

The Impact of Strategic Leadership on Innovation Ambidexterity: The Mediating Effect of Social Capital

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This study focused on the strategic leadership in the organization and the internal and external social capital can be seen as the ambidexterity innovation assets for building organization capability. The research selected 500 top managers and 385 ones were returned, using purposive sampling in Southern Tainan Real Estate firms as subjects to explore the interactions and relationships among strategic leadership, social capital, innovation ambidexterity, and contextual ambidexterity, and examines the fitness of model in this study. The data were analyzed by a variety of statistical methods, such as regression analysis, hierarchical regression analysis, ANOVA, and SEM to test the hypotheses of this study and model fitness. The conclusions are as follows: (1) Strategic leadership has significant positive influence on social capital and innovation ambidexterity. (2) Social capital has significant positive influence on innovation ambidexterity. (3) Good model fitness of relationship exists among each construct, and the social capital has significant mediating effects between strategic leadership and innovation ambidexterity. (4) The relationship between social capital and innovation ambidexterity has a moderating influence of contextual ambidexterity.

Keywords: innovation ambidexterity, strategic leadership, social capital, mediating effect

Introduction

Continuous innovation is a crucial factor for the sustainable development of enterprises (Guarascio & Tamagni, 2019). More critically than ever, they must manage to master the market demand and key business technologies in order to expand their competitive advantages (Chen & Wu, 2021). Obviously, innovation has become an inevitable issue that all enterprises striving to survive and develop must encounter (Chao, Cheng, Tang, & Huang, 2017). The relevant literature suggested that a positive organizational climate can inspire and stimulate more innovations in organizational development. The features or qualities of a work environment, such as managerial commitment, open-mindedness, and shared vision, can promote innovations in services, production processes, and products (Horng & Huang, 2011). As far as organizational innovation is concerned, the concepts of exploratory learning (exploration) and applied learning (exploitation), first proposed by March (1991) in a study of organizational learning, are noteworthy.

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The concept of organizational ambidexterity has been emphasized in various disciplines of management science. As noted by previous literature, it is advisable for an organization to explore its organizational ambidexterity in the pursuit of new knowledge and in the management and application of existing capabilities. However, few studies have been found regarding the influence of strategic leadership on ambidextrous innovation. Therefore, this paper intends to verify their relationships. According to past literature, several scholars have proposed that more diversified perspectives and insights should be included in the research of organizational ambidexterity to enrich its significance and applicability (Junni, Sarala, V. Taras, & S. Y. Tarba, 2013; Lin, Y. P. Peng, Y. C. Peng, & Teng, 2020). For example, the viewpoint on how to enhance organizational ambidextrous innovation capability was rarely addressed in past studies. Therefore, this research attempts to explore and demonstrate whether the internal and external social capital of enterprises serves to facilitate the acquisition of resources and knowledge to enhance the overall ambidextrous innovation.

Based on research background and motivation, the purposes of this study are to explore the relationship between strategic leadership and ambidextrous innovation, to explore the relationship between social capital and ambidextrous innovation, to explore the mediating effect of social capital between strategic leadership and ambidextrous innovation, and to provide industry and academia with recommendations on business management and research directions according to empirical results.

Literature Review

Strategic Leadership and Ambidextrous Innovation

In an ever-changing business environment, individual leadership can no longer afford to tackle diversified and changeable needs in the workplace. Collectively, high-ranking managers play an important role in promoting organizational ambidexterity. According to a study by Du and Chen (2018), a top management team (TMT) can assign strategy execution to appropriate business units and create an employee support system and culture amid management conflicts and paradoxes to improve the innovation performance of the organization. As elite leaders of business management or entrepreneurs help the organization integrate resources and capabilities of all parties to create the greatest value of the business, they play a role in initiating, organizing, and completing innovation (Yang, Wu, Su, & Kao, 2011). Therefore, related literature recommends that leaders should encourage organizational members to share ideas and knowledge about new processes, customer problem solutions, and new products, while promoting organizational interaction and collaboration through strategic leadership towards the implementation of application and exploration activities (Lin & McDonough III, 2011). According to the above-mentioned arguments, the study has the following hypotheses:

H1: There is a significant positive relationship between strategic leadership and ambidextrous innovation.

H1a: There is a significant positive relationship between strategic leadership and exploration capability.

H1b: There is a significant positive relationship between strategic leadership and exploitation capability.

