Confucianism: Ancient ideology or driving force of the future? A scoping review on the effect of Confucian culture on innovation

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ABSTRACT

This paper explores the ambiguous relationship between Confucian culture and innovation based on the scholarly literature. Applying a scoping review approach, the purpose of the literature review is to uncover the reasons behind the ambiguities of empirical research results and conceptualizations of how Confucianism affects innovation on the individual and on the organizational level. The paper builds on the assumption that the different operationalizations of Confucian culture are behind these contradictions. Since Confucianism is an ideology that has developed for over 2000 years, and even its most often cited virtues and principles are quite heterogenous, approaches to its operationalization in the field of management are also diverse. The results of the literature review indicate that different approaches to Confucian culture indeed show homogeneity in the conceptualization of the Confucianism-innovation relationship. Virtues and principles related to rigid hierarchies and great power distance have a detrimental effect, while others a rather positive one. Therefore, the paper argues that a more specific denomination of cultural factors should be necessary to avoid biased and unspecified results in both theoretical and empirical approaches.

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1. INTRODUCTION

For an innovative organization, it is important to have a cultural background that supports development and change. Multiple research supports the notion that to be successful in innovation, one has to establish an appropriate organizational culture (Ahmed 1998; Galiulina — Touate 2022; Tambosi et al. 2021). According to the literature, many characteristics of organizational culture have a positive effect on innovation: for example, green organizational culture (Gürlek – Tuna 2018); "cooperative" and "innovative" culture (Taghizadeh et al. 2020); flexibility and external focus (Sanz-Valle et al. 2011), or adhocracy culture (Naranjo-Valencia et al. 2011). On the other hand, hierarchical culture is often associated negatively with innovation (Naranjo-Valencia et al. 2011; Rezaei et al. 2018). The relationship between national culture and organizational culture has also been discussed by academic research for decades. Many authors have argued for the influence of national culture on organizational culture in different country contexts, such as Brazil (Garibaldi De Hilal 2006), China (Sun 2002), India, Brazil, and the USA (Nelson – Gopalan 2003), or the United Arab Emirates (Klein et al. 2009). However, most of the literature on the relationship between organizational culture and innovation originates from developed economies with Western cultural backgrounds such as the United States and the United Kingdom. East Asia, where Confucian culture is dominant, is fairly underrepresented. From East Asia, only China and India represent themselves on the list of countries in the Scopus database, when searching for the combined keywords of "innovation" and "organizational culture". This suggests that the role of culture in innovation has been predominantly studied from a Western perspective.

At the same time, looking at innovation from an East Asian point of view is undoubtedly of interest to scholars interested in either innovation or the cultural background of management, since most of these countries have rather different histories, traditions, and perceptions about innovative activities than the Western world. China's economic development has been based on traditional manufacturing industries for decades, being heavily dependent on foreign companies for innovation (Huang et al. 2016), and thus, staying well behind developed countries' innovative capacities (Mu et al. 2010). State ownership in China has also been argued to have a detrimental effect on innovation (Jiao et al. 2015). Chinese manufacturers have for a long time applied imitation instead of, or as an antecedent to, innovation (Chung – Tan 2017; Yip – McKern 2014). Many authors also argue that Japan's innovative capabilities lack behind – not only do they appear to be unable to establish new industries (Storz 2008a), they are also underrepresented in the new key industries worldwide (Storz 2008b), struggle to revitalize innovation leadership and are stuck in closed innovation paradigms (Ikeda et al. 2016), are mostly taking a slower, incremental innovation approach, as opposed to radical innovation, which is more prevalent in Europe (Pettigrew et al. 2000), and are even prone to block innovative initiatives (Vaszkun 2013).

One important thing these countries have in common is Confucian culture. Being an ancient ideology of preserving the ancient heritage of China and synthesizing it into a set of principles to guide different aspects of society, Confucianism is generally associated with a traditional way of thinking (Kim et al. 2020; Wan et al. 2021). Confucianism is a major determinant of culture and society in many emerging economies in Eastern Asia (e.g., China, Japan, South Korea, Singapore, Taiwan). At the same time, Confucianism to this day is argued to affect these countries' organizations and management practices (Hofstede – Bond 1988). Most often,

Confucianism is associated with more traditional areas of management, such as leadership (Solansky et al. 2017) or business ethics (Ip 2009), but some other results indicate that Confucianism has no direct effect on modern management at all (Li – Yeh 2023). Still, there are several papers that address Confucian cultural background and innovation – if we accept the premise that the ideology is still a major influencer in corporate management in East Asia, we should be aware of its consequences for the future. The literature on this topic is however quite heterogenous – there is some contradictory empirical evidence and conceptualizations about how Confucian culture affects innovation, and the approaches to operationalize Confucianism are also diverse – which is an understandable consequence of the heterogeneity of the ideology.

