

Knowledge-friendly organisational culture and performance: A meta-analysis

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1. Introduction

Knowledge management (KM) has been popular in business research for more than 30 years, and it can be attributed to globalization, technological development, and the raise of knowledge-intensive economy (Handzic, 2017). Knowledge was considered to be one of the most critical resources for the development of competitive advantages of firms in the 1990s (Drucker, 1993; Grant, 1996), and effective KM can lead to the success of firms (Nonaka & Takeuchi, 1995). KM in the 1990s was mainly driven by managing explicit knowledge through information technologies (IT) (Snowden, 2002), but many of these IT-driven KM projects failed (Edwards, 2016). One of the reasons for their failure was the fact that firms lacked a knowledge-friendly organisational culture (KFOC). Some organisational cultures (i.e., a lack of trust and willingness to share knowledge, and difficulties creating a knowledge-sharing climate) are incompatible with KM, and these become barriers for KM implementation (Rivière & Calabrese, 2016). Therefore, after the 1990s, more attention has been paid to facilitating human-related factors (Handzic, 2017), such as KFOC, knowledge-based leadership, and knowledge-oriented human resource management, in managing knowledge to sustain a competitive advantage at firms.

KFOC is one of the critical enablers of the success of KM (Davenport et al., 1998; Rivière & Calabrese, 2016), and it is considered to be a set of shared values and beliefs in an organisation that promotes employees' passion for learning, openness to innovation, trust, collaboration, and willingness to share knowledge. KFOC enables organisational knowledge to be effectively created, acquired, shared, transferred, and applied (Colovic & Williams, 2020; Imran et al., 2018) so that value can be successfully created for organisations (Kianto et al., 2013). According to the knowledge-based view (Grant, 1996; Inkinen, 2016; Shah & Kant, 2020), better organisational performance can be achieved when knowledge is efficiently integrated in an organisation (Grant, 1997) through a prevailing KFOC.

45 Previous review studies on organisational culture in the KM field have either only summarised earlier
46 studies or proposed conceptual models. For instance, Tian et al. (2018) argued that the effects of
47 organisational culture and national culture on innovation are complex and heterogeneous, suggesting that
48 further quantitative approaches should be applied to investigate these relationships. Mueller (2012)
49 identified the different perspectives of organisational culture in the KM literature. Jacks et al. (2014) and
50 Al Saifi (2015) merely outlined a conceptual framework and argued that KFOC is related to its success
51 without showing any empirical evidence for their research models. Intezari et al. (2017) identified
52 ~~knowledge processes~~ KM activities (e.g., knowledge sharing, creation, and implementation)¹ in the KFOC
53 literature. In addition, earlier review studies either adopted a systemic review approach to evaluate the
54 relationship between KM and organisational performance (Gupta & Chopra, 2018; Inkinen, 2016) or
55 focused on meta-analysing the relationship between strategic KM and firm performance (Liu et al., 2020).
56 However, to date, none of the review studies concerning organisational culture and KM have examined
57 the impacts of KFOC on organisational performance through an integrative approach. Moreover, due to
58 inconsistent empirical evidence, the impacts of KFOC on organisational performance are still
59 inconclusive.

60 Despite the substantial amount of literature on the relationship between KFOC and organisational
61 performance, current empirical studies reveal heterogeneous findings. For instance, Guimarães et al.
62 (2016) found that the KFOC–organisational performance relationship was significant, whereas Song and
63 Kolb (2013) reported this relationship as insignificant. Thus, based on these inconsistent empirical
64 findings, the overall generalisability of the KFOC–organisational performance relationships is
65 unconvincing. In addition, significant empirical findings from individual studies may not be generalisable

¹ KM activities refer to a set of knowledge processes (Beesley & Cooper, 2008), including knowledge application, identification, creation, acquisition, sharing, storage (Heisig, 2009), and so forth. KM practices refers to the conscious organisational and managerial practices intended to achieve organisational goals through efficient and effective management of the firm's knowledge resources (Inkinen, 2016, p.232)

66 to a broader range of economic and social contexts (Gupta & Chopra, 2018). Finally, managers from
67 different national cultures are more likely to select different strategies to respond to the same managerial
68 issues (Schneider & De Meyer, 1991), and firms may manage knowledge differently based on their
69 different cultural backgrounds (Cegarra-Navarro & Sánchez-Polo, 2010; Cegarra-Navarro et al., 2011).
70 KM in organisations is socially embedded (Hussinki et al., 2017; Kim, 2020), but the effects of specific
71 contextual factors, such as national culture, economy, and industry, on KM—which might then influence
72 KM–organisational performance relationships—are still poorly understood. Therefore, this study aims to
73 first synthesise the relationships between KFOC and organisational performance and then estimate the
74 moderating effects of national culture, economy, and industry on the KFOC–organisational performance
75 relationship by adopting a meta-analysis approach using a large number of studies in the KM literature.

76 The present study contributes to the extant KM literature in the following ways. First, it contributes to
77 reducing the heterogeneity of the KFOC–organisational performance relationship prevalent in the KM
78 literature by theoretically depicting and empirically identifying the overall directions and effect of the
79 relations between KFOC and organisational performance. Second, it contributes to the KM literature via
80 the theoretical establishment and empirical validation of the moderating effects of national cultures,
81 economies, and industries on the KFOC–organisational performance relationship. Third, it offers a deeper
82 understanding of the impacts of KFOC on organisational performance, as well as the role of contextual
83 factors in this relationship, using a meta-analytical synthesis to expand on previous systematic review
84 studies, such as Inkinen (2016), Mueller (2012), and Gupta and Chopra (2018). To the best of the authors’
85 knowledge, the present study, which adopts a meta-analysis approach to conduct the literature review, is
86 the first to quantitatively synthesise the KFOC–organisational performance relationship in the KM
87 literature.

88 **2. Research Model Development**

89 **2.1 Main Effects**

90 In previous studies on the relationships between KFOC and organisational performance, organisational
91 performance can be categorised into three types, namely, financial performance, non-financial
92 performance, and overall organisational performance which includes both financial and non-financial
93 performance indicators. Although many scholars have attempted to reveal these relationships using
94 empirical evidence, findings are still inconclusive. For example, Chen et al. (2008) found that the trust
95 dimension of KFOC did not affect organisational performance directly, while Song and Kolb (2013)
96 concluded that the learning culture of KFOC did not significantly impact overall performance of the firm.
97 Payal et al. (2016) also found that KFOC did not affect organisational performance. However, the majority
98 of empirical studies reveal that KFOC significantly influences overall organisational performance (Baker
99 & Sinkula, 1999; Boumarafi & Jabnoun, 2008; Chen et al., 2008; Chen et al., 2011; Chuang et al., 2013;
100 Forte et al., 2016; Guimarães et al., 2016; Kamath et al., 2016; Kamhawi, 2012; Khan et al., 2015;
101 Mageswari et al., 2017; Martin & Sabagh, 2015; Migdadi, 2009; Migdadi et al., 2016; Mousavizadeh et
102 al., 2015; Palacios-Marqués et al., 2011; Pham & Nguyen, 2017; Rezaei et al., 2017; Ruiz-Mercader et
103 al., 2006; Samson et al., 2017; Valdez-Juárez et al., 2016; Wei, 2010; Wong & Wong, 2011). Although
104 inconsistent relationships exist, it still seems that, for the most part, the research evidence has indicated a
105 positive relationship; therefore, it can be assumed that:

106 H1a: KFOC is positively related to overall organisational performance.

107 In addition, numerous studies have been conducted to examine the relationship between KFOC and the
108 financial performance of firms, but the findings here are inconsistent as well. For example, Shih et al.
109 (2009) found that KFOC was not related to the financial performance of firms, while Kianto and Andreeva
110 (2014) reported that KFOC significantly affected the financial performance of firms in service industries;
111 however, this causal relationship was insignificant for firms in the manufacturing industry. On the other

112 hand, the majority of scholarly works (Akgün et al., 2014; Chen et al., 2008; Chen & Liang, 2011; Collins
113 & Smith, 2006; Feng et al., 2014; Hsu & Sabherwal, 2012; Lee & Choi, 2010; Lin et al., 2013; Marouf,
114 2016; Pett & Wolff, 2016; Rezaei et al., 2017; Santos-Vijande et al., 2013) have shown a positive
115 relationship between KFOC and financial performance. Therefore, it can be assumed that:

116 H1b: KFOC is positively related to financial performance.

117 Finally, a wide range of research has focused on investigating the relationship between KFOC and the non-
118 financial performance of firms. For example, Lee et al. (2012) and Noh et al. (2014) argue that the trust
119 dimension of KFOC does not affect the non-financial performance of firms. In addition, Mills and Smith
120 (2011) pointed out that the KFOC–non-financial performance relationship was insignificant. However,
121 numerous studies have shown that KFOC has a positive impact on the non-financial performance of firms
122 (Chong et al., 2011; Chuang et al., 2013; Cooper et al., 2016; Giampaoli & Ciambotti, 2016; Huang et al.,
123 2010; Jiménez-Jiménez et al., 2014; Kim & Hancer, 2010; Machuca & Costa, 2012; Mageswari et al.,
124 2017; Migdadi et al., 2016; Moon & Lee, 2014; Mousavizadeh et al., 2015; Santos-Vijande et al., 2013;
125 Shih et al., 2009; Suchayo et al., 2016; Tan & Wong, 2015; Zhang et al., 2007). Regardless of the small
126 amount of insignificant evidence concerning the KFOC–non-financial performance relationship, the
127 majority of studies claim that KFOC is a positive predictor of the non-financial performance of
128 organisations. Therefore, it can be assumed that:

129 H1c: KFOC is positively related to non-financial performance.

130 *2.2 Moderating effects*

131 Theoretically meaningful contextual explanations may explain the contrasting findings of previous studies
132 on the KM–organisational performance relationships, since contexts are contingency factors influencing
133 KM (Atakhan-Kenneweg et al., 2021; Hussinki et al., 2017; Liu et al., 2019) and may also moderate the

134 relationships between KM and its outcomes. Here, we address three types of contextual issues as potential
135 moderators: national culture, national economy, and firm industry. Associated hypotheses are delineated
136 in the following paragraphs. Figure 2-1 summarises our overall research model.

