

Involution Research and Organizational Culture Construction: A Business Anthropological Case Study in China

Shaojie Wang¹ and Yulong Tu^{2*}

¹*College of Business Administration, South China University of Technology,
Guangzhou City, Guangdong Province, Peoples Republic of China, 510640
Telephone: 86-186-2007-9190*

²*School of Law and Politics, Lingnan Normal University, Zhanjiang City,
Guangdong Province, Peoples Republic of China, 524048
Telephone: 86-135-3101-3397*

E-mail: ¹<wangsj2288@163.com>, ²<cisico@163.com>

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ABSTRACT This study applies the theory of involution into the practice of business administration by using anthropological methods. It analyzes the specific form in the process of organizational culture construction, and expands the extension of involution. The findings suggest that the emotional involution contributes to the formation of employees' expectation toward organizational stabilization and pushes the sustainable development of the organization. Moreover, it suggests that the emotional involution is particularly important in organizational culture construction and that spontaneous social order comes into being where the staffs have mutual communications based on the cultural tradition.

INTRODUCTION

The category of involution was firstly put forward by German philosopher Kant, and then further enriched by Goldenweiser from the perspective of cultural pattern change. Furthermore, through the long-range research of the morphological change in Java's agricultural society, anthropologist Geertz explicitly introduced involution into anthropological studies by elaborating the existential state of involution in real society based on a real-life case (Li and Yang 2015).

With the passage of time, the involution has become a powerful theoretical tool to explain many social phenomena, which has been widely recognized by academic circles and used in social science research. The involution theory can provide a new perspective to interpret many current problems in the development of Chinese society, such as in the human resource management, the issue of migrant rural workers, and the reform of state-owned enterprise and so on. Today, the involution has become a special con-

cept for the description of the retardation phenomenon in social and cultural development (Chan 2014).

In spite of this recent attention, insights from the involution theory still appear to be somewhat underutilized. Two particular problems exist. Firstly, although the extant research has led to important refinements of early versions, many of these refinements are at the macro level. Can the similar outcome appear at the micro level? Secondly, over the years, academic circles have paid more attention to the involution research from the negative perspective research. Does this mean that involution is helpless to evaluate positive outcomes? (Wang 2015).

This study will explore the questions based on the target company in China by introducing the involution theory to the business administration combining with the methods of Business Anthropology (Tian et al. 2015) and analyzes the specific form of involution in organizational culture construction, and raises the opinion that involution embodies emotional involution in organizational culture construction, which can reduce the influence of external information on the staff behaviors to the largest degree and integrate organizational culture into their behaviors and ensure the staffs to devote themselves into their company (Huang 2015). In practice, the emphasis of organizational culture construction

*Address for correspondence:

Yulong Tu
School of Law and Politics, Lingnan Normal University,
Zhanjiang City, Guangdong Province,
Peoples Republic of China, 524048
Telephone: 86-135-3101-3397
E-mail: cisico@163.com

is on building an effective path to gain the emotional involution.

Reference Reviews

Involution is also translated to “too close”, and it sources from Latin “involutum”. The literal meaning of the word is “turn” or “volume”. The originator of that is in Kant’s philosophy theory while Kant compared involution with evolution from connotation to extension and considered the main meaning of involution is involute, inner wrapping, tangled things, and degeneration (Li and Yang 2015). Goldenweiser (1936) asserts “involution” is in the internal complexity of the state when a kind of cultural pattern reaches a final form, which is neither stable down nor transition to a new form by itself. Thus, the system is under conditions of external expansion with strict constraints and in the process of continuous refinement and complication. Consequently, the system forms rigid for the excessive refinement of the internal details. Specific incidents of human activities in support of the involution concept exist in the book of *Agricultural Involution*. In the late 1960s, the American anthropologist, Geertz, performed the field research in Java. In the picturesque island, not enjoying the poem picturesque scenery, he concentrated on the study of a local farmer’s life. He saw that the original ecological agriculture in the maintenance of the pastoral scenery that was in a simple repetition and no progress of the reincarnation state. Geertz (1963) defines the phenomenon of the marginal return of contraction as involution. In this context involution refers to the phenomenon of stagnation or not be transferred to another advanced mode when a social or cultural patterns in a certain stage of development reached a definite situation. Huang (2000) introduces the concept of involution to the study of China’s economic development and social change in the book of *the Peasant Family and Rural Development in Yangtze River Delta*. Specifically, Huang (2000) proposes that the way of diminishing marginal benefit is the growth without development, namely involution, which is to input the large number of workforces in the limited land to obtain total output growth. Huang (2002) points out that the development mode of involution leads to the ending of China and Britain in the 18th century. Derluguian et al. (2000) address that the forced involution makes adult behavior rebound, and go to the extreme, such as the Soviet Union.