Strategic Leadership and Social Capital

In recent years, an increasing number of studies have been found exploring the relationship between leadership and social capital (Balkundi & Kilduff, 2005). Leadership can be understood as a positive force for the establishment of a trusting relationship with stakeholders inside and outside the organization in order to fulfill the common vision and goals of the enterprise (Maak & Pless, 2006). Therefore, we should be concerned not only about how leaders behave, but also about how they function effectively in a variety of situations. According

to the studies stated above, leadership has an impact on the establishment and promotion of social capital. Hitt and Ireland (2002) argued that social capital management is the “essence of strategic leadership” because leaders need to gather intelligence about environmental changes, organizational competitive conditions, and advantages under specific circumstances to be incorporated into organizational strategy. Related literature suggests that organizational knowledge sharing can have a direct impact on facilitating learning. However, the act of sharing and disseminating knowledge from outside to within an organization and across departments also serves as a strong signal about the required type of leadership behavior (Lin & McDonough III, 2011). Accordingly, this study has the following hypotheses:

H2: There is a significant positive relationship between strategic leadership and social capital.

H2a: There is a significant positive relationship between strategic leadership and internal social capital.

H2b: There is a significant positive relationship between strategic leadership and external social capital.

Social Capital and Ambidextrous Innovation

In most Chinese enterprises, *Guanxi* (*relationship*) serves to maintain inter-organizational interaction and development, and thus the relationship network is seen as the most important informal organization in Chinese society (Parnell, 2005; Jia & Lamming, 2013). The position of an enterprise in the relationship network may affect its ability to obtain resources required to improve its business relationships and organizational competitiveness (Lin et al., 2020). Indeed, many studies have demonstrated the importance of intra-organizational relationships and inter-enterprise connections in the promotion of corporate capabilities (Yang, 2009). According to research on the relationship between entrepreneurial social capital and corporate performance, social capital has a significant impact on organizational competitiveness and development of emerging enterprises (Yang et al., 2011). Meanwhile, social capital is an important factor affecting the transfer and sharing of knowledge and resources required for organizational innovation (Tsai & Ghoshal, 1998), which can be transformed into organizational benefits (Adler & Kwon, 2002). Hence, this study proposes the following hypothesis:

H3: There is a significant positive relationship between social capital and ambidextrous innovation.

External social capital. The core objective of inter-organizational relationship management is to design various mechanisms to pursue effective inter-organizational resource exchange and integration to create common interests (Yang & Chou, 2014). Studies have noted that social capital in the relationship network of social embeddedness will affect organizational innovation performance (Jen, Hu, & Liu, 2010). In a complex network system, trust will enhance the cooperation and coordination of network members, which will facilitate the sharing and creation of knowledge resources for product innovation or technological development at lower transaction costs (Yang, 2010). All of this will enable enterprises to carry out organizational innovation of new products, processes, services, and other activities based on existing technical solutions and current market demands (Tsai & Liu, 2012). Accordingly, this study has the following hypothesis:

H3a: There is a significant positive relationship between external social capital and ambidextrous innovation.

Internal social capital. Relevant literature on internal social capital confirms the importance of intra-organizational connections on the improvement of organizational capabilities for innovation (Yang, 2009), which will promote the effective use of knowledge and resources for the organization to raise its responsiveness to diverse challenges (Griffith & Harvey, 2004). An organization may use the relationship network of individual members to minimize the originally required cost and maximize the acquired value during the communication

process so as to help improve the organizational performance of knowledge sharing (Tsai & Liu, 2012). The literature also noted that due to the exclusivity and inertia of the relationship network, specifically in Chinese culture, companies are more likely to share knowledge and information related to current business with network members (Fu, Luan, Wu, Zhu, & Pang, 2021). If an enterprise can continuously share knowledge and information and grasp market information through close internal relationships, it can quickly respond to the market. Accordingly, this study has the following hypothesis:

H3b: There is a significant positive relationship between internal social capital and ambidextrous innovation.

Mediating Effect of Social Capital

Based on the concept of organizational ambidexterity, scholars Lin and Kang (2014) proposed that an enterprise must strike a balance between exploratory innovation and exploitative innovation in the development of an ambidextrous structure for the organization to achieve sustainable growth and performance expansion. In recent years, studies have been conducted to explore the influence of internal information exchange and integration on managers' ambidextrous performance through the perspective of network relationships. Network relationships can provide high-ranking managers with access to internal and external information, allowing them to gain a thorough understanding of exploratory innovation and exploitative innovation in the enterprise (Mehra, Dixon, Brass, & Robertson, 2006). According to Collins and Smith (2006), trust and cooperation among organizational members can facilitate the knowledge exchange, while the shared vision and common language of the organization can integrate diverse knowledge to improve organizational performance. In light of the aforementioned literature, this study proposes the following hypothesis:

H4: Social capital has a significant mediating effect on the relationship between strategic leadership and ambidextrous innovation.

