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SPECIAL SECTION ARTICLE: THE DYNAMICS OF KM: FROM STRATEGY
TO KNOWLEDGE WORKERS' PERFORMANCE



A framework for integrating knowledge management benefits in the UAE organisations

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ABSTRACT

Many organisations have implemented initiatives to promote knowledge management (KM), some efforts were unsuccessful because the expected benefits of KM were not cultivated. Therefore, research has highlighted that a clear understanding of KM benefit (KMB) is crucial because it provides a guide to knowledge efforts. Knowledge management, technology, and globalisation are the key drivers to deliver the organisational strategy required to transfer to a knowledge-based economy. The study analysed the relationship between knowledge management benefits and knowledge management capabilities, human resources practices that enhance knowledge sharing, and organisational learning. It was found that knowledge management capabilities, intrinsic motivation, and organisational learning were useful in positively improving KMB. Also, organisational learning had a mediating effect between knowledge management capabilities, extrinsic motivation, intrinsic motivation, ability-enhancing human resources practices, and KMB. The study proposes a framework for integrating knowledge management benefits (KMB) and makes an essential contribution to the KMB literature.

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Knowledge management benefit (KMB); human resources-enhancing practices (HREP); knowledge management capabilities (KMC); organisational learning (OL); policing organisation (PO); United Arab Emirates (UAE)

1. Introduction

Since the dawn of the knowledge-focused economy, public and private organisations worldwide have aligned themselves with the idea of knowledge management (KM) (Anning-Dorson, 2018). Knowledge management is collecting, organising, and sharing knowledge to enable organisational learning (Marshall, 2017). The competitive edge these organisations may achieve depends on successful KM, organisational learning (OL), and adapting to sophisticated technology (Thomas & Paul, 2019). Knowledge and learning are related: knowledge is the content owned by the organisation or its members, and learning is the process to acquire the content (Easterby-Smith & Lyles, 2011). Although previous studies have investigated the impact of financial measures and intellectual capital (Mardani et al., 2018; Marr et al., 2004), the intangible benefits of KM are unexplored.

Previous studies emphasised the importance of KM capabilities, knowledge infrastructure, learning culture, human resources practices for knowledge sharing, and KMB (Al-Busaidi & Olfman, 2017; Alshamsi et al., 2017; Pee & Kankanhalli, 2016). Most studies that explored factors influencing KMB were conducted in developed countries (Córdova & Gutiérrez, 2018); few studies in developing countries have examined this area (Arunprasad, 2015, 2017; Shao et al., 2015; Siddique, 2012). Also, Massaro et al. (2015) reported that KM studies in the public sector are limited, especially in policing and defence organisations.

In the UAE, there have been few studies on knowledge management. For instance, Al Dari et al. (2018) investigated the role of transformational leadership and rewards on knowledge sharing in the UAE policing organisation. In another study, Nuaimi and Jabeen (2020) suggested that factors inhibiting or facilitating the phases of knowledge management can be grouped by personal and organisational context. Siddique (2012) investigated knowledge management practices and benefits in private companies and found that it is still debatable whether knowledge management initiatives support the shift to a knowledge-based economy.

Therefore, it is crucial to adopt a comprehensive approach that measures the outcomes and intangible benefits of KM (Arora, 2002). This is particularly important for a policing organisation where knowledge is a critical factor and needs to be managed effectively to allow crimes to be detected quickly and maintain public safety (Al-Shayeb & Hatemi-J, 2016). Furthermore, there are gaps in the literature that need to be addressed, such as investigating the impact of KM capabilities, human resource practices, and KMB (Tseng, 2017). Hence to fill these gaps, the purpose of this research is to analyse the relationship between knowledge management capabilities (KMC), human resources practices that enhance knowledge sharing (HREP), and organisational learning (OL) on knowledge management benefits.

This paper first sets out a literature review, then discusses variables and develops hypotheses. It follows with a description of the research methods and a section on results and discussion. This is followed by the conclusion, including the limitations and implications of the research.

2. Theoretical framework and literature review

This research provides a theoretical framework to examine the effect on knowledge sharing of knowledge management capabilities and human resources practices. It also explores the benefits of knowledge management benefits, and the potential mediation effect of organisational learning. Several theories suggest that there are relationships between these constructs. The resource-based view (Barney, 1991) and knowledge-based approach both focus on intangible resources such as knowledge and capabilities. Researchers have suggested that these can be used to generate knowledge management benefits such as increased innovation (Grant, 1996), and improved learning outcomes (Hidalgo-Peñate et al., 2019). The absorptive capacity theory (Liu et al., 2013) suggests that there is a relationship between knowledge management capability and benefits. This theory describes the ability of organisations to absorb technological information and share it with others (Park et al., 2007). Social exchange theory (Blau, 1964) may explain the relationship between intrinsic motivation and knowledge management benefits. The theory suggests that employees will be prepared to share their knowledge for the general good, without needing external rewards (Kuvaas et al., 2012).