137 <Please insert Figure 2-1 here>

138 Figure 2-1 Research model

139 ***2.2.1 Moderating Effects of National Culture***

140 National culture could be one of the most important contextual factors that affects people's KM activities
141 as well as the relationships between KM and its outcomes. National culture refers to a collective
142 programming of the mind of people in a nation that distinguishes people of different nationalities from
143 each other (Hofstede, 1993; Hofstede et al., 2010), while organizational culture is the collective
144 programming of the mind that distinguishes people of one organisation from those of another (Hofstede,
145 1994). An organisational culture is affected by national culture, as organisational members' values are
146 affected by their national backgrounds. Both organisational culture and national culture can affect
147 employees' KM activities in organisations (King, 2007), because culture provides a context for social
148 interaction and determines the effectiveness of KM (De Long & Fahey, 2000).

149 The seminal cultural values framework by Hofstede and his colleagues (Hofstede, 2001; Hofstede et al.,
150 2010) is believed by many to provide the best available framework for understanding differences between
151 cross-cultural research on managerial and organisational issues (Kreacic & Marsh, 1986; Randall, 1993)
152 and has hence guided research for several decades (Tsui et al., 2016). Even though Hofstede's
153 epistemology of national culture has been recently criticised for its theoretical, methodological
154 underpinnings (McSweeney, 2002, 2020), and effectiveness (Bearden et al., 2006; McSweeney, 2013;
155 McSweeney et al., 2016; Minkov, 2018), it is still a valid and useful model for understanding the major
156 differences between national-level cultures, especially in quantitative research, where applied categories

157 should be as generally applicable as possible (Beugelsdijk et al. 2017). For example, based on a review of
158 180 empirical papers published between 1980 and 2002 that applied the national culture model, Kirkman
159 et al. (2006) found that Hofstede's framework was successfully used among researchers to examine
160 cultural differences and that most country differences predicted in the model were supported by these
161 empirical works. Beugelsdijk et al. (2015) examined how Hofstede's dimensions have developed over
162 time by analysing data across two generational cohorts representing almost 100 countries and found that
163 differences between countries still largely followed the original suggestions by Hofstede, meaning that
164 the model could still be applied for inter-country comparisons. Indeed it has been lately applied for
165 understanding, e.g., innovation performance (Tekic & Tekic 2021), social responsibility performance
166 (Liou et al., 2021), user-generated product information seeking (Leonhardt et al., 2020), and ownership
167 control (Venkateswaran & George, 2020). As there is ample evidence demonstrating the reliability,
168 validity and stability of Hofstede's model of national culture over time, the present study has adopted it.

169 According to this model, national culture can be categorised into six dimensions (Hofstede et al., 2010).
170 The first, power distance, reflects the tolerance degree of people in terms of inequality (Hofstede, 2001).
171 Managers, for example, are likely to hold onto their knowledge to sustain their power in large power
172 distance societies. In addition, knowledge tends to be limited to managers in larger power distance
173 societies and rarely reach bottom-line employees due to the rigid hierarchy in these societies. KFOC
174 strongly affects employees' beliefs about knowledge-sharing, learning, and innovation, but the effects of
175 KFOC on organisational performance are mitigated in large power distance societies, because knowledge
176 flow might be restricted by the high hierarchies of organisations as well as by the knowledge-hiding
177 behaviour of employees. Therefore, it can be assumed that:

178 H_{PDa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
179 financial) is stronger in small power distance regions than in large power distance regions.

180 The second, individualism and collectivism describe the relationship between the individual and the group
181 in a specific society (Hofstede, 2001). KFOC emphasises an environment in which employees can trust
182 and collaborate with each other through knowledge-sharing, which is more easily developed in collective
183 societies, as employees are more naturally and socially integrated and thus more likely to work towards
184 their mutual benefit when they recognise each other as members of the same group. On the other hand,
185 individualistic employees are mainly focused on their own benefits and are less likely to share knowledge
186 in a large group unless it directly benefits them. Therefore, it can be assumed that:

187 H_{ICa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
188 financial) is stronger in collective regions than in individualistic regions.

189 The third, femininity versus masculinity mirrors the differences in gender for a society (Hofstede, 2001).
190 Employees in feminine-oriented societies tend to focus more on relationships and the work environment
191 (Hofstede, 2001) and are thus more willing to enjoy a KFOC in which they trust and collaborate with each
192 other. In contrast, employees in masculine-oriented societies are more centred around earnings and work
193 outcomes (Hofstede, 2001) and thus more likely to hide knowledge as a way to protect their status. In
194 addition, the learning environment is more equal for employees in feminine societies than in masculine
195 societies. Therefore, it can be assumed:

196 H_{FMa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
197 financial) is stronger in feminine regions than in masculine regions.

198 The fourth, uncertainty avoidance reflects the degree of ambiguity tolerance in a society (Hofstede, 2001),
199 and differences in the uncertainty tolerance of people highlights distinctive attitudes towards KM. It is
200 more possible for KFOC to be inherently embedded in the organisations of weak uncertainty avoidance
201 regions, because people are more likely to trust each other in these societies than in strong uncertainty
202 avoidance societies (Hofstede, 2001). In addition, new ideas are more easily accepted in weak uncertainty

203 avoidance regions (Hofstede, 2001) than in strong uncertainty avoidance regions. Therefore, it can be
204 assumed that:

205 H_{UAa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
206 financial) is stronger in weak uncertainty avoidance regions than in strong uncertainty avoidance regions.

207 The fifth, long-term versus short-term orientation denotes people's values and beliefs about the past,
208 present, and future in societies (Hofstede et al., 2010). For example, business values like learning, honesty,
209 adaptiveness, accountability, and self-discipline are more attractive in long-term oriented societies, while
210 business values like freedom, rights, achievement, and thinking for oneself are more popular in short-term
211 oriented societies. Thus, it is obvious that KFOC is more likely to be nurtured in long-term oriented
212 societies. On the other hand, it is difficult to obtain a return of investment in KM in a short amount of
213 time, since it takes time for organisations and employees to embark on KM. For instance, one of the
214 obvious obstacles in KM is a lack of KFOC, and it is impossible to cultivate KFOC overnight; considerable
215 effort and time are required to change employees' attitudes and behaviour in order to get them to embrace
216 KM. In addition, transforming an innovative idea into a product is always time-consuming. However, a
217 short-term orientated society expects quick results, while the expectation of long-term (e.g., ten years)
218 profits is quite the norm in long-term oriented societies. As such, KFOC, which emphasises continuous
219 knowledge-sharing and innovation, contradicts the value of a short-term oriented society. Therefore, it
220 can be assumed that:

221 H_{LSa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
222 financial) is stronger in long-term oriented regions than in short-term oriented regions.

223 The last, indulgence-oriented versus restraint-oriented culture describes people's perceptions of happiness
224 and gratification in a nation (Hofstede et al., 2010). Studies on the happiness of knowledge-intensive
225 workers have attracted much attention from scholars (Engelbrecht, 2007; Salas-Vallina et al., 2018). It has

226 been argued that happiness strengthens the relationship between employees and their activities and
227 outcomes, such as the knowledge-sharing–team proactivity relationship (Liu et al., 2018) and the authentic
228 leadership–creativity relationship (Semedo et al., 2017). More people perceive themselves as happy in
229 indulgence-oriented societies. In addition, people are more open to communicate with others in
230 indulgence-oriented societies (Hofstede et al., 2010). It is thus reasonable to assume that KFOC is more
231 easily fostered in indulgence societies. Therefore, it can be assumed that:

232 H_{IRa-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
233 financial) is stronger in indulgence-oriented regions than in restraint-oriented regions.

234 ***2.2.2 Moderating Effects of National Economy***

235 Besides national culture, the national economy also affects the KM activities of organisations. For
236 example, knowledge creation is more active in the developed countries of the world, in which more patents
237 are granted. In addition, more advanced techniques and tools are invented in developed countries. Such
238 innovation and invention cannot be achieved without a mature KFOC. Therefore, it can be assumed that:

239 H_{Ea-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
240 financial) is stronger in developed economies than in developing economies.

241 ***2.2.3 Moderating Effects of Industries***

242 Furthermore, the characteristics of KM vary across industries. It is believed that the service industries are
243 more knowledge-intensive than the traditional manufacturing industries, because service products are
244 intangibly produced through the knowledge interaction of the workers involved in KM activities (Kianto
245 & Andreeva, 2014). In addition, employees' knowledge, experience, and skills are more important in
246 service industries than in the manufacturing industry (Kianto et al., 2010). It is therefore more necessary
247 to especially pursue KM in service industries in order to foster a KFOC. Moreover, Chawla et al. (2010)

248 argued that KFOC is more mature in IT-related service firms than in manufacturing firms. Once a KFOC
249 is well-formulated, firms in service industries can enjoy a competitive advantage by better managing their
250 knowledge. Therefore, it can be assumed that:

251 H_{Ia-c} : The relationship between KFOC and organisational performance (a. overall, b. financial, c. non-
252 financial) is stronger in service industries than in manufacturing industries.

253 **3. Research Methods**

254 **3.1 Meta-Analysis**

255 Meta-analysis is a type of statistical analysis of a large set of empirical results from individual studies
256 used to synthesise the findings (Hartung et al., 2008; Hempel, 2020) by correcting the errors and biases
257 of quantitative scholarly works (Schmidt & Hunter, 2015). This technique is widely used in educational,
258 social, medical sciences (Cheung, 2015) as well as business studies (Daryanto & Song, 2021; Nardi et al.,
259 2020). This study aims to evaluate the relationship between KFOC and organisational performance across
260 different empirical studies; therefore, a meta-analysis approach was adopted to integrate and correct the
261 findings of these previous studies. Group analysis for categorical moderators (Noel & Todd, 2012) was
262 also applied to examine whether the moderators were related to the effect sizes in our study. This study
263 adopted the seven steps of Cooper (2017) to carry out this meta-analysis, as shown in Table 3-1.

