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RESEARCH ARTICLE

The Relationship between Strategic Flexibility and Firm Performance in China's Real Estate Industry

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ABSTRACT

Firm performance is essential for sustaining the competitiveness of organizations, particularly in industries characterized by rapid change, such as real estate. Strategic flexibility, which includes resource flexibility and coordinating flexibility, has become a crucial factor influencing firm performance. It allows firms to effectively adapt to shifting market conditions and optimize operations, positioning them to achieve superior financial and non-financial outcomes. Despite the importance of strategic flexibility, its relationship with firm performance remains insufficiently explored in China's real estate industry. This study aims to address this gap by investigating the direct relationship between strategic flexibility and firm performance in real estate firms in China. Specifically, it examines how resource flexibility and coordinating flexibility contribute to improved financial and non-financial performance. A survey-based approach was employed to collect data from real estate firms across China. The proposed relationships were tested using a structural model, and the measurement model was evaluated for reliability, validity, and overall model fit. The results, analyzed using SmartPLS, demonstrate that both resource flexibility and coordinating flexibility are significantly and positively related to firm performance in financial and non-financial terms. These findings underscore the importance of strategic flexibility as a driver of success in the highly competitive Chinese real estate market. The study also presents theoretical insights and practical recommendations for real estate firms seeking to improve their performance through greater strategic flexibility. Suggestions for future research are provided to expand on these findings and explore additional dimensions of strategic flexibility.

1. INTRODUCTION

The firm's performance is very significant in ensuring the sustainability of the efforts. Firm's performance defined as "the execution of a series of business work functions or activities over some certain period" (Meflinda et al., 2018). In the essence of Dynamic resources-based view (DRBV), firm performance describes "a state for organisations to cope with environmental dynamism and continuously provide satisfactory products or services for customers better than competitors" (Li & Liu, 2012, p. 3). Because the meaning of performance varies among companies in different industries, scholars have argued that firm performance is a multidimensional concept that supposed to represent many characteristics of performance beyond profits and value (Seo et al., 2021). They argued that firms' performance spans both financial- and non-financial performance (Yeniaras et al., 2021). Based on DRBV, the essence of dynamism in this theory allows one to posit that resources and capabilities are sources for competitive performance (Barney, 1991). Hence, pooling and exploiting

of valuable resources is a strict assumption in DRBV and its extended contributions to create the firm value. Because of their potential to develop new sets of resources in unstable contexts, dynamic capabilities are an important part of the DRBV. As a result, a firm's dynamic capabilities allow it to be flexible and adjust its resources to changing situations (Wagner et al., 2018). As a result, DRBV provides a useful framework for analysing how organisations use resources and flexibility to attain and maintain competitive performance (Yu et al., 2018). In the context of the relationship between flexibility and firms' performance, scholars identified two types of flexibility that are important determinants of firms' performance, which are strategic flexibility and financial flexibility (Chan et al., 2017; Seo et al., 2021; Yousuf et al., 2021).

Flexibility is a useful mechanism for dealing with uncertain conditions and responding to variations in a dynamic corporate environment, and it is seen as a strategic attribute and an alternate strategy to managing an uncertain future in the face of product rivalry (Yousuf et al., 2021). Sanchez (1995), who introduced the term of strategic flexibility mentioned that to account for both the flexibility of firm resources per se and the flexibility in coordinating these resources, he conceptualized strategic flexibility into resource flexibility and coordination flexibility. Yousefi and Yung (2021) argued that these two types of strategic flexibility are mechanisms used by firms to deal with uncertainty to effect positively on their performance.

Companies may get several benefits and advantages by creating strategic flexibility in its resources in order to share and utilise their scarce resources in a flexible manner due to resource scarcity and multi-use (Nowak, 2022). Based on DRBV theory, when resource flexibility is sustainably high, firms can ensure that rapid new product lines achieve the advantage of market leadership by reducing the search time for required resources (Chan et al., 2017). According to the theory, resource flexibility allows organisations to develop the capacity to respond to changing environment, which often entails investing in a broad set of resources and having a wide range of strategic alternatives (Hoque et al., 2022). When firms' have high level of resources flexibility, it would enhance their ability to renew most day-to-day tasks or routines, because flexible resources are important factors in order to effectively implement a chosen strategic option, which increase firms' ability to achieve competitive differentiation (Noman & Basiruddin, 2021).

Similarly, according to RBV theory, firms can integrate, build, and reconfigure internal and external resources through coordination flexibility and thus reduce the cost, time, and effort involved in changing the mix and use of resources (Chan et al., 2017). Coordinating flexibility, according the RBV theory, refers to a company's capacity to reach a high level of coordinating flexibility that allows for more efficient and effective strategic resource allocation (Martin & Bachrach, 2018), which may assist a firm break down its institutionalised business model procedures and explore new options by reducing organisational routine inertia and improve performance (Liao et al., 2019). Coordinating flexibility also increases a firm's ability to take advantage of environmental opportunities by enabling continuous adaptations (Ahammad et al., 2021). This is because, coordinating flexibility also enable firms to properly build competitive advantage through reallocate resources and adjust existing strategies in a timely manner to changing environment (Lin et al., 2014), and to fast react to environmental changes and seize external possibilities, lowers the risk of increase operations cost, thus increasing the likelihood of corporate success (Noman & Basiruddin, 2021).

In the same context, financial performance relates to "the degree to which a firm achieves economic goals which span return on investment, return on sales, return on assets, sales growth, and market-share growth" (Yeniaras et al., 2021, p. 58). Even in a crisis, financially flexible companies have more cash on hand and can raise capital cheaper and more effective to support new development possibilities and improve performance (Chang & Wu, 2022). This is because, financial flexibility helps firms to avoid wasteful or ineffective financial resource allocations, allowing them to enhance their performance (Yeniaras et al., 2021), as well as to avoid situations that lead to suboptimal investment and poor performance (Ma & Jin, 2016).

The organisation may be defined as a system (inputs, processes, and outputs) connected to the environment in which it works, meaning it both effects and is influenced by the environment (Yousuf

et al., 2021). In today's highly competitive environment, there is a higher level of uncertainty, which leads to a lack of the essential knowledge to determine cause and effect correlations (Ahammad et al., 2021). In case of inability to predict or control environmental changes, the firm's ability to acquire the required resources for continued production will effected, thus environmental uncertainty is considered a serious threat to their firm's survival (Hoque et al., 2022). As a result, companies should find a relevant way to deal with uncertainty in dynamic environments (Yousuf et al., 2021). In a highly dynamic environment, uncertainties can make it difficult for a company to respond to the need for change, supply necessary resources, anticipate client wants, challenge the current strategic direction, and consider new strategic options (Zhang & Savalei, 2016). However, uncertainty in the environment can be a source of profitable opportunity for reinforcing existing competitiveness and/or developing new ones, allowing the firm to respond effectively to external environmental changes, in this case, to benefit from environmental changes, a firm must be strategic and financially flexible (Liao et al., 2019). Firm's flexibility is a measure to capture how well a company is prepared to respond to and adapt to these changes in the environment (Seo et al., 2021). Han and Zhang (2021) argued that firms' flexibility enable firm to have better responsiveness to environmental changes and can reduce the feedback time and response costs.

2. LITERATURE REVIEW

2.1 Firm's performance

Historically, the strategic management domain's major focus has been on firm's performance (Yeniaras et al., 2021). The firm's performance is very significant in ensuring the sustainability of the efforts, its defined as "the execution of a series of business work functions or activities over some certain period" (Meflinda et al., 2018). In the essence of Dynamic resources-based view (DRBV), Barney (1991, p. 102) defined competitive performance as "a firm is said to have competitive performance when it implements a value creating strategy not simultaneously being implemented by any current or potential competitors". It describes "a state for organisations to cope with environmental dynamism and continuously provide satisfactory products or services for customers better than competitors" (Li & Liu, 2012, p. 3). Thus, competitive performance is an indicator of the firm's potential to surpass its competitors in terms of profitability, economic rents, market share and other outcomes of interest. Also, "a term that is generally used to describe the relative performance of rivals in a given (product) market environment" (Peteraf & Barney, 2003, p. 313).

Because the meaning of performance varies among companies in different industries, scholars have argued that firm performance is a multidimensional concept that supposed to represent many characteristics of performance beyond profits and value (Seo et al., 2021). Thus, scholars argued that firms' performance spans both financial- and non-financial performance (Yeniaras et al., 2021). In the context of the relationship between flexibility and firms' performance. The study of Seo et al. (2021) validated that effective allocating and restructuring firms' flexible resources positively the firm's performance which comprised two dimensions which are financial performance and operational performance. Similarly, (Chan et al., 2017) found that resources flexibility has a positive significant direct effect on firm performance in terms of financial performance (i.e., revenue growth), and non-financial performance (i.e., customer relationships). Meanwhile, Yousuf et al. (2021) found that strategic flexibility (i.e., resources flexibility) has a positive significant direct effect on SMEs' performance in terms of financial performance (i.e., sales, profits and market share), and non-financial performance (i.e., customer satisfaction and operational performance).

The DRBV theory provides the foundation to conceptualise this logic, because the essence of dynamism in this theory allows one to posit that resources and capabilities are sources for competitive performance (Barney, 1991). Although, the DRBV did not provide an explicit definition of competitive advantage, but it mentioned that competitive performance (financial performance) is generated from one of two key types of advantages which are: cost advantage and differentiation advantage (non-financial performance (Fainshmidt et al., 2019). To cope with lack of accurate data that firms provide regarding their performance, especially financial performance indicators, scholars

suggested used financial and non-financial indicators that reflect the performance as expressed by the respondents and comparable to the competitors or industry (Yousuf et al., 2021). Based on the above discussion, this study follows the past studies in the strategy context, and conceptualised firms' performance as a construct the comprise two dimensions are: financial performance and non-financial performance.

