (Guo, Zheng and Liu, 2017). For instance, they could invest in non-R&D-based innovation activities, such as technology adoption, minor modifications, imitation, including reverse engineering, and combining existing knowledge in new ways (Huang, Arundel and Hollanders, 2007). In that case, higher innovation inputs could bring more opportunities to generate new products and services. Consistent with their perspective, the interview described the relationship between innovation inputs and outputs. Below are quotes from the interviews.

*"Our company is relatively small, and we don't have an R&D department. The major innovation inputs concentrated on purchasing new technologies and equipment. By applying introduced external new technologies, we developed new products for our customers. Specifically, we cooperated with Jiangsu Chemical Industry Machinery Institute and Hefei General Machinery Research Institute in the long term. They provided us with the latest technology, and then we designed new heat exchangers according to our customer requirements and feedback. With constant innovation inputs, we*

*currently can develop at least one type of new product each year (Company A)*

Another interviewee commented that:

*“Our innovation inputs are mainly used to develop and produce donkey milk powder products. Given the healing and cosmetic virtues of donkey milk, we cooperated with the Chinese Academy of agricultural sciences, agricultural universities and some research institutions in the Gansu province to provide technical support. After several years’ accumulation, the production has been developed from the small scale of experimental into industrialisation production. We have achieved remarkable achievement in ‘Three Industries Integration’ (Agriculture production, Agro-product Processing, Agriculture-related services). Last year, our company developed six new donkey milk products and donkey milk face masks.” (Company C)*

The above excerpts from the interview highlight the important role of the expenditures in introducing external technologies for the development of new products. In contrast to large companies, family-controlled SMEs usually suffer from constraints on financial resources and human resources personnel (Freixanet, Rialp and Churakova, 2020). Additionally, dynamic Chinese market also leads to a customer-focused innovation for SMEs (Mckinsey Global Institute, 2015), which focuses more on customer feedback rather than scientific results (Chung and Tan, 2017). Therefore, introducing external technologies help family-controlled SMEs to reduce investment risks and provide them with competitive advantages. With the increasing input on purchasing external technologies, company A has more opportunities to design and develop new products based on the introduced technologies. Similarly, company C has signed contracts with research institutions to introduce donkey milk-producing technologies from the external market. By constantly investing in the project, company C completed the development of a series of donkey milk products. Therefore, higher expenditure on innovation activities tends to have a positive impact on developing new products and services. In addition to

introducing external technologies, some family businesses, especially from the high-tech manufacturing industry, combine internal and external innovation inputs into outcomes (Muñoz-Bullón, Sanchez-Bueno and De Massis, 2020). This is depicted in this quote.

*“Our group company established an Academician Workstation in 2011, hiring five academicians from the Chinese Academy of Engineering. We focused on developing new products and services regarding “smart city”, including smart transportation, smarty travel, and smarty building. At the same time, we also cooperated with universities and research institutions, introducing their latest technology to improve our innovative capabilities. With the increased inputs, we achieved remarkable outcomes. Currently, our company have more than 300 patents. The vehicle transport system and recognising Internet of things that we developed have been listed as one of the national SME innovation projects.” (Company H)*

The evidence, as shown above, suggests that innovation inputs are the precondition for innovation outputs. Specifically, both internal and external innovation inputs are critical for company H to generate creative outputs. On the one hand, company G established a research centre to develop innovative transportation systems on their own. On the other hand, the company also built collaborative relationships with research institutions. As the interviewee confirmed that new patents and new transportation systems were developed with the accumulation of technology and experience. As such, the findings are consistent with the previous studies (Bogner and Bansal, 2007; Artz *et al.*, 2010), which suggested that the relationship between expenditures on innovation activities is positive.

## **7.5 Findings on the mediating effects of TMT behaviours**

The preceding section has discussed the evidence of how the five dimensions of SEW influence innovation inputs and the relationship between innovation

inputs and outputs. In the section that follows, it will discuss how innovation inputs affect innovation outputs through TMT behaviours, including the use of knowledge and skills, trust, and cognitive conflicts.

### **7.5.1 Use of knowledge and skills**

According to Forbes and Milliken (1999), TMT's use of knowledge and skills refers to the TMT's ability to tap into the knowledge and skills available to it and apply them to specific tasks. Innovation inputs not only directly affect innovation outputs but also improve TMT's use of knowledge and skills by recruiting innovation talents or expanding knowledge acquisition (Guo, Zheng and Liu, 2017). In that case, family firms are easier to analyse and understand external knowledge and skills, incorporating them into new products and services (Jansen, Van Den Bosch and Volberda, 2005). As such, the role of the use of knowledge and skills are essential between innovation inputs and outputs.

For instance, Lampert and Semadeni (2010) found that innovation investment could broaden the sources of acquiring external knowledge and skills, which accumulates knowledge base and enhances the opportunities to identify and value new external knowledge base. Similarly, Fleming and Sorenson (2001) argued that the expenditures on acquiring external technologies from various technology providers could enrich firms' internal knowledge and technology base, which allows firms to recombine diversified knowledge and lead to innovations. Consistent with previous findings, the interview also indicates how innovation inputs enhance TMT's use of knowledge and skills. Below are quotes from the interviews:

*“Due to the lack of high skilled talents in Gansu, we have to build an “external brain” for the company. As you know, Gansu suffers “brain drain” problems and has a limited scale of talents. The wages and benefits of talents cannot be guaranteed. Therefore, we have invested many resources to build branches in Jing-Jin-Ji Metropolitan Region to recruit high level of innovative talents for our company. They focus on data analyses and provide technical support for intelligent*

*transportation development.” (Company H)*

*“The head of pharmaceutical development is one of our TMT members. He is my mother’s friend, and we employed him with high pay. He is a pharmaceutical technology R&D specialist, and he is very familiar with the pharmaceutical industry. Currently, he leads a team to develop new products. Although my mother worked in a pharmaceutical factory for more than ten years, she did not have professional training. The introduction of this manager enhances our abilities to develop new pharmacy significantly.” (Company D)*

As the above quotes show that the expenditures on innovation activities could help family businesses accumulate the knowledge and skills that transform the technological capability into new products and services. For instance, company H expends a amount of resources to establish an “external brain” for innovation personnel, which overcomes the constraints of human capital and enhances their innovative capabilities. Similarly, the expenditures on recruiting high-salaries innovation personnel to get more opportunities to innovate. After the introduction of new technology, it still requires some digestion, improvement, diagnosis, and judgment to apply to new products and services (Zahra and George, 2002). When family businesses acquire external new knowledge and skills, a high level of use of knowledge and skills could help companies to understand, analyse and apply external knowledge to their new products and services. Furthermore, the existing knowledge and skills within TMT also accelerate the assimilation and use of external knowledge and skills. This is depicted in these quotes.

*“Our chairman has studied surveying and mapping in his past career ...When he established the company, he also invited his classmates to join the TMT [...] Despite what they learned is already out of date, they can learn related knowledge and skills quickly. For instance, at the early stage, when our company introduced drone survey mapping technology from outside, they could quickly learn it and organise employees to apply it in our new projects. ” (Company H)*

*“We design and develop our new type of heater exchanger based on the technology adopted from external research institutions. Because my brother and I both have an educational background in chemical machinery, we participated in the development of new products. We adopted technology from Jiangsu Chemical Industry Machinery Institute to design and develop our new products. Based on the customers’ requirements and feedback, we design and apply the acquired technologies to our new products.” (Company A)*

*“We are a small company, and we cannot conduct R&D on materials or technologies by ourselves. Therefore, we signed contracts with a Zhejiang company to learn steel construction technologies. We sent our TMT members to train in Zhejiang for several months. When they come back, they are responsible for the application of technology and training relative employees. Our company also became the first local company which applies the steel construction technology in the projects.” (Company L)*

The above excerpts from the interviews indicate that TMT’s use of knowledge and skills could help family businesses fully exploit external technologies, applying them to new products and services. For instance, the chairman and TMT members’ professional background helps company B understand and learn new technology quickly, which facilitates the application of relative skills into new services. Similarly, the accumulation of knowledge and skills of company A helps the company to apply external technology to make new designs. Likewise, the use of knowledge and skills helps company L train their employees and apply them to the new project. Moilanen, Østbye and Woll (2014) argued that the TMT of family-controlled SMEs usually plays the role of “gatekeepers” for knowledge flows from external resources. Through connecting, integrating and recombining diverse technologies (Schulz-Hardt *et al.*, 2006), they can be applied to combine existing knowledge in new ways, therefore achieving product innovations.

Overall, the evidence from the interviews shows that TMT's use of knowledge and skills plays a mediating role between innovation inputs and outputs, facilitating the conversion from innovation inputs to outputs. The expenditures on a range of innovation activities and recruiting innovation talents to enhance the abilities of TMT's use of knowledge and skills, generating new products and services. While those companies do not invest a large amount of investment in R&D due to their constrained resources and small-medium size, the use of knowledge and skills within the TMT helps them assimilate and apply external technologies into their products and services, achieving "do more with less" within the family businesses.

### **7.5.2 Trust**

According to Discua Cruz, Howorth and Hamilton (2013), trust is an important variable in cooperation and collaboration among TMT members. It usually serves as an "adaptor" or "lubricant" to facilitate coordination and cooperation (Shi, Shepherd and Schmidts, 2015). As such, trust among TMT could encourage TMT members to coordinate their actions and thus accomplish the collective goals effectively (Zahra, Neubaum and Larrañeta, 2007), which are essential for transforming innovation inputs into new products and services.