264 Table 3-1: Procedures of meta-analysis

265 <Please insert Table 3-1 here>

266 **3.2 Coding of Variables**

267 **3.2.1 Primary Study Variables**

268 **Knowledge-Friendly Organisational Culture.** Organisational culture influences organisations'
269 views and practices about KM, and KFOC is embedded in organisations and facilitates their KM
270 ~~practices~~ activities. Studies have regarded KFOC in a variety of ways; for instance, in a KFOC,

271 employees are free to share their knowledge (Boumarafi & Jabnoun, 2008; Chen & Liang, 2011;
272 Chuang et al., 2013; Mageswari et al., 2017; Mousavizadeh et al., 2015) and are open to expressing
273 their ideas (Akgün et al., 2014; Feng et al., 2014; Rezaei et al., 2017). In addition, in a KFOC, a
274 supportive learning environment (Khan et al., 2015; Lee et al., 2012; Moon & Lee, 2014; Mills &
275 Smith, 2011) is created to improve the capabilities of employees. Employees trust (Chen et al.,
276 2011; Giampaoli & Ciambotti, 2016; Kamhawi, 2012; Lee et al., 2012; Noh et al., 2014; Jain &
277 Moreno, 2015) and smoothly collaborate with each other (Chen et al., 2011; Lee et al., 2012;
278 Migdadi et al., 2016; Moon & Lee, 2014; Rezaei et al., 2017). Employees are also open-minded
279 and encouraged to propose innovative proposals (Samson et al., 2017; Santos-Vijande et al., 2013).
280 This study defines KFOC as a set of shared values and beliefs in an organisation that promotes
281 employees' passion for learning, openness to innovation, trust, collaboration, and knowledge-
282 sharing. Therefore, measurements of organisational culture (climate, environment, values, and
283 beliefs) that reflect a knowledge-sharing, open, trusting, learning-oriented, innovative, and
284 collaborative culture of KM were incorporated.

285 **Organisational Performance.** Organisational performance was mainly measured in terms of
286 three aspects. The first category applies to financial indicators, such as return on investment, sales
287 growth, profitability, return on equity, cash flow, and market share, used to measure financial
288 performance of the firm. Financial performance was coded as 'F'. The second category emphasised
289 non-financial measurements, such as cost deduction, stakeholders' satisfaction, time to market,
290 organisational reputation, personnel development, and research and development, and it was coded
291 as 'NF'. The last category combined both financial and non-financial indicators to measure the
292 overall organisational performance and was coded as 'OP'.

293 **3.2.2 Moderators**

294 **National Cultures.** Six dimensions of Hofstede et al.'s (2010) national culture framework—power
295 distance (PD), individualism vs. collectivism (IC), masculinity vs. femininity (MF), uncertainty
296 avoidance (UA), long-term orientation vs. short-term orientation (LS), and indulgence vs.
297 restrained (IR) culture—were coded based on the regions where the data of the selected studies
298 were collected.

299 In this study, each dimension of national culture was classified into two groups to compare the
300 impacts of this parameter on the relationship between KFOC and organisational performance. The
301 values of each cultural dimension in 104 countries and regions ([www.hofstede-](http://www.hofstede-insights.com/product/compare-countries/)
302 [insights.com/product/compare-countries/](http://www.hofstede-insights.com/product/compare-countries/)) were sequenced with increasing value. The mean value
303 (Robie et al., 1998) of each culture dimension was calculated, and a threshold value, which is the
304 closest to the mean value, was identified. Two groups were generated by comparing each nation's
305 (or region's) value with the threshold value. Classification details are shown in Table 3-1.

306 Table 3-2: National culture classification

307 <Please insert Table 3-2 here>

308 **Economies.** Developing economies, economies in transition, and developed economies are the
309 three broad categories used to demonstrate the economic status of countries and regions (UN,
310 2018). Economy was coded as 'developing vs. transition vs. developed' based on the geographic
311 location of each conducted survey. The codification of economy in this study was done according
312 to the *World Economic Situation and Prospects 2018*, published by the United Nations (2018).

313 **Industry.** This study identified three main types of industries the past studies sampled:
314 manufacturing, service, and multiple industries. The manufacturing industry makes tangible
315 products, while service industries are mainly comprised of financial services, consultancy services,
316 IT services, and other services. The studies investigating research models from the manufacturing

317 industry were coded as 'Manufacturing', and the studies collecting data from the service industries
318 were coded as 'Service'. The third group, which comprised surveys across dissimilar industries
319 involving both service and manufacturing, was coded as 'Multiple'.

320 **3.3 Search Strategy and Results**

321 The search strategy was developed based on the view of Hempel (2020) and Cooper (2017), and it was
322 derived from the research questions to locate as many relevant studies as possible. To accomplish this
323 task, first, the Scopus database was used to locate research papers, since more KM journals are indexed
324 in this database than in the Web of Science. Second, as 'KFOC' terms varied across the studies, the terms
325 'knowledge management' and 'performance' were used—based on their appearance in the title, abstract,
326 or keywords of the target the papers published from 1975 to 2018—to obtain as many papers as possible
327 ². In this way, 32,496 papers were found from the Scopus database, of which 31,526 were written in the
328 English language. These were limited to the subjects of computer science; business management and
329 accounting; engineering; social science; decision science; economics; econometrics and finance;
330 psychology; arts and humanities; and multidisciplinary. Then, 24,663 remaining papers of the 31,526
331 papers were checked according to the contents of their abstracts and keywords. After excluding 23,189
332 papers that were not related to the present research, 136 papers that were unobtainable were also excluded,
333 while six papers from references lists were included; thus, 1,344 papers were used for the next step of
334 analysis.

335 Table 3-3: Paper selection procedures

336 <Please insert Table 3-3 here>

² 'Knowledge management' and 'performance' were used to locate papers because (1) we aimed to collect as many papers in the KM field as possible; (2) KFOC terms varied from study to study; and (3) the adoption of 'culture' or 'organisational culture' as key search terms could produce too many irrelevant papers.

337 After excluding unexpected papers (366 irrelevant papers, 140 non-empirical papers, two non-English
338 language papers, 164 papers without reporting correlation coefficients or other parameters that can be
339 used to calculate correlation coefficients, 173 inappropriate papers on measurement, 43 papers measuring
340 KM as one variable, eight sub-item correlation reporting papers, two incorrect correlations reporting
341 papers, two duplicated papers, 34 unmatched methodical papers, two papers not showing measurements,
342 22 literature reviews, 79 papers on team performance, 47 papers on job performance, and 78 papers on
343 innovation performance), 182 papers related to KM and organisational performance were selected for the
344 primary data coding process.

345 Table 3-4: Paper selection procedures and exclusion criterion

346 <Please insert Table 3-4 here>

347 The remaining 182 papers were classified in detail. Five papers lacked relevant information (e.g., variable
348 measurement); so they were excluded. Ten papers were outside the scope of the desired measurement and
349 were excluded as well. Fifty studies mainly focused on the relationships between KM activities and
350 organisational performance. One paper was excluded due to its duplicate effect sizes. Finally, 116 papers
351 concerning KM practices and organisational performance were coded in detail. Among these 116 papers³,
352 56 papers about KFOC and organisational performance were analysed in this study.

353 Table 3-5: Paper selection for final data coding

354 <Please insert Table 3-5 here>

355 **3.4 Information Collection and Evaluation**

356 The authors took part in discussion rounds regarding the data coding details and came to an agreement on
357 a list of data items to code as well as the procedures for such. In this phase, KFOC and organisational

³ Among these 116 studies, 56 papers were related to KFOC and organizational performance. Twenty-two papers were related to knowledge-based leadership and organizational performance. Fourteen papers were about strategic KM and organizational performance. Fourteen papers were about knowledge codification strategy and organizational performance. Twelve papers were about knowledge personalization strategy and organizational performance. Forty papers were about KM-supportive IT and organizational performance, while forty-five papers were about organizational learning and organizational performance.

358 performance were coded, which included the authors' names, correlation coefficients (other parameters
359 were transformed into correlation coefficients if possible; Appendix B shows the calculation in detail),
360 sample size, regions and industries of the data collected, and measurement of KFOC and organisational
361 performance. During this procedure, the authors also assessed the quality of the studies to re-examine if
362 those selected were appropriate to include in the final dataset. Details regarding the descriptive statistics
363 of the studies are shown in Appendix A.

364 **4. Results**

365 **4.1 Main Effects Analysis**

366 A random-effects model was used to analyse the relationship between KFOC and organisational
367 performance, because the effect sizes and sampling frameworks were varied (Borenstein et al., 2010). In
368 calculating with CMA 3.0, this study shows a positive comprehensive effect size between KFOC and
369 overall performance ($r = 0.438$, 95% confidence interval (CI): 0.362, 0.508, Z-value = 10.211, $p < 0.001$,
370 number of studies: 30, total sample size: 9,515), which supports H1a. In addition, KFOC is positively
371 related to financial performance and non-financial performance, therefore supporting H1b ($r = 0.375$, 95%
372 CI: 0. 0.190, 0.533, Z-value = 3.840, $p < 0.001$, number of studies: 14, total sample size: 2,851) and H1c
373 ($r = 0.443$, 95% CI: 0.367, 0.513, Z-value = 10.275, $p < 0.001$, number of studies: 24, total sample size:
374 4,190).

375 Table 4-1: Main effect analysis

<Please insert Table 4-1 here>

377 **4.2 Moderator Analysis**

378 **National Cultures.** Most of the national culture dimensions did not affect the KFOC–overall
379 organisational performance relationship. As shown in Table 4-2, H_{PDa} , H_{ICa} , H_{FMa} , H_{UAa} , and H_{LSa}
380 were not supported, because none of the Q_{between} values of the groups of small and large power
381 distance, collectivism and individualism, femininity and masculinity, weak and high uncertainty

382 avoidance, and long-term and short-term orientation were statistically significant. However, the
383 restrained and indulgence-oriented culture differed regarding their impacts on the KFOC–overall
384 organisational performance relationship due to the significant Q_{between} value (Q_{between} : 5.590;
385 $df(Q):1$; $p\text{-value}: 0.018^* < 0.1$), but the overall effect size of the indulgence-oriented culture was
386 smaller than that of the restrained culture ($r_{\text{indulgence}} = 0.330^{***} < r_{\text{restrained}} = 0.504^{***}$); thus, H_{IRa}
387 could be rejected. In contrast, none of national culture dimensions had an impact on the KFOC–
388 financial performance relationship or the KFOC–non-financial performance relationship. Detailed
389 insignificant results can be found in Appendix E.