2.2 Strategic Flexibility

Flexibility is a useful mechanism for dealing with uncertain conditions and responding to variations in a dynamic corporate environment, and it is seen as a strategic attribute and an alternate strategy to managing an uncertain future in the face of product rivalry (Yousuf et al., 2021). The origin of strategic flexibility term can be tracked back to Sanchez (1995), who introduced the term in his article entitled "Strategic flexibility in product competition" published in strategic management journal. To account for both the flexibility of firm resources per se and the flexibility in coordinating these resources, Sanchez (1995) conceptualized strategic flexibility into resource flexibility and coordination flexibility. Under this logic, strategic flexibility defined as "the inherent flexibility of a firm's disposable resources (resource flexibility) and the firm's ability to utilise these resources (coordination flexibility)" (Han & Zhang, 2021, p. 3). Strategic flexibility also defined as "the ability of a firm to adjust its strategic decisions in response to internal or external changes (Chan et al., 2017, p. 488). The intrinsic qualities of resources indicate resource flexibility, whereas coordination flexibility shows a firm's capacity to utilise the available resources (Chan et al., 2017). In this context, the study of Liao et al. (2019) has operationalized strategic flexibility as dynamic managerial capability that captures two dimensions of strategic flexibility (i.e. resource flexibility, coordination flexibility). They stated that strategic flexibility is "a multidimensional concept, which is composed of resource flexibility and coordination flexibility" (Liao et al., 2019, p. 96). Similarly, Yousefi and Yung (2021) considered coordination flexibility and resources flexibility as two types of strategic flexibility, they argued that these two types of strategic flexibility are mechanisms used by firms to deal with uncertainty to affect positively on their performance.

Resource flexibility and coordination flexibility are considered also as two major components of strategic flexibility in the study of Chan et al. (2017). They defined strategic flexibility as "a firm's ability to adjust its strategic decisions in response to either internal or external changes in the market environment" (Chan et al., 2017, p. 488). They argued that "firms possessing strategic flexibility have flexible resource pools and diverse portfolios of strategic coordinating options that allow them to practice effective "surprise management" (Chan et al., 2017, p. 488). This classification of strategic flexibility into resource flexibility and coordination flexibility can help to understanding the influence of multiple strategic orientations on firm performance, it's takes strategic orientations of a firms as alternatives that coexist and support one another (Han & Zhang, 2021). Based on these arguments, this study defined strategic flexibility as "the inherent flexibility of a firm's disposable resources (resource flexibility) and the firm's ability to utilise these resources (coordination flexibility)" (Han & Zhang, 2021, p. 3). This study followed these arguments and considered strategic flexibility as a construct that comprises two dimensions which are resources flexibility and coordinating flexibility. Because of the synergies produced, this conceptualization follows the idea of 'the more, the better,' which indicates that focusing on several strategic objectives at the same time supports stronger business performance. The following subsections addressee these two dimensions in detail.

3. METHODOLOGY

3.1 Research design

Based on the theoretical underpinning of this study; firm' performance is the outcomes of two types of flexibility that are important determinants of firms' performance, which are strategic flexibility (in terms of resources flexibility and coordinating flexibility) and financial flexibility (Chan et al., 2017; Seo et al., 2021; Yousuf et al., 2021). Put differently, firms can use these two types of flexibilities to attain and maintain competitive performance (Yu et al., 2018). Further, in a highly dynamic environment, uncertainties can make it difficult for a company to respond to the need for change, supply necessary resources, anticipate client wants, challenge the current strategic direction, and

consider new strategic options (Zhang & Savalei, 2016). However, uncertainty in the environment can be a source of profitable opportunity for reinforcing existing competitiveness and/or developing new ones, allowing the firm to respond effectively to external environmental changes, in this case, to benefit from environmental changes, a firm must be strategic and financially flexible (Liao et al., 2019). Thus, this study proposes a structural model (Figure 2.1) by which strategic flexibility (i.e., resources flexibility and coordinating flexibility), and financial flexibility, effect directly on firm's performance (in terms of financial performance and non-financial performance). Moreover, the relationship between resources flexibility, coordinating flexibility, financial flexibility, and firm's performance is moderated by environmental uncertainty. In this study, six constructs were investigated that include: (i) strategic flexibility (i.e., resources flexibility, coordinating flexibility), and financial flexibility, which are the independent variables; (ii) Firm's performance (i.e., financial performance and non-financial performance), the dependent variable; and (iv) environmental uncertainty, i.e., the moderating variable.

The relationship between the strategic flexibility (i.e., resources flexibility, coordinating flexibility), financial flexibility and firm's performance (i.e., financial performance and non-financial performance), was studied directly, to identify the direct relationships between firms' flexibility and firm performance. This study also aims to investigate these priori-hypothesized relationships and to explore whether this relationship is conditional by the moderating role of environmental uncertainty. Current literature provides reliable measurement scales that have been developed to measure resources flexibility, coordinating flexibility, financial flexibility, environmental Uncertainty, financial performance and non-financial performance. Therefore, the measures of these constructs are based on existing measures in the relevant literature and DRBV. Based on the theoretical underpinning of this study, research objectives and questions are developed to test the proposed relationship between the study constructs. The following sections discuss in detail the procedures and approaches that will be applied in this study.

3.1.1 Research purpose

Explanatory research is any study that aims to explore a specific topic or investigate a phenomenon with the goal of explaining the relationships between distinct variables (Saunders et al., 2016). According to this identification, this study is an explanatory research in nature, because, this study seeks to explain the relationships between the proposed variables. This study seeks to investigate the relationships between resources flexibility, coordinating flexibility, financial flexibility, financial performance and non-financial performance. Furthermore, this study seeks to explore the moderating role of environmental uncertainty on the relationship between strategic flexibility (i.e., resources flexibility and coordinating flexibility), financial flexibility, and firm's performance (in terms of financial performance and non-financial performance). This study employs presented hypotheses that were evaluated using large samples to examine these correlations. In conclusion, the primary goal of this study is to investigate and comprehend the relationships between the many specified variables. This study is therefore an explanatory investigation.

3.1.2 Research philosophy

Methodology should be founded on and congruent with certain philosophical beliefs or paradigms, not just a collection of processes, techniques, methods, and instruments. Positivism and phenomenology are two extremes of epistemological positions that represent the research technique, and these two positions determine the types of knowledge that may be derived from the phenomena being examined (Easterby-Smith et al., 2012). According to the positivist viewpoint, the social world exists externally, and the social phenomena may be measured using objective and scientific means. Quantitative procedures, according to this reasoning, are the most dependable means for eliciting knowledge in an objective reality (Neuman, 2000). This study is susceptible to the logical ways in which people strive to find natural laws via empirical testing, according to the positivist paradigm (Saunders et al., 2009). As a result, under this philosophical viewpoint, the deductive technique used in this work is an appropriate approach (Easterby-Smith et al., 2012). This research suggests that reality exists outside, is predictable, and can be measured and comprehended using quantitative empirical methods, according to the positivist paradigm. As a result, this study

relies on the given hypotheses to offer trustworthy responses concerning the correlations between the proposed constructs, which were tested using samples.

This study seeks to examine the relationship between strategic flexibility (i.e., resources flexibility and coordinating flexibility), financial flexibility, and firm's performance (in terms of financial performance and non-financial performance). Further, this study aims to provide the first empirical evidence on the moderating role of environmental uncertainty on the relationship between strategic flexibility (i.e., resources flexibility and coordinating flexibility), financial flexibility, and firm's performance (in terms of financial performance and non-financial performance).. Furthermore, the proposed links in this study were studied utilising large samples, with the requisite conceptual framework and hypotheses developed and tested using the questionnaire survey technique. This is the process of logical reasoning that is necessary to explain relationships between the constructs being studied (Saunders et al., 2009). In conclusion, this study employs a survey as a research tool to assess and analyse relationships between the identified dimensions, implying that the philosophical paradigm used in this study is positivism.

3.1.3 Research strategy and time horizon

As stated in section 3.2.2, the philosophical paradigm used in this work is positivism. Quantitative procedures, according to this paradigm, are the most dependable means for eliciting knowledge in an objective reality (Neuman, 2000). A questionnaire-based survey (cross-sectional design) is a suitable approach and preferable means to gather the essential data at a certain moment in time due to time restrictions and since this study intends to analyse a specific phenomenon at a specific period (Saunders et al., 2009). This study's research questions, such as "Does" and "Do," are more appropriate for usage with the survey approach. This study aims to offer credible responses to the research questions stated in Chapter 1 (section 1.5), by employing a questionnaire-based survey. A survey instrument may be easily administered, offer clear responses to particular questions, and the results are simple to analyse and understand (Bryman & Bell, 2007). This technique can assist in gathering data from a broad sample frame at a reasonable cost in order to evaluate the hypothesised correlations and generalise the results (Bryman & Bell, 2007).

A survey allows the generalisation of the research findings and testing the established research hypotheses, by collecting a huge amount of data from a big population in a cost-effective manner, a survey enables for the generalisation of research findings and the testing of existing research hypotheses (Bryman & Bell, 2007). A questionnaire-based survey is ideal for revealing what a large number of respondents believe about the subject under inquiry and determining the link between the study's dimensions. This tool supports the dominant strategy researchers' viewpoint. Given that studying certain phenomena at a given period allows the researcher to gather data using a questionnaire at a specific point in time, it is appropriate for the current study to collect data using a questionnaire survey at a single point in time (Saunders et al., 2009).

3.2 Population and sampling

In general, most of theories that addressed the relationship between firms' flexibility and firm's performance in developed markets; however, this association is missing in emerging markets, which require additional attention (Miroshnychenko et al., 2021). Scholars argued that is an essential context to investigate further in order to develop a more comprehensively informed and contextually robust theory in emerging markets (Hoque et al., 2022; Miroshnychenko et al., 2021). Furthermore, in the context of emerging markets, the effect of environmental uncertainty as a crucial moderator in enhancing or reducing the influence of strategic flexibility on performance is urgently needed, providing opportunities for new theory development and empirical testing (Ahammad et al., 2021). In this context, going outside western applications will enhance the explanatory power of dynamic resources-based view and explain the issue of firms' performance better, and will supplement the existing body of research. Especially when this research will be applied in the context of emerging countries it will extend beyond the existing research. For these reasons, and for easy accessibility purposes, China real estate sector is chosen as the research field for this study. This research was conducted on Chinese real estate firms.