Duara in the book, *Culture, Power and State: 1900-1949, in North China*, puts forward the concept of state power involution, and he points out that he just used the word of involution in his book rather than using the definition by Geertz. Although this is similar to the concept of agricultural involution that by no means of an actual development of growth (that is, no improvement in benefit), fixed way (that is, profit-oriented country brokers) regeneration and reluctant maintenance, the difference lies in the standardization and rationalization of the institutions and involution power are often in conflict, dysfunction and the process of involution exist simultaneously (Li and Yang 2015). In the 20th century of China, the state regime depended on the creation of institutions and the increases of taxes to boost revenues rather than the efficiency improvement for the functional departments. The consequences lead to the national fiscal revenue growth accompanied with the growth of corruption and bribery by “profit-oriented agents”, which shows that efforts for the modernization in China state regime have failed since the 20th century (Jin 2002).

MATERIAL AND METHODS

This study applies the research methodology of business anthropology by conducting the research based on the original long interviews and fieldwork of observational data. During the process of the investigation and study, the researchers always maintain a high degree of theoretical sensitivity and the ability to the integration (Tian 2013). In the specific implementation, the researchers deep themselves into the field of the study with on-site participant observation, no structured interviews, focus groups, images and so on, to collect data, and then transform the field data to text data for further analysis (Wang 2014). Some scholars have pointed out that using multi-angle different sources of data in case study can help the researchers grasp the research topic and collect more accurate and more close to the fact things, which can form a “triangle of evidence” (Tian 2012). This study uses triangulation method to analyze the case. The researchers take a lot of observation notes, and 28 hours and 25 minutes of interviews are tape-recorded. After preliminary analysis of the data, the current researchers continue to live in the employee dormitory for further analysis of field observations and in-depth review with represents employees in order to further validate and sup-

plement the data in the first stage, consequently obtain more comprehensive data. As to the processing of the original data, the researchers divide the data analysis into four steps. The first step, to collect data provided by the respondents events or projects, the second step, to encode source data according to certain classification criteria and theoretical basis, and generate the main categories according to the same principle, the third step, to identify subcategories of each of the major categories, the fourth step, to integrate projects of each sub category, and further categorize the integration of sub categories, merge and refine, avoid needless duplication and omissions, and form the research category finally (Tian 2011).

Case of Company W

Built in 1992, company W is a business firm for healthcare products in China. Its parent company of W, Lee Kum Kee, was set up in the year 1888 and has been passed down to its fourth generation. Company W was established by the fourth generation of the Lee family. Since its establishment, company C has attached importance to the guidance of employees' values. With the 20 years' development, the leaders of company C have gradually guided their family values into the company's daily management and turned the family values into the company's core value. Since the year 2012, Qingming sacrifice rites of the family have become a vital festival for the company, and only outstanding employees are qualified to attend it. Therefore, the original key activities of the family also become the activities of the company. The Company C can focus on the employees' affection in the company and build up their sense of belonging, and consequently, an organizational culture was incorporated into the employees' behaviors.

RESULTS

Story One: Self-oriented Culture

"We once relied on a consulting company to promote our company culture but failed. The reason was that in the prescribed contract period, the consulting company couldn't incorporate our company culture into the employees' behaviors, neither could they change their mental models. In 2009, we invited a professional manager for working on the company culture construction. However, since the appear-

ance of the company culture manager, cadres and leaders of other departments didn't involve themselves in the promotion of company culture and just waited for the manager of culture to undertake. Soon within the company, there appeared a number of interpersonal circles based on employees' native places. Affected by different clansmen association, the employees were not stable, again that attempt failed. Our company's practices indicate the internal company will form a native obstacle, which would hinder the landing of company culture, let alone incorporate company culture into the employees' working behaviors when the company lacks the ability in culture promotion. We kept exploring. Until the 15th anniversary of the company's establishment, we have groped a set of effectual rules for company culture to land, and made a series of specific measures. Moreover, we have set up the thick atmosphere of company culture to let the employees accept our company's core values subtly. With years of insistence, the impact of company culture on employees' behaviors has strengthened explicitly. Even in the background of rapid-expanding staff group, we still can keep the relative impact power of company culture on employees' behaviors." (Data here is from code number 9, 13, 26 and 72).