390 Table 4-2: Categorical moderator test of national culture (the KFOC–overall organisational performance relationship)
391 <Please insert Table 4-2 here>

392 Note: ^[1]The study of Kamhawi (2012) and ^[2]Boumarafi and Jabnoun (2008) were dropped.

393 **National Economy.** The differences in economy did not affect the KFOC–organisational
394 performance relationship in terms of the insignificant moderating tests, which did not support HE_a ,
395 HE_b , or HE_c . Detailed empirical results can be found in Appendix E.

396 **Industry.** Industry⁴ was a categorical moderator strengthening the KFOC–financial performance
397 relationship in service industries ($r_{\text{service}} = 0.590^{***} > r_{\text{manufacturing}} = 0.334^{**}$), which supported H_{Ib}
398 (Table 4-3), whereas the moderating effects of industry on the KFOC–overall organisational
399 performance relationship and the KFOC–non-financial performance relationship were
400 insignificant, thus not supporting HI_a and HI_c . Details on the insignificant results can be found in
401 Appendix E.

402 Table 4-3: Categorical moderator test for industry (KFOC–financial performance relationship)
403 <Please insert Table 4-3 here>

404 Note: ^[2]The study of Marouf (2016) was excluded.

⁴ Studies not reporting on industry or those collecting data from multiple industries were excluded for the moderating test for industry type.

405 <Please insert Figure 4-1 here>

406 Figure 4-1: Empirical results of KFOC–organisational performance relationships

407 **5. Discussion and Implications**

408 **5.1 Key Findings**

409 A KFOC can help an organisation improve its performance by helping it create, acquire, and apply
410 knowledge more effectively and efficiently. This study supported this argument by showing a significant
411 accumulative effect size ($r_{\text{KFOC-OOP}} = 0.438$), confirming that KFOC was positively related to overall
412 organisational performance. This finding is in line with a large number of previous studies, such as Wong
413 and Wong (2011), Baker and Sinkula (1999), Kamhawi (2012), thus supporting H1a. In addition, the
414 finding is in agreement with earlier studies, such as Kianto et al. (2013), Collins and Smith (2006), and
415 Hsu and Sabherwal (2012), which argued that KFOC is positively related to the financial performance of
416 firms. Hypothesis H1b was also supported through the demonstration of a significant overall effect size
417 ($r_{\text{KFOC-FP}} = 0.375$). Finally, it is clear from this study that KFOC was positively associated with the non-
418 financial performance of organisations ($r_{\text{KFOC-NFP}} = 0.443$), which corroborates the findings of prior
419 research, such as Tan and Wong (2015), Suchahyo et al. (2016), and Chuang et al. (2013), thus supporting
420 hypothesis H1c.

421 The above-mentioned positive findings on the relationships between KFOC and organisational
422 performance can be explained by the fact that, if the organisational culture is more friendly towards
423 knowledge, the organisation can manage their knowledge more successfully (Davenport et al., 1998;
424 Mousavizade & Shakibazad, 2019). In a KFOC, employees understand that knowledge is important and
425 believe that KM is beneficial in their jobs. Positive behaviour toward knowledge is common in
426 organisations with KFOC; for instance, employees trust and share their knowledge to help each other, are
427 open to experiment and create knowledge for innovation, smoothly collaborate to solve problems, and are

428 willing to learn to improve their skills. In this way, employees can obtain the latest knowledge they need
429 to improve their performance, and organisations can benefit from their employees' efforts in KM activities
430 by increasing their competitive advantage over rivals.

431 The impacts of national culture on the KFOC–organisational performance relationship are complex, as
432 not all comparisons of the different dimensions of national culture are significant, and some comparisons
433 are inconsistencies. These inconsistencies might be explained by the fact that it is the organisational
434 culture—rather than the national culture—that significantly affects organisational performance. KFOC is
435 one of the internal causes behind the success of firms, whereas national culture is an external cause behind
436 facilitated or hindered KFOC (Jacks et al., 2014)—performance relationships. On the other hand, different
437 degrees of indulgence of regions were found to significantly impact the relationship between KFOC and
438 overall organisational performance, thus rejecting H_{IRa} , because the overall effect size in a restrained
439 culture was found to be larger than in an indulgence-oriented culture ($r_{indulgence} = 0.330^{***} < r_{restrained} =$
440 0.504^{***}). This contradictory finding can be explained by the following factors. People in restrained
441 cultures generally feel helpless in their lives (Hofstede et al., 2010), but the KFOC emphasis on building
442 a trusting and collaborative culture conducive to knowledge-sharing mitigates this feeling of helplessness
443 among the employees. This explains why the effect size in the restrained culture was stronger. In other
444 words, KFOC is more effective in enhancing overall organisational performance once it is formulated in
445 a restrained culture. This conclusion is also applicable for the relationship between KFOC and financial
446 as well as non-financial performance. However, the distinctions were not statistically obvious when
447 compared to indulgence-oriented and restrained cultures for these two types of organisational
448 performance.

449 Comparisons between developed and developing economies in terms of KFOC–organisational
450 performance relationships were not statistically significant, thus not supporting H_{Ea} , H_{Eb} , and H_{Ec} . Despite

451 the insignificant group comparisons, it was revealed that the effect sizes were larger in developing
452 economies than in developed economies, which was contradictory to the hypotheses. This might be
453 explained by the fact that, in general, KM in firms in developed economies is more mature than in firms
454 in the developing economies. Such KM maturity was found to be homogeneous in developed economies,
455 making it difficult to lead to competitive advantages. In contrast, the KM maturity level in developing
456 economies was found to be heterogeneous, and a higher level of KM maturity was found to lead to the
457 better performance of firms in these economies.

458 In line with Kianto and Andreeva (2014), this study found that the KFOC–financial performance
459 relationship was strengthened in the service industries ($r_{\text{manufacturing}} = 0.334^{**} < r_{\text{service}} = 0.590^{***}$), which
460 can be explained by the fact that service industries are more knowledge-intensive than the manufacturing
461 industry (Kianto & Andreeva, 2014). With a mature KFOC, firms in service industries can achieve better
462 financial performance than those in the manufacturing industry, because it is more important for service
463 firms to have a culture in which employees can easily share, obtain, and apply knowledge. A similar
464 conclusion was found for the KFOC–overall organisational performance relationship, although these
465 comparisons were not significant. However, the comparison of these industries in terms of the relationship
466 between KFOC and non-financial performance was insignificant, but the integrated effect size was larger
467 in the manufacturing industry than in the service industries. This inconsistency may be due to the
468 heterogeneity of the service industries, as some service industries are not more knowledge-intensive than
469 the manufacturing industry (Kianto & Andreeva, 2014), and non-financial performance, such as product
470 quality improvement, is more sensitive to KM in the manufacturing industry.

471 **5.2 Theoretical Implications**

472 This study significantly contributes to knowledge-based theory and international business research from
473 the following perspectives. First, to the best of the authors' knowledge, this study is the first to present

474 evidence regarding the KFOC–organisational performance relationships using a meta-analysis technique.
475 Moreover, this study deepens our understanding of knowledge-based theory by proving that a KFOC can
476 help organisations realise a competitive advantage by fostering a widely accepted belief among employees
477 that embracing positive knowledge-related behaviour can enhance the efficiency of knowledge flows in
478 the organisation. With the meta-analysis approach, this study expands on the earlier review studies of
479 Inkinen (2016) and Gupta and Chopra (2018) by offering a specific comprehensive magnitude between
480 KFOC and overall organisational performance, KFOC and financial performance, and KFOC and non-
481 financial performance. This study also remarkably improves the generalisability of the impacts of KFOC
482 on organisational performance through clarifying the contradictory relationships between them by using
483 a large number of research subjects across many different empirical studies (9,515 subjects from 30 studies
484 for the KFOC–overall organisational performance relationship, 2,851 subjects from 14 studies for the
485 KFOC–financial performance relationship, and 4,190 subjects from 24 studies for the KFOC–non-
486 financial performance relationship).

487 Second, this study has enhanced our knowledge of the impact of national culture on the relationship
488 between KFOC and organisational performance, thus extending knowledge-based theory by considering
489 the impacts of cross-cultural factors and contributing to international business research. The present study
490 also provides novel knowledge by showing that a restrained culture rather than an indulgence-oriented
491 culture strengthens KFOC and its benefits, while the differences in other dimensions of national culture
492 almost equally affected the KFOC–organisational performance relationship. Thus, this study contributes
493 to international business research by generating new knowledge about the role of national culture and
494 economy in KM. In addition, this is one of the few studies examining the impacts of industry on the
495 relationships between KFOC and organisational performance. It enhances our understanding in this area

496 by confirming that the KFOC–overall organisational performance relationship is stronger in service
497 industries than in manufacturing industries.

498 **5.3 Managerial Implications**

499 This study also has several useful practical applications, especially for organisations with cultures that are
500 knowledge averse. First, it offers KM practitioners direct empirical evidence of the relationship between
501 KFOC and its benefits, suggesting that knowledge managers should balance the cultural and technological
502 aspects of KM. Therefore, KM leadership, which refers to the capability of leaders to influence others in
503 terms of embracing KM, should be developed to foster KFOC, especially in firms against KM.
504 Additionally, rapid technology development, such as Industry 4.0 and 5G, and fluctuating business
505 environments, such as de-globalisation, re-shoring, and the COVID-19 pandemic, have changed the way
506 of doing business for firms, thus requiring firms to embrace a KFOC to sustain a competitive advantage.
507 In firms, certain practices should be adopted to create a set of shared values and beliefs encouraging
508 employees to be passionate about learning, open to innovation, trusting, collaborative, and willing to share
509 their knowledge with each other. These practices include, for instance, organising communities of
510 practice, sharing knowledge during meetings, motivating learning and training through examinations,
511 fostering trust through teamwork, and promoting a high tolerance for the unexpected results of innovative
512 ideas.