For the reasons reported in section 1.2, chapter 1, Chinese real estate firms were selected as the appropriate population for studying the relationships between strategic flexibility (i.e., resources flexibility and coordinating flexibility), financial flexibility, and firm's performance (in terms of financial performance and non-financial performance). Further, to examine the moderating role of environmental uncertainty on the relationship between strategic flexibility (i.e., resources flexibility and coordinating flexibility), financial flexibility, and firm's performance (in terms of financial performance and non-financial performance) for several reasons: (i) to simultaneously attain the research objectives to understand of real estate firms' perspective on firm's flexibility and firm's performance; (ii) the majority of past studies have concentrated specifically on the hospitality firms (Chang & Wu, 2022), health-care organizations (Nowak, 2022), manufacturing industries (Han & Zhang, 2021), pharmaceutical firms (Yousuf et al., 2021), and garment manufacturers (Chan et al., 2017), however, Such relationship have yet to examine in the context of real estate firms.

The targeted population and key informants will be drawn from Chinese real estate firms. According to the China Statistical Yearbook (2022), there are 419 real estate firms registered in the database of the Ministry of Industry in China. The database includes details of the names, contact numbers, emails and addresses of the registered real estate firms. Thus, the sampling frame of Chinese real estate firms will be drawn from the listed firms in the database of the Ministry of Industry in China. Thus, the sampling frame of Chinese real estate firms drew from the listed firm in the database of ministry of industry in China. The key respondents for this study are the mid-level managers in the Chinese real estate firms. This is because, mid-level managers are responsible to hold the firm strategy together, and they are deemed to have the required authority to control the firm's resources base and financial structure. Furthermore, they are deemed to have the financial data knowledge required for this study (Chu, 2021). This approach to choose the key informants will enhance the reliability of the collected data, because responses that were collected are within their domain of responsibility (Karia, 2011).

The sampling frame of Chinese real estate firms drew from the listed firm in the database of ministry of industry in China. Probability sampling, according to Sekaran (2003), is utilised when the researcher wants a representative sample in order to achieve more generalisation. The data were collected from real estate businesses using a questionnaire employing simple random method. With fact, in simple random sampling, any element in the population frame has an equal chance of being included as a sample subject (Bryman & Bell, 2007; Sekaran, 2003). The units are chosen directly from the sample frame in this kind of sample (Byrne, 2016). Furthermore, because the selected sample represents the features of the community from which it was taken, this method of sampling has the least bias and gives the maximum level of generalisability (Sekaran & Bougie, 2016).

According to Roscoe (1975) table of sample size, the equivalent sample size for a population between 400 to 500 is **196** units.

To determine the accurate number of participants for this study, G*Power is used to assess the sample size. G*Power is an inferential statistics software that calculates statistical power using a range of statistical tests such as t-tests, F-tests and chi-square tests as well as one-way versus multi-way ANOVA (Faul et al., 2009). The alpha (with a standard value of .05), power (with a standard value of .95) and effect size hypotheses are determined in this study (small, moderate or large). Figure 1 shows that the sample size required for this study is **191**.

Thus, a sample size of **200 observations** is acceptable and meets the sample size requirements for multivariate analysis (at least 10 times the number of the survey indicators/variables) and is consistent with previous study guidelines (e.g., Hair et al., 2017; Sekaran & Bougie, 2016).

3.3 Instrument and measurement

The measuring items for this study were adopted or adapted from existing literature to be more relevant with the setting of this investigation, since many studies have been performed on the constructs that were employed in this study (Appendix A). Resources flexibility, coordinating flexibility, financial flexibility, environmental uncertainty, financial performance, and non-financial

performance are based on existing scales. The real estate firm in China was employed as the unit of analysis for all of the metrics used in this study. All components were assessed using multiple-item measures in this study. On a Likert scale, respondents were asked to rate how strongly they disagreed (1) and how strongly they agreed (5). The variables and measuring items sources in this investigation are summarised in Table 3.1.

Table 3.1: Constructs and measures of study

Section	Variables	No. of items	Type of scale	Source
A	Resources Flexibility	9	5-point Likert scale	(Adomako & Ahsan, 2022; Chan et al., 2017; Han & Zhang, 2021)
A	Coordinating Flexibility	8	5-point Likert scale	(Chan et al., 2017; Han & Zhang, 2021)
A	Financial Flexibility	8	5-point Likert scale	(Adomako & Ahsan, 2022; Yeniaras et al., 2021)

3.4 Research instrument development

A four-section questionnaire (Appendix A) is developed for the purpose of data collection based on the theoretical underpinnings of this study outlined in chapter two and the suggested linkages between variables in the conceptual framework (Figure 2.1). Section A is composed of 6 questions that related to demographic data. Section B is composed of twenty five items; nine items are for measuring the resources flexibility; eight items for measuring coordinating flexibility; eight items for measuring financial flexibility. Similarly, section C is composed of fourteen, seven items for measuring financial performance, and seven items for measuring non-financial performance. Section D is composed of seven items that are related to measure environmental certainty.

The questionnaire items were created using a closed response approach, in which respondents were asked to select one of five options to indicate how strongly they agree or disagree with statements, based on a 5-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement (Sekaran & Bougie, 2016). The use of the five-point Likert scale is chosen because: (i) coefficient alpha indicates a better reliability rate with this type of design (Hair et al., 2010); and (ii) the use of the five-point Likert scale is highly accepted in this sort of study (Hinkin, 1995). Brief phrases and easy language are utilised in the questionnaire design to encourage respondents to finish the questionnaire items. A cover letter was also sent with the questionnaire to clarify the study's goals and to assure respondents that the information they supplied would only be used for academic and research reasons.

3.5 Operational definition of constructs

Resources flexibility is “the extent to which a resource can be applied to a larger range of alternative uses, thus allowing firms to better switch their resources from one use to another use with ease" (Adomako & Ahsan, 2022, p. 127). The measurement items for resources flexibility were used to measure the possibility of used firm's resources in varies uses, the ability of resources to use in alternative uses between units in less efforts, shorter time, and minimum cost. These items are adopted from the works of Adomako and Ahsan (2022), Chan et al. (2017), and Han and Zhang (2021). This is because these studies have empirically affirmed that the conceptualization and measurement of resources flexibility is reliable, and its validity has been supported. Nine items in resources flexibility measurement scale. These items were (i) "The main resources are widely used in product development, sales, etc."; (ii) "There is a large range of alternative uses to which our major resources can be applied"; (iii) "The major resources can be allocated to develop, and deliver a diverse line of products"; (iv) "Difficulty in switching from one use of the main resources to an alternative use is low"; (v) "The time of switching from one use of the main resources to an alternative is low"; (vi) "The cost of switching from one use of the main resources to an alternative is low"; (vii)

"The sharing degree of the main resources used in developing, producing, selling and after-sell services of different products is high"; (viii) "The firm often finds new uses for existing main resources through communication between units"; and (ix) "The main resource can be easily switched to alternative uses in different units of the firm".

Coordination flexibility is "a firm's ability to build new resource combinations creatively and effectively through internal coordination processes" (Han & Zhang, 2021, p. 2). The measurement items for coordinating flexibility were used to measure the ability to changeover firm's resources and processes to different products and processes in less cost, the ability to improve mobility and adaptability to enhance capabilities smooth communication mechanism, and ability to change firm's strategies and structures to respond to external environments. These items are adopted from the works of Chan et al. (2017) and Han and Zhang (2021). This is because these studies have empirically affirmed that the conceptualization and measurement of coordinating flexibility is reliable, and its validity has been supported. Eight items in coordinating flexibility measurement scale. These items were: (i) "The time of changeover to a different product is short on the main production line"; (ii) "The cost of changeover to a different product is small on the main production line"; (iii) "In order to cope with various conditions, we make efforts to improve flexibility by fostering capabilities incrementally"; (iv) "In order to cope with various conditions, we make efforts to improve adaptability by fostering capabilities incrementally"; (v) "Our firm allows each unit to change normal procedures in order to maintain flexibility and dynamics"; (vi) "Our firm's ways of management can be adapted according to different employees and circumstances"; (vii) "We have a very smooth communication mechanism within our firm"; and (viii) "We actively change our strategies and structures to respond to external environments".

Financial flexibility also defined as "the capability of a firm in having access to the low-cost funds and able to reorganize its financial structure at low cost" (Altaf, 2020, p. 8). The measurement items for financial flexibility were used to measure the extent to which the firm is financially flexible, can obtain funding externally, can fund resources changes, availability of financial capital, easy access to financial capital to support its business operations. These items are adopted from the works of Adomako and Ahsan (2022) and Yeniaras et al. (2021). This is because these studies have empirically affirmed that the conceptualization and measurement of financial flexibility is reliable, and its validity has been supported. Eight items in financial flexibility measurement scale. These items were: (i) "We are satisfied with the financial capital available for the business operations"; (ii) "Our firm has easy access to financial capital to support its business operations"; (iii) "Our firm operations are better financed than our key competitors' operations"; (iv) "If we need more financial assistance for our business operations, we can easily obtain it"; (v) "We can obtain financial resources in a short time to support business operations"; (vi) "We can fund resource changes from within the firm"; (vii) "Our firm can obtain funding externally easily"; (viii) "In general, our firm is Financially flexible".

Firm's Performance is "a state for organisations to cope with environmental dynamism and continuously provide satisfactory products or services for customers better than competitors" (Li & Liu, 2012, p. 3). Firm's performance comprises two dimensions that reflect the general performance of a firm, which are financial performance and non-financial performance (Yeniaras et al., 2021). The measurement items for financial performance were used to evaluate firm's financial performance in the last 3 years, in comparison to its main competitors, in terms of the return on investment, return on sales, return on assets, sales growth, and market-share growth. These items are adopted from the work of Yeniaras et al. (2021). This is because this study has empirically affirmed that the conceptualization and measurement of financial performance is reliable, and its validity has been supported. Seven items in financial performance measurement scale. These items were: (i) "In the last 3 years, our firm has better profitability in comparison to our main competitors"; (ii) "In the last 3 years, our firm has better return on investment in comparison to our main competitors"; (iii) "In the last 3 years, our firm has better return on sales in comparison to our main competitors"; (iv) "In the last 3 years, our firm has better growth in profits in comparison to our main competitors"; (v) "In the last 3 years, our firm has better return on equity in comparison to our main competitors"; (vi) "In

the last 3 years, our firm has better growth in sales in comparison to our main competitors"; (vii) "In the last 3 years, our firm has better growth in market share in comparison to our main competitors".