1.1. Research background: Confucian culture

The origins of Confucianism date back more than 2000 years ago to Confucius and his disciples. Taught by the sage to his followers, the foundations of the ideology were a synthesis of principles and virtues from ancient Chinese tradition (Hofstede – Bond 1988). Many different values are attributed to Confucianism – in the following, the most often cited ones will be summarized. *Respecting traditions and the rules of social hierarchy* (Fitzgerald 1989) is a principle based on five main types of predefined relationships and the virtues associated with them: father and son (father's *endearment* and son's *filial devotion*), brothers (elder brother's *gentleness* and younger brother's *respect*), husband and wife (the husband's *fidelity* and the wife's *compliance*), youth and seniors (senior's *benevolence* and youth's *submission*) and ruler and subordinate (ruler's *kindness*, and subordinate's *loyalty*) (Child – Warner 2003). The virtue of striving to be a better human, or a so-called *superior man* (Lin – Ho 2009), is also a basis of Hofstede and Bond's (1988) Confucian dynamism cultural dimension, which denotes five main virtues: *benevolence, righteousness, propriety, wisdom and integrity*.

The effect of Confucian culture on different aspects of modern management and organizations has been studied by numerous authors. On the individual level, the major research streams focus on work values (Jaw et al. 2007; Ralston et al. 1999; Vaszkun – Saito 2022); leadership (X.-P. Chen et al. 2014; Cheung – Chan 2005; L. Ma – Tsui 2015), interpersonal relationships (Hong 2004) and citizenship behavior (Y. Han – Altman 2010; Hunsaker 2016). On the organizational level corporate governance (Jin et al. 2023; Yu et al. 2021), business ethics (X. Du 2015; Ip 2009) and corporate social responsibility (V.-I. Tian et al. 2022a, b; Zhao – Roper 2011) are the most often addressed topics about Confucian culture. Confucianism is found to have both positive and negative effects on modern management, such as fostering self-enhancement (Jaw et al. 2007), parent-like responsibility and loyalty (Vaszkun – Saito 2022) or in-role and extra-role performance (X.-P. Chen et al. 2014) as positive influence, and negatively affecting subordinate performance (X.-P. Chen et al. 2014) or enhancing the gender pay gap (Jin et al. 2023).

1.2. Research background: innovation and its enablers

This paper follows the definition of innovation by Singh and Aggarwal (2022): "the operationalization of creative potential with a commercial and/or social motive by implementing new adaptive solutions that create value, harness new technology or invention, contribute to competitive advantage and economic growth." This definition gives us three important aspects of innovation: 1) creative potential as an antecedent of innovation, which, in practice, might

include relevant learning opportunities and research and development activities; 2) new solutions, technologies, or inventions; and 3) harnessing these innovations as value-added new products, services or processes.

Various scholars have investigated different enablers of innovation, such as dynamic capabilities (Teece 2007), strategic orientation (Gatignon – Xuereb 1997), social capital (Camps – Marques 2014) or knowledge creation (Esterhuizen et al. 2012). Furthermore, research has also explored additional factors influencing innovation, such as organizational structure (Gaspary et al. 2020), technological capabilities (Ho 2011), external collaboration (Csedő – Zavarkó 2020; R. Ma et al. 2013), and entrepreneurial orientation (Shehzad et al. 2023). Others address the effect of organizational and national culture on innovation performance (Ahmed 1998; Galiulina – Touate 2022; Tambosi et al. 2021). The impact of national culture on individual and organizational innovation behavior was also assessed by multiple studies: collectivism and power distance (R. Du et al. 2017); the impact of individualism/collectivism and uncertainty avoidance on innovation diffusion (Desmarchelier – Fang 2016); foreign ownership in a transition economy (Zdunczyk – Blenkinsopp 2007); the effects of individualism, power distance, masculinity, uncertainty avoidance, long-term orientation, and indulgence on new product development (Sivakumar – Roy 2019).