When innovation becomes a collective goal for family businesses, it could foster stronger ties and reciprocity among TMT members (Downe, Loke and Sambasivan, 2012), which enhances the trust climate in the team. For instance, one of the participants commented:

*"The communication between our TMT members is relatively well. Most of our TMT members are family members or old staff. Most of them joined the company for more than twenty years. Therefore, it is relatively easy to develop a common understanding. Once the company starts a new innovation project, they usually stand the company's viewpoint and think about the company's benefits and try their best to work for the common goals. During the process, the trust could be fostered stronger." (Company G)*



The interview indicates that as innovation becomes the core business activity in the company, TMT members are more likely to put collective efforts towards entrepreneurial venturing. In that case, trust among TMT could facilitate coordination and cooperation during the innovation projects, thereby generating more new products and services. Especially in family firms, mutual trust is usually depicted as one of the most important characteristics due to their family relationships (Eddleston *et al.*, 2010). TMT members of family firms are more likely to develop common goals due to their kinships and history of interactions within the family (Corbetta and Salvato, 2004). As such, the role of trust among TMT members becomes more important for the transformation between innovation inputs and outputs, improving the efficiency of the innovation process. Below are some quotes from the interviews.

*“In our company, most TMT members are family members. We always trust each other and are dedicated to the business. Because we are from a same family and see each other frequently. Every year we need to sit at one table to celebrate festivals. Trust among us leads to high-level cohesion and loyalty inside the company. (Company F)”*

Another interviewee commented that:

*“Compared with nonfamily businesses, I think family businesses have more efficient communications among TMT members due to a high level of trust. For example, when we decide to have a TMT meeting, family members may have a small, scale talk before the official one to unify the opinions first. In that case, the communication among TMT members is more efficient.” (Company I)*

The evidence above is consistent with previous studies, which suggested that family firms are particularly capable of capitalising on trust (Cruz, Gómez-Mejía and Becerra, 2010). For instance, the interviews of company D indicated that family relationships breed trust between TMT family members, which enhances the cohesion among the team. Similarly, the respondent of the company I also noted that trust within family firms leads to efficient communications between

family members. According to Lin, Dang and Liu (2016), the trust climate among family members also could expand to nonfamily members, which promotes the efficiency of the team. During the innovation process, trust among TMT is essential for facilitating coordination and cooperation during innovation (MacCurtain *et al.*, 2010). On the one hand, trust among TMT could enhance the overall cohesion within the team, behaving actively and effectively around a range of innovation tasks (Tekleab *et al.*, 2016). On the other hand, trust can encourage team members to obtain, process, and communicate information from distinct knowledge domains and may thus facilitate the development of deeper expertise in certain areas (Huang, 2009). The interview excerpts below attest to this.

*"[...] We have a very good trust climate within trust climate within the TMT. Therefore, when we develop a new project, each department is dedicated to its work. If someone encounters problems, other departments will offer help, even if it is not their job. They would not say this is not my responsibility, I only do my job." (Company F)*

*"The company is like a chain of the bike. When we conduct innovation projects, each department is connected. Trust among TMT is the chain lube, which smooths the cooperation among departments. (Company B)"*

In the case of companies F and B, trust among TMT members could enhance the coordination and cooperation among cross-functional teams within family firms, smoothing information flows from different business units, thereby implementing proactive ideas and solving problems efficiently during the innovation (Fulmer and Gelfand, 2012). Specifically, innovation usually requires coordination across functional integration due to their interdependency and complexity (Welter, 2012). Trust among TMT members could activate cooperation across departments and reduce interdepartmental conflicts (Griffin and Hauser, 1996), thereby stimulating cross-functional innovative ideas for new products and services (Flatten *et al.*, 2011). As such, the evidence above shows that trust among TMT could mediate the relationship between innovation

inputs and outputs. The common goals of innovation encourage TMT members to work together towards innovation, which enhances the level of trust. Under a trust climate among TMT, the coordination and cooperation cross functional teams could be facilitated to implement proactive ideas and solve problems during the innovation.

### **7.5.3 Cognitive conflicts**

According to Tjosvold, Law and Sun (2006), cognitive conflicts refer to the disagreement of opinions or ideas about the task itself without involving personal relationships. The cognitive conflicts within the TMT could generate a wide variety of ideas and synthesise diverse perspectives (Rietzschel, Carsten and Nijstad, 2009), applying them to new products and services. The findings from the qualitative interviews suggest that innovation inputs affect innovation outputs through cognitive conflicts among TMT, which contribute to the efficient conversion from innovation inputs to outputs. For instance, one participant commented:

*“TMT members from different departments could have different opinions and ideas during the project. Generally, they will discuss it inside. For instance, the project manager’s method may be beautiful, and the construction manager’s method may be more efficient. In that case, TMT members will hold an internal meeting to discuss and communicate their opinions. Although it could extend to conflicts due to the different opinions, they will not affect personal relationships. Through communication, they always have a better solution.”*  
(Company B)

The evidence, as shown above, suggests that the cognitive conflicts among TMT members could enhance the understanding of tasks and bring diversified solutions during innovation. This is consistent with previous studies (Wang, Su and Guo, 2019). Specifically, the TMT conflicts in company B provide different perspectives on innovation projects, which facilitate the formulation of novel ideas and stimulate creative thinking. During the innovation, a high level of innovation inputs enables family firms to access more diverse perspectives,

thereby provoking TMT cognitive conflicts (Carmeli and Paulus, 2015). This is consistent with the qualitative findings of this study. See the interview excerpt below.

*“We have signed contracts with a local university department to build a university-industry collaborations (UICs) basement. They provide us technical support and bring us new ideas and solutions for developing Intelligent transportation system (ITS).” (Company H)*

The preceding perspectives evidence shows that the expenditures on innovation could help family firms broaden the sources of diverse perspectives, which paved the way for triggering more cognitive conflicts within the TMT (Chai *et al.*, 2020). Through cognitive conflicts within TMT, family firms could generate a wide variety of ideas and synthesise diverse perspectives (Rietzschel, Carsten and Nijstad, 2009), applying them to new products and services. Below is a quote from one of the interviewees.

*“In our company, the internal conflict is relatively small. We usually focus on the project itself rather than on someone. During the project, our TMT members may argue about something, even bang on the table. However, we again worked together after the conflicts. Unlike government agencies, they may have extra considerations, such as promotion. All of our conflicts have the same goal, which is earning money. So we may have some conflicts on a specific project, but it will not influence our personal relationship.” (Company I)*

One of the participants observed that:

*“When it comes to innovative projects, my son and I tend to have conceptual conflicts. The young generation always has different opinions from us, which leads to conflicts. Although he usually has new ideas, they should slowly integrate into the current situation with this market. His new ideas should be combined with reality. We always discuss such problems in private time.” (Company K)*

The above excerpts from the interview of company I indicate the positive effect of cognitive conflicts on efficiency. Through the cognitive conflicts, company I could have more efficient communications among TMT members, underpinning information sharing during innovation. According to stewardship theory, TMT members are more likely to express their different opinions openly and integrate them into new alternatives of action when they have an atmosphere of openness in communication (Tjosvold, 2008; Tjosvold, Wong and Feng Chen, 2014). Moreover, in family businesses, when TMT members have cooperative goals, they are more willing to solve their cognitive conflicts (Alvarado-Alvarez, Armadans and Parada, 2020). In company K, the cognitive conflicts provoke new ideas and foster overcoming confirmatory biases and agility in group decision-making (König, Kammerlander and Enders, 2013), which leads to more new products and services. Especially in family-controlled SMEs, common behavioural norms and similar backgrounds of family members usually lead to group thinking (De Massis, Frattini and Lichtenthaler, 2013). Cognitive conflicts among TMT is "an antidote to core rigidities", which help family-controlled SMEs overcome the confirmatory biases in decision-making (Schulz-Hardt *et al.*, 2006). Taken together, the evidence shows that cognitive conflicts between TMT could mediate conversion from innovation inputs and outputs, contributing to the "doing more with less" in family businesses.

## **7.6 Summary**

The preceding chapters examine the conceptual model through quantitative research, which involves a survey of 473 Chinese family businesses. This chapter presents the qualitative findings through interviews with 13 family owners or senior managers in Chinese family businesses. By examining the impacts of SEW on innovation inputs, and the indirect effects of TMT behaviours on the relationship between innovation inputs and outputs from a micro perspective. The findings are consistent with the research model of this study, which provide strong evidence that SEW has a significant effect on the innovation inputs, and TMT behaviours positively mediate the relationship between innovation inputs and outputs. The next chapter will summarise the

major findings of this research and discuss the theoretical contributions and implications for managerial practice. Moreover, the limitations and future directions of the study will also be addressed in the next chapter.

## **Chapter 8 Conclusions and Recommendations**

### **8.1 Introduction**

This study aims to provide a better understanding of innovation in Chinese family firms. This chapter summarises how this thesis answers the research questions and presents the findings of this study. Section 8.2 will present the key findings of the thesis. Followed by section 8.3, will discuss the theoretical contributions and the managerial implications of this study. Section 8.4 will review the limitations of this study and discuss the options for future work. Finally, this chapter will summarise this thesis and make the conclusion in section 8.5.

### **8.2 Findings and Conclusions of the Research**

This research focused on answering two research questions by using the mixed method. Through analysing the quantitative data collected via the online survey, and the qualitative data through semi-structured interviews with family owners and senior managers, this thesis managed to answer the research questions. Table 8.1 summarises the key research findings in this work.