The measurement items for non-financial performance were used to evaluate firm's non-financial performance in terms of short product delivery cycle time, timeliness of after sales service, productivity improvements (e.g., assets, operating costs, labour costs), strong bond with customers, knowledge of customer buying patterns, increasing sales, and the ability to find new revenue streams (e.g., new products, new markets). These items are adopted from the work of Chan et al. (2017). This is because this study has empirically affirmed that the conceptualization and measurement of non-financial performance is reliable, and its validity has been supported. Seven items in non-financial performance measurement scale. These items were: (i) "Our firm has a short product delivery cycle time"; (ii) "We have timeliness of after sales service"; (iii) "Our firm achieved productivity improvements (e.g. assets, operating costs, labour costs)"; (iv) " Our firm has a strong and continuous bond with customers"; (v) " Our firm has precise knowledge of customer buying patterns"; (vi) "Our firm achieved increasing sales of existing products"; and (vii) "Our firm can find new revenue streams (e.g. new products, new markets)".

Environmental uncertainty is "the extent of change, volatility, unpredictability and instability in the external business environment" (Ahammad et al., 2021, p. 4). The measurement items for environmental uncertainty were used to evaluate firm's the extent to which the local market are intense, regular changes for new products and services, changes happen continuously, the volumes of products and services change fast, customer requirements vary across different segments, and the difficultly to predict demand for our products. These items are adopted from the work of Hoque et al. (2022) and Liao et al. (2019). This is because these studies have empirically affirmed that the conceptualization and measurement of environmental uncertainty is reliable, and its validity has been supported. Seven items in environmental uncertainty measurement scale. These items were: (i) "Environmental changes in our local market are intense"; (ii) "Our clients regularly ask for new designs and services"; (iii) "In our local market, changes are taking place continuously"; (iv) "In our market, the volumes of products and services to be delivered change fast and often"; (v) "In our kind of business customer requirements vary significantly across different customer segments"; (vi) "In our kind of business, customers' preferences change considerably over time", and (vii) "It is very difficult to predict demand for our products".

***Control variable*:** control variables are the variable could explain a variance in the dependent variables as recommended by past studies (Nowak, 2022). In this study, one control variable will be used. Firm size will be the controlled variable. Past studies indicate that firm size is the ability to acquire and deploy resources, and such ability can vary across firms (Chang & Wu, 2022; Seo et al., 2021). A firm's size might play a role in shaping strategic flexibility (Miroshnychenko et al., 2021). Further, larger firms are strategically more agile and tend to have better performance than smaller firm (Ahammad et al., 2021). Seo et al. (2021) mentioned that firms that are financially flexible may achieve superior performance because they have more financial re- sources to deploy. Large size firm also has more ability to acquire more specialised resources, thus more ability to align its business strategy with its business environment, which provide the firm competitive advantage over small firm's, in such way firm's size might affect performance (Hoque et al., 2022). Similarly, Miroshnychenko et al. (2021) found that firm size is a significant predictor of performance, implying that larger firms are in a better position to adapt their strategic and financial flexibility with environmental changes than smaller ones. Firm size (Size) is operationalized in this study as the log (volume) of sales (Seo et al., 2021). Firm's size also can be operationalised by the number of full time employees (Adomako & Ahsan, 2022; Han & Zhang, 2021; Yeniaras et al., 2021). The direct effects of strategic flexibility (i.e., resources flexibility, and coordinating flexibility), financial flexibility on financial and non-financial performance (H1a, b, H2a, b and H3a, b) will be tested by creating the structural pathway from the exogenous variable to the outcome variable while firm's size control variables will be included in the model to calculate the structural coefficient of such relationships as recommended by Hoque et al. (2022). Furthermore, to test the hypotheses predicting the moderating effects of environmental uncertainty on the relationships between flexibility and performance (H4a-

c and H5a-c), the interactive term will be calculated to create new structural paths while firm's size will be included as a control variable as recommended by Nowak (2022).

3.6 **Data collection procedures**

Data was gathered from Chinese real estate firms. A questionnaire survey approach was utilised to achieve the study goals and to explore the predicted links from the perspective of real estate firms in China. A questionnaire survey is a data collection approach that translates the research's objectives into particular questions that can be answered, and then provides trustworthy responses to the study questions (Malhotra, 2004). The goal of this study's questionnaire-based survey technique is to offer clear and substantial evidence for the suggested correlations between the study variables. To collect data, an online survey questionnaire was employed since it may provide an 11 percent higher response rate than an self-questionnaire survey (Shih & Fan, 2008). Respondents were first informed to the research's principles and aims in order to gauge their interest in participating in the current study. The questionnaires were emailed to the respondents in the Chinese real estate firms. The respondents that were asked if they would be willing to participate in the study. Questionnaires were distributed to respondents who agreed to take part in the study. The questionnaire was created using the Google Docs service. Participants will be instructed to access the Google Docs online survey questionnaire using the URL address supplied in the email. To prevent respondents from filling out the survey more than once, a Google form option will be utilised that permits each respondent to submit just one response.

3.7 Pre-test and pilot test

Pre-test

The construct validity of the measuring scale is the key issue during the pre-test stage. The construct validity must be assessed at this step to verify that the scale items are free of ambiguity and duplication. A group of three academics from China were requested to appraise and analyse the measuring items to guarantee construct validity. They asked to evaluate how well the measurement items aligned with the suggested variables' theoretical definitions. Meanwhile, the questionnaire was evaluated by a panel of three Chinese real estate managers. The feedback from the two groups of judges is critical for ensuring construct validity, ensuring that the measurement items are free of ambiguity and redundancy, detecting any item confusion, refining the items, and ensuring that the measurement items cover all aspects of the variables being measured (Sekaran & Bougie, 2016). The preliminary questionnaire was produced based on the comments from the two sets of judges and was ready for pilot testing.

Table 3.2 shows the measurement items and the (amendments) adaptation that have done by the expert panel.

Pilot test

Johanson and Brooks (2010) suggested that 10–20% of participants are regarded to be adequate and reasonable to participate in a pilot study. In this study, the number of real estate firms that will be targeted to collect data is 200 real estate firms in China; thus 20 (10%) firms will be used in the pilot test analysis. Accordingly, the preliminary questionnaire was piloted with 20 real estate firms in China during the pilot test stage. Before conducting a full-scale investigation, a pilot study is conducted to evaluate the data collection instrument using a small sample of people from the total population (Sekaran & Bougie, 2016). This stage is critical for ensuring that the instrument is legible and detecting any potential questionnaire design flaws. The pilot test also aids in the efficiency of the questionnaire by rewording any unclear questions and adjusting any double-barrelled questions. Furthermore, a pilot test may be used to check the measurement items' reliability. Internal consistency among numerous items within a concept is measured by reliability (Sarstedt et al., 2023). A pilot test is an important step in the research process that helps the researcher identify flaws that were not previously identified and change the questionnaire before collecting data from the actual study sample (Legate et al., 2023; Saunders et al., 2009). The scale's high reliability suggests that it can consistently deliver the same results when used again (Sekaran & Bougie, 2016). The Cronbach's Alpha test is the most often used reliability assessment tool in social science research (Hair et al.,

2006). The replies of the respondents were analysed using reliability analysis in this study. If the Cronbach's coefficient alpha scores of each item surpass the minimal values of 0.60 to 0.70, the scales were declared trustworthy (Hair et al., 2010). Finally, real estate business managers who took part in the pilot study were excluded from the final sample.

Reliability analysis have been used to analysis the respondents' answers in this study. Table 3.2 shows the results of the reliability test. The scales utilized are reliable if the Cronbach's coefficient alpha scores of each tool exceed the minimum scores that are 0.60 to 0.70 (Hair, 2010). Table 3.2 shows that the scales that were used in this pilot test have internal consistency with Cronbach's alpha coefficient values between 0.760 and 0.912, for all measurement scales. Therefore, all the factors also exceeded the recommended value of 0.70.

Table 3.3: Result of Pilot Reliability Analysis (*n* = 20)

NO	Constructs	Items	Cronbach's Alpha
1	Resources flexibility	9	.797
2	Coordinating flexibility	8	.912
3	Financial flexibility	8	.815

3.8 Data analysis method

A combination of descriptive and inferential statistics approaches were utilised in this study to maximise the efficiency of data analysis. Descriptive statistics were employed to aid in the summarization of the acquired data by identifying the sample characteristics (Sarstedt et al., 2014). The predicted associations provided in the conceptual framework of this study were tested using inferential statistics. SPSS version 25 was utilised in this investigation, as well as Partial Least Square (PLS-SEM) utilising the SmartPLS 4 software. The data analysis methodologies utilised in this investigation are described in the following sections.

3.8.1 Data screening

Data screening is a requirement for raw data in order to improve the resulting model and avoid difficulties at a later stage of analysis (DeSimone et al., 2015). Data screening examines inconsistent replies, missing values, outliers' values, and the data normal distribution to guarantee that raw data was translated accurately and effectively (Pallant, 2013). When working with multivariate statistical approaches, data screening is a vital first step to guarantee that the data entered is error-free (Osborne et al., 2014). SmartPLS and the other statistical techniques used in SEM are sensitive to missing data and outliers' values, hence data screening is required prior to analysis (Hair et al., 2012). The descriptive and frequencies commands in SPSS version 25.0 were used in this study's data screening step to discover the three assumptions of a multivariate analysis: missing data, outliers, and normality testing. This study goes through these three assumptions in further detail in the following.

Missing data: the initial assumption of a multivariate analysis is that there will be missing data. In social science research, the majority of investigations are done by a questionnaire survey (Sekaran & Bougie, 2016). Many surveys are left blank when a survey is conducted manually (Sarstedt et al., 2019). As a result, missing values become a regular issue in data analysis (Johnson & Wichern, 2017). In quantitative investigations, missing values are the rule rather than the exception, according to Little and Rubin (2014). Missing values imply a partial loss of data, and data contains a variety of codes that indicate a lack of response (Schafer & Graham, 2002). This difficulty arises when respondents fail to reply to one or more questions in the questionnaire, which can lead to a variety of issues in the quantitative data analysis process, such as reduced sample size, which decreases statistical power (Osborne et al., 2014). Hair et al. (2010) recommends four stages to overcome missing data: (i) examine the kind of missing data; (ii) check the amount of missing value; (iii) analyse

the unpredictability of missing value; and, finally, (iv) execute the remedies through weighting or deletion.