513 This study also informs managers that not all dimensions of national culture impact KFOC–organisational
514 performance relationships. This finding may help managers in multinational companies (MNCs) make
515 better decisions when they invest in a new overseas market in the post-pandemic era. They should
516 particularly pay attention to developing KFOC, since it may offset some negative impacts of national
517 culture on KM. For instance, KFOC facilitates knowledge-sharing among employees, including managers
518 and subordinates, thus reducing knowledge gaps within the tall managerial hierarchies in larger power

519 distance regions. In addition, managers should be aware that organisational culture is generally easier to
520 change than national culture. Therefore, they are encouraged to identify appropriate strategies to align KM
521 needs by taking advantage of positive cultural backgrounds of a nation for KM and mitigate the negative
522 impacts of national culture through KFOC. For instance, managers might encourage continuous learning
523 without extra remuneration for employees in a restrained culture, as employees are more likely to learn
524 by themselves, whereas employees in an indulgence-oriented culture are unlikely to learn by themselves
525 without motivation, and managers might encourage them to learn by offering them bonus pay. Finally,
526 this study recommends that knowledge managers, especially those in service industries, should be more
527 dedicated to fostering a KFOC in their organisations, since knowledge is more critical for the success of
528 service firms.

529 **5.4 Limitations and Future Research**

530 Despite the fact that this study provides significant theoretical contributions and valuable managerial
531 implications, there are some specific limitations that could be addressed in the future. First, this study only
532 included papers written in English from 1975 to 2018 from the Scopus database, and thus it might suffer
533 from a language bias and a database bias, although such biases were considered minimal, according to
534 past research (Livingston et al., 2008). Second, this study considered KFOC as an integrative variable, so
535 that the relationships between the sub-dimensions of KFOC—such as knowledge-sharing, trusting,
536 learning-focused, collaborative, and innovation-fostering cultures—and organisational performance
537 remain unexplored. Future studies may examine these relationships in detail. Third, Hofstede's national
538 culture dimensions have been criticised in the sense that their values do not represent the current situations
539 of some nations, as Minkov (2018) argued. For instance, Confucian countries are becoming more
540 individualism-oriented nowadays. Further studies might therefore adopt updated national culture values
541 to replicate our model in exploring novel knowledge. For example, a newly developed national culture

542 dimension—flexibility versus monumentalism (Minkov et al., 2018)—might be added to the research
543 model. Fourth, the industries were only generally categorised into manufacturing, service, and multi-
544 industries in this study; however, the effect sizes in specific industries, such as IT industries and finance
545 industries, might be compared in the future. In addition, other moderators, such as national income level,
546 educational development, total research and development investment, respondent characteristics, and year
547 of data collection, might be applied in future studies to explain the variance across studies. Finally, meta-
548 analysis studies can be conducted to investigate the relationships between other KM practices (i.e., KM
549 leadership, KM strategies, KM-supportive IT, and organisational learning) or ~~knowledge processes~~ KM
550 activities (i.e., knowledge creation, sharing, application, retention, etc.) and different types of
551 performance, such as team or project performance, employee job performance, and innovation
552 performance. Examinations of these relationships might be conducted through big data analytics and
553 machine learning techniques as well.

554

6. Conclusions

555 The importance and novelty of this study is that it has clarified the complex relationship between KFOC
556 and organisational performance using a meta-analysis technique. For the first time, this study has provided
557 a specific answer to the essential questions: (1) what is the relationship between KFOC and organisational
558 performance? and (2) do contextual factors (national culture, economy, and the type of industry) moderate
559 the KFOC–organisational performance relationships? based on synthesising a large number of subjects
560 from many studies. We confirmed that KFOC is positively related to organisational performance by
561 correcting the mixed relationships in earlier studies. These findings support this study’s contributions to
562 the literature by providing specific strength of the relationship between KFOC and organisational
563 performance and thereby enhancing the generalisability of the KFOC–organisational performance
564 relationship. We also found that the restrained culture strengthens the KFOC–overall organisational

565 performance relationship and that the KFOC–financial performance relationship is stronger in service
566 industries, which contributes to KM theory by highlighting the impacts of contextual factors on this
567 relationship. The study remarkably deepens our understanding of the role of contexts in affecting KM and
568 its benefits. Finally, this study raises many questions that are worth investigating in the future, such as the
569 relationships between other KM practices or ~~knowledge processes~~ KM activities and different types of
570 performance, e.g., team performance, employee performance, and innovation.

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Appendices

Appendix A: Descriptive statistics

As shown in Figure A.1, studies concerning KFOC–organisational performance relations have become more popular after 2005, and a greater number of studies were published after 2010.

<Please insert Figure A.1 here>

Figure A.1: Studies on KFOC–organisational performance relationships

Table A.1: Descriptive statistics of studies examining the KFOC–overall organisational performance relationship

<Please insert Table A.1 here>

Table A.2: Descriptive statistics of studies examining the KFOC–financial performance relationship

<Please insert Table A.2 here>

Table A.3: Descriptive statistics of studies examining the KFOC–non–financial performance relationship

<Please insert Table A.3 here>

Appendix B: Effect size transformation

Appendix B1: Converting t-value to effect sizes

Several test statistics, such as t-statistics, Chi-square, F-test score, p-values, and Z-statistics, can be converted into r correlations. In this research, nine studies reported t-statistics, while other statistics were not found. Then, formulas from previous studies (Rosenthal, 1991) was adopted to transform the t-statistics into correlation coefficients.

$$ESr = \frac{t}{\sqrt{t^2 + df}}$$

Appendix B2: Combining effect sizes across studies

Many studies reported more than one correlation coefficient for multiple measures. For instance, Lee et al. (2012) adopted trust, collaboration, and learning to measure KFOC and reported three correlation coefficients. In such cases, the mean effect sizes of the three correlation coefficients were combined by the methods proposed by Noel and Todd (2012), Rosenthal (1991), and Shadish and Haddock (1994).

First, the Z-values (ESZ_r) of each correlation coefficient (r) were standardized by:

$$ESZ_r = 0.5 \log_e \left[\frac{1+r}{1-r} \right] \text{ (Lim et al., 2011);}$$

Then, the mean Z_r effect size was calculated by the following equation:

$$\overline{ESZ_r} = \frac{\sum(WZ_r * ESZ_r)}{WZ_r}, \text{ } WZ_r = n - 3,$$

where n is the sample size for each study (Lim et al., 2011);

Finally, the standardized correlation was converted back from the mean Z_r as follows:

$$\overline{ESr} = \frac{e^{2\overline{ESZ_r}} - 1}{e^{2\overline{ESZ_r}} + 1} \text{ (Lim et al., 2011).}$$

Appendix C: Publication bias test

The fail-safe N test is commonly used to detect ‘file-drawer’ problems. In the seminal paper of Rosenthal, (1979), the author proposed an indicator called the ‘failsafe N’ to indicate the number of excluded studies with a zero effect size that can converse present conclusion of a meta-analysis. Rosenthal also suggested a general rule for detecting publication bias with the failsafe N parameter. The ‘file-drawer’ problem does not exist if the failsafe N is larger than (or equal= to) $5k + 10$ (k is the number of studies in a meta-analysis), because it is unlikely to have many unpublished studies in file drawers (Rosenthal, 1979). The test results showed there was no publication bias in these studies, as shown in Table C.1.

Table C.1: Publication bias analysis

<Please insert Table C.1 here>

Appendix D: Homogeneity test

The Q-statistic and I^2 (Huedo-Medina et al., 2006; Noel & Todd, 2012) can be used to assess the heterogeneity of a meta-analysis, while the Q-statistic only shows whether the meta-analysis study is heterogenous or not; however, I^2 can quantify the extent of the heterogeneity (Noel and Todd, 2012). I^2 explains the ratio of between-study variance to total variance (Higgins & Thompson, 2002), while the total variance is comprised of between- and within-study variance (Noel and Todd, 2012). In general, $I^2 \approx 25$, $I^2 \approx 50$, and $I^2 \approx 75$ denotes low, medium, and high heterogeneity, respectively ($I^2 = 0$ denotes word homogeneity) (Huedo-Medina *et al.*, 2006; Noel and Todd, 2012). Therefore, this study applied I^2 to evaluate the heterogeneity of the meta-analysis. As shown in Table D.1, the variation in effect sizes cannot be explained by the sampling error only, which is necessary to examine the effects of moderators and the roots of the heterogeneity.

Table D.1: Homogeneity test

<Please insert Table D.1 here>

Appendix E: Moderating effects of contextual factors

Table E.1: Categorical moderator test for national culture (KFOC–financial performance relationship)

<Please insert Table E.1 here>

Table E.2: Categorical moderator test for national culture (KFOC–non-financial performance relationship)

<Please insert Table E.2 here>

Table E.3: Categorical moderator test for economy (KFOC–overall organisational performance relationship)

<Please insert Table E.3 here>

Table E.4: Categorical moderator test for economy (KFOC–financial performance relationship)

<Please insert Table E.4 here>

Table E.5: Categorical moderator test for economy (KFOC–non-financial performance relationship)

<Please insert Table E.5 here>

Table E.6: Categorical moderator test for industry (KFOC–overall organisational performance relationship)

<Please insert Table E.6 here>

Table E.7: Categorical moderator test for industry (KFOC–non-financial performance relationship)

<Please insert Table E.7 here>

Tables

Table 3-1: Procedures of meta-analysis

SN	Steps in research synthesis	Corresponding section
1	Formulating the problem: Identify research variables and targeted relationships	Section 3.2
2	Searching the literature	Section 3.3
3	Gathering information from studies	Section 3.4
4	Evaluating the quality of the studies	Section 3.4
5	Analysing and integrating the findings of the studies	Section 4
6	Interpreting the results	Section 5
7	Presenting the results	The whole paper

Table 3-2: National culture classification

Dimensions	Mean	Threshold	Rules	Code	Number of regions
Power distance	64.59	66	Larger than (included) 66	L	46
			Less than 66	S	58
	38.62	38	Less than (included) 38	C	64

Individualism vs. collectivism			Larger than 38	I	40
Masculinity	47.58	47	Less than (included) 47	F	54
			Larger than 47	M	50
Uncertainty avoidance	64.11	65	Larger than (included) 65	S	53
			Less than 65	W	51
Long-term vs. short-term orientation	42.93	41	Larger than 41	L	41
			Less than (included) 41	S	46
Indulgence vs. restraint	47.99	48	Larger than (included) 48	I	41