**Table 8.1** Summary of research findings

Research Questions	Hypothesis	Findings	Conclusion
RQ1: What is the impact of SEW on innovation inputs?	H1a: In family firms, family influence and control have a negative effect on innovation inputs.	Maintaining a high level of family control and influence over the firm could reduce family owners' willingness to pursue innovation, lowering their innovation investment.	Supported
	H1b: In family firms, family members' identification with the firm has a negative effect on the innovation inputs	Family members' identification with the firm might have little impact on the innovation inputs.	Not supported
	H1c: In family firms, binding social ties have a positive effect on innovation inputs.	Family firms with strong bindings social ties could be more likely to invest in innovation.	Supported
	H1d: In family firms, emotional attachment has a positive effect on innovation inputs.	Family members' intense emotional attachment to the firms could drive family firms to invest more in innovation.	Supported
	H1e: In family firms, the renewal of family bonds through dynastic succession has a positive effect on the innovation inputs.	The intention to transfer the business to the next generation increases the tendency for family firms to invest in innovation.	Supported
RQ2: What do the TMT behaviours influence on the relationship between innovation inputs and outputs?	H2: In family firms, innovation inputs is positively associated with innovation outputs.	Higher innovation inputs in family firms could result in greater innovation outcomes.	Supported
	H3a: In family firms, the top management team's use of knowledge and skills positively mediates the relationship between innovation inputs and innovation outputs.	The use of knowledge and skills tends to have indirect and positive effects on the relationship between innovation inputs and outputs.	Supported



	H3b: In family firms, the top management team's use of knowledge and skills positively mediates the relationship between innovation inputs and innovation outputs.	Through the interpersonal trust within TMT, greater innovation inputs could transform to more innovation outputs.	Supported
	H3c: In family firms, cognitive conflicts positively mediate the relationship between innovation inputs and innovation outputs.	Innovation inputs enable to trigger different perspectives, thereby transforming into new products or services.	Supported

This research examines the impact of SEW on innovation inputs, and explores the relationship between innovation inputs and outputs, and the role of TMT during this process. It confirms that multiple dimensions of SEW have different effects on innovation inputs. Moreover, this study also confirms more innovation inputs could lead to greater innovation outputs. Through TMT behaviours, including the use of knowledge and skills, trust, and cognitive conflicts, innovation inputs could achieve "doing more with less".

### **8.2.1 Socioemotional wealth and innovation inputs**

In Chapter 6 and 7, the impacts of five dimensions of SEW on innovation inputs are examined, including family control and influence, identification, binding social ties, emotional attachment, and renew family bonds. With the data from the online survey of 473 small to medium-sized Chinese family firms and semi-structured interviews of 12 Chinese family firms, this study finds that varied dimensions of SEW have different effects on innovation inputs. These research findings add to the Chinese family business literature by enriching the understanding of the relationship between SEW and innovation inputs in Chinese family firms. In addition, they also contribute to the application of stewardship theory and upper echelon theory in family business studies. The following summaries the impact of different dimensions on innovation inputs.

#### **Family control and innovation inputs**

The first dimension of SEW is family control and influence. This research finds that maintaining a high level of family control and influence could have a detrimental effect on innovation inputs. Specifically, the quantitative results (Section 6.4 Results of Research Model Testing) revealed that family control and influence is positively and significantly associated with innovation inputs. Similarly, the evidence from the interviews also suggested that family owners of family businesses usually invest most of their personal wealth in the firm (Carney, 2005), which diminishes their pursuit of risky opportunities. Also, tight

control over the firm could lead to the absence of external viewpoints, which hinders the firm from engaging in innovation. This is consistent with previous studies (Chin *et al.*, 2009; Block, 2012; Chrisman and Patel, 2012).

### **Identification and innovation inputs**

The second dimension of SEW is the identification with the firms. In terms of the relationship between identification and innovation inputs, the finding was unexpected and suggested that identification has limited influence on innovation inputs. More specifically, the quantitative results indicated that the relationship between identification and innovation inputs is insignificant. Moreover, some interviewees also noted that family owners are reluctant to acknowledge they are family businesses due to their concern over the family business identity. Therefore, a possible explanation for this finding might be that many Chinese family firms still struggle with the family icon due to the short family business history in China (Wang and Beltagui, 2021). As such, small-scaled family businesses are less likely to pay attention to their family business identity, which limits their influence on innovation inputs. This is consistent with the study of Lam (2011).

### **Binding social ties and innovation inputs**

The third dimension of SEW is binding social ties. The quantitative results revealed that the relationship between binding social ties and innovation inputs is significant and positive, which suggests that strong binding social ties could enhance the innovation inputs for family firms. The qualitative evidence also shows that strong binding social ties play a significant role in the new knowledge acquisition and capital funds obtained for Chinese family firms, which provide more opportunities to access new expertise and technologies for innovation. As a result, this study suggests that the stronger binding social ties, the more innovation inputs. This is consistent with previous studies (Calabrò *et*

*al.*, 2018; Gast *et al.*, 2018; Arzubiaga *et al.*, 2021; Weimann, Gerken and Hülbeck, 2021), which highlight the positive role of social ties on innovation.

### **Emotional attachment and innovation inputs**

The fourth dimension of SEW is emotional attachment. The quantitative results show that emotional attachment is significantly and positively related to innovation inputs. Similarly, the qualitative findings also confirmed the crucial role of emotional attachment, which suggests that the intense emotional attachment to the firm usually reveals a strong desire to ensure the longevity and prosperity of the firm. In that case, family firms could be motivated to embrace the long-term orientation, enhancing their tendency to invest in innovation (Classen *et al.*, 2014). Therefore, this study also finds that emotional attachment is important for improving innovation inputs in family firms.

### **Renew family bonds and innovation inputs**

The last dimension of SEW is renew family bonds. According to the quantitative results, renew of family bonds is positively and significantly associated with innovation inputs. Moreover, the qualitative interviews indicated that the intentions to transfer the business to the next generation could encourage family firms to invest more in innovation, ensuring their sustainability and competitiveness in the future. Therefore, renew of family bonds could have a positive impact on innovation inputs for family firms.

## **8.2.2 The role of TMT behaviours between innovation inputs and outputs**

Moving forward, this thesis examines the relationship between innovation inputs and outputs and explores how TMT behaviours influence this relationship. Through in-depth analysis of both quantitative (Chapter 6) and qualitative data (Chapter 7), the findings are in two folds: Firstly, higher innovation inputs of family firms could lead to greater innovation outcomes. Secondly, the use of knowledge and skills, trust, and cognitive conflicts could mediate the

relationship between innovation inputs and outputs. These research findings contribute to the family business innovation literature by disentangling the role of TMT behaviours in the innovation process.

### **Innovation inputs and outputs**

This research examines the relationship between innovation inputs and outputs. According to the quantitative results, a positive and significant correlation was found. In consistent with quantitative results, the qualitative evidence also confirms the positive relations between innovation inputs and innovation outputs. Investing resources in innovation is considered as the starting point of product innovation (Lee, Wu and Pao, 2014). Continued innovation inputs allow firms to gain useful external knowledge sources (Escribano, Fosfuri and Tribó, 2009), obtain new machines, equipment, and software (Rosenbusch, Brinckmann and Bausch, 2011), and pay for licensing fees or recruit highly skilful employees (Escribano, Fosfuri and Tribó, 2009), which determine the opportunities to generate innovation outcomes. Therefore, this study suggested that higher innovation inputs result in greater innovation outcomes.

### **Use of knowledge and skills**

One of the TMT behaviours that influence the relationship between innovation inputs and outputs is TMT's use of knowledge and skills. The quantitative results revealed that the use of knowledge and skills partially and positively mediates the relationship between innovation inputs and outputs. In terms of qualitative findings, some interviewees argued that TMT's use of knowledge and skills enables family businesses to actively learn new knowledge and skills, absorb them, and transform them into new products or services. Through the use of knowledge and skills, expenditures on innovation activities could generate new products or services, which is consistent with the quantitative results. Accordingly, the research finding suggested that the use of knowledge

and skills could partially mediate the relationship between innovation inputs and outputs.

### **Trust**

Another TMT behaviours is trust among TMT members. According to the quantitative results, trust partially mediated the relationship between innovation inputs and outputs. Similarly, the qualitative evidence also confirmed the crucial role of trust during the innovation process. It could serve as a "lubricant" or "adaptor" in this process (Shi, Shepherd and Schmidts, 2015), transforming innovation inputs into outputs. Collective efforts towards innovation could further foster trust among TMT members, and activate cooperation across divisions, thereby generating new products and services. As a result, the research findings revealed that trust among TMT members could partially mediate the relationship between innovation inputs and outputs.

### **Cognitive conflicts**

In terms of cognitive conflicts, it could be viewed as an opportunity to exchange perspectives and debate on innovation inputs and outputs. The quantitative results found a partial and positive mediating effect of cognitive conflicts between innovation inputs and outputs. The qualitative evidence also accords with the quantitative results, which showed that cognitive conflicts in TMT could bring about new ideas and trigger more innovative actions. The expenditures on innovation enable family firms to access more sources of diverse perspectives, provoking TMT cognitive conflicts (Carmeli and Paulus, 2015). Through cognitive conflicts, innovation inputs indirectly influence innovation outcomes. Therefore, the research finding confirmed a partial and positive mediating effect between innovation inputs and outputs.

### **8.2.3 Comparative assessment of research findings in Chinese family business**

Although there have been growing interests in family business innovation, most studies are implemented in Western countries. The understanding of how Chinese family businesses embrace innovation still remains limited. Previous studies on this topic largely are restricted to Chinese listed family firms (Carney, Zhao and Zhu, 2019; Zhang *et al.*, 2021; Islam *et al.*, 2022; Qi and Wu, 2022; Yang *et al.*, 2022). For instance, Islam *et al.* (2022) investigated how family ownership and management influence technological innovation. By using nine-year data from 44 Chinese family listed enterprises, they found that family ownership without family involvement in senior management is negatively associated with technological innovation. In contrast, family ownerships with family involvement in senior management positively relate to technical innovation. Likewise, Yang *et al.* (2022) focused on the impact of family ownership and management on green innovation in family businesses. Based on a sample of listed Chinese family firms from 2009 to 2019, they found an inverted U-shaped relationship between the degree of family management and green innovation.

