

SYSTEMATIC REVIEW ON THE IMPACT OF NATIONAL CULTURE AND ORGANIZATIONAL CULTURE ON INNOVATION CAPABILITIES

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ABSTRACT

The influence of culture on innovation is not explicitly categorized as "black or white". It is impossible to carry out a quantitative questionnaire and a regression equation to create a comprehensive analysis of the relations between culture and innovation. Additionally, Tian, 2018 also commented that there is called for a new model of research that studies the impact of culture on innovation for future research from the perspective of historical development (Tian et al., 2018). Therefore, understand what has been done in the field is very critical for future researches and been significant for researching world.

Keywords:; national culture organizational culture; innovation capabilities; culture; innovativeness.

INTRODUCTION

Innovation is viewed as the driving force for success in a dynamic and complicated environment, and the company risks failing if it does not continuously generate new knowledge to combat competition. Drucker, 1954, in the book Principles of Management, asserted that innovation is the primary function of the business, and that a corporation can only attain market dominance by consistently providing fresh consumer pleasure through innovation (Mohr & Sarin, 2009). A systematic literature review (Tian et al., 2018) discovered 674 publications on the relationship between culture and innovation. These findings also constitute the study's conclusion.

- 1) National culture and organizational culture influence innovation on a broad or significant scale, although existing at separate levels.
- 2) From 1980 to 2017, statistical analysis demonstrates that the topic of cultural influence on innovation has evolved at a dynamic rate.
- 3) Future research should focus more on "the interaction between corporate culture and national culture on creativity."

In addition to the foregoing findings, Iddris (2016) also create a systematic review on innovation capability. Numerous elements, including operation, management strategy, human resource management, and resource allocation, were shown to influence an organization's innovation capabilities, as indicated by the findings. However, research also demonstrates that national culture and organizational culture contribute to the innovation capability of

organizations...

Therefore, research that allows us to determine how both country culture and organizational culture influence innovation capability is necessary. The goal of this study is to investigate for the first time how national culture and corporate culture affect innovation capabilities.

MATERIAL AND METHODS

Systematic literature review differs from conventional literature review due to its scientific, impartial, and transparent database selection and disclosure procedure(Tran field et al., 2003).

The method of SLR by following the procedure suggested as follows:

- **Planning the review:** Setting the objective, developing the proposal and Protocol
- **Conducting the review:** Identifying, selecting, assessing, extracting and synthesizing the relevant article.
- **Reporting and Dissemination of the results:** reporting the descriptive analysis such as authors, contribution, countries and key emerging themes.

PLANNING THE REVIEW

Data is collected through 2 search engines which were EBCOST and Google Scholar using keywords "Innovation Capability" and "Culture"; document type set at "journal article"; Language is "English", without any selection restriction. The keywords were used to search for "title", and the initial result was 42 and 59 for EBCOST and Google Scholar respectively. With the assistance of Zotero Citation Management Software, additional extraction was performed to eliminate duplicates. The total number of articles was subsequently reduced to 41.

Table 1: Prisma Method for SLR

Purpose	Research area	Research Area
Source	Ebcos	Google Scholar
Type of Search	Title Search	Title Search
Included Factor	Peer Review, English, academic journal	Peer Review, English, Academic Journal Only
Result	42	59
After Duplicated Remove	28	31
Group	59	
Duplicated Remove	41	

After further review of the abstracts, nine (9) articles were excluded from the SLR process

due to the lack of full text, research based on distinct categories...

Thirty-three articles are taken into account for additional analysis after all of the preparations have been made (33).

CONDUCTING THE REVIEW

After collecting the data from the publications, the data analysis was divided into distinct collections based on the objectives and types of research methodologies (Qualitative or Quantitative).

The collection of papers can be summarized as follows:

- Conceptual Paper
- Systematic Literature Review
- Empirical Study

The practice of read-through is carried out after, and the data is extracted with the following criteria as the list below:

- Publication Year
- Author
- Title
- Publication Title
- Library Catalogue
- Research Focus
- The dimension of the study
- Level of Test
- Sample
- Type of Research / Method
- Country of Research
- Findings
- Future Motivation
- Manual Tags

FINDINGS

National Culture And Innovation Capability

By encouraging a societal perspective on innovation, national culture has a substantial effect on the innovation of enterprises in a nation (Hemin Song et al., 2019; van Everdingen & Waarts, 2003). Three(3) researchers have investigated and reported on the connection between country culture and innovation capacity (Hongyi Sun, 2009; Tsegaye et al., 2019; Wong et al., 2008)