2.1. Knowledge management benefits

KMB is an outcome that measures KM efforts in an organisation (Bose, 2004), and has been explored by various scholars (Massingham & Massingham, 2014; Yahyapour et al., 2015). Non-financial benefits of knowledge include corporate governance, benchmarking, performance drivers, and problem-solving (Dalkir, 2017; Massingham & Massingham, 2014). Few studies in developing countries have investigated KMB (Farooq, 2018), and most available studies focused on a single benefit, such as organisational effectiveness (Pee & Kankanhalli, 2016) and enhancing customer value (Cepeda-Carrion et al., 2017). However, these studies (Farooq, 2018; Pee & Kankanhalli, 2016) “opened the door” in investigating the intangible benefits of KM in a unified framework.

2.2. Organisational learning

OL is the integration of knowledge acquisition and organisational change based on action (Castaneda et al., 2018). OL processes should be used to develop knowledge resources and capabilities that can help organisations sustain their competitive advantage (Njuguna, 2009). OL also has a mediating effect between strategic planning and organisation performance (Kohtamäki et al., 2012), and is a positive predictor of KM practices (Kasemsap, 2016). The present study is the first UAE-based study to focus on the integration of OL and KM in an organisational context (Johannessen, 2018; Tseng, 2017).

2.3. Knowledge management capabilities

The success or failure of KM initiatives depends on the assessment of various preconditions that are important for an organisation to flourish. These preconditions represent the organisation’s capabilities or resources (Lee & Lee, 2007). KM capabilities can be enhanced through developing information technology (IT), by which organisations can transmit and create knowledge (Ryan et al., 2010). Therefore, IT is an essential capability that supports the creation of useful knowledge (Ho et al., 2012). According to knowledge-based theory, an organisation can create core competencies by its capability to develop new knowledge (Noruzy et al., 2013), such as OL, that enhances performance (Helms & van Reijssen, 2008). Liu et al. (2018) found that OL is the most critical aspect for cultivating the associations amid common objectives, capabilities, and social capital to attain competitive advantage.

Saha et al. (2017) found that organisations achieve excellence and maintain competitive advantage through integrating its knowledge management strategy and sustainable knowledge transfer capability. Ong and Po-Yen (2014) recommended to study the impact of IT capabilities components including IT infrastructure, IT technical and managerial knowledge, and IT integration. Previous research demonstrated that IT enables KM through the storage of information and easy retrieval whenever information is needed to leverage innovation (Veer Ramjeawon & Rowley, 2017). Timely access to information using IT can also enhance KMB by facilitating organisational decision-making (Ho et al., 2012). However, several studies failed to find positive relationships between IT and organisational performance (Chae et al., 2018). This led to the first hypothesis:

H1: KM capabilities have a direct positive relationship with KMB.

2.4. Human resources-enhancing practices (HREP)

HREP impacts employees' behaviour, attitudes, and performance (Foss et al., 2009; Kehoe & Wright, 2013). HREP enables organisations to store knowledge in proper systems that result in improved organisational performance (Youndt & Snell, 2004) and supports the achievement of organisational success (Figueiredo et al., 2016).

The relationship between HREP and knowledge sharing has been studied (Gope et al., 2018; Nielsen et al., 2011), with a focus on individual perspectives (Foss et al., 2009). However, it is important to investigate relationships between HREP and other KM outcomes. HREP can be classified into four categories: fostering extrinsic motivation, fostering intrinsic motivation, providing opportunities, and enhancing employees' abilities (Andreeva & Sergeeva, 2016).

2.5. Motivation-enhancing human resources practices

KM requires managers to effectively motivate employees to update and deepen their information to support better decision-making (Carneiro, 2001). Self-determination theory suggests there are two kinds of motivation, intrinsic and extrinsic motivation (Ryan & Connell, 1989), which have been widely discussed (Chen & Hsieh, 2015). According to social exchange theory, employees with high intrinsic motivation show positive attitudes towards knowledge sharing regardless of the extrinsic motivation they receive (Kuvaas et al., 2012).