1.3. Research background: Confucianism – innovation relationship

Confucianism is often associated with organizational practices in East Asia and recently a growing number of research has addressed its effect on innovation (Li – Yeh 2023; X. Ma et al. 2023; Xu et al. 2022). Confucianism is undoubtedly a major influence on society and business in many emerging Asian nations, but at first glance, its foundations in ancient Chinese traditions seem contradictory with modern practices and future-oriented innovation. The Confucianism-innovation relationship has been addressed in a growing number of studies since the 2010s, but existing empirical and conceptual evidence provides us with ambiguous results. The relationship has been studied in multiple areas of management, such as business ethics (Yeh – Xu 2010), organizational performance (Tang et al. 2011; M. Zheng – Tanaka 2017) or organizational behavior (Chang 2018; Moake et al. 2019), and in multiple different countries, such as Japan (Haglund 1984), Malaysia (Yamazakia – Kayes 2010), Taiwan (T.-S. Han et al. 2010), Korea (Flight et al. 2011), but mostly in China (Feng et al. 2021; Wan et al. 2021). While many of the papers find a positive association (Rhee – Kim 2019; Tang et al. 2011; M. Zheng – Tanaka 2017) between Confucian cultural background and innovation, others argue that Confucianism has negative consequences for innovativeness (Feng et al. 2021; Lee et al. 2020; Wan et al. 2021), and several other papers argue that the two constructs are unrelated (Li – Yeh 2023).

1.4. Research scope and research questions

Seeing the heterogeneity of the papers on the topic and the ambiguous result, this paper intends to create a framework to interpret the relationship between Confucianism and innovation. Confucianism is approached and operationalized in many ways in management related academic literature. It is presumed that the approach each research takes to operationalize the ideology would have a determining effect on the outcome – the positive or negative association between Confucianism and innovation. Therefore, the research questions are as follows:

RQ1:   How is Confucian culture operationalized in connection with innovation?

RQ2:   According to scholarly literature, how does Confucian culture impede, and how does it promote innovation?

2. METHODOLOGY

To get a comprehensive picture on the relationship between Confucian culture and innovation, a scoping review approach was applied (Fig. 1). The purpose of scoping reviews is to indicate the nature and size of a particular research field, they address broad research questions, and apply a comprehensive search strategy for selecting the articles, which can be both empirical and theoretical, but their selection is based on explicit inclusion criteria, and the analysis of the selected papers is conducted with content or thematic analysis (Paré et al. 2015). To determine the explicit selection process, the steps proposed by Tranfield et al. (2003) were followed. First, the inclusion criteria and appropriate keywords were determined for the comprehensive database search. The first search was conducted in the Scopus database because it includes the relevant journals and most of the content from other databases. In addition, it provides precise filtering options to enhance the search results (Anand et al. 2021). Due to the broad meaning of these keywords resulting in a high number of irrelevant results, terms such as "change", "transformation", "development" or "research" were omitted from the query. After careful consideration, the keywords "innovation" and "invention" were included, in order to include all the possible articles about innovation and related learning and R&D activities. Since the aim was to find papers that deal with innovation and Confucianism at the same time, the word "Confucius" was added to the query as well. An asterisk was applied at the end of the stem of the words ("innovat*", "invent*" and "confuci*") to make sure that any variant of the words is included. The subject area of the search was limited to business and management and economics, the language to English, the source type to journal articles, book chapters and conference papers, thus excluding editorials and review pieces. This initial search yielded 69 articles. To get a more comprehensive pool of articles, the same search was conducted in the Web of Science database (Cerchione et al. 2020), which yielded an additional 6 papers.

2.1. Analysis of the selected papers

Next, all the papers from the databases were carefully reviewed to decide which will be included in the analysis. The titles and abstracts of each article were cross-checked with the inclusion criteria. Only those articles could be included which were dealing with 1) a context of Confucian culture, and 2) addressed innovation as a dependent variable (or equivalent of a dependent variable in conceptual and qualitative papers) in organizational context. In multiple articles, innovation and Confucianism were addressed "next to each other", but not related to each other – these pieces were excluded during the analysis. After hand-picking the relevant papers for the research, the final sample included 27 papers.

A thematic analysis was conducted on the relevant 27 papers by coding them in an Excel sheet in predefined categories, such as the definition of Confucianism, the definition of innovation, the relationship the paper associates with these two constructs, the country where the
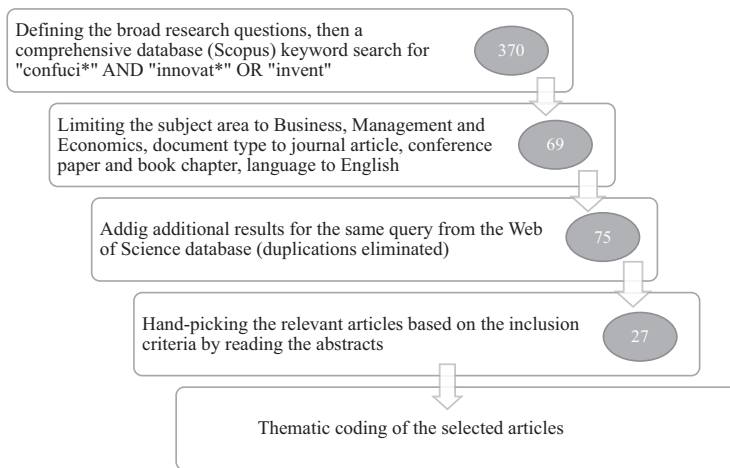
Fig. 1. The execution process of the scoping review method
Source: author.

research was conducted and whether it addresses Confucianism and innovation on the individual or on the organizational level.