Additionally, a few studies investigate innovation in family-controlled SMEs in China. For example, Wang and Beltagui (2021) investigated the impact of intergenerational leadership on innovative capability and business performance. Drawing upon data from 531 family businesses in China, they found a positive correlation between innovative capability and growth performance in family businesses. Furthermore, the study also indicated that intergenerational leadership could impede the realisation of the potential of innovation within family businesses. Xie, Zhang and Blanco (2022) examined the mediating effect of the familiness learning mechanism and the moderating effect of family involvement on the relationship between organisational readiness for digital

innovation and family businesses' digital business model innovation (BMI). They suggested that organisational readiness for digital innovation positively impacts family businesses' digital BMI, and that the familiness learning mechanism mediates this relationship. Moreover, family involvement moderates the effects of organizational readiness for digital innovation on digital BMI in family businesses.

Overall, studies in the literature investigate Chinese family business innovation from multiple angles, including family involvement (De Massis et al., 2018; Wei and Chen, 2022; Yang et al., 2022), succession (Carney, Zhao and Zhu, 2019; Song et al., 2022; Yang, Nahm and Song, 2022), intergenerational leadership (Wang and Beltagui, 2021), and digital innovation (Xie, Zhang and Blanco, 2022). However, the understanding of the mechanism of the innovation process within Chinese family business is limited, especially the conversion from innovation inputs to outputs. This thesis investigates the mechanism of innovation on how and why family firms are more efficient during the innovation process. In contrast to previous studies, this thesis provides a more nuanced picture of Chinese family business innovation, from its antecedents to the resulting outputs. Moreover, this study first examines the indirect effects of TMT behaviours on the relationship between innovation inputs and outputs in Chinese family businesses. The findings highlight the crucial role of TMT's use of knowledge and skills, trust, and cognitive conflicts during the innovation process. Finally, most previous studies on Chinese family businesses focused on listed family firms, this thesis further extends the understanding of innovation in Chinese family-controlled SMEs.



## 8.3 Contributions to Knowledge

### 8.3.1 Theoretical contribution of this study

This thesis investigated the impact of SEW on innovation inputs, and the role of TMT behaviours between innovation inputs and outputs in Chinese family businesses. Based on the research findings, this thesis contributes to the existing theories and literature through fulfilling the research gaps from six aspects.

The first and most important contribution relates to the "black box" of the innovation process in family-controlled SMEs. While extensive previous studies have documented that family firms could achieve successful innovation with constrained innovation inputs (Broekaert, Andries and Debackere, 2016; Duran *et al.*, 2016; Manzaneque, Diéguez-Soto and Garrido-Moreno, 2018; Asaba and Wada, 2019), the internal mechanism enabling conversion from innovation inputs into outputs have not been fully examined, leading to the unique conundrum of "do more with less" (Duran *et al.*, 2016). Chrisman, Chua, *et al.* (2015) analysed the innovation paradox of family businesses, claiming that family firms may have a superior ability to innovate, despite their deficient desire to innovate. This thesis extends the existing literature by elucidating how innovation inputs are leveraged by TMT and converted to innovation outputs. Specifically, the research findings reveal that TMT behaviours partially mediate the relationship between innovation inputs and outputs. Innovation inputs of family firms are expected to have an indirect and positive effect on innovation outputs through the use of knowledge and skills, trust, and cognitive conflicts. This finding tackles the conundrum of how family firms can win at innovations with limited innovation inputs, and responds to the call for a deeper understanding of "doing more with less" scenario in family firms (Duran *et al.*, 2016).

Secondly, this research contributes to the literature on SEW and innovation. By drawing on the FIBER five-dimension model (Berrone, Cruz and Gomez-Mejia, 2012), this thesis conceptually and empirically demonstrates how different dimensions of SEW shape decision-making on innovation inputs for family businesses. SEW, which is viewed as an "affective endowment" and the noneconomic value derived from family ownership is deemed to be related to a conservative approach characterised by risk-aversion and fewer investments to develop innovations (Gómez-Mejía *et al.*, 2007). However, the relationships between the dimensions of SEW and innovation inputs are not clear (Martínez-Alonso, Martínez-Romero and Rojo-Ramírez, 2018). This study focused on how the multidimensionality of SEW affects innovation inputs in different ways. More specifically, the study found that family influence and control may have negative implications for innovation inputs, while binding social ties, emotional attachment, and renew family bonds might positively affect the innovation inputs. These findings add to the debate on whether to predict family business behaviours by treating SEW as a collective whole or as different noneconomic components. In the earlier studies, SEW was proposed as an umbrella concept which includes different noneconomic goals (Gómez-Mejía *et al.*, 2007). While Chua, Chrisman and De Massis (2015) challenged the stock and flow components have not been differentiated. They noted that "we still have not come to grips with the implications for how the stocks and flows of noneconomic benefits or utilities should be treated in family business studies" (Chua, Chrisman and De Massis, 2015, p. 175). The result of this study implies that stocks in each of the components of SEW may evolve differently, which provides a more fine-grained understanding of the mechanisms behind family business innovation.

Thirdly, this research also adds to the literature with empirical evidence of family firm innovation, SEW, and TMT behaviours. This study theoretically proposes and empirically corroborates the impact of SEW on innovation inputs and the

indirect effects of TMT behaviours between innovation inputs and outputs, which paints a more nuanced and comprehensive picture of the innovation process in family businesses. In particular, to researcher's best knowledge, this is the first study to examine the indirect effects of TMT behaviours on innovation in family firms. While family business literature has increased its interest in the way of TMT plays an essential role in shaping family business innovation (Ensley and Pearson, 2005; Minichilli, Corbetta and MacMillan, 2010; Arzubiaga, Maseda and Iturralde, 2019), extant studies largely focused on the direct linkage between the composition of the TMT characteristics and innovation (Minichilli, Corbetta and MacMillan, 2010; Arzubiaga, Maseda and Iturralde, 2019), such as TMT family ratio, education background, and firm culture. However, a considerable gap remains in identifying the conduits by which TMT behaviours work during the innovation process. Additionally, the dynamic group process of TMTs might not simply be inferred from structural board elements. With the data from 473 Chinese family businesses and 12 case studies, this thesis revealed how the multidimensions of SEW influence the innovation inputs and the indirect effects of TMT behaviours on the relationship between innovation inputs and outputs. This provides fresh additional empirical data on this relatively unexplored field.

Fourthly, this research also contributes to the application of the stewardship theory and upper echelon theory in family business research. By examining TMT's use of knowledge and skills, trust, and cognitive conflicts. Despite the relatedness of stewardship theory because of the emotional attachment of the family to the business (Davis, Allen and Hayes, 2010; Madison *et al.*, 2016), past studies using the theoretical lens focus on the stewardship of family members (Vallejo, 2009; Eddleston, Kellermanns and Zellweger, 2012). This research extends the scope by examining the stewardship behaviours of the TMT. The research findings demonstrate that family businesses benefit from the stewardship stance, where high levels of the use of knowledge and skills,

trust, and cognitive conflicts in TMT help innovation. Additionally, this research also enriches the upper echelon research in the family business by integrating TMT behaviours as mediators between innovation inputs and outputs. General literature on TMTs in family business highlights the effect of composition and structure (Ensley and Pearson, 2005; Minichilli, Corbetta and MacMillan, 2010; Arzubiaga, Maseda and Iturralde, 2019), this study extends to behavioural dynamics to explain their efficiency during the innovation process. Upper echelon perspectives suggest that TMTs affect firm innovation by influencing strategic decisions (Hambrick, 2007). Based on upper echelon theory, this study probes more deeply into the linkage between innovation inputs and outputs, identifying the conduits by which TMT behaviours work during the innovation process. As such, it provides new insight into the relationship of TMT behaviours to family business innovation and thereby elaborates knowledge of the innovation and TMT behaviours in family businesses.

Last but not least, this research enriches the literature on innovation in Chinese family businesses. Previous studies on family business innovation were mainly implemented in Western countries, innovation in family-controlled SMEs has not been well investigated in emerging economies. This study is implemented in China, a transitional economy with family businesses emerging after 1979 and flourishing since the 1990s. In the past four decades, the flourishing of the Chinese private sector has created significant economic growth (Li *et al.*, 2015). Nevertheless, due to the underdeveloped formal institutions, family businesses, compared with their state-owned counterparts, receive a low level of legal and institutional protection (Tan, 2002), where innovation is difficult to operationalise. Given the different forms of innovation between the Western economies and the Chinese (Williamson and Yin, 2014), this thesis has provided a deeper insight from multiple angles, including SEW, TMT behaviour, stewardship, and the Chinese socio-economic context. The research findings

expand the understanding of how family businesses in China are able to innovate and thrive.

### **8.3.2 Practical implication of this study**

In addition to its theoretical contributions, this thesis also provides several practical implications for family business practitioners and policymakers.

#### **Implications for family business owners, managers or advisors**

Firstly, this thesis extends the understanding of how SEW dimensions lead to an enhanced or reduced propensity to innovation, which provides practitioners with practical insights into how such tendencies might shape their companies' innovativeness. Specifically, the findings of this thesis reveal that different dimensions of SEW have multiple effects on the innovation inputs. Previous studies usually highlight the negative aspect of preserving SEW on innovation (Chrisman and Patel, 2012; Gomez-Mejia *et al.*, 2010). However, this thesis illustrates that protecting SEW does not always lead to conservative and careful decisions on innovation investments. Some dimensions of SEW may enhance the innovation inputs in family businesses, such as binding social ties, emotional attachment, and renew family bonds. As such, family business owners, managers, and advisors could exploit the advantages of positive SEW dimensions to encourage innovation. For instance, family business owners and senior managers could promote binding social ties by expanding their social networks, stimulating knowledge acquisitions and reinforcing innovation activities. Furthermore, they could focus on encouraging strong emotional attachment to the firm. By cultivating a sense of responsibility and steward behaviours, family businesses are more likely to embrace a long-term orientation to innovate. Finally, family business owners are encouraged to establish succession plans that formulate long-term strategies that actively promote innovation, ensuring their business remain competitive and adaptable in a dynamic market.