Various researchers (e.g., Chiang & Birtch, 2012; Cruz, 2013) have studied the role of rewards in both developed (Cruz, 2013) and developing countries (Lai & Tong, 2010; Mansor & Saparudin, 2015). The findings suggested rewards had both positive and negative effects on knowledge sharing (Al Dari et al., 2018; Liu & Li, 2017). Intrinsic rewards were more effective than extrinsic motivation (Mansor & Saparudin, 2015). This suggests there is controversy in the results of previous studies, and investigating motivation is essential. Therefore, two additional hypotheses were proposed:

H2: Extrinsic motivation has a direct positive relationship with KMB.

H3: Intrinsic motivation has a direct positive relationship with KMB.

2.6. Opportunity-enhancing human resource practices and KMB

Opportunity-enhancing methods include meetings, workshops, teamwork, free communication, and supporting communities of practice (Wu et al., 2007). Reinholt et al. (2011) found that opportunities play a catalyst role; if opportunities exist, employees participate in knowledge sharing activities and vice-versa. Opportunities help employees learn-by-doing and build organisational knowledge memory (Inkinen et al., 2015). However, most research in this area has been conducted in developed countries (Tüselmann et al., 2007), and few studies focused on developing countries (Ahmad & Allen, 2015). This led to a fourth hypothesis:

H4: Opportunity-enhancing human resources practices have a direct positive relationship with KMB.

2.7. Ability-enhancing human resources practices and KMB

Ability-enhancing practices refer to the skills employees have and training they receive that enables them to share knowledge with others. Self-efficacy is an important requirement for behavioural change, and can be defined as an individual's belief that they possess the required skills and abilities to produce a particular outcome (Bandura, 1986; Hsu et al., 2007). Abilities, opportunities, and motivation have positive relationships with affective commitment and organisation performance (Kundu & Gahlawat, 2018). Therefore, the fifth hypothesis was:

H5: Ability-enhancing human resources practices have a direct positive relationship with KMB.

2.8. Organisational learning and knowledge management benefits

There is a known relationship between OL and KMB (Vera et al., 2015). OL is a process by which organisations can improve over time through innovation and learning from mistakes. OL theory suggests employees share the knowledge that results in producing ideas that enhance the organisation's innovation and creativity (Johannessen, 2018) and build organisational memory. Conversely, when employees do not share knowledge, OL faces challenges such as not being able to solve problems efficiently (Zhang & Kwan, 2018). OL and KMB are related through innovation, building organisational memory, and solving problems, which are considered benefits of KM (Dalkir, 2017). Therefore, hypothesis six proposed that:

H6: OL has a direct positive relationship with KMB.

2.9. KM capabilities, organisational learning, and knowledge management benefits

OL is a process of acquiring, disseminating, and sharing knowledge (Argote, 2013). Through OL, employees reflect on their experiences to solve work problems encountered daily (Arunprasad, 2017). The process by which new knowledge is developed can fill the gap between IT and organisational performance (Chae et al., 2018). A resource-based view suggests dynamic capability can be gained by implementing a good knowledge strategy to sustain a competitive advantage. To gain competencies, an organisation must invest in its skills, technology, and continuous learning (Carlson et al., 2018). The technology infrastructure may, in turn, impact OL and enhance innovation (Kamhawi, 2012). This led to a seventh hypothesis:

H7: OL has a mediating effect on KM capabilities and KMB.

2.10. HREP, organisational learning, and KMB

As human resources management and KM are inter-related, research suggests that organisations can use HREP to enhance KM success (Figueiredo et al., 2016) and encourage employees to share experiences (Theriou & Chatzoglou, 2014). Human resources management impacts OL through employees' performance and abilities to manage knowledge (Norashikin et al., 2009). Arunprasad (2017) reported that an OL strategy had a moderating effect between HREP and an organisation's performance.

OL represents an organisation's ability to create and apply knowledge, and forms a predictor of business performance (Vij & Farooq, 2015). There is positive relationship between employees' intrinsic and extrinsic motivation and KM implementation (Donate & Guadamillas, 2015; Massa & Testa, 2009). If employees are encouraged to share knowledge, OL takes place by reflecting their abilities to solve problems efficiently (Zhang & Kwan, 2018). Based on OL theory and the preceding discussion, two further hypotheses were formulated:

H8: OL has a mediating effect on extrinsic motivation and KMB.

H9: OL has a mediating effect on intrinsic motivation and KMB.

Ma et al. (2017) reported that opportunity-enhancing human resources practices were not related

to knowledge sharing and team creativity, which depended on cultural factors such as power distance (Wu & Chaturvedi, 2009). However, if employees do not have the opportunity to share knowledge and learn, they will be less creative (Fong et al., 2018). Selective hiring, strategic training, and providing employees the opportunity to participate in decision-making will enhance OL (López-Cabrales et al., 2011). This suggests there is a link between opportunity, OL, and KMB. Therefore, it is imperative to investigate the impact of OL on opportunity-enhancing human resources practices and KMB, which led to hypothesis 10:

H10: OL has a mediating effect on opportunity-enhancing human resources practices and KMB.