Table 3-3: Paper selection procedures

SN	Selection procedures & criterion	No. of studies left
1	Searched 'knowledge management' and 'performance' as keywords in the Scopus database for works from 1975–2018	32,496
2	Excluded 970 papers not in English	31,526
3	Limited in subjects: computer science, engineering, business management and accounting, decision science, social science, economics, econometrics and finance, psychology, arts and humanities, and multidisciplinary	24,663
4	Excluded 23,189 papers not on topic after screening abstract and titles year-by-year	1,474
5	Excluded 136 unobtainable papers	1,338
6	Added six papers by snowballing from reference lists	1,344
Summary: The full content of 1,344 papers was examined		

Table 3-4: Paper selection procedures and exclusion criterion

SN	Selection procedures & criterion	No. of studies left
1	Excluded 366 papers not on topic	978
2	Excluded 140 papers that are not empirical	838
3	Excluded 2 papers not in English	836
4	Excluded 164 papers not reporting correlation coefficients (or other statistics that can be used to calculate correlation coefficients)	672
5	Excluded 173 papers out of the scope of measurement	499
6	Excluded 43 papers that measured KM as a variable	456
7	Excluded 8 papers that reported sub-item correlations	448
8	Excluded 2 papers that reported incorrect correlations	446
9	Excluded 2 duplicate papers	444
10	Excluded 34 papers with unmatched methods	410
11	Excluded 2 papers not reporting measurements	408
12	Excluded 22 literature reviews	386
13	Excluded 79 papers on team performance	307
14	Excluded 47 papers on job performance	260
15	Excluded 78 papers on KM and innovation performance	182
Summary: 182 papers were left for primary data coding processes		

Table 3-5: Paper selection for final data coding

SN	Exclusion criterion for final data coding	No. of studies left
1	Excluded 50 papers about KM process and organisational performance	132
2	Excluded five papers due to lack of information	127
3	Excluded 10 papers outside scope of measurement	117
4	Excluded one paper with a duplicated effect size	116
Summary: 116 papers remained for final data coding processes, and 56 papers about KFOC and organisational performance were analysed in this study.		

Table 4-1: Main effect analysis

Study	Sample size	Total subjects	Effect size	95% Confidence interval (CI)		Two-tailed test		Result
				Lower limited	Upper limited	Z-value	p-value	
KFOC-OOP	30	9,515	0.438	0.362	0.508	10.211	0.000	Supported H1a
KFOC-FP	14	2,851	0.375	0.190,	0.533	3.840	0.000	Supported H1b
KFOC-NFP	24	4,190	0.443	0.367	0.513	10.275	0.000	Supported H1c

Table 4-2: Categorical moderator test of national culture (the KFOC-overall organisational performance relationship)

National culture dimension	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p-value	
Power distance (L)	14	0.428	0.283	0.554	5.400	0.000	Not supported $H_{PDa}^{[1]}$
Power distance (S)	15	0.451	0.361	0.532	8.818	0.000	
Total between	Q _{between} : 0.077; df(Q):1; p-value: 0.781						
Collectivism (C)	16	0.404	0.285	0.510	6.235	0.000	Not supported $H_{ICa}^{[1]}$
Individualism (I)	13	0.483	0.373	0.580	7.619	0.000	
Total between	Q _{between} : 1.025; df(Q):1; p-value: 0.311						
Femininity (F)	11	0.376	0.279	0.466	7.090	0.000	Not supported $H_{FMa}^{[1]}$
Masculinity (M)	18	0.476	0.370	0.569	7.860	0.000	
Total between	Q _{between} : 1.989; df(Q):1; p-value: 0.158						
Uncertainty avoidance (S)	13	0.392	0.258	0.510	5.431	0.000	Not supported $H_{LSa}^{[1]}$
Uncertainty avoidance (W)	16	0.479	0.391	0.557	9.489	0.000	
Total between	Q _{between} : 1.310; df(Q):1; p-value: 0.252						
Long-term orientation (L)	19	0.466	0.351	0.566	7.195	0.000	Not supported $H_{IRa}^{[1,2]}$
Short-term orientation (S)	9	0.397	0.305	0.482	7.839	0.000	
Total between	Q _{between} : 0.914; df(Q):1; p-value: 0.339						
Indulgence (I)	10	0.330	0.223	0.429	5.772	0.000	Rejected $H_{IRa}^{[1,2]}$
Restrained (R)	18	0.504	0.399	0.596	8.246	0.000	
Total between	Q _{between} : 5.590; df(Q):1; p-value: 0.018* < 0.1						

Note: ^[1] The study of Kamhawi (2012) and ^[2] Boumarafi and Jabnoun (2008) were dropped.

Table 4-3: Categorical moderator test of industries (the KFOC-financial performance relationship)

Industry type	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p-value	
Manufacturing	6	0.334	0.122	0.517	3.024	0.002	Supported $H_b^{[2]}$
Service	2	0.590	0.488	0.676	9.233	0.000	
Total between	Q _{between} : 5.861; df(Q):1; p-value: 0.015* < 0.05						

Note: ^[2] The study of Marouf (2016) was excluded.

Table A.1: Descriptive statistics of studies examining the KFOC–overall organisational performance relationship

SN	Study name	Effect size	Sample size	Region	PD	IC	FM	UA	LS	IR	Economy	Industry
1	Baker & Sinkula, 1999-OP	0.325	411	US	S	I	M	W	S	I	Developed	Multiple
2	Boumarafi & Jabnoun, 2008-OP ^[2]	0.282	89	UAE	L	C	M	S	NA	NA	Developing	Multiple
3	Chen et al, 2011-OP	0.649	556	China	L	C	M	W	L	R	Developing	Service
4	Chen et al., 2009-OP ^[3]	0.314	325	China	L	C	M	W	L	R	Developing	Unclear
5	Cheng et al., 2008-OP	0.354	218	China	L	C	M	W	L	R	Developed	Multiple
6	Chuang et al., 2013-OP	0.274	119	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
7	Forte et al., 2016-OP ^[3]	0.500	101	Iran	S	I	F	W	S	R	Developing	Unclear
8	Guimarães et al., 2016-OP	0.080	618	Brazil	L	C	M	S	L	I	Developing	Manufacturing
9	Huang et al., 2010-OP	0.440	170	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
10	Imran et al., 2018-OP	0.710	197	Pakistan	S	C	M	S	L	R	Developing	Service
11	Jain & Moreno, 2015-OP	0.590	205	India	L	I	M	W	L	R	Developing	Manufacturing
12	Kamath et al., 2016-OP	0.790	249	India	L	I	M	W	L	R	Developing	Manufacturing
13	Kamhawi, 2012-OP ^[1]	0.370	167	Bahrain	NA	NA	NA	NA	NA	NA	Developing	Multiple
14	Khan et al., 2015-OP	0.737	214	Pakistan	S	C	M	S	L	R	Developing	Service
15	Lin et al., 2013-OP	0.290	214	Taiwan (China)	S	C	F	S	L	I	Developing	Multiple
16	Mageswari et al., 2017-OP	0.652	251	India	L	I	M	W	L	R	Developing	Manufacturing
17	Matin & Sabagh, 2015-OP ^[3]	0.530	148	Iran	S	I	F	W	S	R	Developing	Unclear
18	Migdadi et al., 2016-OP ^[3]	0.484	258	Saudi	L	C	M	S	S	I	Developing	Unclear
19	Migdadi, 2009-OP ^[3]	0.136	416	Saudi Arabia	L	C	M	S	S	I	Developing	Unclear
20	Mousavizadeh et al., 2015-OP	0.560	268	US	S	I	M	W	S	I	Developed	Multiple
21	Palacios-Marqués et al., 2011-OP	0.440	193	Spain	S	I	F	S	L	R	Developed	Service
22	Payal et al. 2016-OP	0.423	100	India	L	I	M	W	L	R	Developing	Service
23	Pham & Nguyen, 2017-OP ^[3]	0.316	103	Vietnam	L	C	F	W	L	R	Developing	Unclear
24	Rezaei et al., 2017-OP	0.371	222	Iran	S	I	F	W	S	R	Developing	Manufacturing
25	Ruiz-Mercader et al., 2006-OP	0.307	151	Spain	S	I	F	S	L	R	Developed	Service
26	Samson et al., 2017-OP	0.425	1579	Australia	S	I	M	W	S	I	Developed	Multiple

SN	Study name	Effect size	Sample size	Region	PD	IC	FM	UA	LS	IR	Economy	Industry
27	Song & Kolb, 2013-OP	0.492	633	Korea	S	C	F	S	L	R	Developing	Multiple
28	Valdez-Juárez et al., 2016-OP	0.144	903	Spain	S	I	F	S	L	R	Developed	Multiple
29	Wei, 2010-OP ^[3]	0.350	204	China	L	C	M	W	L	R	Developing	Unclear
30	Wong & Wong, 2011-OP	0.215	233	Malaysia	L	C	M	W	S	I	Developing	Manufacturing

Note: ^[1]National culture scores of Bahrain are unavailable, while the study of Kamhawi (2012) collected data in Bahrain, so it was excluded when moderating the effects of national culture. ^[2]Boumarafi and Jabnoun (2008) collected data in the UAE, but scores for long-term-oriented and indulgence-oriented of the UAE are not available. This study was also dropped when the moderating effects of long-term orientation and indulgence were analysed. ^[3]The studies of Chen et al. (2009), Forte et al. (2016), Matin and Sabagh (2015), Migdadi et al. (2016), Migdadi (2009), Pham and Nguyen (2017), and Wei (2010) did not report on industry in detail; therefore, these studies were excluded when the moderating effect of industries was tested.