3. FINDINGS AND DISCUSSION

3.1. Different operationalizations of Confucian culture

In the analysed papers Confucianism is operationalized in different ways. We can distinguish them along two main dimensions: the level of inquiry and the specificity of the definition. First of all, there is a difference in the levels of inquiry. There are a few studies which focus on the values and the belief system of the individual persons within the organization. However, the majority of the authors take a broader approach, and consider Confucianism as the cultural background of the organization, the common belief system which surrounds its people. In addition, in some papers, this cultural background is addressed as a general national or regional setting which affects organizational practices, without specifying the exact virtues or principles. The most frequent approach though is to take an excerpt of the collection of Confucian values and examine or conceptualize the effect of that specific element of the ideology on innovation. In the followings, the most often used Confucian values will be summarized.

Respecting *hierarchical order* and *seniority*: Confucian cultures respect the older, attach great importance to hierarchies, in which ranking orders are often based on age, or time spent at the company. Additionally, first-borns are considered most important in families, which can have an effect on organizational practices in the case of first-born leaders. The organizational values not only emphasize hierarchy, but also the importance to conform to the supervisory rules, which is also crucial to maintain organizational harmony and good relationships. High *power distance* is closely related to respecting hierarchy and seniority. These values are also addressed by the Hofstede value dimensions. *Benevolence* and *righteousness* are two of the five Confucian

core values. While some of the articles include all of these five principles (Y. Chen et al. 2022; Wang – Sun 2019), others focus on just one or two – mainly benevolence and/or righteousness (Chen et al. 2022; Tian et al. 2022a, b). *Collectivism* and *group orientation* are also addressed several times as national (Flight et al. 2011) and organizational attributes (Lee et al. 2020) – collectivism, as a main component of Confucianism, is also an important element of the Hofstede value dimensions (Hofstede – Bond 1988). The importance of *learning*, self-cultivation, and self-development is also discussed in relation to innovation, both from a Confucian (C. Zheng et al. 2017) and neo-Confucian perspective (Kim et al. 2020). Table 1 summarizes the different operationalizations of Confucian culture in the sample. An extended version of Table 1 can be found in Appendix 3, which contains the exact references for each category.

The heterogeneity of the papers in the approach to Confucianism is clear. The above-mentioned values are each mentioned in at least two different papers of our sample, however, there are multiple other values with a single use only, such as faithfulness, the doctrine of the mean, long-term orientation or the concept of the superior man. Overall, Confucianism is associated with innovation more positively. On the individual level, Confucian culture seems to be working in favour of innovative attitudes and behaviours. Controversies in results show up mainly at the organizational level, where positive results still outnumber negative ones, but negative associations are also significant, and make the overall picture much less unanimous. In the following, it will be assessed how the different operationalizations of Confucian culture affect its associated relationship with innovation.

3.2. How and when does Confucianism enable innovation?

On the individual level, Confucianism is exclusively measured by certain virtues or principles which are attributed to the ideology, such as collectivism, benevolence, righteousness, or wisdom (the importance of continuous learning) which are almost exclusively associated positively with individual innovative behaviour. More specifically, the five virtues (*benevolence, righteousness,*

Table 1. Different approaches to the operationalization of Confucian culture in innovation-related literature

	Level of inquiry	Approach to Confucianism	Cultural background on:	Variables / values
Operationalization of Confucian culture	Individual	Specific virtues/principles	x	Seniority, benevolence, righteousness, harmony, learning and education, power distance
	Organization	Specific virtues/principles	x	Same as above, plus collectivism, group orientation
		General cultural background	Country level	The country is considered Confucian (e.g., according to GLOBE study)
			Regional level	The close region of the firm is considered more affected by Confucianism (e.g., the number of Confucian temples nearby)

Source: author.

propriety, wisdom, and integrity), zhong-yong thinking, and continuous learning all are associated positively with different innovative behaviors. It is important to note though, that these individual-level innovation measures are quite heterogenous and range from employee idea generation and realization through consumer perceptions of innovation and the perceptions of intellectual property right protection (identified as the prerequisite of innovation) to innovation-related learning and self-development activities. For example, Zhou and Yang (2022) find that employee's zhong-yong thinking (a way of traditional Confucian thinking which considers multiple perspectives and strives for harmony) enhances their innovative behavior, such as by generating new ideas or solutions, and constantly looking for opportunities. Similarly, Wang and Sun (2019) associate the effect of the five Confucian virtues positively with innovation – approached as the attitudes towards the protection of intellectual property rights, which can foster innovation.