An organisation's capacity to create new knowledge using human resources practices relies on considering employees' abilities as instrumental in knowledge creation and development (López-Cabrales et al., 2011; Runar Edvardsson, 2008). Improving employees' capabilities and acquiring new knowledge through explorative learning are viewed as OL (Tallott & Hilliard, 2016). Employees' skills, knowledge, and abilities contribute to achieving organisational goals and objectives (Chen & Hsieh, 2015). This resulted in a final hypothesis:

H11: OL has a mediating effect on ability-enhancing human resources practices and KMB.

3. Research framework

The framework illustrated in Figure 1 presents KM capabilities, HREP, and OL as three important elements in attaining KMB.

4. Research methodology

4.1. Sample selection and data collection

This study used a questionnaire-based survey to answer the research questions. A quantitative paradigm was adopted, and descriptive statistics were used to analyse the survey data and model fit. Approval to conduct this study was obtained from the Information Security Department of the policing organisation. The questionnaire was distributed online and in a paper-based format. Data were collected from 693 employees in managerial and leadership positions in the study organisation. Participants constituted a mixture of military and civilian personnel.

4.2. Survey design and measurement of variables

The primary tool of this research was a self-administered questionnaire. As outlined in Appendix A (Table A1)

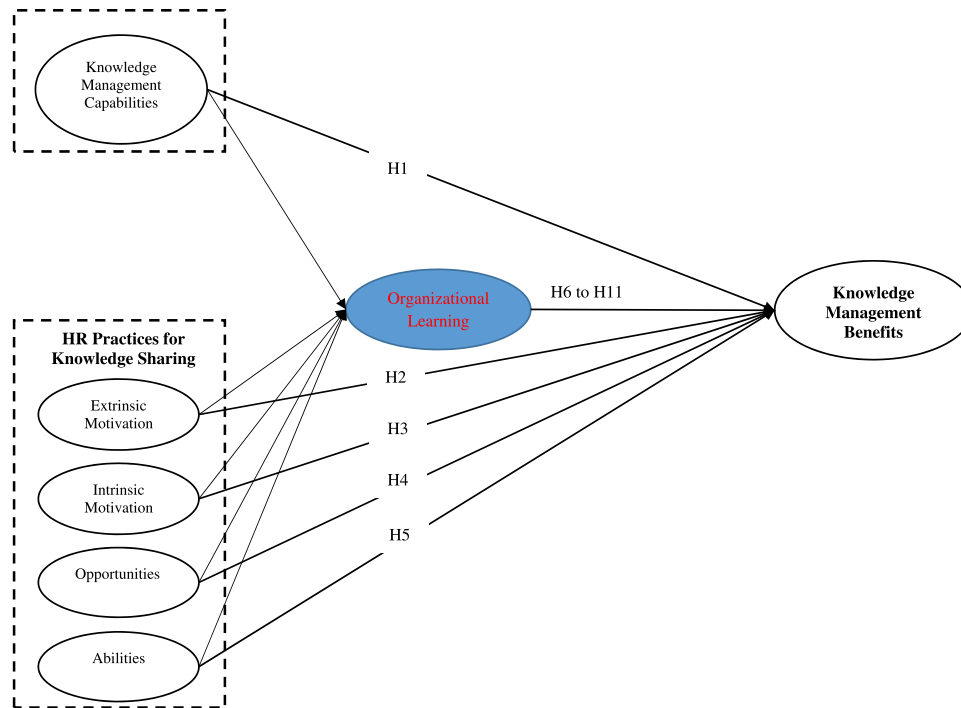


Figure 1. Proposed model.

and Appendix B, all the questionnaire items were adapted from items in prior studies. Items were measured on a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree,” with “neutral” represented by the value of 3. To measure internal consistency, the researcher calculated Cronbach’s alpha reliability coefficient to measure the internal consistency of the survey instrument. All Cronbach’s α values were above the 0.7 threshold (Nunnally & Bernstein, 1994). Participation in the survey was voluntary, and no financial rewards were offered.

5. Statistical analysis

The analysis was performed in two stages. The first stage investigated relationships between measured and latent variables, and the second examined relationships between latent variables. Data normality was assessed using the Shapiro-Wilk test. Table 1 demonstrates that the data were not distributed normally. Hence, a partial least square-structural equation modelling (PLS-SEM) approach was appropriate because there were no distributional assumptions (Hair et al., 2012).