Outliers values: the value of outliers is the second assumption in a multivariate analysis. Outliers are cases in which one or more variables have extraordinary values (Tabachnick & Fidell, 2007). Outliers' values analysis indicates circumstances in which the scores are significantly different from the rest of the data in a set (Byrne, 2016), which can affect parameter estimations (Ringle et al., 2014), and statistical outcomes (Tabachnick & Fidell, 2007). Outliers can occur as a result of incorrect data entry (Cox, 2017), such as inputting instances that are not part of the target population or when the population's distribution for a variable has extreme values compared to the normal distribution (Hair, 2010). The widely known rule of thumb for dealing with outlier values, which is to analyse univariate outliers based on standardised Z values, was used to find and eliminate outliers' values from the data set in this study (Tabachnick & Fidell, 2007).

Normality: the third assumption of multivariate analysis is normality (Churchill & Lacobucci, 2004). To select a proper statistical analysis, a normal distribution was required (PLS-SEM or Amos-PLS) (Micceri, 1989). According to Pallant (2011), skewness and kurtosis are statistical analysis approaches that may be used to determine the form of a data distribution. Skewness depicts distribution symmetry, whereas kurtosis describes the 'peakedness' or 'flatness' of data distribution when compared to the normal distribution (Field, 2009; Hair et al., 2006). Positive skewness, according to Hair et al. (2006), means the distribution is pushed to the left and the tail is shifted to the right, whereas negative skewness means the opposite. The degree of skewness for the normal distribution is advised to be zero, which reflects symmetric form (Henseler et al., 2015). Similarly, a lower kurtosis number suggests a flatter distribution, whereas a higher value indicates a peaked distribution. Kurtosis levels of less than one are regarded inconsequential, whereas values of one to ten indicate mild non-normality, and values of more than ten indicate severe non-normality (Henseler et al., 2009).

3.8.2 Partial least squares (PLS-SEM) path modelling

The variance-based SEM, also known as the SEM PLS approach, was used in this work to evaluate the association between suggested variables. PLS is an analytical approach that may be used to investigate the influence of a moderating variable or mediating factors on the connection between one or more independent and dependent variables (Hair et al., 2017). Because it can be immediately included into the model to evaluate all relevant channels and complexities, such as measurement error and feedback, this approach is a particularly appealing alternative for investigating the influence of a moderating variable (Hair et al., 2010). PLS-SEM is widely used in the field of social research (Hair, 2010), particularly in the area of strategy (Dennis Cook & Forzani, 2023). PLS is an analytical approach used in SEM software, and its popularity has skyrocketed in recent years. PLS gives a thorough analysis that may be used to evaluate several relationships at the same time (Reinartz et al., 2009). As a result, SEM-PLS is an acceptable approach for this research.

The path model in this study includes examine the direct relationship between flexibility (i.e., strategic, coordinating and financial flexibility) and firm performance (financial and non-financial performance), Further, the path model includes environmental uncertainty as a moderator. According to Sarstedt et al. (2017), in such model the relationships will be complicated when the study explores direct and moderating associations concurrently in one model, according to, hence employing the PLS approach to assess this model is more suitable. The nonparametric PLS is also more suited when the data distribution does not fulfil the normal distribution constraints (Sarstedt et al., 2017). This is because PLS was designed to handle non-normal data, hence a normal distribution is not required (Rönkkö et al., 2016). PLS is also better for assessing small sample sizes and interaction effects in complicated models with latent variables (e.g., strategic flexibility) with observed variables (e.g., financial flexibility) (Conway & Huffcutt, 2003). It's also acceptable in this study, because the study's constructs are measured using a big number of items (Haenlein & Kaplan, 2004; Sarstedt et al., 2014). SEM is also one of the most powerful statistical methods for testing several associations at the same time (direct and moderating relationships) (Hair, 2010).

In this study, PLS was used to assess (i) the overall fit of the measurement model of the study constructs (i.e., resources flexibility, coordinating flexibility, financial flexibility, financial performance, non-financial performance, and environmental uncertainty) as well as the structural model (test the suggested 12 hypotheses in the framework) (Gefen et al., 2000); (ii) estimate the validity of fundamental theories of statistical models (Gotz et al., 2010); and (iii) testing hypotheses related to the relationship between latent variables (i.e., strategic flexibility) and observed variables (i.e., resources flexibility, coordinating flexibility, financial flexibility, financial performance, non-financial performance, and environmental uncertainty) (Gotz et al., 2010; Ringle et al., 2014). As a result, PLS is a complete statistical approach that will allow hypotheses regarding correlations between constructs to be tested in this study framework (Zhang & Savalei, 2016). To put it another way, PLS will allows to evaluate a hypothesised model statistically in a simultaneous examination of the full model to see how well it matches the data (Byrne, 2016). As a result, this study assumes that PLS is better suited for data analysis.

3.8.2.1 Assessing the measurement model in PLS-SEM

The measurement model, also known as the outer model in PLS, is used to assess how loaded observed items are on their underlying concept. The outer model should be used to confirm the observed items' underlying link with the latent components (Byrne, 2016). By investigating the relationship between items and their underlying variables, confirmatory factor analysis (CFA) using (*R* value) was used to validate the measurement model (outer model). Before examining the links in the overall model, the reliability and validity of the variables and items in the measurement model were examined in this study to verify that only reliable and valid measurements were employed. For build dependability, Cronbach's alpha and composite reliability were used. Furthermore, the composite reliability and discriminant validity were used to evaluate convergent and discriminant validity.

Resources flexibility, coordinating flexibility, financial flexibility, financial performance, non-financial performance, and environmental uncertainty had operationalized in this research as variables that measured through measurable items. Therefore, the reliability and validity of the measurement model were assessed based on the following evaluation criteria (Hair, 2010; Sarstedt et al., 2017; Sarstedt et al., 2014):

- Indicator reliability
- Internal consistency (reliability)
- Convergent validity
- Discriminant validity

Table 3.3 shows the Indices and recommended thresholds for the measurement model's test.

Reliability: internal consistency between several items in a single concept is measured by reliability (Hair, 2010). The term "high reliability" refers to an instrument's capacity to deliver consistent results when used repeatedly (Sekaran & Bougie, 2016). Cronbach's alpha will be used in this study because it is the most commonly used reliability testing method in social science (Hair et al., 2010). If the Cronbach alpha scores of the scale above the minimal scores (that is, 0.60 to 0.70), the scale is considered trustworthy (Hair, 2010). Item loadings in relation to their respective structures will be computed.

Convergent validity is achieved when the observed items measuring a particular construct accurately reflect the underlying theoretical variable. A favourable correlation between a latent construct and its indicators is referred to as convergent validity (Hair et al., 2010). In other words, it demonstrates that the questionnaire questions for a particular construct accurately reflect the construct, as evidenced by the concept's unidimensionality (Henseler et al., 2015). The researchers proposes to use Average Variance Extracted (AVE) to examine the convergent validity of the study constructs in this study (Hair et al., 2006; Henseler et al., 2009). The AVE is the proportion of variation explained by a concept versus measurement error (Hair et al., 2012).

Discriminant validity is a measure of how different a construct is in comparison to other constructs that are theoretically unrelated (Byrne, 2016). To put it another way, discriminant validity ensures that the measures are employing items only onto the construct intended and not onto another (Hair et al., 2012). A high discriminant validity indicates that the construct is different and unique from others (Hair, 2010). In other words, the construct's indicators only loaded on itself and nothing else (Henseler et al., 2015). In this study, the researcher will assess the construct's discriminant validity using Cross Loadings, HateroTrait-Mono Trait (HTMT), and the Fornell Lacker criteria (Hair et al., 2006; Henseler et al., 2015).

3..8.2.2 Assessing the structural models in PLS-SEM

The structural model assessment seeks to provide more comprehensive discussions and detailed results about the relationships between variables that constitute the conceptual framework. The Structural model in this study was assessed based on the following evaluation criteria (Hair, 2010; Sarstedt et al., 2017; Sarstedt et al., 2014):

- R^2 explanation of endogenous latent variables
- Predictive relevance Q^2
- Significance and relevance of path coefficients
- f^2 and q^2 effects size of path coefficients
- Collinearity

Table 3.3 shows the Indices and recommended thresholds for the structural model's test.

Table 3.4: Indices and recommended thresholds for model test

Type of Model	Criterion	Level of Acceptance	Description and References
Measurement model	Indicator reliability	Loading > 0.70	Loadings should be higher than 0.70 (Hair et al., 2011; Sarstedt et al., 2017).
	Internal consistency reliability	0.60 to 0.70	Cronbach's alpha between 0.60 to 0.70 is considered acceptable (Hair et al., 2011; Sarstedt et al., 2017).
	Convergent validity	AVE > 0.50	The extent to which a construct converges in its indicators by explaining the items' variance (Sarstedt et al., 2017).
	Discriminant validity	AVE	Fornell–Larcker criterion, The AVE of each construct should be higher than the correlation with any other constructs (Sarstedt et al., 2019; Sarstedt et al., 2017).
Structural model	Collinearity	*VIF* < 5	VIF values above 5 are indicative of collinearity among the indicators (Hair et al., 2011). Similar to formative measurement model assessment, but here the exogenous latent variables serve as input for the VIF assessments (Sarstedt et al., 2017)
	R^2 explanation of endogenous	R^2 rang from 0-1	R^2 value indicates the variance explained in each of the endogenous constructs. The R^2 ranges from 0 to 1, with higher levels indicting more predictive accuracy, values of 0.75, 0.50, or 0.25 described as substantial, moderate, or weak, respectively.

	Predictive relevance Q^2	Q^2 > zero	If the Q^2 values larger than zero for a particular endogenous construct, this means that the path model's predictive accuracy is acceptable for this construct (Henseler et al., 2015; Sarstedt et al., 2017).
	Significance and relevance of path coefficients	Bootstrapping values	Critical t-values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent) (Henseler et al., 2015; Sarstedt et al., 2017).
	f^2 and q^2 effects size of path	f^2 values of 0.02, 0.15 and 0.35	$f2 = (R^2_{included} - R^2_{exclude}) / (1- R^2_{included})$ values of 0.02,0.15 and 0.35 are a weak, medium, or large effect (Hair et al., 2012; Henseler et al., 2015; Sarstedt et al., 2017).