On the organizational level, a Confucian organizational background has mixed associations with organizational level innovation measures. As a general, country level cultural background, two papers confirm a positive effect on new product innovations. In case of specific virtues and principles, the picture is much more heterogenous – out of the 9 papers addressing this focal point, 5 find a positive association, and 2 more associate certain values positively, while others negatively with Confucianism. More precisely, the virtues and principles of collectivism, group orientation, hierarchy, harmony, sincerity and benevolence are positively associated with organizational product and process innovation, as well as innovative culture and knowledge exchange, which are important enablers of innovation. For example, the main virtues of Confucianism are associated positively with innovation multiple times: Tian et al. (2022)a, b find benevolence useful for innovation, Zheng and Tanaka (2017) find the eight Confucian values beneficial for management innovations, and Rhee and Kim (2019) also associate a set of fundamental Confucian values positively with product innovation. Collectivism and other group-oriented values are also found to have a positive effect on perceived organizational innovativeness (Lee et al. 2020) and organizational creativity (X. Ma et al. 2023). Respecting the rules of social relationships is associated positively with the likelihood of innovation in teams (Percy – Dow 2022) and an overall innovative culture (Yeh – Xu 2010).

3.3. How and when does Confucianism impede innovation?

Confucianism is most often associated negatively with innovation when it is operationalized as a set of specific virtues or principles, for example as high power distance, or as respect for seniority and hierarchy. In turn, these virtues and principles are almost exclusively associated negatively with Confucianism – hierarchy is the exception, with being associated positively with innovation on one occasion. However, in this case, the operationalization of innovation is quite heterogenous – general organizational creativity and innovativeness, perceived organizational innovativeness or willingness to change, R&D investments, their efficient turnover into new patents, and the number of new patents. Overall, there is a more behavioural approach to innovation when it is negatively associated with Confucianism. Power distance is associated negatively with innovation on multiple occasions, Ma et al. (2023) argue for a negative connection between large power distance and organizational creativity, Xu et al. (2022) between power distance and innovation efficiency, and Ying et al. (2022) also associate power distance negatively with new patents and innovation investments. The importance of rigid hierarchies and respecting

(mostly age-based) seniority is also found to have a negative effect on perceived organizational innovativeness (Lee et al. 2020) and the number of new patent applications (Wan et al. 2021).

3.4. Mixed results

The effect of individuals' Confucian beliefs on organizational-level innovation outputs is not an extensively studied area, only 2 papers in our sample fall into this category. One of these papers associated Confucian dynamism positively with management innovation (Chang 2018), while the other associated the importance of seniority negatively with the number of patent applications (Xu et al. 2022). Confucianism as a regional level cultural background (usually measured with the number of Confucian temples in the area of the focal firm) also has inconclusive associations in our sample. Four papers deal with this kind of operationalization, two of them (Wan et al. 2021; Yan et al. 2021) find a negative association between Confucianism and innovation (measured as R&D investment and patent numbers), one finds no relationship between Confucian cultural background and patent count, and one paper identifies Confucian background as a positive stimulus of innovation (as R&D investment).

3.5. Summary of the findings

In the following, the findings will be summarized to answer each research question explicitly and provide a comprehensive framework on how the operationalization of Confucian culture affects the detected relationship between Confucianism and innovation.

RQ1: How is Confucian culture operationalized in connection with innovation?

Confucian culture in the innovation-related literature is operationalized in multiple different ways. First, we can differentiate between the organizational level (the organization as a whole, homogenous unit is influenced by the ideology) and the individual level (individuals within the organization are influenced by the ideology, to different degrees). On the individual level, Confucianism is operationalized as a single value or a set of values attributed with the ideology, such as benevolence, righteousness, respecting hierarchies,or a collectivist mindset. On the organizational level, while these specific values are also applied, Confucianism is often operationalized as the general cultural background of the country or the region of the focal firm. One prevailing variable in this group is the number of Confucian temples in the area of the firm, but some other studies simply consider companies Confucian when they are located in, or their major shareholders come from Confucian Asia (according to the GLOBE study).