Methodology

Research Structure

This study intends to explore the factors affecting the establishment of ambidextrous organizations under strategic leadership. Specifically, it aims to determine whether strategic leadership can influence ambidextrous innovation through social capital. The research framework is as follows.



Figure 1. Research framework.

Research Subjects

Based on a conceptual construct of organizational hierarchy, this study adopted a purposive sampling to choose its subjects (land administration agents and brokers) from the real estate development and service firms in southern Taiwan (Chiayi-Tainan region and Kaohsiung-Pingtung region). As a result, 500 high-ranking managers, with one chosen from each of 250 real estate development firms and one chosen from each of 250 real estate service firms, were selected to undergo a questionnaire survey during the period from August 2020 to mid-September 2020. A total of 385 valid questionnaires were collected, with a return rate of 77%.

Research Results

Reliability and Validity

Reliability analysis. This study conducted reliability analysis on each construct and variable. The results indicated that the Cronbach's alpha for each construct in this study is greater than 0.8, as shown in Table 1, those suggested high reliability.

Table 1

Cronbach's Alpha for Each Construct

Construct	Cronbach's α
Preference for challenge	0.918
Organizational control	0.886
Internal social capital	0.955
External social capital	0.928
Exploitative innovation capability	0.842
Exploratory innovation capability	0.937

Convergent validity. The average variance extracted (AVE) for most of the constructs in this study is higher than 0.5, as shown in Table 2, those indicated good convergent validity.

Table 2

CR and AVE for Each Construct

Construct	CR	AVE
Preference for challenge	0.922	0.542
Organizational control	0.888	0.500
Internal social capital	0.956	0.643
External social capital	0.934	0.506
Exploitative innovation capability	0.850	0.589
Exploratory innovation capability	0.939	0.658

Divergent validity. Divergent validity is to explore the difference between the intended construct and other constructs to understand whether each construct can be differentiated. Research has shown that when the square root of the AVE of the construct is greater than the correlation coefficient between the construct and other constructs, it means that the questionnaire has good divergent validity (Hair et al., 2006). The results of divergent validity analysis are shown in Table 3.

Table 3

Correlation Matrix and Divergent Validity

Construct	SL1	SL2	SC1	SC2	OA1	OA2
Preference for challenge	(0.736)	0.689***	0.515***	0.526***	0.497***	0.567***
Organizational control		(0.707)	0.498***	0.560***	0.403***	0.499***
Internal social capital			(0.802)	0.755***	0.635***	0.621***
External social capital				(0.711)	0.616***	0.672***
Exploitative innovation capability					(0.767)	0.694***
Exploratory innovation capability						(0.811)

*** $p < 0.001$.

Regression Analysis

Multiple regression analysis of strategic leadership and ambidextrous innovation. On the relationship between strategic leadership and exploitative innovation, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 56.864, p < 0.001$). Among the variables of strategic leadership, preference for challenge has a significant impact on exploitative innovation capability, indicating that managers of the real estate industry in Taiwan who care for their subordinates while presenting their perspective and vision for the future development of the organization will be able to improve exploitative innovation capability. Accordingly, strategic leadership has a significantly positive impact on exploitative innovation capability, and H1a is supported.

On the relationship between strategic leadership and exploratory innovation, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 96.523, p < 0.001$). Among the variables of strategic leadership, both preferences for challenge and organizational control have a significant impact on exploratory innovation capability, indicating that managers of the real estate industry in Taiwan who care for his subordinates while presenting his perspective and vision for the future development of the organization will be able to improve exploratory innovation capability. Accordingly, strategic leadership has a significantly positive impact on exploratory innovation capability, and H1b is supported.

Multiple regression analysis of strategic leadership and social capital. On the relationship between strategic leadership and internal social capital, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 77.514, p < 0.001$). Among the variables of strategic leadership, preference for challenge has a significant impact on internal social capital, indicating that when managers of the real estate industry in Taiwan show willingness to accept new changes, find new solutions to organizational problems, receive diverse opinions, and delegate decision-making power to subordinates, the level of internal social capital will be elevated. Accordingly, strategic leadership has a significantly positive impact on internal social capital, and H2a is supported.