The present researchers term the organizational culture promotion pattern of company C as the filled-type, which means seeking the best matching point between organizational culture, and employee behaviors through constant trial and error. Company C's practice indicates that the good performance of organizational culture system relies on the construction of a firewall against the subculture and the peripheral culture within the company. Only in this way can organizational culture construction be effectively promoted. The researchers define the process of self-filling and self-focus of emotion in company's value as emotional involution, which means using a high-density promotion path to gather employees in the company abolishing the subsistence basis of peripheral culture. The process referred to human resource management practices, which would include steps to guide the employees' emotion and to generate emotional attachment to the company and eventually build a harmonious and stable operation circumstance. Consequently, a rigorous net of emotion has been woven in the company with the implementation of employees' emotional involution.

Story Two: Professional Transmission Platform

“We have trained a professional interpreter team to represent the development history and the culture of our company for visitors. A publicity department was established to be responsible for public relations work between the company and consumers, agencies and communities. Thus, the public will understand the motivation and starting points of company’s dealing with affairs, which can turn the company’s recessive culture explicit. There is also a culture promotion team consisting of persons in charge of each department. This team helps the culture of the company to be implemented in employees’ behaviors. Company culture is an important part for discussion in each month’s summing-up meeting for senior executives. It is each managerial staff’s responsibility to implement company culture, and encourage their subordinates to speak and take measures, and let department managers promote culture, thus company culture will integrate into employees’ behavior.” (Data is from code number 3, 43, 44, 54, 103, 161 and 170)

This story indicates that the so-called professionalism never means doing things by professional individuals, but rather a professional functional system, which can advance organizational culture forward. This confirms that organizational culture is a system and needs various factors to cooperate as a whole and help each other realize the culture building (Wang 2013). The platform of company C is one that spreads love and care and implements company social responsibility. It uses the performance of company social responsibility to drive the implementation of organizational culture (Wang 2014). Professionalism brings the standardization of company operation, which contributes to providing predictable action space, raising employees’ ability of willingness and driving the culture landing.

Story Three: Diversified Activities

“Each year our company arranges specific activities concerning factors like social dimension, health concepts of the company, etc. We hold an environmental protection activity like the annual barefoot walking across China to spread our cultural concept of environmental protection and health. Recreational and sports activities help the company’s culture to infil-

trate into behaviors of common staff of the company. We prefer to make the sterile regular managerial meetings enjoyable through these activities, and spread company culture in a more relaxed and pleasant way. We hold various activities throughout the year, inviting agencies to attend and let them experience and feel our culture. Each year through different theme activities, company’s ideas and ideological things turn into operational actions. Theme activities promote intimacy between the staff and raise the efficiency of decision-making.” (Data is from code number 25, 26, 37, 38, 49, 62 and 70)

This story illustrates that organizational culture does not mean mysterious behaviors, but some lifestyle or even entertainment behaviors. Then why can lifestyle environment assist the employees better in accepting organizational culture? A cultural psychology study shows that people living in collectivism culture like the Chinese one that can better seize the situational information when faced with an important percept, which can affect the establishment of cultural beliefs and then affect behaviors (Kitayama et al. 2003). Therefore, through lifestyle links, Company C places the staff in a lifestyle cultural environment. The visual objects that employees constantly see and hear are mostly relevant to organizational culture. The influence of organizational culture on the employees who have been soaked in this kind of lifestyle environment is self-evident. Through diversified activities, the employees’ emotion will be gradually fixed on the company, consequently pull together with the development of the company.