Table A.2: Descriptive statistics of studies examining the KFOC–financial performance relationship

SN	Study name	Effect size	Sample size	Region	PD	IC	FM	UA	LS	IR	Economy	Industry
1	Akgün et al., 2014-F	0.110	193	Turkey	L	C	F	S	L	I	Developing	Manufacturing
2	Chen & Liang, 2011-F	0.490	97	Taiwan (China)	S	C	F	S	L	I	Developing	Multiple
3	Chen et al., 2008-F	0.390	150	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
4	Collins & Smith, 2006-F	0.313	136	US	S	I	M	W	S	I	Developed	Multiple
5	Feng et al., 2014-F	0.611	214	China	L	C	M	W	L	R	Developing	Manufacturing
6	Hsu & Sabherwal, 2012-F	0.050	510	Taiwan (China)	S	C	F	S	L	I	Developing	Multiple
7	Kianto & Andreeva, 2014-F-M ^[1]	0.535	86	NA	NA	NA	NA	NA	NA	NA	NA	Manufacturing
8	Kianto & Andreeva, 2014-F-S ^[1]	0.511	61	NA	NA	NA	NA	NA	NA	NA	NA	Service
9	Kianto et al., 2013-F	0.152	399	Finland	S	I	F	W	S	I	Developed	Multiple
10	Lee & Choi, 2010-F	0.016	187	Korea	S	C	F	S	L	R	Developing	Multiple
11	Marouf, 2016-F ^[2]	0.790	392	Kuwait	L	C	F	S	NA	NA	Developing	Unclear
12	Pett & Wolff, 2016-F	0.171	117	US	S	I	M	W	S	I	Developed	Manufacturing
13	Santos-Vijande et al., 2013-F	0.620	154	Spain	S	I	F	S	L	R	Developed	Service
14	Shih et al., 2009-F	0.089	155	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing

Note: ^[1]Kianto and Andreeva (2014) collected their research data from Finland, China, and Russia, but these three countries are not consistent in any dimension in terms of national culture and economic status. Therefore, it was deleted with the analysis of the moderating effects of national culture and economy. ^[2]Marouf's (2016) study was carried

out in Kuwait, where scores regarding long-term orientation and indulgence oriented are not available. Then, it was abandoned, when we analysed the moderating effects of long-term orientation and indulgence. In addition, Marouf (2016) did not clearly report the industry categories from which the data was collected; thus, it was dropped when the moderating effect of industry were analysed.

Table A.3: Descriptive statistics of studies examining the KFOC-non-financial performance relationship

SN	Study name	Effect size	Sample size	Region	PD	IC	FM	UA	LS	IR	Economy	Industry
1	Boumarafi & Jabnoun, 2008-NF ^[2]	0.289	89	UAE	L	C	M	S	NA	NA	Developing	Multiple
2	Chen & Liang, 2011-NF	0.532	97	Taiwan (China)	S	C	F	S	L	I	Developing	Multiple
3	Chong et al., 2011-NF ^[3]	0.128	203	Malaysia	L	C	M	W	S	I	Developing	Government
4	Chuang et al., 2013-NF	0.293	119	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
5	Cooper et al., 2016-NF	0.551	448	US	S	I	M	W	S	I	Developed	Service
6	Giampaoli & Ciambotti, 2016-NF	0.529	85	Italy	S	I	M	S	L	R	Developed	Multiple
7	Huang et al., 2010-NF	0.436	170	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
8	Jiménez-Jiménez et al., 2014-NF	0.104	81	Spain	S	I	F	S	L	R	Developed	Service
9	Kianto & Andreeva, 2014-NF-M ^[1]	0.435	175	NA	NA	NA	NA	NA	NA	NA	NA	Manufacturing
10	Kianto & Andreeva, 2014-NF-S ^[1]	0.391	120	NA	NA	NA	NA	NA	NA	NA	NA	Service
11	Kim & Hancer, 2010-NF	0.149	179	US	S	I	M	W	S	I	Developed	Service
12	Lee, et al., 2012-NF	0.536	105	Korea	S	C	F	S	L	R	Developing	Multiple
13	Machuca & Costa, 2012-NF	0.208	100	Spain	S	I	F	S	L	R	Developed	Service
14	Mageswari et al., 2017-NF	0.543	251	India	L	I	M	W	L	R	Developing	Manufacturing
15	Migdadi et al., 2016-NF ^[3]	0.430	258	Saudi	L	C	M	S	S	I	Developing	Unclear
16	Mills & Smith, 2011-NF ^[2]	0.723	189	Jamaica	S	I	M	W	NA	NA	Developing	Multiple
17	Moon & Lee, 2014-NF	0.690	230	Korea	S	C	F	S	L	R	Developing	Multiple
18	Noh et al., 2014-NF	0.536	108	Korea	S	C	F	S	L	R	Developing	Multiple
19	Rezaei et al., 2017-NF	0.414	222	Iran	S	I	F	W	S	R	Developing	Manufacturing
20	Santos-Vijande et al., 2013-NF	0.370	154	Spain	S	I	F	S	L	R	Developed	Service
21	Shih et al., 2009-NF	0.298	155	Taiwan (China)	S	C	F	S	L	I	Developing	Manufacturing
22	Sucahyo et al., 2016-NF	0.387	139	Indonesia	L	C	F	W	L	R	Developing	Multiple
23	Tan & Wong, 2015-NF	0.728	206	Malaysia	L	C	M	W	S	I	Developing	Manufacturing

SN	Study name	Effect size	Sample size	Region	PD	IC	FM	UA	LS	IR	Economy	Industry
24	Zhang et al., 2007-NF	0.457	307	Canada	S	I	M	W	S	I	Developed	Multiple

Note: ^[1] Kianto and Andreeva (2014) collected their research data from Finland, China, and Russia, but these three countries are not consistent in any dimension in terms of national culture and economic status. Therefore, this study was not included when the moderating effects of national culture and economy were examined. ^[2] The study of Boumarafi and Jabnoun (2008) as well as Mills and Smith (2011) were conducted with the data from the UAE and Jamaica. Scores for long-term and indulgence orientation are not available in these countries. Thus, these two studies were removed when the moderating effects of long-term orientation and indulgence were analysed. ^[3] The subjects of Chong et al. (2011)'s study were from the government; while Migdadi et al. (2016) did not clearly specify from which industry they collated their data; thus, these studies were omitted when the moderating effect of industry were analysed.

Table C.1: Publication bias analysis

Studies	Failsafe N	k	N/5k+10	Result
KFOC–overall organisational performance (OOP)	3,318	30	20.738	No publication bias
KFOC–financial performance (FP)	1,369	14	17.113	No publication bias
KFOC–non-financial performance (NFP)	5,799	24	44.608	No publication bias

Table D.1: Homogeneity test

Studies	Sample size	Heterogeneity				Tau-square				Result
		Q	df(Q)	p	I ²	τ^2	SE	δ^2	τ	
KFOC-OOP	30	546.419	29	0.000	94.693	0.059	0.021	0.000	0.242	Heterogenous
KFOC-FP	14	367.186	13	0.000	96.460	0.066	0.058	0.004	0.375	Heterogenous
KFOC-NFP	24	197.260	23	0.000	88.340	0.045	0.016	0.000	0.211	Heterogenous

Table E.1: Categorical moderator test for national culture (KFOC–financial performance relationship)

National culture dimension	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Power distance (L)	3	0.560	0.080	0.829	2.244	0.025	Not supported H _{PD_b} ^[1]
Power distance (S)	9	0.263	0.119	0.396	3.528	0.000	
Total between	Q _{between} : 1.547; df(Q): 1; p-value: 0.214						
Collectivism (C)	8	0.358	0.062	0.596	2.350	0.019	Not supported H _{IC_b} ^[1]
Individualism (I)	4	0.329	0.079	0.540	2.553	0.011	
Total between	Q _{between} : 0.025; df(Q): 1; p-value: 0.876						
Femininity (F)	9	0.337	0.077	0.555	2.510	0.012	Not supported H _{F_{M_b}} ^[1]
Masculinity (M)	3	0.386	0.076	0.628	2.408	0.016	
Total between	Q _{between} : 0.065; df(Q): 1; p-value: 0.799						
Uncertainty avoidance (S)	8	0.359	0.060	0.600	2.331	0.020	Not supported H _{U_{Ab}} ^[1]
Uncertainty avoidance (W)	4	0.328	0.065	0.549	2.424	0.015	
Total between	Q _{between} : 0.027; df(Q): 1; p-value: 0.869						
Long-term orientation (L)	8	0.317	0.115	0.494	3.017	0.003	Not supported H _{LS_b} ^[1, 2]
Short-term orientation (S)	3	0.199	0.101	0.294	3.919	0.000	
Total between	Q _{between} : 1.099; df(Q): 1; p-value: 0.295						
Indulgence (I)	8	0.215	0.109	0.315	3.943	0.000	Not supported H _{IR_b} ^[1, 2]
Restrained (R)	3	0.449	0.022	0.737	2.055	0.040	
Total between	Q _{between} : 1.206; df(Q): 1; p-value: 0.272						

Note: ^[1]The study of Kianto and Andreeva (2014) was excluded. ^[2]The study of Marouf, 2016 was excluded.

Table E.2: Categorical moderator test for national culture (KFOC–non-financial performance relationship)

National culture dimension	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Power distance (L)	6	0.442	0.244	0.604	4.133	0.000	Not supported H _{PD_c} ^[1]
Power distance (S)	16	0.447	0.354	0.531	8.514	0.000	
Total between	Q _{between} : 0.003; df(Q): 1; p-value: 0.959						
Collectivism (C)	12	0.459	0.337	0.566	6.671	0.000	Not supported H _{IC_c} ^[1]
Individualism (I)	10	0.429	0.309	0.537	6.418	0.000	
Total between	Q _{between} : 0.128; df(Q): 1; p-value: 0.721						
Femininity (F)	12	0.417	0.315	0.509	7.416	0.000	

Masculinity (M)	10	0.478	0.344	0.593	6.324	0.000	Not supported $H_{FMc}^{[1]}$
Total between	Q _{between} : 0.568; df(Q):1; p-value: 0.451						
Uncertainty avoidance (S)	13	0.420	0.323	0.509	7.762	0.000	Not supported $H_{UAc}^{[1]}$
Uncertainty avoidance (W)	9	0.479	0.337	0.600	5.989	0.000	
Total between	Q _{between} : 0.500; df(Q):1; p-value: 0.480						
Long-term orientation (L)	13	0.437	0.341	0.523	8.150	0.000	Not supported $H_{LSc}^{[1,2]}$
Short-term orientation (S)	7	0.431	0.270	0.568	4.916	0.000	
Total between	Q _{between} : 0.004; df(Q):1; p-value: 0.949						
Indulgence (I)	10	0.419	0.291	0.532	5.972	0.000	Not supported $H_{IRc}^{[1,2]}$
Restrained (R)	10	0.451	0.340	0.550	7.236	0.000	
Total between	Q _{between} : 0.161; df(Q):1; p-value: 0.688						

Note: ^[1] The study of Kianto and Andreeva (2014), ^[2] Boumarafi and Jabnoun (2008), and Mills and Smith (2011) were excluded.