On the relationship between strategic leadership and external social capital, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 97.785, p < 0.001$). Among the variables of strategic leadership, preference for challenge has a significant impact on external social capital, indicating that when managers of the real estate industry in Taiwan are able to adjust the directions of organizational development in response to environmental changes, the level of external social capital will be elevated. Accordingly, strategic leadership has a significantly positive impact on external social capital, and H2b is supported.

Multiple regression analysis of social capital and ambidextrous innovation. On the relationship between social capital and exploitative innovation, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 154.423, p < 0.001$). Both internal social capital and external social capital have a significant impact on exploitative innovation, indicating that in the real estate industry in Taiwan, if organizational employees maintain a close interaction and healthy friendships, while developing good relationships with external manufacturers, customers, and other related agencies, it will improve the capability of exploitative innovation.

On the relationship between social capital and exploratory innovation, the results of the analysis found that all of the coefficients of determination of the multiple regression equations reach a significant level ($F = 177.948,$

$p < 0.001$). Both internal social capital and external social capital have a significant impact on exploratory innovation, indicating that in the real estate industry in Taiwan, if organizational employees maintain a close interaction and healthy friendships, while developing good relationships with external manufacturers, customers, and other related agencies, it will improve the capability of exploitative innovation. Accordingly, social capital has a significantly positive impact on ambidextrous innovation, and H3 is supported.

Analysis of Mediating Effect

This study adopted the bootstrapping method to test the mediation effect. Based on the recommendations of Hayes (2009), MacKinnon and Fairchild (2009), it used the standard of 95% confidence interval and a repeated sampling technique for 2000 times. The results of model goodness-of-fit verification are shown in Table 4.

Table 4

Model Goodness-of-Fit Verification

Goodness-of-fit statistics	Results
χ^2	28.85
df	6
χ^2/df	4.808
p -value	0.000
GFI	0.976
CFI	0.983
TFI	0.956
RMR	0.009

Table 5

Mediating Effect of Social Capital

	Point estimation	Product of coefficients		Bootstrapping			
				Bias-corrected 95% CI		Percentile 95% CI	
		SE	Z	Lower	Upper	Lower	Upper
Total effect							
strategic leadership → ambidextrous innovation	0.689	0.058	11.879	0.566	0.792	0.575	0.795
Indirect effect							
strategic leadership →social capital →ambidextrous innovation	0.529	0.103	5.136	0.340	0.743	0.331	0.731
Direct effect							
strategic leadership →social capital	0.694	0.07	9.914	0.537	0.810	0.546	0.814
social capital →ambidextrous innovation	0.762	0.114	6.684	0.482	0.946	0.499	0.958
strategic leadership →ambidextrous innovation	0.160	0.112	1.429	-0.043	0.398	-0.045	0.395

According to Table 5, in terms of social capital as a mediator between strategic leadership and organizational ambidexterity, the Z value of the total effect is 11.879, and the Z value of the indirect effect is 5.136, both of which are greater than 1.96, and confidence intervals do not contain the value of zero, indicating a significant level of mediation. However, the Z value of the direct effect is only 1.429, less than 1.96, and confidence intervals

contain value of zero, indicating that no significant effect has been reached. Accordingly, social capital has a full mediating effect on the relationship between strategic leadership on organizational ambidexterity, and H4 is supported.

Conclusions, Contribution, and Suggestions

Conclusions

Impact of strategic leadership on ambidextrous innovation. According to the multiple regression analysis of the relationship between strategic leadership and ambidextrous innovation, the variable of preference for challenge in strategic leadership has a significant impact on exploitative innovation capability. Meanwhile, the variables of preference for challenge and organizational control have a significant impact on exploratory innovation capability. The results indicate that if high-ranking managers in the real estate industry tend to make high-risk decisions and accept organizational changes to a great extent, they will have a significant influence on the development of new products and markets.

Impact of strategic leadership on social capital. According to the multiple regression analysis of the relationship between strategic leadership and social capital, the variable of preference for challenge in strategic leadership has a significant impact on internal social capital. Meanwhile, the variables of preference for challenge and organizational control have a significant impact on external social capital. The results indicate that if high-ranking managers in the real estate industry are willing to adopt high-risk decision-making methods and accept organizational changes to a great extent, they can increase social capital accumulation inside and outside the organization. Additionally, relationships within an organization are better when the parties are willing to delegate power to their subordinates.