Story Four: Decoration Culture

“During the company’s decoration process, we tried to reflect the company culture in virtue of specific elements, and embodied the tai chi aesthetics in decoration. Core idea of the company is carved on stone and placed in the exhibition hall on the 17th floor. A helicopter model is placed in the exhibition hall to represent the helicopter thinking in management. The stairs between the 17th and 18th floor is a transparent torch model, which transmits the idea of fire-like enthusiasm to the staff. One wall of the large meeting room is remolded into an indoor climbing wall to spread the entrepreneurship spirit to the staff. Chairs in the VIP meeting room can rotate 360 degree around the meeting table

automatically, which emphasizes the idea of transpositional consideration. Dome light of the VIP meeting room is the model of the triones, which implies that the managerial staff should be like the triones in the company to guide the direction of the company to move forward.” (Data are from code number 4, 6, 7, 8, 9, 12 and 203)

Through decoration of the office, company C embedded a cultural symbol into the company's architecture to reflect cultural concept of the company and build a natural cultural symbol atmosphere. Once their staffs enter this environment, they can rapidly and subtly be affected by the organizational culture. To symbolize the working place and let the staff work in a specific cultural symbol place, and tightly connect emotion of the staff with certain places are others key factors of the success of company C in the culture construction. The study shows that the process of focusing on human emotion is “Point - Line - Surface” gradual change (Wang 2015), company C culture construction is successful, it is the practice of this theory point of view.

Story Five: Team Culture

“When building teams, we have the rule of introducing themselves between team members to guarantee their full understanding, reach mutual trust, and set up common goals, and then they will learn culture of the company together. Our staffs learn and experience the company culture through the platform of learning, doing and teaching, which exists in every single team in the company. Each year we provide team-building with a fee of 1200 RMB to every employee, and how to use the fee depends on team members' negotiation. Team activities must be carried out centering on the company culture. Through team building, we try to explore mental models of the staff and cultivate their cooperation spirit and good communication ability. We always believe that cooperation and the holistic ability of the team is the key of company competitiveness. In our team building activities, the employees will concretely explain company culture, which gives them a stage to show themselves.” (Data is from code number 120, 122, 138, 147, 149, 151, 191 and 236)

The team building activities in company C has its unique features. It builds teams following the principle line of spreading company culture,

and the activities closely embody the company culture. Thus in such a strong organizational cultural atmosphere, the company let their staff experience the living atmosphere, which is hard to get access in other companies and guide the staff's emotion through team power and team atmosphere building to gradually change the staff's mental models. Chinese employees are grown up in a country with long collectivism tradition. Related studies indicate that once adaptation of cultural traits forms, the cognitive neuro-mechanism, which is in charge of saving and transmitting cultural ability, will be further extracted and purified. Eventually, it will give rise to cultural differences in psychological and neural genetic system, which has decisive function on the formation of cultural traits (Aylor et al. 2006). This kind of endogenous effect will further perform intergenerational continuation to pass cultural traits on to the next generation. In this way, certain explicit cultural traits will be stabilized in specific groups. Genetics researches indicate that human genes have obvious differences in cultural traits. The reason that a specific gene's cultural traits difference in allele frequency exists in several evolution processes, such as natural selection and genetic drift (Green et al. 2008). Accordingly, for Chinese employees, the collectivism factor is cultural information rooted in genes. Therefore, to take cultural influence on employees with such cultural genes and build a collective cultural environment should be the most convenient and effective approach.

Story Six: Home-like Working Environments

“We carry out the round table meal system in our company. 8 employees sit together around one table each time. Through this way, we desire to change our staff from the individual me to the collective me and eventually to the company-level me. We advocate the balance among health, family and work. For us, working together is also living together. Working is part of life, which extends to family life. In order to help new employees accept the company culture, we installed broadband, TV and air conditioner in their dormitory, and built a computer room and library and offered complete sports facilities. Based on this, we hope new employees will accept the company's culture of thinking for the benefit of others. In 2001, an employee's family had an accident and she was very anxious.

Leaders of the company knew this in the first time and assigned a car and a colleague to accompany this employee home. After she dealt with family events, she returned to the company quickly. Through this kind of conducts, we hope to make sure that the employees have a sense of belonging in the company." (Data is from code number 170, 174, 175, 186, 198, 201, 205, 217, 225, 226, 245, 250, 278)

Chinese culture is the home culture. In their inward world, home is the spiritual Mecca to the Chinese people. If an organization wants to win the trust of its staff, it is a key method to build the working environment atmosphere like a home (Wang 2011). In this kind of life background, the staff will approve and accept the organizational culture more easily. Some studies indicate that the culture shapes people's preference of self-emotion control, expression, recognition and adjustment. Compared with high arousal positive emotions, East Asians experience lower emotional arousal, and they tend to suppress their emotions than the Westerners (Tsai 2007). This behavior of self-suppression in emotions is supposed to be edified by the Confucian culture, and the Chinese in this respect is more apparent. The organization should recognize the staff's self-restrained emotions in time, and prevent self emotional involution, and lead them to perceived organizational involution, which can help the staff find their spiritual sense of belonging, place self emotions in the organization and realize unification between the staff themselves and the company in development.