Both Hongyi Sun (2009) and Tsegaye et al., (2019) utilized the five-dimensional cultural

index of Hofstede's Dimensions. The analysis of the relationships between Hofstede's cultural dimensions and the national Innovation culture index (ICI) revealed that countries with high Individualism, uncertainty avoidance, and power distance have a positive correlation with their national innovation capacity (Hongyi Sun, 2009). Additionally, the study using data from the Global Innovation Index and Hofstede's cultural characteristics indicated that countries with low power distance and strong individualism have the highest levels of creativity and innovation (Tsegaye et al., 2019). These two studies raised the worry that the innovation index that has been implemented is not designed to assess innovation capability, as it focuses primarily on a country's innovativeness.

On the other hand, the study by (Wong et al., 2008, p. 20) with two populations, American-born Chinese (Chinese-Americans who were born and educated in America and are Chinese by ethnicity) and mainland Chinese, found no significant differences between the two groups (who were born and raised in Mainland China). The study confirmed that American-born Chinese have greater capacity for innovation than their mainland counterparts.

Organizational Culture & Innovation Capability

Numerous research (Crossan & Apaydin, 2010; Tian et al., 2018) on the relationship between organizational culture and innovation concluded that organizational culture exerted a substantial effect on the innovation of the firm.

Based on the SLR methodology, nineteen (19) research articles confirmed that organizational culture influences innovation capacity (illustrated in table 2). In addition, the research is divided into two categories: culture typology system study and contextual, cultural definition study (Reiman & Oedewald, 2002)

Table 2 List of Article on culture typology system study

	Year (*)	Author	Title	The dimension of the study
1	2017	Chang, Wen-Jung; Liao, Shu-Hsien; Wu, Tai-Te	Relationships among organizational culture, knowledge sharing, and innovation capability: a case of the automobile industry in Taiwan.	Innovation Capability (Process, Product, Marker, Strategy); Knowledge sharing (Knowledge Donating, Knowledge Collecting); organizational Culture (Quinn Model)
2	2015	Akbar Hassanpour; Seyedeh Khadijeh Mirfallahi	The impact of culture and strategic orientation on service innovation capability: Evidence from banking industry	innovation capability, strategic orientation and organizational culture (Quinn & Spreitzer Model)

3	2019	Leal-Rodriguez, Antonio L.; Eldridge, Stephen; Ariza-Montes, Jose Antonio;	Understanding How Organizational Culture Typology Relates to Organizational Unlearning and Innovation Capabilities	4 type of culture vs organizational learning and innovation capability
4	2012	Chen, Shin Tien; Chang, Bao Guang	The Effects of Absorptive Capacity and Decision Speed on Organizational Innovation: A Study of Organizational Structure as an Antecedent Variable	The dimensions culture of Harrison which are Formalization of organization and Centralization of Power in Organization (Organizational age, organizational size, knowledge-sharing climate, organizational culture, organizational innovation, formalization degree, centralization degree, speed of making decision, and organizational absorptive capability.)
5	2019	Aimin QI	Interaction between the Sustainable Innovation Capability on Patent Based On Entrepreneurial Culture: Empirical Research from China.	Entrepreneurial culture (resource allocation, market orientation, risk tolerance); sustainable innovation capability (technological innovation, product innovation); patent(invention patent, unity patent, design patent)
6	2010	Cakar, Nigar Demircan; Erturk, Alper	Comparing the innovation capability of small and medium-sized enterprises: examining the effects of organizational culture and empowerment	Dependence Variable: Uncertainty Avoidance, Assertiveness Focus, Collectivism; Power Distance. Independence Variable Denison (200) measurement of innovation through new product development compared with competitors and research and development expenditures compared to competitors.
7	2019	Gupta, Amit Kumar; Gupta, Narain	Innovation and Culture as a Dynamic Capability for Firm Performance: A Study from Emerging Markets.	Product Innovation, Process Innovation, Innovation Culture, Firm Size, Firm Performance