Sources: (Yusr, 2013)

4. RESULTS

4.1 Response rate

As mentioned in chapter three, the Google Docs service was used to design the questionnaire, participants were requested to use the URL address provided in the email to access the Google Docs online survey questionnaire. Simple random sampling was used, respondents who showed a willingness to participate in the study were requested to fill out the questionnaire. A total of 200 responses were received and used in the subsequent analysis. The number of usable responses is shown in Table 4.1.

Table 4.1 Usable responses

Usable Responses	
Usable responses	200

4.2 Respondents profile

Table 4.2 depicts the respondents' profiles. In terms of age, Table 4.2, shows that 38% of respondents were in the age group between 31-40, 24% of respondents were in the age group between 41-50, 18% of respondents were in the age group between 20-30, while 20% of respondents were in the age group above 50. In terms of position in the firms, (20.50%) of respondents were project managers, (16.00%) of respondents were financial managers, (15.00%) were operations managers, (14.00%) were HRM managers, (13.50%) were executives managers, (12.50%) were sales and marketing managers, while (8.50) were others. In terms of gender, table 4.2, also shows that 61% of the patients were male and 39% were female. Furthermore, Table 4.2 also shows that the majority of the respondents hold a high level of education as follows: Bachelor's degree (56%), master's degree (17%), PhD (4%), and high school certificate or below (23%). In terms of work experience, Table 4.2, shows that (41%) of respondents had experience of more than 10 years, (39%) of respondents had experienced between 6-10 years, (13.50%) of respondents had experienced between 2-5 years, while (6.50%) of respondents had experienced less than one year.

Table 4.2 Respondents profile (N= 200)

Age (Years)	**Frequency (n)**	**Percent (%)**
20-30	36	18.00

31-40	76	38.00
41-50	48	24.00
Above 50 years	40	20.00
Position in the firm	**Frequency (n)**	**Percent (%)**
Project Manager	41	20.50
Operations manager	30	15.00
Executive director	27	13.50
Financial manager	32	16.00
HRM managers	28	14.00
Sale and Marketing manager	25	12.50
Other	17	8.50
Gender	**Frequency (n)**	**Percent (%)**
Male	122	61.00
Female	78	39.00
Education Level	**Frequency (n)**	**Percent (%)**
High school certificate or below	46	23.00
Bachelor	112	56.00
Master	34	17.00
PHD	8	4.00
Work for real estate firm	**Frequency (n)**	**Percent (%)**
Less than 1 year	13	6.50
2-5 years	27	13.50
6-10 years	78	39.00
More that 10 years	82	41.00

In sum, based on the discussion above, it can be noted here that generally the respondents cover both males and females, cover the age groups between 20-60 years, and most of the respondents have long years of work for real estate firms exceeding 5 years at least (80%), thus giving a good indicator about generalizing the research findings to the real estate firms. The most of patients were highly educated with 77% holding bachelor's degrees and above. Moreover, the respondents covered most of the mid-level managers' work positions in real estate firms in China. Therefore, the targeted respondents were suitable for this study. This means that the respondents are suitable persons to fill up the questionnaire because they have the required knowledge for this study. This increases the validity of the collected data because the responses that were collected are within their domain of knowledge as recommended by Karia (2011).

4.3 Data screening

4.3.1 Non-response bias

Levene's test for equality of variance was used to test of response bias. The respondents were divided into two groups based on early (110 responses) and late responses (90 responses) and all the variables were examined using the Levene's test for equality of variance. Table 4.2 shows that there is no significant difference between the two group of early respondents and late respondents.

Table 4.3 Results of independent-samples t-test for non-response bias

Variables	Group	N	Mean	SD	Levene's Test for Equality of Variances	
					F	Sig.
Resources flexibility	1	200	4.2649	.56129	.562	.876
	2	185	4.2338	.55659		
Coordinating flexibility	1	200	4.2266	.60737	.000	.991
	2	185	4.0961	.56876		
Financial Flexibility	1	200	4.1230	.64032	.382	.657
	2	185	3.8816	.59574		
Financial Performance	1	200	3.9876	.61238	.000	.998
	2	185	4.1278	.76231		
Non-Financial performance	1	200	4.3402	.77896	.321	.671
	2	185	3.6798	.58768		
Environmental uncertainty	1	200	4.3412	.67243	.000	.978
	2	185	3.9978	.59876		

4.3.2 Outliers values

According to Hair et al. (2006), researchers claimed that an outlier is a value where the Standard Z score for a large sample size falls outside of the range of ± 3.29, and ± 2.5 for a small sample size (i.e., 80 or fewer). All of the questionnaire items in this study were grouped together to represent a single variable in order to evaluate the outlier's assumption. The Z-scores were computed using descriptive statistics in SPSS, and Tabachnick & Fidell (2007) advocated standardising the Z-scores based on the values of each item. The outcome of univariate outliers using standardised Z values is displayed in Table 4.3. As suggested by Hair et al. (2006), Table 4.3 demonstrates that all item Z values fell between the cut-off values ± 3.29, indicating that the study's dataset was free of outliers.

Table 4.4 Result of univariate outliers based on standardised Z values

Items (Z value)	N	Minimum	Maximum
ResFle 1	200.000	-1.907	1.113
ResFle 2	200.000	-1.875	1.118
ResFle 3	200.000	-1.820	1.010
ResFle 4	200.000	-1.912	1.035
ResFle 5	200.000	-1.877	1.022
ResFle 6	200.000	-1.784	1.152
ResFle 7	200.000	-1.843	1.114
ResFle 8	200.000	-2.101	0.929
ResFle 9	200.000	-1.874	0.972
CooFle 1	200.000	-1.892	0.964
CooFle 2	200.000	-1.784	1.152
CooFle 3	200.000	-1.843	1.114
CooFle 4	200.000	-2.176	0.870
CooFle 5	200.000	-2.415	1.480
CooFle 6	200.000	-2.152	1.258
CooFle 7	200.000	-2.512	1.561
CooFle 8	200.000	-2.416	1.516
FinFle 1	200.000	-2.197	1.765
FinFle 2	200.000	-2.781	1.549

FinFle 3	200.000	-2.109	1.263
FinFle 4	200.000	-2.496	1.338
FinFle 5	200.000	-2.702	1.208
FinFle 6	200.000	-2.497	1.205
FinFle 7	200.000	-2.728	1.391
FinFle 8	200.000	-2.404	1.428
FinPer 1	200.000	-2.270	1.230
FinPer 2	200.000	-2.741	1.412
FinPer 3	200.000	-2.713	1.475
FinPer 4	200.000	-2.658	1.530
FinPer 5	200.000	-2.379	1.571
FinPer 6	200.000	-2.188	1.180
FinPer 7	200.000	-2.595	1.531
NFinPer 1	200.000	-2.497	1.449
NFinPer 2	200.000	-2.302	1.739
NFinPer 3	200.000	-2.850	1.527
NFinPer 4	200.000	-2.754	1.540
NFinPer 5	200.000	-2.501	1.526
NFinPer 6	200.000	-2.568	1.558
NFinPer 7	200.000	-2.288	1.270
EnvUnc 1	200.000	-2.525	1.416
EnvUnc 2	200.000	-2.789	1.366
EnvUnc 3	200.000	-2.742	1.441
EnvUnc 4	200.000	-2.764	1.411
EnvUnc 5	200.000	-2.740	1.529
EnvUnc 6	200.000	-2.769	1.442
EnvUnc 7	200.000	-2.569	1.512

4.3.3 Normality

Each item in the suggested model was evaluated to see if the gathered data satisfied the normality assumption. First, Hair et al. (2010) and Pallant (2013) noted that the normality distribution of the items is not a concern when the sample size is 200 or greater. Therefore, it could be initially considered that the influence of non-normality in this investigation was minimised because 200 samples were acquired for it. Table 4.4 displays both positive and negative values for skewness and kurtosis. If a value is within the usual range, it does not indicate an issue, either positive or negative. The underlying characteristics of the variables being measured are reflected in positive or negative values (Hair et al., 2006). The data was not regularly distributed, as Table 4.4 demonstrates. Out of 46 items, two of the 46 items (ResFle 7 and NFinPer 2) have a value of skewness higher than ± 2. Further, three items (CooFle 8, FinPer 4, and NFinPer 6) out of 46 items, have a kurtosis value greater than ± 2, meaning that the values of skewness and kurtosis show values outside of the range ± 2, which did not meet the requirements of Hair et al. (2006) for normal distribution. Therefore, the data set in this study was non-parametric, which was one of the reasons for using Smart-PLS rather than of using AMOS.

Table 4.5 Assessment of data normality

Items	Mean	Std. Deviation	Skewness	Kurtosis
ResFle 1	3.51	1.336	-0.131	-1.549
ResFle 2	4.26	1.047	-0.090	-1.623
ResFle 3	4.47	.819	-0.176	-1.685
ResFle 4	4.09	1.310	-0.234	-1.624
ResFle 5	3.88	1.286	-0.242	-1.598
ResFle 6	3.83	1.262	-0.001	-1.653
ResFle 7	3.74	1.317	-2.104	-1.623
ResFle 8	3.91	1.242	-0.422	-1.478
ResFle 9	3.83	1.374	-0.312	-1.583
CooFle 1	3.99	1.272	-0.294	-1.643
CooFle 2	3.67	1.316	-0.001	-2.025
CooFle 3	3.80	1.392	-0.104	-1.623
CooFle 4	3.54	1.387	-0.571	-1.336
CooFle 5	3.63	1.467	-0.114	0.072
CooFle 6	3.85	1.402	0.057	-0.324
CooFle 7	3.66	1.356	-0.089	-0.184
CooFle 8	3.81	1.322	-0.281	-3.114
FinFle 1	3.67	1.335	-0.188	0.115
FinFle 2	3.71	1.346	-0.085	-0.232
FinFle 3	4.07	1.282	-0.114	-0.195
FinFle 4	3.77	1.263	-0.575	-0.515
FinFle 5	4.08	1.262	-0.010	-0.610
FinFle 6	3.98	1.359	-0.138	-0.599
FinFle 7	3.73	1.229	0.003	-0.407
FinFle 8	3.72	1.391	0.143	-0.636
FinPer 1	3.88	1.278	0.033	-0.460
FinPer 2	3.86	1.338	-0.190	-0.332
FinPer 3	3.55	1.372	-0.022	-0.395
FinPer 4	3.71	1.335	-0.521	2.193
FinPer 5	3.74	1.392	-0.427	-0.286
FinPer 6	3.90	1.300	-0.622	0.224
FinPer 7	3.75	1.386	0.037	-0.646
NFinPer 1	4.05	1.241	-0.090	-0.507
NFinPer 2	3.76	1.361	2.050	-0.465
NFinPer 3	3.57	1.343	0.139	-0.435
NFinPer 4	3.59	1.295	-0.674	0.402
NFinPer 5	3.70	1.314	-0.483	-0.176
NFinPer 6	3.65	1.307	-0.624	-4.010
NFinPer 7	3.77	1.374	-0.467	-0.648
EnvUnc 1	4.17	1.156	-0.427	-0.290
EnvUnc 2	4.02	1.262	-0.506	0.354
EnvUnc 3	4.05	1.241	-0.816	1.028