DISCUSSION

The present researchers generalize the emotional involution path in organizational culture construction as a manikin illustrated in Figure 1. The factor of self-oriented culture is the head, which decides whether emotional involution can happen or not, and the degree of emotional involution. The home-like working environment is the center of the model, which decides the situation of emotional involution as well as emotional involution's influence on the degree of the staff and the organization. The professional transmission platform and diversified activities are the two arms, which are the means of guiding the occurrence and formation of emotional involution. Decoration culture and team culture are its two legs, which act as the motivation that con-

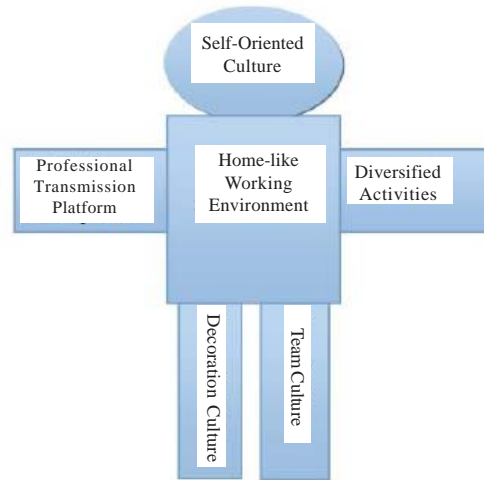


Fig. 1. The Model of Paths of Emotional Involution

stantly can drive emotional involution forward. Researchers might grasp this manikin better when using the model of emotional involution. Using only several factors would be hard to obtain a good result and can even have counteractions. Emotional involution contributes to the formation of employees' expectation toward organizational stabilization and pushes the sustainable development of the organization. Emotional involution is particularly important in organizational culture construction because the culture is neither natural nor reasonably designed by humans, but kind of composed of traditional acquisition behavior rules. By pursuing the maximum self-interest, dispersive individuals have interaction and game with one another, and generate mutual identity, namely "internal rules". Spontaneous social order comes into being where the staffs have mutual communications based on the cultural tradition.

CONCLUSION

From current literatures, the academic world tends to view involution as a negative phenomenon. However, when discussions reach to a certain developing stage, they tend to stay in a standstill status. The maintenance of this state depends on consuming the intra-organizational energy, and more energy is required to keep this ultra stable period. If there is no new energy infusion to this system from the outside world, it exists in such a kind of balanced state. However,

the researchers believe involution has positive ones. The involution can assist things in accumulating energy and then encourage further evolution, consequently help keep the stabilization of things and brings well-ordered evaluative situation for certain organization. For instance, in marriage and families, involution acts more to help keep the family stable and offer family members a stable environment to realize the family's ordered evolution.

RECOMMENDATIONS

The findings in this research will enable one to rethink the role of involution in business administration. Firstly, the construction of organizational culture can be accomplished in the process of the staffs' emotional involution. If the staffs' emotional feelings were erratic with no sense of belonging, the organizational culture would be very difficult to be structured. Moderate involution would in favor of the stable environment for evolution to push the organizational culture land and consolidation.

Secondly, emotional involution is an important phenomenon in business administration, especially in organizational culture construction, which can assist employees in coping with the distraction from the turbulent society's information flow on their behaviors. With the appearance of large data tide, employees are surrounded by massive amounts of information and are faced with different distractions on their behaviors, and their peace of minds will easily be disorganized by a sudden piece of information. Emotional involution cannot only guarantee that the employees' emotion are focused on the company, but help gain a stable human resource environment that can promote the company to move forward.

Thirdly, the implementation of emotional involution should follow specific paths. For organizational cultural construction in the business administration, emotional involution relies on six factors, namely self-oriented culture, home-like working environment, professional transmission platform, diversified activities, decoration culture and team culture. Logical relations between the six factors form a manikin, and good organizational culture is formed on the basis of this model's application foundation.

Research of emotional involution is still in the initial exploratory stage in business adminis-

tration. This paper has made a preliminary research from the perspective of business anthropology with a case study in China. The present researchers planned to carry out a multi-sample research to explore the issues concerning involution in the practice of business administration.