RQ2: According to scholarly literature, how does Confucian culture impede, and how does it promote innovation?

Confucianism plays a complex role in enabling or impeding innovation, and the exact effect found by each study largely depends on the level of analysis and the approach to the operationalization of Confucian culture. At the individual level, Confucian virtues and principles, such as collectivism, benevolence, righteousness, and wisdom, are positively associated with innovative behavior, including idea generation, problem-solving, and intellectual property rights protection. On the organizational level, Confucian values like collectivism, group orientation, hierarchy, harmony, sincerity, and benevolence are generally seen as facilitators of organizational innovation, fostering product and process innovation, innovative culture, and knowledge exchange.

However, Confucianism's negative impact on innovation is observed when specific virtues like high power distance and respect for seniority and hierarchy are considered. These values tend to be associated negatively with innovation, particularly in terms of organizational creativity, innovativeness, R&D investments, and the number of new patents. The relationship between individuals' Confucian beliefs and organizational level innovation outcomes remains relatively underexplored, yielding mixed results. Similarly, the influence of Confucianism as a regional cultural background on innovation outcomes also lacks consensus, with studies reporting both positive and negative associations.

Table 2 summarizes the findings of the literature review, organized into a framework based on the level of inquiry and the operationalization of innovation and Confucianism. An extended version of Table 2 can be found in Appendix 4, which contains the exact references for each category.

4. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

For the literature review, the scope was limited to the Scopus and Web of Science databases and English language. While these databases contain the majority of the relevant English language literature, the analysed sample might have been extended by including further databases, possibly even in Chinese language. Due to the assumption that the most relevant research results from China are also published in English, the decision was made against this.

Table 2. Confucianism – innovation framework

			Operationalization of innovation	
			Individual level	**Organizational level**
Operationalization of Confucianism	**Individual level**	Specific virtues/principles	***Positive*** *– 5 papers* *Neutral – 2 papers*	*Only 2 studies – one **positive** (Confucian dynamism) and one **negative** (seniority) association*
	Organizational level	Specific virtues/principles	***Positive*** *- 1 paper*	***Positive*** *association in 6 papers, mixed values* ***Negative*** *association in 4 papers, values about hierarchy, seniority and power distance*
		General cultural background — Country level	Not applicable	***Positive*** *association in 2 papers*
		General cultural background — Regional level	Not applicable	***Positive*** *association in 1 paper* ***Negative*** *association in 2 papers* *Neutral association in 1 paper*

Source: author.

Confucianism was selected as a main keyword to filter for associations made specifically between Confucian ideology and innovation. However, as we have seen, in many papers Confucianism is addressed as only one of its components – such as power distance or collectivism. Conducting a search query in Scopus database for these keywords together with innovation would probably yield several dozen more papers – but since the purpose of this study was to explore the connections made between Confucianism and innovation, any additional keywords were excluded, thus keeping the focus on the original research goal.

5. CONCLUSION

5.1. Theoretical contributions

The findings of this paper can be summarized as follows. First, Confucianism is more often associated positively than negatively with innovation. Generally, a Confucian belief system of the individual seems to have a positive effect on their individual innovative behavior. The connection between individual Confucian beliefs and organizational-level innovation is an underrepresented area in the literature. Confucianism as a background to the organization as a whole is the most frequent approach in relation to organizational-level innovation. The association between Confucian background and innovation is mixed in this group of studies, mostly depending on the conceptualization of Confucianism. If it is operationalized as a single, or several similar values (power distance, collectivism, harmony etc.), and that value relates to respecting hierarchies, power distance, and seniority, the association is negative, in case of any other values, it is positive. In the case of approaching Confucianism as a homogenous regional or national cultural background, the associations are rather mixed.

Therefore, this paper argues to forego over-emphasizing the Confucian background of East Asian countries related to innovation. Confucianism is a complex philosophy which has been developing for more than 2000 years, therefore, it is not a homogenous cultural background, so in many cases, attributing managerial consequences to Confucian culture in general is no different than attributing them to the country itself. A more specific denomination of cultural factors behind management is called for. Confucianism is a melting pot for many values, morals, and ideas, developed, collected and interpreted in many different ways – it is certainly not to be neglected in East Asia but approaches to its operationalization should be as specific as possible to avoid potential bias.

5.2. Practical contributions

Based on the findings regarding the operationalization of Confucian culture and its impact on innovation, several conclusions and implications can be drawn for general usability and practical application.