EnvUnc 4	3.55	1.372	-0.524	0.314
EnvUnc 5	3.58	1.353	-0.341	-0.161
EnvUnc 6	3.71	1.346	-0.304	-0.211
EnvUnc 7	3.74	1.333	-0.119	-0.765

4.4 Exploratory factor analysis (EFA)

For every one of the 46 items that were taken from the literature, an exploratory factor analysis (EFA) was conducted. EFA was used to test the items in order to determine how much each item contributed to each of the six theoretically defined variables. First, Table 4.5 demonstrates that the Bartlett's test was significant ($p<0.000$) and the KMO value was more than 0.6 (0.912), satisfying the EFA's basic assumptions as advised by researchers Hair (2010) and Kaiser (1958). For factor analysis in this study, the assumption of sample sufficiency and adequacy is therefore regarded as accurate.

Table 4.6: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.912
Bartlett's Test of Sphericity	Approx. Chi-Square	5617.658
	df	830
	Sig.	0.000

The communalities that are described by each questionnaire item are displayed in Table 4.6. With their components, the majority of the 46 items shared more than 0.5 communalities. Lower communalities indicate an item that is not compatible well with other items in the same component. In order to improve or refine the scale, Hair et al. (2006) advise eliminating the items with low communality of less than 0.5. No item of the study's items had communalities of less than 0.5; as a result, 46 items were taken into consideration for additional data analysis.

Table 4.7: Communalities shared by individual items

Communalities					
Items	**Initial**	**Extraction**	**Items**	**Initial**	**Extraction**
ResFle 1	1.000	.689	FinFle 7	1.000	.676
ResFle 2	1.000	.826	FinFle 8	1.000	.609
ResFle 3	1.000	.626	FinPer 1	1.000	.732
ResFle 4	1.000	.645	FinPer 2	1.000	.637
ResFle 5	1.000	.593	FinPer 3	1.000	.696
ResFle 6	1.000	.731	FinPer 4	1.000	.678
ResFle 7	1.000	.759	FinPer 5	1.000	.769
ResFle 8	1.000	.713	FinPer 6	1.000	.759
ResFle 9	1.000	.634	FinPer 7	1.000	.586
CooFle 1	1.000	.664	NFinPer 1	1.000	.785
CooFle 2	1.000	.700	NFinPer 2	1.000	.805
CooFle 3	1.000	.631	NFinPer 3	1.000	.760
CooFle 4	1.000	.662	NFinPer 4	1.000	.649
CooFle 5	1.000	.774	NFinPer 5	1.000	.702
CooFle 6	1.000	.695	NFinPer 6	1.000	.722

CooFle 7	1.000	.703	NFinPer 7	1.000	.748
CooFle 8	1.000	.697	EnvUnc 1	1.000	.753
FinFle 1	1.000	.698	EnvUnc 2	1.000	.805
FinFle 2	1.000	.657	EnvUnc 3	1.000	.675
FinFle 3	1.000	.614	EnvUnc 4	1.000	.884
FinFle 4	1.000	.823	EnvUnc 5	1.000	.677
FinFle 5	1.000	.797	EnvUnc 6	1.000	.804
FinFle 6	1.000	.672	EnvUnc 7	1.000	.752

The total variation explained by each component or variable is displayed in Table 4.7. According to Hair et al. (2006) and Tabachnick & Fidell (2007), components that contribute to an eigenvalue of greater than one should be taken into consideration since they are deemed relevant, whilst those that contribute to an eigenvalue of less than one should be ignored or eliminated. Six of the first 8 components are shown in Table 4.7 as significant and having an eigenvalue greater than 1. The entire variation of 66.936% was explained by these 6 components. The values of these six components were greater than those suggested by statisticians (Hair et al., 2006; Tabachnick and Fidell, 2007). Six components with an eigenvalue greater than one were therefore extracted. The pattern matrix was looked at in order to validate this finding. It was verified that every item was loaded in their relevant components alone; none were loaded separately (cross-loaded, Table 4.13).

Table 4.8: Eigenvalues and variance extracted by each component

Total Variance Explained									
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	16.845	35.890	35.890	16.845	35.890	35.890	4.526	9.252	29. 773
2	7.572	8.237	44.127	5.118	8.237	44.127	4.487	9.175	38.948
3	3.620	6.440	50.567	3.620	6.440	50.567	4.267	8.135	47.083
4	2.436	4.511	60.078	2.436	4.511	60.078	3.829	7.519	54.602
5	1.826	3.653	63.731	1.826	3.653	63.731	3.494	7.389	61.991
6	1.503	3.205	66.936	1.503	3.205	66.936	3.294	6.587	66.936
7	0.956	1.912	81.042						
8	0.853	1.705	82.747						
Extraction Method: Principal Component Analysis.									

Haenlein & Kaplan (2004) contended that in this situation, relying just on Kaiser's criteria (i.e., eigenvalue>1) leads to an overestimation of the number of retrieved components. Consequently, an extra statistical method known as "Horn's parallel analysis" (Horn, 1965) was used to validate the components that were retrieved using Kaiser's criterion. Using the Monte Carlo PCA programme, Horn's parallel analysis was implemented. The programme predicted 46 items with 200 sample sizes, which were then run to generate 100 more sets of random data. Parallel analysis was used to compare the extracted eigenvalues from the SPSS data reduction approach methodically with the

values derived from the random data set. As indicated by Pallant (2011, p. 191), only six components were kept after Table 4.8 demonstrates that the eigenvalue derived using PCA within components 1 to 6 was greater than the values extracted from the parallel analysis.

Table 4.9: Parallel analysis for confirming the factors extracted using PCA

Components	Actual Eigenvalues from PCA	Criterion Value from Parallel Analysis	Decision
1	17.945	2.674	Accept
2	4.118	2.354	Accept
3	3.220	1.958	Accept
4	2.256	1.934	Accept
5	1.850	1.825	Accept
6	1.790	1.603	Accept
7	0.956	1.020	Reject
8	0.853	0.987	Reject

As an extra criterion, the Scree test was used to determine the number of components. The cut-off point is determined by analysing the curve shape inside the Scree plot test, which plots the latent roots' graph against the number of components in their extraction order (Hair et al., 2006, p. 120). Plot shape (e.g., elbow shape) decreases from the greatest eigenvalue component to the lowest eigenvalue component (Tabachnick & Fidell, 2007). According to Hair et al. (2006) and Pallant (2013), the plot shape change indicates the difference between factors of interest with eigenvalue >1 and factors with eigenvalue <1. Six factors are shown in Figure 4.1 of this study, which are comparable to factors that were extracted using Kaiser's latent root criteria, i.e., eigenvalue>1. The graph showed that just six factors remain since the slope flattens down between factors 6 and 8. Together, parts 1 through 6 accounted for or explained a significantly larger portion of the variation than the other components.

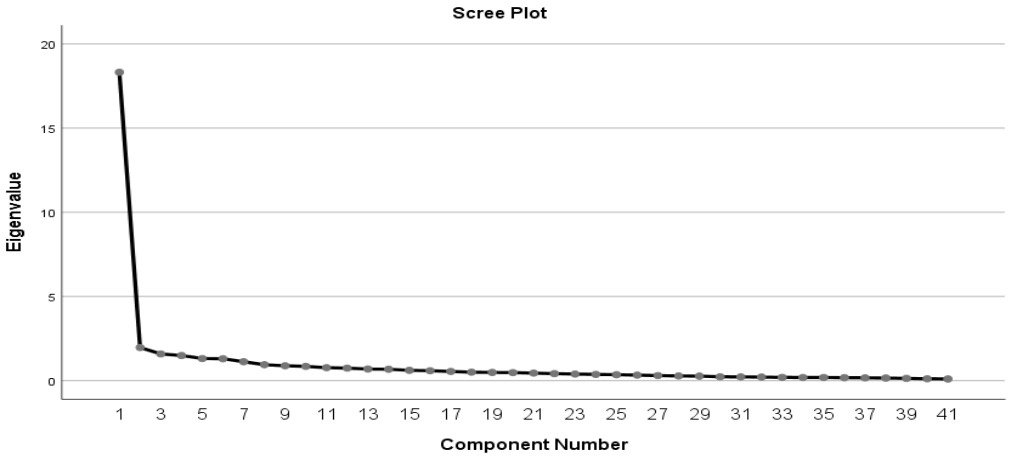

Figure 4.1: Scree Plot of all the components

Lastly, Table 4.9 pattern matrix (Factor loading) shows 6 factor solutions. According to Henseler et al. (2015), there should be a greater than 0.7 absolute correlation between the variable and its measuring item (i.e., factor loading). Items were loaded on six components/factors that met the factor loading criteria, as the pattern matrix table demonstrates. The item loadings fell within the excellent range (more than 0.70), as advised by Pallant (2011) and Henseler et al. (2015).