5.1. Measurement model

The reliability and validity of the constructs were assessed before performing the PLS analysis (Hair et al., 2017). Measures included: composite reliability, which determines internal consistency reliability;

convergent validity, which demonstrates the extent of the relationship between two constructs; and discriminant validity, which explains how much a construct is distinct from other constructs in the study (Khoshkam et al., 2016).

Table 1 shows that the measurement model met all general requirements. All standardised factor loadings for all reflective constructs were higher than the threshold value (0.70), suggesting adequate indicator reliability levels (Hair et al., 2017). Moreover, average variance extracted (AVE) values for all constructs were above 0.50, indicating convergent validity was achieved for latent variables (an AVE of 0.50 or higher suggests the construct may explain over half of the variance of its indicators on average) (Hair et al., 2014). The Cronbach’s alpha values were 0.79–0.92, and the composite reliability scores were 0.87–0.94. These values were higher than the threshold value (0.70) (Hair et al., 2013), which confirmed the scale was reliable and had satisfactory internal consistency.

Three approaches were used to assess discriminant validity: the Fornell-Larcker criterion; cross-loading; and the heterotrait-monotrait ratio (HTMT) of correlations, as shown in Table 2. Comparing the loadings across the factors showed that an indicator’s loading on its construct was higher in all events compared with cross-loadings with other constructs. Henseler et al. (2015) proposed the heterotrait-monotrait (HTMT) ratio of correlations to assess discriminant validity in variance-based SEM as a solution to this issue. In this study, all HTMT values were lower than

Table 1. Test of normality and measurement model results.

Indicators	Test of Normality SW test Statistic	Convergent Validity					Internal Consistency Reliability	
		Loadings		Indicator Reliability	AVE		CR	α
		>0.70	SE					
AEP1	0.856***	0.878***	0.010	84.015	0.771	0.779	0.914	0.859
AEP2	0.869***	0.874***	0.010	89.747	0.764			
AEP3	0.877***	0.896***	0.010	91.400	0.803			
EMP1	0.887***	0.745***	0.031	23.979	0.555	0.697	0.873	0.792
EMP2	0.896***	0.873***	0.013	65.849	0.762			
EMP3	0.898***	0.879***	0.012	76.397	0.773			
IMP1	0.884***	0.790***	0.024	33.329	0.624	0.726	0.888	0.811
IMP2	0.844***	0.893***	0.010	92.593	0.797			
IMP3	0.870***	0.870***	0.012	69.858	0.757			
KMB1	0.861***	0.814***	0.014	59.392	0.663	0.640	0.926	0.906
KMB2	0.877***	0.779***	0.017	45.928	0.607			
KMB3	0.860***	0.806***	0.017	48.235	0.650			
KMB4	0.868***	0.797***	0.015	52.056	0.635			
KMB5	0.865***	0.794***	0.018	44.209	0.630			
KMB6	0.865***	0.763***	0.018	42.188	0.582			
KMB7	0.869***	0.844***	0.013	67.193	0.712			
KMC1	0.881***	0.794***	0.020	39.547	0.630	0.722	0.912	0.872
KMC2	0.871***	0.892***	0.012	77.319	0.796			
KMC3	0.865***	0.842***	0.015	57.328	0.709			
KMC4	0.888***	0.868***	0.011	75.714	0.753			
OL1	0.876***	0.916***	0.008	113.273	0.839	0.822	0.949	0.927
OL2	0.872***	0.931***	0.007	136.248	0.867			
OL3	0.870***	0.925***	0.007	124.952	0.856			
OL4	0.886***	0.852***	0.015	57.152	0.726			
OP1	0.896***	0.759***	0.029	26.239	0.576	0.638	0.940	0.928
OP2	0.887***	0.856***	0.023	37.549	0.733			
OP3	0.893***	0.866***	0.020	43.324	0.750			
OP4	0.884***	0.861***	0.018	46.644	0.741			
OP5	0.857***	0.816***	0.021	38.627	0.666			
OP6	0.903***	0.742***	0.029	25.731	0.551			
OP7	0.894***	0.726***	0.033	21.939	0.527			
OP8	0.879***	0.772***	0.028	27.785	0.596			
OP9	0.882***	0.776***	0.027	29.042	0.602			

*** $p < 0.001$. ^aTest statistics were obtained by 10,000 bootstrap runs. SW = Shapiro-Wilk test; SE = standard error; AVE = average variance extracted; CR = composite reliability; α = Cronbach's alpha; HTMT = heterotrait-monotrait ratio; AEP = abilities-enhancing HRP; EMP = extrinsic motivation-enhancing HRP; IEP = intrinsic motivation-enhancing HRP; KMC = knowledge management capabilities; OP = opportunities-enhancing HRP; OL = organisational learning; KMB = knowledge management benefits

Table 2. Discriminant validity: Fornell-Larcker criterion and heterotrait-monotrait ratio.