Confucian values can be leveraged to facilitate organizational innovation. Practitioners should encourage collectivism, group orientation, hierarchy, harmony, sincerity, and benevolence within their organizations. These values contribute to creating an innovative culture that promotes knowledge exchange, product and process innovation, and a supportive environment for creativity. Emphasizing the importance of these values in organizational policies and practices can stimulate innovation within teams and across the entire organization.

It is important for practitioners to be aware of the potential negative impact of certain Confucian values on innovation. Values such as high power distance and excessive respect for seniority and hierarchy may hinder creativity, innovativeness, and R&D investments. Organizations should strive to strike a balance between maintaining respect for traditional values and fostering an environment that encourages open communication, collaboration, and creativity. Recognizing and addressing these impediments can help organizations overcome cultural barriers to innovation.

In conclusion, both practitioners and researchers can benefit from the insights provided by the scholarly literature on the operationalization of Confucian culture and its impact on innovation. By understanding the positive and negative associations between Confucian values and innovation, practitioners can design interventions, policies, and practices that harness the strengths of Confucianism while mitigating its potential drawbacks. This knowledge can guide practitioners in creating a conducive environment for innovation, nurturing individual creativity, and fostering organizational growth in Confucian-influenced contexts. At the same time, management scholars can be more aware of the limitations and impact each different operationalization approach means for the outcome of the research.

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Appendix 1. The search query used in the Scopus database

69 document results.

(TITLE-ABS-KEY ("innovat*" OR "invent*")) AND (TITLE-ABS-KEY ("confuci*")) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "ch") OR LIMIT-TO (DOCTYPE, "cp")).

Appendix 2. List of the analysed papers

No	Authors	Title	Year	Source title
1	Yeh Q.-J., Xu X.	The Effect of Confucian Work Ethics on Learning About Science and Technology Knowledge and Morality	2010	Journal of Business Ethics
2	Tang G., Li J., Wang X.	Multimarket contact and firm performance: The moderating effect of Confucian culture	2011	Frontiers of Business Research in China
3	Rhee M., Kim T.	Exploiting old lessons and exploring new ideas: A Confucian approach to exploitation and exploration	2019	Asia Pacific Journal of Management
4	Wang Q., Sun X.	Exploring Chinese Design Business Owners' Attitudes Towards Intellectual Property Rights	2019	International Journal of Innovation Management
5	Wan Q., Cheng X., Chan K.C., Gao S.	Born to innovate? The birth-order effect of CEOs on corporate innovation	2021	Journal of Business Finance and Accounting
6	Feng X., Jin Z., Johansson A.C.	How beliefs influence behaviour: Confucianism and innovation in China	2021	Economics of Transition and Institutional Change
7	Yan et al	Does Confucian culture influence corporate R&D investment? Evidence from Chinese private firms	2021	Finance Research Letters
8	Tian M., Rohlfer S., Wu Y., Yan H.	Does Confucian Culture Promote Innovation ? An Empirical of a Leading Organization in the Field**	2022	Management Revue
9	Percy W., Dow K.	The coaching dance applied: training Chinese managers to coach	2022	Coaching
10	Chen et al.	How does Confucian culture affect technological innovation? Evidence from family enterprises in China	2022	PLOS One
11	Ying et al.	Impact of Seniority on Corporate Innovation: Evidence from China	2022	16th International Conference on Management Science and Engineering Management (ICMSEM)
12	Zhou et al.	How does employees' Zhong-Yong thinking improve their innovative behaviours? The moderating role of person-organisation fit	2022	Technology analysis and strategic management
13	Li G., Yeh Y.-H.	Western cultural influence on corporate innovation: Evidence from Chinese listed companies	2023	Global Finance Journal
13	Ma X., Rui Z., Zhong G.	How large entrepreneurial-oriented companies breed innovation: the roles of interdepartmental collaboration and organizational culture	2023	Chinese Management Studies