Secondly, a deeper understanding of the efficiency of the conversion from innovation inputs to outputs is crucial for family owner managers and advisors. This thesis confirms the indirect effects of TMT behaviours on the relationship between innovation inputs and outputs. In particular, TMT's use of knowledge and skills, trust, and cognitive conflicts assist the conversion of innovation inputs into outputs. As such, practitioners and family business owner-managers may consider investing in meaningful TMT behaviours and ensure a stewardship environment is nurtured. For instance, TMT members should be encouraged to be actively involved in the innovation process, exchanging their knowledge and skills (Rong, Li and Xie, 2019). Furthermore, family business owners or managers should increase their spending on innovation to maintain experienced and skilled staff in the TMT to conduct a more efficient innovation process. For example, family firms could provide staff members with pertinent training programs to develop their knowledge and skills in producing competitive and innovative products.

Additionally, building TMT trust is also crucial for enhancing conversion efficiency. The findings of this thesis offer valuable insights for family business practitioners, emphasizing the need to foster trust within the TMT. Details to address include the importance of the TMT engaging in the trust construction, the role of TMT members in this process, the mechanisms and procedures to address trust-related conflicts, and the reviewing process for continued trust development. Despite family kinship could be a fundamental base of trust in family businesses (Shi, Shepherd and Schmidts, 2015), allowing common goals to be maintained in the TMT is vital for fostering trust among TMT members. This implies that family business owners and managers could develop the governance mechanism within the family to guarantee the professionalism of TMT members and reinforce considerations for nonfamily members, especially when TMT are dominated by family members.

Moreover, family business practitioners could create a tolerant TMT atmosphere, promoting open communication and welcoming cognitive conflicts. Indeed, the culture in China is characterised by high power distance and respect for authority, which developed a paternalistic leadership (Chen, Yang and Jing, 2015). Under an autocratic style of leadership, TMT members are less likely to express their ideas openly and against their leaders (Cheng *et al.*, 2004; Chen *et al.*, 2011). In that case, it is difficult to trigger cognitive conflicts inside the TMT and generate new ideas. Consequently, family business owners, senior managers and advisors ought to empower TMT members to express their opinions and openly debate from diversified perspectives in the pursuit of innovation.

### **Implications for policymakers**

At the policy level, this research provides further insights for policymakers to refine innovation policies and help family businesses achieve better performance during the innovation process. By exploring the black box of Chinese family business innovation, this research manages to identify practical factors that policymakers should take into account in order to strengthen the effect of supportive policies on Chinese family business innovation.

The first implication involves the development of tailored policies and the launching of favourable supporting schemes to facilitate the innovation development of family-controlled SMEs. As discussed in Chapter 2, China has experienced an economic growth slowdown since 2015 due to the stagnant demand in internal markets and trade tensions in international markets (Wang and Beltagui, 2021). Consequently, Innovation has emerged as a top priority for China's economic development. Chinese officials have emphasised that the nation's economic growth depends on innovation from private enterprises, making the innovative capability of family businesses a particularly important concern. As such, policymakers may glean insightful information from the study

in adopting policies to nurture family business innovation by understanding how SEW dimensions influence a family's committed resources, time and effort towards innovation. For instance, this study finds that binding social ties positively influence innovation inputs. To promote innovation in family-controlled SMEs, government officials may devise policies and programs that encourage information sharing, experience exchange, and the development of social capital through family or broader communities. The government could facilitate the involvement of external resources like investors, brokers, and intermediaries in order to offer immediate support and service for family businesses. Moreover, the government could assist family-controlled SMEs obtain licenses to import technology and other equipment, thereby expanding opportunities to innovate.

The second implication for policymakers is the enhancement of gathering external resources to support family businesses' operation and innovation development. Managers of family-controlled SMEs consistently require knowledge and information from external resources to develop effective conversion from innovation inputs to outputs. However, there is often a lack of formal channels for family businesses to access this support. On the one hand, the government could provide training services for family businesses to help them develop capabilities in using knowledge and skills. As discussed in Chapter 4, the creation and diffusion of knowledge and skills play a crucial role in the innovation process. Policymakers should assist Chinese family businesses in enhancing their capability of using knowledge and skills. Therefore, this research suggests that government incentives should adopt various approaches, such as providing complementary services and consolidating external resources, to support family business operations and innovation development. On the other hand, strengthening collaboration between universities or research institutions is also important. Universities and



external research institutions are valuable resources for family-controlled innovation. The policymakers could initiate policies to enhance the university-industry linkage and encourage researchers in universities to participate in projects led by firms in China. In doing so, Chinese universities and family businesses could actively exchange knowledge and information, facilitating the innovation process.

## **8.4 Limitations and Recommendations for Future Research**

### **8.4.1 Research limitations**

While findings in this research provide primary contributions to both academia and practice, this thesis still contains some limitations which require further explorations. Firstly, this study focuses on innovation in family businesses, however, the absence of official family business databases creates an important limitation. Due to the lack of family business database in China, it is difficult to conduct a conventional representative sample survey. To access information from family businesses, this study adopted the snowball sampling procedure, where the author used contacts to distribute questionnaires and conduct semi-structured interviews. Although this approach provided an effective way to access family businesses, it may hinder the generalisability of the study (Bettinelli, 2011). Furthermore, in the case of this research, the snowball sampling procedure was initiated from the Gansu province, northwest of China. The sample mainly concentrated in the region of northwest China, which could create a potential regional bias. Future studies, attempting to portray a comprehensive picture of family businesses in China may initiate from different regions of the country simultaneously.

Secondly, the constructs used in the survey are borrowed from the literature, which are developed from the Western economies (Lefebvre, Lefebvre and

Talbot, 2003; Song, Dyer and Thieme, 2006; Martín-de Castro *et al.*, 2013; van Doorn, Heyden and Volberda, 2017), while the literature suggests that innovation in China takes a very different form to Western innovation (Williamson and Yin, 2014). In addition, the items were derived from different studies. Although the thesis has conducted a range of tests to confirm the reliability and validity of the constructs, they still have some limitations. Future studies may develop contextualised constructs, reflecting the Chinese socio-economic environment, and examine idiosyncratic innovation in Chinese family firms.

Thirdly, this thesis defined family business based on the definition of Leach *et al.* (1990), which does not differentiate between family firms with more than 50 per cent of the family voting power. However, differences in family ownership (e, g. 60% or 100% family voting power) might lead to differences in strategic decision-making and operational practices, thereby influencing innovation in family firms. For instance, closely held family firms may be skeptical about the deployment of externally generated, long-term funding, whereas open-family firms may demonstrate greater flexibility (Zata Poutziouris, 2001). Future research could consider ownership as a variable.

Finally, the final limitation of this thesis relates to the cross-sectional design. This study uses cross-sectional data with a sample of 473 family-controlled SMEs operating in China. Zellweger and Sieger (2012) claimed that innovativeness might wavers over time. It would, therefore, be interesting for future research to use a longitudinal design, which would enhance the understanding of the relationship between SEW, innovation, and TMT behaviours.

#### **8.4.2 Directions for future research**

This thesis also provides some opportunities for future research. To begin with, this research model examines the SEW and the innovation inputs, and the mediating effects of TMT behaviours on innovation inputs and outputs. Future studies could extend this model to other countries with a similar dynamic and developing markets, such as India, Brazil. It could advance the understanding on how family business can innovate and thrive in the emerging markets.

Moreover, the mechanisms underlying innovation inputs and outputs are worthy of further examination. This study firstly examines the indirect effects of TMT behaviours on innovation in family firms. It focused on the effect of three TMT behaviours on the relationship between innovation inputs and outputs. Given the high level of common understanding and the intense social relationships in a family firm context, we focus on three dimensions of TMT behaviours, namely, use of knowledge and skills, trust, and cognitive conflicts. Future studies thus can extend our model to more other aspects of TMT behaviours, such as pluralistic ignorance, effort norms and cohesiveness. Due to the leading role of TMT in family firms (D'Allura, 2019), future research might explore the potential effects of other dimensions of TMT behaviours on conversion from innovation inputs to outputs in family firms, which could provide new research insights.

Another future research direction is regarding the "doing more with less" scenario in family firms. The seminal work of Duran *et al.* (2016), based on a meta-analysis of 108 primary studies, concludes that family businesses invest less yet enjoy greater innovation outputs from their investments. Followed their study, this thesis explored the conundrum of how family firms achieve advantages in innovations with limited innovation inputs, which echoes studies that shows discrepancy in family business innovation research (Chrisman, Chua, *et al.*, 2015; De Massis, Di Minin and Frattini, 2015; Duran *et al.*, 2016). However, a recent study by Block, Hansen and Steinmetz (2022) challenges

Duran *et al.* (2016) 's study and claims that family firm innovation may be overstated and family firms do more with less does not hold in general. By updating and extending the meta-analysis of Duran *et al.* (2016) 's study, they found that while family firms have a slightly lower innovation inputs than nonfamily firms, there is no systematic differences in terms of innovation outputs. Therefore, the literature appears inconclusive, and future researchers could investigate this phenomenon more deeply. Given the intense debates on this topic, there are ample research opportunities to explore when, how and under what conditions family businesses could win in innovation with limited innovation inputs.

## **8.5 Conclusion**

Given the black box of family firm innovation, this study adopts a mixed method with an attempt to advance the understanding of the innovation process in Chinese family businesses. By drawing on stewardship theory and upper echelon theory, this study examines how SEW influences innovation inputs and the role of TMT behaviours during the conversion from innovation inputs to outputs. The results reveal that while family control and influence have a negative impact on innovation inputs, binding social ties, emotional attachment, and renew family bonds could positively affect innovation inputs. Moreover, the use of knowledge and skills, trust, and cognitive conflicts by TMTs partially mediate the relationship between innovation inputs and outputs. With these insights, this study contributes to the family business innovation literature by disentangling the role of SEW and TMT behaviours in the innovation process. It also adds to the literature on family businesses in emerging economies and offers theoretical and practical implications.