Constructs	AEP	EMP	IMP	KMB	KMC	OL	OP
AEP	0.883	0.530	0.656	0.638	0.575	0.834	0.213
EMP	0.473	0.835	0.629	0.447	0.559	0.624	0.185
IMP	0.555	0.529	0.852	0.643	0.627	0.811	0.121
KMB	0.565	0.410	0.558	0.800	0.541	0.740	0.104
KMC	0.504	0.475	0.532	0.488	0.850	0.623	0.158
OL	0.749	0.568	0.710	0.680	0.567	0.907	0.193
OP	0.192	0.162	0.106	0.097	0.140	0.181	0.799

^aDiagonal elements in bold denote the square root of average variance extracted.

^bLower triangle: denotes the correlations between the constructs.

^cUpper triangle: denotes the heterotrait-monotrait values.

Finally, to verify the face validity of the questionnaire, five academic experts and 30 others (15 police officers and 15 civilians' personnel) examined the instrument. Based on their feedback, the items were somewhat modified to match local requirements, but without changing the meaning of any item.

the conservative threshold of 0.85 (see the diagonal in Table 2), showing discriminant validity was achieved.

5.2. Structural model

PLS uses a bootstrapping procedure to estimate standard errors and the importance of parameter

estimates. Streukens and Leroi-Werelds (2016) indicated the following criteria for bootstrapping must be considered.

- (1) **Model parameter evaluation used:** This study used bias-corrected percentile bootstrap confidence intervals rather than standard normal or percentile approaches. Bias-corrected percentile bootstrap confidence intervals are considered better than standard normal bootstrap confidence intervals in terms of power, accuracy, and type I error rate (Streukens & Leroi-Werelds, 2016).
- (2) **A number of bootstrap samples:** In total, 10,000 bootstrap subsamples at a 95% confidence interval (two-tailed) were analysed to determine the level of significance for each indicator weight (Streukens & Leroi-Werelds, 2016).

Finally, the structural model results were assessed. This involved examining the model's predictive capabilities and relationships between constructs. Hair et al. (2017) recommended the following six steps.

Table 3. Direct relationships and mediating effect tests.

	Path coefficients	SE	t-values (bootstrap)	p-values	95% CI	Status
Direct relationships-Structural path						
KMC -> KMB	0.122	0.051	2.398	0.017	(0.02, 0.22)	H1: Supported
EMP -> KMB	-0.019	0.038	0.501	0.617	(-0.09, 0.06)	H2: Not Supported
IMP -> KMB	0.119	0.054	2.201	0.028	(0.01, 0.23)	H3: Supported
OP -> KMB	-0.033	0.030	1.116	0.264	(-0.10, 0.02)	H4: Not Supported
AEP -> KMB	0.105	0.056	1.875	0.061	(-0.01, 0.21)	H5: Not Supported
OL -> KMB	0.465	0.062	7.553	0.000	(0.34, 0.58)	H6: Supported
AEP -> OL	0.447	0.036	12.563	0.000	(0.38, 0.52)	
EMP -> OL	0.126	0.031	4.098	0.000	(0.07, 0.19)	
IMP -> OL	0.340	0.038	8.959	0.000	(0.27, 0.41)	
KMC -> OL	0.098	0.032	3.039	0.002	(0.04, 0.16)	
OP -> OL	0.025	0.021	1.209	0.227	(-0.02, 0.06)	
Mediating effect tests						
KMC -> OL -> KMB	0.045	0.015	2.973	0.003	(0.02, 0.08)	H7: Supported <i>Mediation Type:</i> Complementary (partial mediation)
EMP -> OL -> KMB	0.059	0.017	3.508	0.000	(0.03, 0.10)	H8: Supported <i>Mediation Type:</i> Indirect-only (full mediation)
IMP -> OL -> KMB	0.158	0.028	5.611	0.000	(0.11, 0.22)	H9: Supported <i>Mediation Type:</i> Complementary (partial mediation)
OP -> OL -> KMB	0.012	0.010	1.189	0.234	(-0.01, 0.03)	H10: Not supported
AEP -> OL -> KMB	0.207	0.032	6.568	0.000	(0.15, 0.28)	H11: Supported <i>Mediation Type:</i> Indirect-only (full mediation)

$R^2_{OL} = 0.708$; Adjusted $R^2_{OL} = 0.706$; $R^2_{KMB} = 0.490$; Adjusted $R^2_{KMB} = 0.485$;
 $Q^2_{OL} = 0.553$; $Q^2_{KMB} = 0.295$;

Bootstrapping based on $n = 10,000$ subsamples.