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REFERENCES

- Aylor SE, Way BM, Welch WT, Hilmert CJ, Lehman BJ, Eisenberger NI 2006. Early family environment, current adversity, the serotonin transporter polymorphism, and depressive symptomatology. *Biological Psychiatry*, 60: 671-676.
- Chan PY 2014. The meaning of involution of welfare and its institution in the transitional period: Narrative Analysis of the experiences of the laid-off women workers who seek and receive assistance during unemployment and poverty in the cities. *China Journal of Social Work*, 7(2): 213-216.
- Derluguian GM, Greer SL 2000. *Questioning Geopolitics: Political Projects in a Changing World-system*. Westport: Greenwood Publishing Group.
- Duara P 2010. *Culture, Power and the State: Rural North China, 1900-1942*. Nanjing: Jiangsu People's Publishing House.
- Geertz C 1963. *Agricultural Involution: The Process of Ecological Change in Indonesia*. California: University of California Press.
- Goldenweiser A 1936. Loose ends of a theory on the individual pattern and involution in primitive society. *Anthropology*, 99-104.
- Green AE, Munafo M, De Young CG, Fossella J, Fan J 2008. Using genetic data in cognitive neuroscience: From growing pains to genuine insights. *Nature Reviews Neuroscience*, 9: 710-720.
- Huang CC 2000. *The Peasant Families and Rural Development in the Yangtze River Delta*. Shanghai: Zhonghua Publishing House.
- Huang CC 2002. Development or involution? 18th century Britain and China. *Journal of Asian Studies*, 61(2): 501-538.
- Huang L 2015. The social governance of "Involution" risk and evasion way in China. *Theoretical Orientation*, 7: 19-24.
- Jin T 2002. Comparison of thoughts in evolutionary economics: Veblen, Schumpeter and Hayek. *Economic Science*, 4: 53-63.
- Kitayama S, Dufy S, Kawamura T, Larsen JT 2003. Perceiving an object and its context in different cultures: A cultural look at new look. *Psychological Science*, 14: 201-206.
- Li W, Yang C 2015. The grass-roots autonomous involution and the structural difficulties of rural social work. *Social Work*, 4: 22-29.

- Prasenjit D 1994. *Culture, Power and the State: Rural North China, 1900-1912*. Nanjing: Jiangsu People's Publishing House.
- Tian G, Trotter D, Liu Y 2015. Anthropological methods are meaningful in business research: A case study of foodservice at a Chinese University. *The Anthropologist*, 19(1): 11-24.
- Tian G 2010. The unique contributions and the unique methodologies: A concise overview of the applications of Business Anthropology. *International Journal of Business Anthropology*, 1(2): 70-88.
- Tian RG, Gramling L, Byrd R, Epps L, Keith D, Lick R 2008. Food service and college operations: A business anthropological case study, USA. *The Applied Anthropologist*, 28(1): 60-75.
- Tian G, Dan T 2011. Searching the importance of foodservice in higher education: A Business Anthropological case study in China. *International Journal of Business Anthropology*, 1(3): 89-102.
- Tian G, Luis B 2012. The effectiveness of social marketing mix strategy: Towards an anthropological approach. *International Journal of Business Anthropology*, 1(3): 102-113.
- Tsai JL 2007. Ideal affect: Cultural causes and behavioral consequences. *Perspectives on Psychological Science*, 2: 242-259.
- Wang SJ, Tu YL, Liu SS 2014. The evolution of state-owned enterprises in South China: The choice of property right system perspective. *The Anthropologist*, 18(1): 103-111.
- Wang SJ, Liu SS 2013. Investigation of the cultural evolution model in Chinese Enterprises. *Management World*, 2: 184-185.
- Wang SJ 2013. Chinese traditional culture, organizational culture construction and sustainable development of the company: Establishing indigenous organizational culture theory. *Journal of Macau University of Science and Technology*, 2: 38-54.
- Wang SJ 2014. Exploration the model of Chinese enterprises' social responsibility- the reflection on theory of enterprise social responsibility. *Journal of Management Case Studies*, 6: 208-222.
- Wang SJ 2011. *Research on Corporate Governance of Family Business Based on Social Capital*. PhD Thesis, Unpublished. Macau: City University of Macau.
- Wang SJ 2015. Field research on business culture evolution path and influence on performance: The perspective of Business Anthropology. *Journal of Shanxi University of Finance and Economics*, 37(7): 72-84.

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