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## Appendix

### Appendix A- Ethical Approval



Date 24<sup>th</sup> March 2021

Researcher: Tianxing Pu PhD Student 2032649

Title of Research: The role of socioemotional wealth (SEW) and top management team (TMT) behaviours in family SMEs innovation

Decision: Your ethics application has been **APPROVED**

Dear Tianxing

The Faculty Ethics Committee has approved your amended application.

Please ensure that you are conversant with the latest guidelines on recruiting research participants and data security. See the Ethics Guidance web pages <https://www.wlv.ac.uk/research/research-policies-procedures-guidelines/ethics-guidance/>

If you make any substantial changes to your research, you will have to complete a new request for ethical approval.

This letter only relates to ethical issues and has no bearing on other aspects of your research, such as methodology and theoretical framework.

Please do not hesitate to contact the relevant representative for your subject on Faculty Ethics Committee if you have any questions.

We wish you the very best with your research.

Yours Sincerely

*Sheila Gill*

**Sheila Gill**

**Faculty Research Administrator**

**On behalf of Faculty of Arts, Business & Social Sciences Ethics Committee**

Dean: Mr Miceal Barden LLB(Hons) PGDip LLM FHEA  
University of Wolverhampton, Faculty of Arts, Business & Social Sciences, Mary Seacole Building, Nursery Street  
City Campus Molineux, Wolverhampton WV1 1AD United Kingdom  
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## Appendix B - Survey Questionnaire (English version)

### Questionnaire

#### The role of SEW and TMT behaviours in family business innovation: Evidence from China

The purpose of this study is to explore the role of socioemotional wealth (SEW) and top management team (TMT) behaviours in the innovation of Chinese family businesses. Your company has been randomly selected to participate in the survey.

Please use your judgement and answer the questions as fully and accurately as you can. Please note that your name will not be shown on any document associated with this research. All the specific information provided in this questionnaire will remain absolutely confidential and will be used anonymously for academic purposes only. Thank you very much for your cooperation and help. Without which this study would not be successful.

#### CONFIDENTIALITY

Views expressed in this questionnaire will be kept strictly confidential and will be used only for academic purposes. Any information identifying the respondents will not be disclosed.

Tianxing Pu  
Doctoral Researcher  
University of Wolverhampton Business School  
Wolverhampton WV1 1AD  
Email: [e-mail address redacted]

This questionnaire is investigating family businesses. Please answer the below question.

#### Would you describe your company as a family business?

☐ Yes      ☐ No

**(Definition of a family business:** *a company where members of a kinship group hold at least 50 per cent of the equity in a company, and/or a single family group effectively controls the business, and/or a significant proportion of the senior management is members from the same family).*

(If your answer is 'yes', please carry on with this questionnaire; otherwise, the questionnaire will be submitted automatically)

## **SECTION A: Business Profile**

- 1. Where is the headquarter of your company? \_\_\_\_\_**
- 2. Please indicate the business sector in which your firm operates (please tick one box only).**

- ☐1. Agriculture (agriculture, hunting, forestry, fishing)
- ☐2. Electricity, gas and water supply
- ☐3. Transport and distribution (transport, storage)
- ☐4. Information transmission, software and IT services
- ☐5. Cultural and media industry
- ☐6. Mining and quarrying
- ☐7. Construction
- ☐8. Hotels and restaurants (tourism-dependent, hotels, catering)
- ☐9. Professional services (real estate, renting)
- ☐10. Manufacturing (manufacturing, mining, quarrying)
- ☐11. Trade and commerce (wholesale and retail)
- ☐12. Financial and insurance activities
- ☐13. Other community, social and personal services activities
- ☐14. Multiple
- ☐15. Others

- 3. Basic information of the company**

Company Name (optional) \_\_\_\_\_

How long has your company been established? \_\_\_\_\_

Number of full-time employees as at the date of survey \_\_\_\_\_

Number of part-time employees as the date of survey \_\_\_\_\_

- 4. Top management team**



Number of top management team \_\_\_\_\_

Number of family members in top management team \_\_\_\_\_

## SECTION B: Socioemotional Wealth

Please rate the following statements on a scale of 1-5, 1= strongly disagreed, and 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree and encircle the appropriate number accordingly.

### 5. Family Control and Influence

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
F1	In my family business, family members exert control over the company's strategic decisions.	1	2	3	4	5
F2	In my family business, most executive positions are occupied by family members.	1	2	3	4	5
F3	In my family business, nonfamily managers and directors are appointed by family members.	1	2	3	4	5
F4	The board of directors is mainly composed of family members.	1	2	3	4	5
F5	The majority of the shares in my family business are owned by family members.	1	2	3	4	5
F6	Preservation of family control and independence are important goals for my family business.	1	2	3	4	5

### 6. Identification of Family Members with the Firm

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
I1	Family members have a strong sense of belonging to my family business.	1	2	3	4	5
I2	Family members feel that the family business's success is their own success.	1	2	3	4	5

I3	My family business has a great deal of personal meaning for family members.	1	2	3	4	5
I4	Being a member of the family business helps define who we are.	1	2	3	4	5
I5	Family members are proud to tell others that we are part of the family business.	1	2	3	4	5
I6	Customers often associate the family name with the family business's products and services.	1	2	3	4	5

## 7. Binding Social Ties

		<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither disagree nor agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
B1	My family business is very active in promoting social activities at the community level.	1	2	3	4	5
B2	In my family business, nonfamily employees are treated as part of the family	1	2	3	4	5
B3	In my family business, contractual relationships are mainly based on trust and norms of reciprocity.	1	2	3	4	5
B4	Building strong relationships with other institutions (i.e., other companies, professional associations, government agents, etc.) is important for my family business.	1	2	3	4	5
B5	Contracts with suppliers are based on enduring long-term relationships in my family business.	1	2	3	4	5

## 8. Emotional Attachment of Family Members

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
E1	Emotions and sentiments often affect decision-making processes in my family business.	1	2	3	4	5
E2	Protecting the welfare of family members is critical to us, apart from personal contributions to the business.	1	2	3	4	5
E3	In my family business, the emotional bonds between family members are very strong.	1	2	3	4	5
E4	In my family business, affective considerations are often as important as economic considerations.	1	2	3	4	5
E5	Strong emotional ties among family members help us maintain a positive self-concept.	1	2	3	4	5
E6	In my family business, family members feel warmth for each other.	1	2	3	4	5

## 9. Renewal of Family Bonds to firm Through Dynastic Succession

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
R1	Continuing the family legacy and tradition is an important goal for my family business.	1	2	3	4	5
R2	Family owners are less likely to evaluate their investment on a short-term basis.	1	2	3	4	5
R3	Family members would be unlikely to consider selling the family business.	1	2	3	4	5

R4	Successful business transfer to the next generation is an important goal for family members.	1	2	3	4	5
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## SECTION C: Innovation Inputs

### 10. Innovation inputs

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
RI1	Our company has adequate and useful equipment for innovation.	1	2	3	4	5
RI2	Our company has adequate R&D budget levels.	1	2	3	4	5
RI3	Our company has a long tradition and reputation in the industry for attempting to be first in trying out new methods and equipment.	1	2	3	4	5
RI4	Our company has increased R&D spending in the past three years.	1	2	3	4	5
RI5	Our company spends more than most firms in the industry on new product development.	1	2	3	4	5

11. What is the average of R&D investments as a percentage of annual sales over the last 3 years?  
(5-point Likert scale: 1=1–5%, 2=6–10%, 3=11–20%, 4=21–30%, 5=Greater than 30%)

☐1    ☐2    ☐3    ☐4    ☐5

### 12. Human capital

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
H1	Our company allocates resources (money, time, etc.) to employees training in a higher extent than our competitors.	1	2	3	4	5

H2	In our company, the percentage of people with a superior degree (bachelor, engineer, masters, etc.) is higher than our competitors.	1	2	3	4	5
H3	Our employees have skills that are difficult for our competitors to imitate or duplicate.	1	2	3	4	5

## SECTION D: Innovation outputs

### 13. Innovation outputs

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
IO1	In the last three years, the number of product innovations developed by our company is higher than our competitors'.	1	2	3	4	5
IO2	The percentage of sales, with respect to new products, in the total of sales, is higher than our competitors'.	1	2	3	4	5
IO3	In the last 3 years, the number of new products with respect to our product portfolio is higher than our competitors'.	1	2	3	4	5

## SECTION E: Moderating Effects

### 14. The use of knowledge and skills

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
KS1	Our TMT is in tune with the state-of-the-art in our field of business.	1	2	3	4	5
KS2	Our TMT is able to quickly integrate and/or apply new knowledge and skills.	1	2	3	4	5
KS3	We quickly know who is most knowledgeable with regard to newly acquired knowledge and skills.	1	2	3	4	5
KS4	Our TMT has the competencies to quickly gauge the value of new knowledge and skills.	1	2	3	4	5
KS5	It is well known who can help solve problems associated with new knowledge and skills.	1	2	3	4	5

### 15. Trust

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
T1	Our TMT members are generally trustworthy.	1	2	3	4	5
T2	Our TMT members have reciprocal faith in other members' intentions and behaviours.	1	2	3	4	5
T3	Our TMT members have reciprocal faith in others' ability.	1	2	3	4	5
T4	Our TMT members have reciprocal faith in others' behaviours to	1	2	3	4	5

	work toward organizational goals.					
T5	Our TMT members have reciprocal faith in others' decision toward organizational interests than individual interests.	1	2	3	4	5
T6	Our TMT members have relationships based on reciprocal faith.	1	2	3	4	5

## 16. Cognitive Conflicts

Cognitive conflict is the conflict that arises when different parties have divergent views on how a task can be implemented. They may argue from their own stances and contribute constructively on task implementation.