15	Lee H.J., Kim M.Y., Park S.M., Robertson P.J.	Public Service Motivation and Innovation in the Korean and Chinese Public Sectors: Exploring the Role of Confucian Values and Social Capital	2020	International Public Management Journal
16	Yamazakia Y., Kayes D.C.	Learning and work satisfaction in Asia: A comparative study of Japanese, Chinese and Malaysian managers	2010	International Journal of Human Resource Management
17	Zheng C., Wang B.-X., Hu M.-C.	New Chinese entrepreneurs: Perspectives of Confucian attributes and social settings	2017	Entrepreneurship: Concepts, Methodologies, Tools, and Applications
18	Flight R.L, Allaway A.W., Kim W.-M., D'Souza G.	A study of perceived innovation characteristics across cultures and stages of diffusion	2011	Journal of Marketing Theory and Practice
19	Moake T.R., Oh N., Steele C.R.	The importance of team psychological safety climate for enhancing younger team members' innovation-related behaviors in South Korea	2019	International Journal of Cross Cultural Management
20	Kim H.Y., Park J.H., Kim H.J.	South Korean humanistic leadership	2020	Cross Cultural and Strategic Management
21	Hsiao T.-C.	Capability development and management of R & D professionals in a developing context, Taiwan	1997	Technovation
22	Han T.-S., Chiang H.-H., Chang A.	Employee participation in decision making, psychological ownership and knowledge sharing: Mediating role of organizational commitment in Taiwanese high-tech organizations	2010	International Journal of Human Resource Management
23	Chang Y.-Y.	Charismatic leadership in IT firms in Taiwan: an empirical study	2018	Asia Pacific Business Review
24	Rosenbusch N., Gusenbauer M., Hatak I., Fink M., Meyer K.E.	Innovation Offshoring, Institutional Context and Innovation Performance: A Meta-Analysis	2019	Journal of Management Studies
25	Haglund E.	Japan: Cultural considerations	1984	International Journal of Intercultural Relations
26	Zheng M., Tanaka H.	Impact of Chinese Confucian cultural value on management and employee performance in China's service industry: A case study of service innovation under program management environment	2017	Proceedings of the 12th International Scientific and Technical Conference on Computer Sciences and Information Technologies, CSIT 2017
27	Xu X., Lin C., Duan L.	Does hierarchical ranking matter to corporate innovation efficiency? An empirical study based on a corporate culture of seniority	2022	Chinese Management Studies

Appendix 3. Extended version of Table 1. Different approaches to the operationalization of Confucian culture in innovation-related literature, with citations

	Level of inquiry	Approach to Confucianism	Cultural background on:	Variables / values	References
Operationalization of Confucian culture	Individual	Specific virtues/principles	x	Seniority, benevolence, righteousness, harmony, learning and education, power distance	(Chang 2018; Flight et al. 2011; Kim et al. 2020; Moake et al. 2019; Wan et al. 2021; Wang – Sun 2019; Yamazakia – Kayes 2010; C. Zheng et al. 2017; Zhou – Yang 2022)
	Organization	Specific virtues/principles	x	Same as above, plus collectivism, group orientation	(T.-S. Han et al. 2010; Hsiao, 1997; Lee et al. 2020; X. Ma et al. 2023; Percy – Dow 2022; Rhee – Kim 2019; M. Tian et al. 2022; Xu et al. 2022; Yeh – Xu 2010; Ying et al. 2022; M. Zheng – Tanaka 2017)
		General cultural background	Country level	The country is considered Confucian (e.g., according to GLOBE study)	(Rosenbusch et al. 2019; Tang et al. 2011)
			Regional level	The region of the firm is considered to be affected by Confucianism (e.g., the number of Confucian temples nearby)	(Y. Chen et al. 2022; Feng et al. 2021; Li – Yeh 2023; Yan et al. 2021)

Source: author.

Appendix 4. Extended version of Table 2. Confucianism – innovation framework with citations

				Operationalization of innovation	
				Individual level	Organizational level
Operationalization of Confucianism	Individual level		Specific virtues/principles	*Positive* – 5 papers (Kim et al. 2020; Wang – Sun 2019; Yamazakia – Kayes 2010; C. Zheng et al. 2017; Zhou – Yang 2022) *Neutral* – 2 papers (Flight et al. 2011; Moake et al. 2019)	*Only 2 studies – one **positive** (Confucian dynamism) (Chang 2018) and one **negative** (seniority) (Wan et al. 2021) association)*
	Organizational level		Specific virtues/principles	*Positive* - 1 paper (T.-S. Han et al. 2010)	*Positive* association in 6 papers (Lee et al. 2020; X. Ma et al. 2023; Rhee – Kim 2019; M. Tian et al. 2022; Yeh – Xu 2010; M. Zheng – Tanaka 2017), *mixed values **Negative** association in 4 papers (Y. Chen et al. 2022; Lee et al. 2020; Xu et al. 2022; Ying et al. 2022), values about hierarchy, seniority and power distance*
		General cultural background	Country level	Not applicable	*Positive* association in 2 papers (Rosenbusch et al. 2019; Tang et al. 2011)
			Regional level		*Positive* association in 1 paper (Yan et al. 2021) ***Negative** association in 2 papers (Y. Chen et al. 2022; Feng et al. 2021) Neutral association in 1 paper (Li – Yeh 2023)*

Source: author.