8	2015	P Iskandar, Yulita Hanum; Abdul Manaff, Siti Norbilah Bt	Interrelationships among innovative culture, social networks, environmental characteristic and innovation strategy as a mediator influencing the technological capability within the manufacturing industry in Malaysia	Innovation culture, social network, environmental characteristics to innovation strategy and technological capability.
9	2015	Liao, Shu-hsien; Hu, Da-chian; Chen, Chih-Chiang; Lin, Yu-Lu	Comparison of competing models and multi-group analysis of organizational culture, knowledge transfer, and innovation capability: an empirical study of the Taiwan semiconductor industry.	organizational culture (Bureaucratic culture, supportive culture and innovation culture), knowledge transfer (Organizational Knowledge transfer, group movement, procedural movement), and innovation capability (product innovation, process innovation, managerial innovation and strategy innovation)
10	2014	Verma, Pratibha; Singh, Bindu; Rao, M. K.	Developing innovation capability: The Role of organizational learning culture and task motivation	Innovation capability; leaning culture and task motivation
11	2013	QIN, Dezhi; ZHAO, Desen; YAO, Lan	Enterprise culture and technological innovation capability from the perspective of resources	The research focuses on the way that technological innovation capability is accumulated from enterprise culture through basic resources, shaping innovation resource (knowledge source, innovation atmosphere, innovation team)
12	2019	Singh, Sanjay Kumar; Del Giudice, Manlio; Tarba, Shlomo Y.; De Bernardi, Paola	Top management team shared leadership, market-oriented culture, innovation capability, and firm performance	Top Management Team, Market-Oriented Culture, Innovation capability and Innovation Performance.
13	2019	Do Khoi Nguyen, Le Ba Phong; Hui, Lei	Creating a Competitive Advantage for Vietnamese Manufacturing and Service Firms: The Role of Collaborative Culture and Innovation Capability	Innovation capability vs collaborative culture and competitive advantage

14	2013	Chien, Shih-Chien	Innovation strategy as a mediator among social networks, innovative culture, and technological capability-An empirical study of the ICT industry in Taiwan	Innovative Culture and Social Network vs Innovation Strategy and Technological Capability
16	2020	Tang, GuoXiang; Park, Kwangtae; Agarwal, Anurag; Liu, Feng	Impact of Innovation Culture, Organization Size and Technological Capability on the Performance of SMEs: The Case of China	Innovation Culture, organizational size; firm performance; technological capability
17	2020	Bucciari, Dominic; Javalgi, Raj G.; Cavusgil, Erin	International new venture performance: Role of international entrepreneurial culture, ambidextrous Innovation, and dynamic marketing capabilities	International Entrepreneurial Culture and Ambidextrous innovation and dynamic marketing capability and Innovation performance
18	2018	Zhi Yang; Van Thithuy Nguyen; Phong Ba Le	Knowledge sharing serves as a mediator between collaborative culture and innovation capability: an empirical research	Collaborative Culture, Knowledge sharing, Innovation capability
19	2017	Marco Alberto Núñez Ramírez; Roger Alejandro Banegas Rivero; Altayra Geraldine Ozuna	Relationship Between Flexible Organizational Culture and Innovation Capabilities: The Moderating Effect of Rigid Organizational Culture	IT Management Capability; learning alliance, supportive innovation culture; firm size, quality management practice implementation.

Regarding the study of the culture typology system, the framework of cultural typology produced by the preceding researcher is utilized ((Cameron & Quinn, 2011; Handy, 1996; Hofstede & Hofstede, 2005).

The model of (Handy, 1996) has been implemented with the mediator of decision-making speed (Chen & Chang, 2012) with the following result: (1) The greater the degree of organizational formalization, the greater the absorptive capacity of the organization, and the greater the degree of organizational innovation. (2) The higher the degree of organizational centralization, the lower the organization's absorptive capacity, and the lower the degree of organizational innovation. (3) The greater the degree of organizational formalization, the slower the rate of organizational decision-making, and thus, the slower the rate of organizational innovation. (4)The degree of organizational centralization is unrelated to absorptive capacity and decision speed; hence, it has no effect on the rate of organizational

innovation. The other uses Hofstede's national culture model to examine organizational culture (Cakar & Erturk, 2010) with the confirmation that for medium-sized enterprises in Turkey, only uncertainty avoidance is associated to innovation capability at both the individual and company levels. For small businesses, power distance has an effect on innovation capability at the individual level, whereas collectivism has an effect on innovation capability at the firm level.