Table 4.10: Pattern matrix (factor loading)

Rotated component matrix						
Items	**Component**					
	ResFle	**CooFle**	**FinFle**	**FinPer**	**NFinPer**	**EnvUnc**
ResFle 1	0.822					
ResFle 2	0.828					
ResFle 3	0.845					
ResFle 4	0.782					
ResFle 5	0.829					
ResFle 6	0.806					
ResFle 7	0.813					
ResFle 8	0.828					
ResFle 9	0.785					
CooFle 1		0.817				
CooFle 2		0.845				
CooFle 3		0.817				
CooFle 4		0.816				
CooFle 5		0.799				
CooFle 6		0.814				
CooFle 7		0.819				
CooFle 8		0.773				
FinFle 1			0.835			
FinFle 2			0.840			
FinFle 3			0.834			
FinFle 4			0.827			
FinFle 5			0.840			
FinFle 6			0.861			
FinFle 7			0.827			
FinFle 8			0.874			
FinPer 1				0.826		
FinPer 2				0.831		
FinPer 3				0.847		
FinPer 4				0.830		
FinPer 5				0.834		
FinPer 6				0.833		
FinPer 7				0.814		
NFinPer 1					0.828	
NFinPer 2					0.828	
NFinPer 3					0.850	
NFinPer 4					0.842	
NFinPer 5					0.834	
NFinPer 6					0.845	
NFinPer 7					0.843	
EnvUnc 1						0.762
EnvUnc 2						0.827

EnvUnc 3						0.824
EnvUnc 4						0.824
EnvUnc 5						0.804
EnvUnc 6						0.837
EnvUnc 7						0.831
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 6 iterations.						

4.5 Partial least squares structural equation Modeling (PLS-SEM)

Due to the reasons listed in Chapter Three's Section 3.7 as well as the fact that the data that was gathered was not normally distributed (Table 4.4). This study tested the measurement model and the structural model using the PLS-SEM approach. The conceptual model was created through simulation work with Smart-PLS software. The model's simulation using the Smart-PLS software is used to compute and evaluate a number of parameters, including item loading, validity tests, reliability, and path coefficients. Henseler et al. (2009) proposed a two-step approach for SmartPLS. These phases consist of: (i) estimating the route coefficients of a structural model; and (ii) computing PLS model parameters independently by figuring out the measurement model's blocks. The sections (4.7) and (4.8) that follow in this chapter outline these two procedures.

4.6 Assessment of the measurement model

The validity and reliability of the variables and items in the measurement model were examined prior to evaluating the relationships in the overall model. This was done to ensure that the measurements being utilised were only reliable and valid. For construct validity, convergent and discriminant analysis was performed, and for construct reliability, Cronbach's alpha and composite reliability were analysed. The measurement model, sometimes referred to as the outer model, is used in PLS factor analysis to ascertain the extent to which the observed items are loaded onto their underlying construct. The outer model is recommended in order to validate the underlying links between the observed items and the latent components (Byrne, 2016). The link between the items and the related underlying constructs was examined using a variety of techniques in order to validate the measurement model (outer model). The assessment standards for the measurement model's model fit are provided in the following subsections.

4.6.1 Content validity

Through the evaluation process (Section 3.8 in Chapter 3), a panel of three Chinese experts—real estate managers and academics—assured the content validity. Additionally, as suggested by Hair et al. (2006), factor loading of the items was utilised to verify that every item could measure a certain construct. Each item's factor loading should load either highly (more than 0.07) on the variable it was intended to measure, or it will be eliminated if it loads higher on some other factors than its corresponding construct (Hair et al., 2011). To be substantially loaded on their respective construct, standardised factor loading should be higher than 0.5, and ideally higher than 0.7 (Hair et al., 2012; Hair et al., 2010). Table 4.10 reveals that all of the item loadings were considerably loaded, with factor loading above the suggested value of 0.70.

4.6.2 Construct Reliability

Internal consistency was the first criterion for evaluating and verifying the measurement model. Using Cronbach's Alpha, the internal consistency of the entire scale has been evaluated by comparing the items and observed variables with one another. Item variation that reflects item reliability is explained by the underlying latent variable (Gotz et al., 2010). Cronbach's Alpha is generally

recognised to have a value of 0.70 (Henseler et al., 2015). For exploratory studies, however, a Cronbach's Alpha level of 0.6 may be acceptable (Hair et al., 2010). The factor loading for all items was between 0.762 and 0.861, which was greater than the minimal threshold requirement of Hair et al. (2010) and Henseler et al. (2015). Table 4.10 shows the absolute correlation between each variable and its measuring items. The measurement model's external loadings are displayed in Figure 4.2.

While Bagozzi and Baumgartner (1994) indicate that the reliability of individual items is adequate, experts recommend assessing the reliability of constructs by observing the reliability of a collection of items under the same construct. Construct-level reliability may validate the expectation that items in the same variable will exhibit a stronger internal connection. In this study, Cronbach's α and composite reliability were used to measure construct-level reliability. Composite reliability measures how well all assigned items represent its constructs (Gotz et al., 2010), which improves the estimate of variance shared by the corresponding indicators (Hair et al., 2006). It refers to the degree to which the items consistently represent the same latent construct (Hair et al., 2010). On the other hand, Cronbach's α assesses the multi-item scale's internal consistency's unidimensionality (Cronbach, 1951). Table 4.10 reveals that the Cronbach's α (between 917 - 0.942) was greater than the suggested threshold of 0.7 (Cronbach, 1951; Hair et al., 2010) and the composite reliability (between 0.928 - 0.951) was higher than the cut-off value of 0.70.

4.6.3 Convergent validity

A group of observable items that accurately reflects the underlying theoretical concept is known as convergent validity. According to Hair et al. (2010), convergent validity describes how answers gathered using several scales correlate to represent the same variable. Put differently, convergent validity means that the collection of items should represent the same underlying variable, which is corroborated by the fact that they are unidimensional (Henseler et al., 2009). As advised by Hair et al. (2006) and Henseler et al. (2009), the "Average Variance Extracted" (AVE) approach was used in this study to test for convergent validity. According to Hair et al. (2013), the average percentage value of the variation that is often retrieved from the observed items of a variable is referred to as the AVE. According to Table 4.10, the average variance explained (AVE) by each variable was higher than the suggested value of 0.5 (50%). This means that, on average, each variable could account for more than half of the variation in its measuring items (Fornell & Larcker, 1981).

Table 4.11: Internal consistency and convergence validity results

Constructs/Items	Factor Loadings	CA	CR	AVE
Resources flexibility		**0.937**	**0.939**	**0.665**
ResFle 1	0.822			
ResFle 2	0.828			
ResFle 3	0.845			
ResFle 4	0.782			
ResFle 5	0.829			
ResFle 6	0.806			
ResFle 7	0.813			
ResFle 8	0.828			
ResFle 9	0.785			
Coordinating Flexibility		**0.927**	**0.930**	**0.661**
CooFle 1	0.817			
CooFle 2	0.845			

CooFle 3	0.817			
CooFle 4	0.816			
CooFle 5	0.799			
CooFle 6	0.814			
CooFle 7	0.819			
CooFle 8	0.773			
Financial Flexibility		**0.942**	**0.951**	**0.710**
FinFle 1	0.835			
FinFle 2	0.840			
FinFle 3	0.834			
FinFle 4	0.827			
FinFle 5	0.840			
FinFle 6	0.861			
FinFle 7	0.827			
FinFle 8	0.874			

5. DISCUSSION OF RESULTS

5.1 Introduction

This research contributes significantly to the understanding of the relationship between strategic flexibility and firm performance in the real estate sector of China. It specifically examines the direct relationship between strategic flexibility, in terms of resource flexibility and coordinating flexibility, and firm performance, which includes both financial and non-financial performance. The integrated model developed and empirically tested in this study provides new insights into how strategic flexibility influences firm success in a dynamic and competitive real estate market.

As outlined in Chapter One, this study addresses a critical gap in the literature. Although strategic flexibility has been acknowledged as a major factor influencing firm performance, the relationship between its various dimensions (resource flexibility and coordinating flexibility) and firm performance has not been fully explored, particularly in the context of real estate firms in China. Existing research has often examined strategic flexibility and firm performance in separate tracks, but this study focuses on the combined effect of these strategic orientations.

The literature indicates that strategic flexibility, especially resource and coordinating flexibility, plays a vital role in enabling firms to adapt to environmental changes and enhance their performance. For instance, Han and Zhang (2021) emphasized the need for future research to explore various forms of strategic flexibility to understand their influence on firm performance better. This study answers that call by examining how resource and coordinating flexibility directly affect financial and non-financial outcomes in real estate firms in China.

The direct relationship between strategic flexibility and firm performance (RQ1)

The primary research objective was to assess the direct relationship between strategic flexibility—specifically resource flexibility and coordinating flexibility—and firm performance (both financial and non-financial) in China's real estate firms. Based on a thorough literature review and empirical analysis, this study confirmed that strategic flexibility has a significant positive impact on both financial and non-financial performance.

Resource flexibility allows firms to allocate and reallocate resources efficiently in response to changing market conditions, which directly contributes to improved financial outcomes. Coordinating flexibility, on the other hand, enables firms to synchronize operations across

departments, resulting in enhanced non-financial performance, such as customer satisfaction, employee engagement, and innovation capacity.
The hypotheses tested using SmartPLS (PLS-SEM) with data collected from 200 mid-level managers in Chinese real estate firms provided strong evidence that resource flexibility and coordinating flexibility are significantly correlated with firm performance. These findings align with the theoretical predictions that strategic flexibility, by improving a firm's ability to respond to market volatility, plays a crucial role in enhancing both financial stability and operational effectiveness.

6. CONCLUSION

The aim of this study was to investigate the direct relationship between strategic flexibility—specifically resource flexibility and coordinating flexibility—and firm performance, which includes both financial and non-financial performance, in the context of China's real estate industry. A five-point Likert-type instrument was developed to collect data, and the measurement model was validated using SmartPLS version 3.3.3. The findings demonstrated that the proposed structural model fit the data well, providing significant insights into the impact of strategic flexibility on firm performance.

The key findings can be summarized as follows:

1. **Resource flexibility** was found to have a significant positive relationship with **financial performance**.
2. **Resource flexibility** was found to have a significant positive relationship with **non-financial performance**.
3. **Coordinating flexibility** was found to have a significant positive relationship with **financial performance**.
4. **Coordinating flexibility** was found to have a significant positive relationship with **non-financial performance**.

These results highlight the critical role that both resource flexibility and coordinating flexibility play in enhancing firm performance. Real estate firms in China that can effectively allocate resources and coordinate operations are more likely to experience improvements in both financial outcomes (such as profitability and revenue growth) and non-financial outcomes (such as customer satisfaction, employee engagement, and innovation). The positive impact of strategic flexibility on firm performance, this study contributes to the existing literature and provides valuable insights for managers in the real estate sector, offering practical recommendations to enhance their firms' adaptability and success in a dynamic business environment.

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