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
CC1	In TMT, we see constructive changes occurring on projects because of conflicts.	1	2	3	4	5
CC2	In TMT, we know each other better because of the way conflicts are handled.	1	2	3	4	5
CC3	In TMT, we are more sensitive to one another because of the way that conflicts are handled.	1	2	3	4	5
CC4	In TMT, we feel energized and ready to get down to work after a conflict.	1	2	3	4	5

***Thank you for completing this questionnaire!***

## Appendix C - Survey Questionnaire (Chinese version)

### 家族企业创新调查问卷

尊敬的企业领导、经理及相关部门负责人：

您好！感谢您在百忙之中填写这份问卷。我是来自英国胡弗汉顿大学的研究人员，此次研究的目的是探讨家族企业中的创新问题。**本问卷纯属学术研究的目的，不涉及任何商业敏感数据，我们承诺对您提供的所有信息保密。**题目答案没有对错之分，请根据您的实际情况填写，您的协助将是本研究成败的关键。在此，对您的支持和配合表示衷心地感谢！

如您有任何其它关于本问卷的疑问，请通过电子邮件联络我。

邮件：[T.pu@wlv.ac.uk](mailto:T.pu@wlv.ac.uk)

**家族企业一般有三种类型：**

一是纯粹的家族式企业，即从老板到管理者再到员工，全都是一家人。二是传统的家族式企业，由家族掌门人控制大权，关键的岗位基本都是由家族成员来担当，外来人员只能处于非重要的岗位。三是现代的家族式企业，家族持所有权，而将经营权交给有能力的家族或非家族成员。

本次问卷调查主要针对家族企业，您在填写之前，请先结合下方的条件，判断您所在的企业是否符合本问卷中关于“家族企业”的界定。

您所在的企业是否同时满足以下三个条件：1)家族成员持股达到或超过 50%；2)家族能够对企业决策实施有效的控制；3)企业的部分高层是同一个家族的成员

是 ☐ 否 ☐

如果上述问题的答案为“是”，请您继续填写此问卷。



## 第一部分 企业基本情况

### 1. 贵企业总部所在的位置

- ☐ 华南地区（广东、广西、福建、海南、香港特别行政区、澳门特别行政区）
- ☐ 华北地区（北京、天津、河北、山西、山东、内蒙古）
- ☐ 华中地区（湖北、湖南、河南、安徽、江西）
- ☐ 西北地区（陕西、宁夏、新疆、甘肃、青海）
- ☐ 西南地区（重庆、四川、云南、贵州、西藏）
- ☐ 华东地区（上海、江苏、浙江、台湾）
- ☐ 东北地区（黑龙江、吉林、辽宁）

### 2. 企业所处的主要行业

- ☐ 农林牧渔业
- ☐ 制造业
- ☐ 房地产业
- ☐ 批发和零售业
- ☐ 住宿和餐饮业
- ☐ 交通运输、仓储和邮政业
- ☐ 信息传输、软件和信息技术服务业
- ☐ 科学研究和技术服务业
- ☐ 居民服务、修理和其他服务业
- ☐ 租赁和商务服务业
- ☐ 文化、体育和娱乐业
- ☐ 卫生和社会工作
- ☐ 金融业
- ☐ 采矿业
- ☐ 教育

### 3. 企业基本情况

企业的注册年份\_\_\_\_\_

企业当前全职员工的人数\_\_\_\_\_

企业当前兼职员工的人数\_\_\_\_\_

**4. 企业高管**是在企业管理层中担任重要职务、负责企业经营管理、掌握企业重要信息的人员,主要包括经理、副经理、财务负责人,董事会秘书和企业章程规定的其他人员。

企业当前的高管人数\_\_\_\_\_

公司高管中来自同一个家族（有亲戚关系）的人数\_\_\_\_\_

## 第二部分 社会情感财富

以下问卷均有 5 个选项，请您根据企业的实际情况，判断您所在的企业多大程度上与下列情况相符，从“非常不符合”到“非常符合”中选择一个您认为合适的选项。

### 5. 家族对企业的控制和影响力

		非常不符合	不太符合	难以判断	比较符合	非常符合
a)	在企业中，家族成员能够完全决定企业的战略决策。	1	2	3	4	5
b)	企业的大部分行政主管和经理由家族成员担任。	1	2	3	4	5
c)	非家族管理人员和企业主管通常是由家族任命的。	1	2	3	4	5
d)	企业的高层管理人员或董事会主要由家族成员组成。	1	2	3	4	5
e)	公司的大部分股权（或货币资金，固定资产）是由家族成员持有的。	1	2	3	4	5
f)	企业的重要目标之一是保证家族对企业的控制，即公司的经营目标、重要决策和未来走向主要是家族成员决定，其他家族外成员意见不起决定性作用。	1	2	3	4	5

### 6. 家族成员对企业的身份认同

		非常不符合	不太符合	难以判断	比较符合	非常符合
a)	家族成员对企业有很强的归属感。	1	2	3	4	5
b)	家族成员觉家族企业的成功也是自己的成功。	1	2	3	4	5
c)	家族企业对家族成员有很重要的意义。	1	2	3	4	5
d)	成为家族企业的一员能够帮助家族成员提高他们对家族的认同感。	1	2	3	4	5
e)	家族成员为自己在家族的企业工作而感到自豪。	1	2	3	4	5
f)	客户常常会将家族的名字和企业的产品与服务联系在一起，家族的名称就是公司信誉的保证。	1	2	3	4	5

## 7. 企业与社会之间的纽带

		非 常 不 合	不 太 符 合	难 以 判 断	比 较 符 合	非 常 符 合
a)	企业经常在当地举办一些社会活动，如慈善捐助、赞助体育比赛等。	1	2	3	4	5
b)	企业的员工虽然不是老板的亲戚，但也可以凭借出色的工作能力得到重用。	1	2	3	4	5
c)	企业的合同关系建立在信任和互惠的基础上。	1	2	3	4	5
d)	对企业来说，同政府部门、专业机构及其他相关企业等建立长期关系很重要。	1	2	3	4	5
e)	企业与供应商的合同是基于长期的合作关系。	1	2	3	4	5

## 8. 家族成员对企业的情感

		非 常 不 合	不 太 符 合	难 以 判 断	比 较 符 合	非 常 符 合
a)	企业在做决策时，通常要考虑家族成员的感情和情绪。	1	2	3	4	5
b)	家族成员在为企业奋斗的同时，企业也非常注重保护每位家族成员的利益。	1	2	3	4	5
c)	在企业中，家族成员之间的情感联结非常紧密，他们会认为任何时候都是“一家人”。	1	2	3	4	5
d)	在企业做决策时，对家族的情感考量和对经济利益的考量同等重要。	1	2	3	4	5
e)	家族成员对家族强烈的情感联结能够帮助他们树立自信，肯定自身价值和能力，对生活充满热情和勇气。。	1	2	3	4	5
f)	在企业中，家族成员彼此间感到温暖。	1	2	3	4	5

## 9. 企业的传承

		非 常 不 合	不 太 符 合	难 以 判 断	比 较 符 合	非 常 符 合
a)	延续家族的传统是企业的重要目标之一。	1	2	3	4	5

b)	家族企业的所有者不太会根据短期的利益来决定他们的投资。	1	2	3	4	5
c)	家族成员通常不会考虑将企业变现出售。	1	2	3	4	5
d)	将企业顺利地传递给下一代是家族成员的重要目标。	1	2	3	4	5

### 第三部分 创新投入与产出

#### 10. 创新研发投入

		非 常 不 合	不 太 符 合	难 以 判 断	比 较 符 合	非 常 符 合
a)	贵企业拥有数量充足且运转有效的设备用于创新。	1	2	3	4	5
b)	贵企业有足够的预算投入到产品的研发中去。	1	2	3	4	5
c)	贵企业保持着不断投入新设备、尝试新方法的优良传统，并在行业内享有良好声誉。	1	2	3	4	5
d)	贵企业在过去三年内增加了研发投入。	1	2	3	4	5
e)	贵企业在新产品开发方面的支出超过了业内大多数企业。	1	2	3	4	5

	1- 5%	6- 10%	11- 20%	21- 30%	30% 以 上
11. 在过去三年里，企业的研发投入占企业年销售额的百分比平均是多少？	1	2	3	4	5

#### 12. 创新人力资本投入

	非 常 不 合	比 较 不 符 合	不 符 合	比 较 符 合	非 常 符 合

a)	与竞争对手相比，贵企业愿意花更多的时间和资金对员工进行创新技术的培训。	1	2	3	4	5
b)	贵企业中高学历员工（本科以上含本科）所占比例高于竞争对手。	1	2	3	4	5
c)	贵企业的员工具有竞争对手的企业员工难以模仿或复制的技能。	1	2	3	4	5

### 13. 创新产出

		非常不符合	比较不符合	不符合	比较符合	非常符合
a)	在过去的三年里，贵企业所开发的创新产品或服务的数量高于其他竞争对手。	1	2	3	4	5
b)	过去三年，相比于其他竞争者，贵企业所研发新产品或服务的销售额占总销售额的比例高。	1	2	3	4	5
c)	过去三年，贵企业新产品或服务的数量占产品组合的比例高于其他竞争者。	1	2	3	4	5

## 第三部分 高管团队行为

### 14. 高管团队对知识和技能的使用

		非常不符合	不太符合	难以判断	比较符合	非常符合
a)	贵企业的高管团队能够与企业业务领域内的最新技术保持一致。	1	2	3	4	5
b)	贵企业的高管团队能够快速整合和利用最新的知识和技能。	1	2	3	4	5
c)	贵企业的高管团队能够及时地了解谁掌握了行业内的最新知识和技能。	1	2	3	4	5

d)	贵企业的高管团队能够快速评估新知识和新技术的价值。	1	2	3	4	5
e)	贵企业的高管团队了解谁能够帮助企业解决新知识和新技能的问题。	1	2	3	4	5