CI = confidence interval; SE = standard error; R^2 = coefficient of determination; Q^2 = predictive relevance of endogenous variables (omission distance = 8);
 f^2 = effect size of each independent construct; q^2 = effect size of an exogenous construct's contribution to an endogenous latent variable.

Step 1: Collinearity assessment. Assessment of SEM collinearity showed all variance inflation factor values were below 5 (except OL2, which was on the threshold at 5.010) and over 0.20, demonstrating non-severe multicollinearity (Hair et al., 2014).

Step 2: Structural model path coefficients. As shown in Table 3 and Figure 2, three direct hypotheses were supported (H1, H3, and H6), whereas H2, H4, and H5 were not supported. The extracted values from the bootstrapping

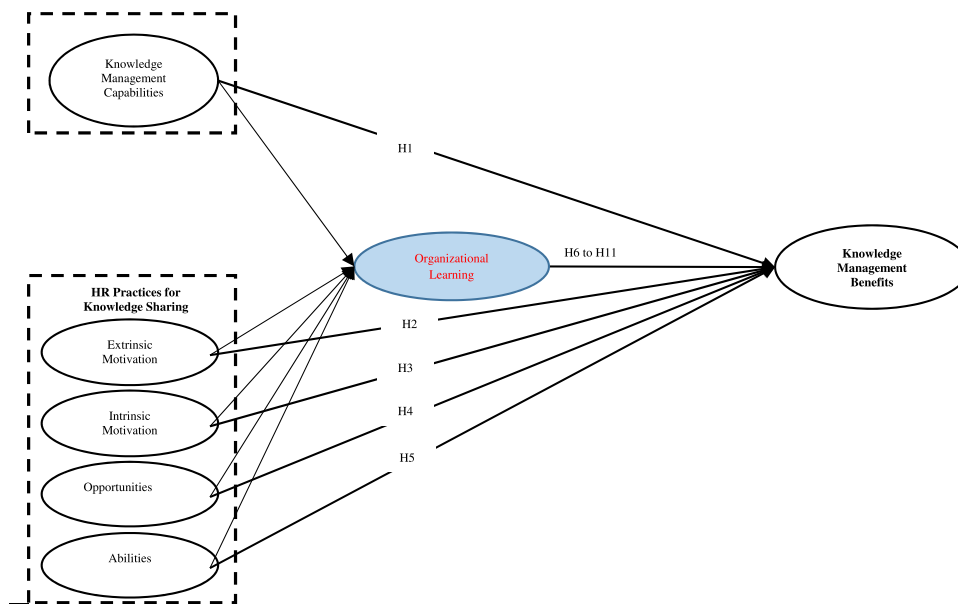


Figure 2. Structured model results with standardised coefficient. H1: $\beta = 0.122$, p-value = 0.017; H2: $\beta = -0.019$, p-value = 0.617; H3: $\beta = 0.119$, p-value = 0.028; H4: $\beta = -0.033$, p-value = 0.264; H5: $\beta = 0.105$, p-value = 0.061; H6: $\beta = 0.465$, p-value = 0.000; H7: $\beta = 0.045$, p-value = 0.003; H8: $\beta = 0.059$, p-value = 0.000; H9: $\beta = 0.158$, p-value = 0.000; H10: $\beta = 0.012$, p-value = 0.234; H11: $\beta = 0.207$, p-value = 0.000

showed KM capabilities ($\beta = 0.122$; $t = 2.398$; $p = 0.017$), intrinsic motivation ($\beta = 0.119$; $t = 2.201$; $p = 0.028$), and OL ($\beta = 0.465$; $t = 7.553$; $p < 0.001$) had direct positive relationships with KMB.

Step 3: Coefficient of determination (R^2). R^2 measures a model's predictive accuracy. R^2 values should be assessed for all endogenous constructs, as these values measure the model's in-sample predictive power (Ringle et al., 2020). The effect ranges from 0 to 1, with 1 representing complete predictive accuracy (Hair et al., 2014). R^2 values of 0.25, 0.50, and 0.75 are considered weak, moderate, and strong, respectively. The R^2 values of mediator-OL (0.708) and KMB (0.490) in this study were satisfactory.

Step 4: Effect size (f^2). The f^2 was assessed for each independent construct in the model. It measures the extent to which an independent construct exercises a considerable influence on KMB (Hair et al., 2014). In general, f^2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effects of the exogenous latent variable, respectively. Table 4 shows that independent constructs that significantly influenced KMB had larger effect sizes compared with other independent constructs.