The vast majority of research has been conducted using the Competing Value Framework model (Chang et al., 2017), and research in the Taiwanese automobile industry has proven a strong relationship between organizational culture and innovation capability. (Akbar Hassanpour & Seyedeh Khadijeh Mirfallahi (2015) conclude that in Alborz, Iran, organizational culture has a beneficial effect on organizational structure and service innovation capability. Furthermore, it was proposed that organizational structure has a favorable effect on innovation capabilities in banking service. Lastly, (Leal-Rodriguez et al., 2019) found that each culture type has a varied level of influence on the innovation capabilities of Spanish firms. Specifically, adhocracy culture has a close relationship with innovative capabilities.

Regarding contextual cultural definition research, it employs the definition of prior research to identify the cultural type without contrasting it to the framework of all other cultures. These context-specific definitions are provided below:

Table 3: List of contextual definitions for Organizational Culture

Year	Author(s)	Contextual Cultural Definition
2019	Gupta, Amit Kumar; Gupta, Narain	Innovation Culture
2019	Aimin QI	Entrepreneurial culture
2015	P Iskandar, Yulita Hanum; Abdul Manaff, Siti Norbilah Bt	Innovation culture
2015	Liao, Shu-hsien; Hu, Da-chian; Chen, Chih-Chiang; Lin, Yu-Lu	organizational culture (Bureaucratic culture, supportive culture and innovation culture)
2014	Verma, Pratibha; Singh, Bindu; Rao, M. K.	Leaning culture
2013	QIN, Dezhi; ZHAO, Desen; YAO, Lan	enterprise culture through basic resources, shaping innovation resource (knowledge source, innovation atmosphere, innovation team)
2019	Singh, Sanjay Kumar; Del Giudice, Manlio; Tarba, Shlomo Y.; De Bernardi, Paola	Market Oriented Culture
2019	Do Khoi Nguyen, Le Ba Phong; Hui, Lei	Collaborative culture
2013	Chien, Shih-Chien	Innovative Culture
2019	Audah, Abdul Kadir; Kusmaningtyas, Amiartuti	Organizational Culture of Innovation
2020	Tang, GuoXiang; Park, Kwangtae; Agarwal, Anurag; Liu, Feng	Innovation Culture

2020	Bucciari, Dominic; Javalgi, Raj G.; Cavusgil, Erin	International Entrepreneurial Culture
2018	Zhi Yang; Van Thithuy Nguyen; Phong Ba Le	Collaborative Culture
2017	Marco Alberto Núñez Ramírez; Roger Alejandro Banegas Rivero;	Innovation supportive culture.

These studies all verified that, as stated, organizational culture has an effect on the innovation capabilities of an organization. As a result of the context-specific nature of the culture's distinguishing qualities, however, further examination is made difficult. Understanding the relationship between organizational culture and innovation capability is biased. For instance, organizations' innovation capabilities must be tied to their inventive culture. As argued in research philosophy, no organization has such a notion of "Cultureless." Consequently, a culture typology system study would be enough to compare and conform to the current state of organizational culture research.

Knowledge Sharing To Innovation Capability

In their research on the Taiwanese automobile sector, the authors discovered that information sharing serves as a link between organizational culture and innovation capability (Chang et al., 2017). A study in Taiwan's semiconductor sector (Liao et al., 2015) validated this idea by indicating that knowledge transfer is the cause of Innovation capability and also influences organizational culture. Knowledge sharing mediates the association between collaborative culture and two specific types of innovation, namely product innovation and process innovation, according to a China-based empirical study (Yang et al., 2018). Additionally, (Chen & Chang, 2012) suggested that information sharing climate is partially related to an organization's innovation capabilities. Lastly, (QIN et al., 2013) also emphasized how the organization's creativity is determined by the source of its information.

Out of the scope of the SLR, it was discovered that the studies by (Alegre & Chiva, 2013; Presbitero et al., 2017) concluded that the organizational culture and innovation capability have a high association with the mediators knowledge sharing and learning organization. Therefore, for study into the relationship between organizational culture and innovation capabilities, the contribution of the learning organization and knowledge exchange must be incorporated.

DISCUSSION & FUTURE RESEARCHS

The preceding study has demonstrated that corporate culture and national culture have a substantial effect on innovation capabilities. In certain nations, national culture has a greater positive or negative impact on innovation capabilities than in others, and various organizational industry and management types also have an effect on innovation. It creates a scenario that requires additional investigation.

In addition to the established positive association between organizational culture and innovation capability, a number of studies have identified knowledge sharing as the

intermediary in the process through which Organizational Culture influences innovation capability.

Due to the national scope of this issue, a large-scale research is required to investigate it. It also indicates that a fundamental technique may not be adequate to explore the issue. Future research may use a mixed methodology.

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