Impact of social capital on ambidextrous innovation. According to the multiple regression analysis of the relationship between social capital and ambidextrous innovation, the variables of internal social capital and external social capital have a significant impact on exploitative innovation capability and exploratory innovation capability. The results are partially consistent with previous studies (Tuncdogan, Boon, Mom, Van Den Bosch, & Volberda, 2017; Fu et al., 2021), noting that companies are more likely to share relevant current knowledge and information with network members due to the exclusivity and inertia of the relationship network. Meanwhile, the findings of this study are also consistent with the viewpoint proposed by Tang, Fu, and Xie (2017) that companies can improve their innovation capabilities and increase their exploratory innovation activities through connection with external networks. In other words, exploratory learning will allow an organization to break through original regulations to acquire new knowledge through channels outside the existing network and overcome relational inertia.

Mediating effect of social capital. The results of this study are consistent with the research of Lee, Ooi, Chong, and Sohal (2018), indicating that relationship is an indispensable foundation for the development of an enterprise. An organization will be able to reap gains and profits through the development of more competitive products based on close collaboration with suppliers in the long run. Meanwhile, based on a strong relationship with customers, an enterprise will be able to integrate technology into its products and raise its competitiveness. The results are also in line with the findings of scholars Xie and Wang (2021), noting that a good innovation environment enables enterprises to acquire diverse knowledge and experiences through a close network, thereby increasing the resources for exploratory innovation.

The purpose of this study was to explore the factors, potentially environmental variables, affecting organizational innovation in terms of strategic leadership and social capital. Accordingly, it intended to examine whether the context of organizational ambidexterity is an important factor for the development of organizational capabilities. The results show that high-ranking leaders should focus on external social capital and internal social capital, in addition to favorable organizational structure and contextual factors, to facilitate the construction of innovation capabilities. Specifically, enterprises should acquire required resources and knowledge based the interaction with external partners and the cohesive relationship of internal members to construct distinctive organizational capabilities. Hopefully this study may serve as a reference for follow-up research.

Contributions

Contribution to the academic community. The empirical analysis of this study verified the model for the relationship among strategic leadership, social capital, and ambidextrous innovation. The three research constructs are significantly related to one another in terms of organizational development for enterprises in the real estate industry in Taiwan. Strategic leadership has a positive impact on social capital and ambidextrous innovation, and social capital has a positive impact on ambidextrous innovation. Meanwhile, the results found that social capital has a mediating effect on the relationship between strategic leadership and ambidextrous innovation. This has not been addressed in previous studies. Hopefully this study may serve as a reference for follow-up research.

Contribution to the industry. In a changing and competitive market environment, enterprises should manage not only to acquire external knowledge and create internal knowledge, but also to understand how to apply knowledge while modifying organizational practices and reacting to new knowledge according to circumstances. Internally, an organization must establish a strong social network to help members exchange and integrate information, resources, and knowledge. Especially, leaders should endeavor to promote communication, cooperation, and coordination among organizational members to strengthen organizational cohesion in pursuit of the common goals of the organization. Externally, leaders should establish long-term partnerships with external manufacturers to facilitate the construction and accumulation of social capital, the acquisition of complementary resources and knowledge, and the reduction of information costs and uncertainty risks in transactions.

Suggestions

Generalization of research results. The real estate industry has always been known as the “locomotive industry” for national economic development. It is a complex and diverse industry, which is closely related to people’s livelihood and serves to stimulate the development of many related industries. Therefore, the latest research on the real estate industry is considered critical. However, it requires observation and empirical evidence in follow-up research on whether the constructs discussed in this study will remain as key factors affecting organization innovation under the changeable circumstances and management paradigms in the future.

Applicability of the model to other industries. This study chose high-ranking executives from the real estate industry in Taiwan as the subjects. However, the issue of the relationship between strategic leadership, social capital, and ambidextrous innovation is also important for other industries. Therefore, follow-up research may target different industries as the subjects to verify the reliability, validity, and applicability of the scale established in this study.

In the era of knowledge economy, how leaders can strategically establish ambidextrous organizations and strengthen the application of knowledge management to enhance organizational competitiveness is an urgent

management issue. Expectedly the results of this study will help academia and the industry understand the relationship between strategic leadership and organizational performance.

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