## 15. 信任

		非常不符合	不太符合	难以判断	比较符合	非常符合
a)	贵企业高管团队的成员是值得信任的。	1	2	3	4	5
b)	贵企业高管团队的成员相互信任彼此的行为和想法意图。	1	2	3	4	5
c)	贵企业高管团队的成员彼此间信任并认可各自的能力。	1	2	3	4	5
d)	贵企业高管团队成员之间相互信任，为企业的共同目标而努力。	1	2	3	4	5
e)	贵企业高管团队的成员相信，团队成员在做决策时会优先考虑企业的利益，而不是个人利益。	1	2	3	4	5
f)	贵企业高管团队成员之间的关系是建立在相互信任基础上的。	1	2	3	4	5

## 16. 认知冲突

认知冲突指的是因各方对如何执行任务有不同看法而发生的冲突。他们可以根据自己的立场进行辩论，但最终是为了给执行任务提出建设性的意见。

		非常不符合	不太符合	难以判断	比较符合	非常符合
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a)	贵企业的创新项目可能会因为高管团队成员之间的建设性争论而更具有可行性。	1	2	3	4	5
b)	通过建设性冲突，高管团队成员之间彼此更加了解。	1	2	3	4	5
c)	通过建设性冲突，高管团队成员之间会更加尊重对方。	1	2	3	4	5
d)	高管团队的成员往往能够在冲突过后很快冷静下来，继续充满活力地工作。	1	2	3	4	5

**感谢您参与填写问卷！**

## Appendix D - Interview Questionnaire (English version)

### Qualitative Questionnaire

Thank you for agreeing to participate in this interview. The purpose of this study is to explore the role of socioemotional wealth (SEW) and top management team (TMT) behaviours in the innovation of Chinese family businesses. Perspectives are being sought through interviews with TMT members of FBs. Perspectives are being sought through interviews with TMT members of FBs. Your company has been randomly selected to participate in the survey.

*You are encouraged to give your views freely and accurately. Please note that your name will not be shown on any document associated with this research. **All information provided in this interview will remain absolutely confidential and will be used anonymously for academic purposes only.***

This interview should take one hour and will be recorded so that we can more easily review the notes afterwards. Thank you very much for your cooperation and help, without which this study would not be successful.

Tianxing Pu  
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## **Section 1 Background**

1. When was this business founded? What motivates the founder to establish this company?
2. What are the main products or services of your company? Where is your target market? Who are your target customers?
3. What is the total number of employees in your business currently? What is the percentage of full-time employees?
4. What is your position in the company? What is your profession before starting/joining this firm?

## **Section 2 Socioemotional wealth and innovation inputs**

As we all know, innovation usually involves a range of uncertain risks, and it requires a large number of resources and capabilities to produce tangible outcomes, especially for SMEs. Therefore, your company might have some considerations when decided to invest in innovation. I want to ask some questions about noneconomic factors.

### **5. Family control and influence**

- a) Are the majority of the shares owned by family members? Does the family affect the decision-making process regarding investing in an innovation project?
- b) Do you think preserving family control and independence have influence on the R&D spending on innovation inputs?

### **6. Identification**

- a) Do family members have a strong sense of belonging to the business? What is the impact of such strong identification on innovation inputs?
- b) Does the company carry your family's name? Does it impact on the decision-making on innovation investment?

### **7. Binding social ties**

- a) Does your firm have cooperated with universities/research institutes or the technology market? Does your company take innovative projects collaboratively with them?

IF YES: Who are the main partners involved in the projects? What exactly did the partners provide to support the project? Why/What are the advantages and disadvantages?

- b) What is the impact of such social ties on innovation inputs?

## **8. Emotional attachment**

- a) Do you think emotional bonds between family members are very strong? Do you think such emotional ties will make the firm more willing to stick to what they have done in the past rather than invest in innovation?
- b) Do you think the strong emotional attachment could amplify concerns about the firm's future, which leads to more responsible decision-making on innovation input?

## **9. Renew of family bonds**

- a) Are you going to transfer your business to the next generation? Do you think such intentions affect the decision of the company to invest in innovation?

## **Section 3 Innovation input and output**

- 10. Innovation usually requires many innovative talents. How many employees in the R&D sector of your company? What is the education level of them? How many resources (money, time, etc.) do you allocate to employees training?
- 11. Does your company have an R&D sector? How many budgets on this sector?
- 12. How frequently does your company develop new products or introduce new services? What percentage of new products' sales on total sales? What is the level in your industry?

## **Section 4 The role of TMT behaviours**

- 13. In terms of TMT, what is the composition of TMT in your company? How many/What percentage of family members on the TMT?
- 14. During the innovation, do you think what role does TMT play?

## **15. Use of knowledge and skills**

- a) Do the TMT members in family firms have capabilities to search for external knowledge and skills, assimilate them and leverage them towards companies' own innovation purposes?
- b) Do you think use of such knowledge and skills in TMT have impact on the conversion of innovation input to output?

## **16. Trust**

- a) Do you think TMT members have reciprocal faith in others' behaviours to work toward organisational goals? Can it improve the efficiency of transformation from innovation input to output?
- b) During the innovation, do you think the trust relationship in TMT could improve the quality of conversion from innovation inputs to outputs? For instance, TMT members are more willing to introduce more their personal networks to support innovation.

## **17. Cognitive conflict**

Cognitive conflict is the conflict that arises when different parties have divergent views on how a task can be implemented. They may argue from their own stances and contribute constructively on task implementation.

- a) Do cognitive conflicts often occur among TMT members during the innovation? Can you describe how these cognitive conflicts occurred?
- b) When the company face decision-making on innovation, do TMT members have a chance to openly share their opinions and listen to others? Do you think such behaviour can enhance the efficiency of transforming innovation input to output?

*Thank you for your cooperation and your time!*

## Appendix E - Interview Questionnaire (Chinese version)

### 调查访谈

感谢您参加这次访谈。这项研究的目的是探讨社会情感财富（SEW）和高层管理团队（TMT）行为在中国家庭中小企业创新中的作用。请您自由准确地回答问题。采访中提供的所有信息将绝对保密，并且仅用于学术目的。这次采访需要一个小时，并且会被记录下来，以便我们以后可以更轻松地查看笔记。非常感谢您的合作与帮助！

#### 第一部分 背景

1. 请问贵公司是何时成立的？为什么要创建这家公司，创立的初衷是什么？
2. 贵公司现在主打的产品有哪些？服务的客户群是哪类群体？
3. 贵公司当前有多少名员工？其中有多少是全职的？
4. 您在公司中担任什么职位？在加入公司之前，您的专业背景是什么？

#### 第二部分 社会情感财富和创新投入

众所周知，创新是一项非常复杂的管理实践。因此，当贵公司决定投资创新时，可能会考虑多方面的因素。我想就一些非经济方面的因素提出一些问题。

5. 家族的控制和影响
  - a) 贵公司的股权是否主要有家族成员持有？家族是否能够影响公司的投资决策？
  - b) 您认为保持家族对公司的控制权和决策的相对独立性是否会影响公司的研发投入？如果有的话是积极的还是负面的？
6. 家族成员对公司的认同
  - a) 家族成员是否对公司有很强的归属感？这种强烈的认同感会对公司的创新投入产生什么样的影响？
  - b) 贵公司的名字是否包含家族的名字？这种绑定是否会对公司投资创新项目的决策产生影响？比如担心影响家族的声誉。
7. 企业与社会之间的纽带
  - a) 贵公司是否与大学、研究机构或技术市场有合作？贵公司是否同他们进行了协同创新？

如果有，谁是主要的合作伙伴？主要合作的项目是什么？
  - b) 您认为这种同社会间的纽带对公司的创新投入有什么影响？
8. 情感联结
  - a) 您认为家庭成员之间的情感联结牢固吗？您是否认为这种情感联结

会使公司更愿意维持家族过去的产品和经营模式，而不太愿意做出改变，投资于创新？

b) 您是否认为家族成员对公司的情感依恋会加剧对公司未来的担忧，从而导致在对创新投入决策时更加谨慎？

#### 9. 家族传承

a) 您是否会将公司传给下一代？您认为这会对公司的创新投入产生什么样的影响？

### 第三部分 创新投入和产出

创新并非易事，常常伴随许多不确定的风险，需要消耗大量的人力物力才能转化成产品。特别是对于中小企业来说，无论是资本还是人力资源来说都面临很大的挑战。

10. 创新通常需要许多创新人才。您公司的研发部门有多少名员工？他们的教育水平如何？公司是否有专门针对创新人才的培训？一年会分配多少时间和资金？

11. 贵公司是否有研发部门？这个部门一年有多少预算？

12. 贵公司一般多久会开发一款新的产品或服务？这些新开发的产品占的销售总额的比例是多少？这在行业中处于什么水平？

### 第四部分 高管的行为

13. 贵公司高管团队的构成是什么，家族成员占多少？

14. 在创新的过程中，高管团队扮演什么样的角色？

15. 对知识和技能的使用

a) 贵公司高管团队是否具有搜索外部市场上的知识和技能，吸收他们并将其使用在公司自身创新项目上的能力？

b) 您认为高管团队对这种知识和技能的使用对公司将创新投入转化为产出的过程产生什么影响？

16. 信任

a) 您认为高管团队成员间是否相互信任，为组织的共同目标努力？您认为高管团队的信任是否会提高将创新投入转化为产出的效率？

b) 在创新的过程中，高管团队间的信任是否会提高将创新投入转化为产出过程的效率？比如说，高管团队成员更加愿意用自己个人的人脉支持公司的创新。

17. 认知性冲突

认知型冲突指的是当各方对如何执行任务有不同看法时发生的冲突。他们可以根据自己

的立场进行辩论，最终是为了给如何执行任务提出建设性的意见。

- a) 在创新过程中，高管团队成员之间是否经常发生建设性冲突？您能描述这些冲突是如何发生的吗
- b) 在创新的过程中，当高管团队成员的意见发生分歧时，他们是否有机会公开分享意见并听取他人意见？您认为这种行为可以提高将创新投入转化为产出的效率吗？

感谢您（百忙中）接收我们的采访，对我们学术工作的支持

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