Table E.3: Categorical moderator test for economy (KFOC–overall organisational performance relationship)

Economies	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Developed economies	7	0.369	0.254	0.474	5.944	0.000	Not supported H_{Ea1}
Developing economies	23	0.458	0.360	0.546	8.238	0.000	
Total between	Q _{between} : 1.466; df(Q):1; p-value: 0.226						

Table E.4: Categorical moderator test for economy (KFOC–financial performance relationship)

Economies	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Developed economies	4	0.329	0.079	0.540	2.553	0.011	Not supported $H_{Ea2}^{[1]}$
Developing economies	8	0.358	0.062	0.596	2.350	0.019	
Total between	Q _{between} : 0.025; df(Q):1; p-value: 0.876						

Note: ^[1] The study of Kianto and Andreeva (2014) was excluded.

Table E.5: Categorical moderator test for economy (KFOC–non-financial performance relationship)

Economies	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Developed economies	7	0.356	0.212	0.486	4.639	0.000	Not supported $H_{Ea3}^{[1]}$
Developing economies	15	0.484	0.383	0.574	8.261	0.000	
Total between	Q _{between} : 2.302; df(Q):1; p-value: 0.129						

Note: ^[1] The study of Kianto and Andreeva (2014) was excluded.

Table E.6: Categorical moderator test for industry (KFOC–overall organisational performance relationship)

Industry type	Sample size	Effect size	95% CI		Two-tailed test		Result
			Lower limited	Upper limited	Z-value	p value	
Manufacturing	8	0.459	0.235	0.637	3.795	0.000	Not supported $H_{Ia1}^{[3]}$
Service	6	0.570	0.427	0.685	6.636	0.000	
Total between	Q _{between} : 0.855; df(Q):1; p-value: 0.355						

Note: ^[3] Studies not reporting on industry and those that collected data from multiple industries were excluded.

Table E.7: Categorical moderator test for industry (KFOC–non-financial performance relationship)

Industry type	Sample size	Effect size	95% CI	Two-tailed test	Result
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	Sample size	Effect size	Lower limited	Upper limited	Z-value	p value	
Manufacturing	7	0.467	0.334	0.582	6.232	0.000	Not supported H _{1a3}
Service	6	0.312	0.135	0.470	3.384	0.001	
Total between	Q _{between} : 2.316; df(Q):1; p-value: 0.144						

Note: ^[3]The study of Chong et al. (2011) and Migdadi et al. (2016) were excluded.

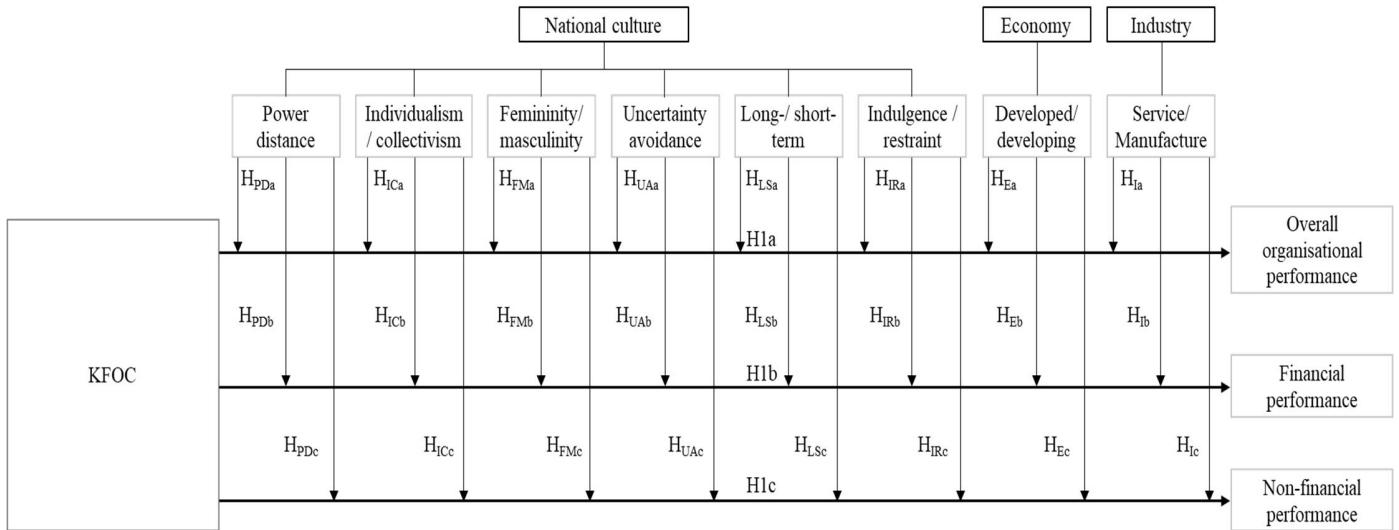


Figure 2-1 Research model

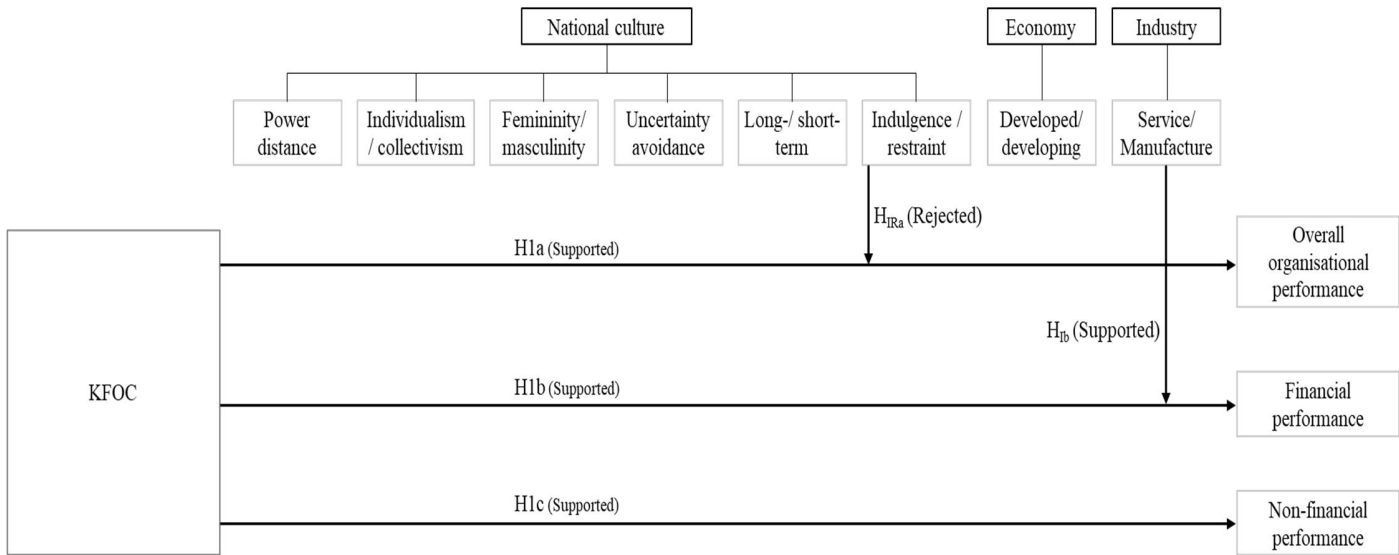


Figure 4-1: Empirical results of KFOC–organisational performance relationships

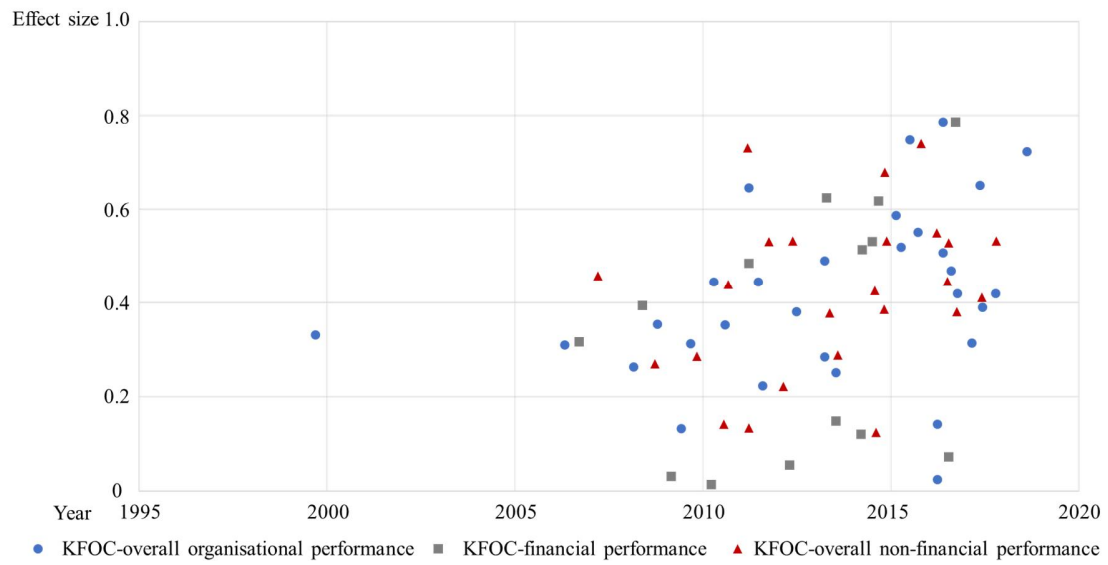


Figure A.1: Studies on KFOC–organisational performance relationships