Step 5: Blindfolding and predictive relevance (Q^2). In this study, the Q^2 value for each structural model was higher than 0 (Table 4), indicating all models had predictive relevance for KMB. The mediation model had the highest Q^2 value (0.553), followed by the independent model (0.295).

Step 6: Effect size (q^2). The q^2 value is used to assess the contribution of an exogenous construct to the Q^2 value of an endogenous latent variable. In general, q^2 values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium, or large predictive relevance for a certain endogenous construct, respectively (Hair et al., 2017). The q^2 values for each construct in the model are outlined in Table 4.

5.3. Estimation of mediation effect

To evaluate the mediation effect of a construct, the t -value must be measured before and after introduction of the mediating variable in an existing

relationship (Preacher et al., 2007; Ramesh et al., 2019). This study tested five mediation effects (Table 3). First, the mediating role of OL in KM capabilities and KMB was examined. Before introducing OL, the direct relationship between KM capabilities and KMB was a direct positive relationship with a significant p -value ($\beta = 0.122$; $t = 2.398$; $p = 0.017$). The direct path (KM capabilities to KMB) remained significant (the influence of KM capabilities hardly decreased: $\beta = 0.045$, $t = 2.973$, $p = 0.003$) in the KM capabilities and OL mediating path ($\beta = 0.098$; $t = 3.039$; $p = 0.002$). In turn, OL and KMB ($\beta = 0.465$; $t = 7.553$; $p < 0.001$) became significant and indicated partial mediation, which supported H7. The product of the direct and indirect effects was calculated to corroborate the type of partial mediation further. As the direct and indirect effects were positive, their product was also positive (i.e., $0.122 \times 0.045 = 0.006$). This showed that OL represented *complementary partial mediation* of the relationship from KM capabilities to KMB.

Second, the mediating effect of OL on extrinsic motivation and KMB was assessed. Before introducing OL, the direct relationship from extrinsic motivation to KMB was weak and statistically non-significant ($\beta = -0.019$; $t = 0.501$; $p = 0.617$). The direct path became significant ($\beta = 0.059$; $t = 3.508$; $p < 0.001$) with the extrinsic motivation and OL mediating path ($\beta = 0.126$; $t = 4.098$; $p < 0.001$). In turn, OL and KMB ($\beta = 0.465$; $t = 7.553$; $p < 0.001$) became significant and indicated *indirect-only (full) mediation*, which supported H8.

Third, the mediating role of OL for intrinsic motivation and KMB was assessed. Before introducing OL, the direct relationship between intrinsic motivation and KMB was a positive relationship with a significant p -value ($\beta = 0.119$; $t = 2.201$; $p = 0.028$). The direct path (intrinsic motivation to KMB) remained significant (the influence of intrinsic motivation increased; $\beta = 0.158$, $t = 5.611$, $p < 0.001$) with the intrinsic motivation and OL mediating path ($\beta = 0.340$; $t = 8.959$; $p < 0.001$). In turn, OL and KMB ($\beta = 0.465$; $t = 7.553$; $p < 0.001$) became significant and indicated partial mediation, which supported H9. As the direct and indirect effects were positive, their product was also positive (i.e., $0.119 \times 0.158 = 0.019$). This showed OL represented *complementary partial mediation* of the relationship between intrinsic motivation and KMB.

Fourth, we assessed the mediating effect of OL for opportunity-enhancing practices and KMB. Before introducing OL, the direct relationship from opportunity-enhancing practices to KMB was weak and statistically non-significant ($\beta = -0.033$; $t = 1.116$; $p = 0.264$). After introducing the mediating variable, both the direct ($\beta = 0.012$; $t = 1.189$; $p = 0.234$) and opportunity-enhancing practices to OL mediating

Table 4. Effect sizes (f^2 and q^2).

	Effect Size f^2		Effect Size q^2	
	KMB	OL	KMB	OL
AEP	0.01	0.41	0.00	0.21
EMP	0.00	0.04	0.00	0.01
IMP	0.13	0.22	0.10	0.21
KMB				
KMC	0.18	0.20	0.09	0.09
OL	0.12		0.13	
OP	0.00	0.00	0.00	0.00

f^2 = effect size of each independent construct; q^2 = effect size of an exogenous construct's contribution to an endogenous latent variable.

paths ($\beta = 0.025$; $t = 1.209$; $p = 0.227$) remained non-significant, demonstrating *no moderation effect*, and indicating H10 was not supported.

Finally, we assessed the mediating effect of OL for ability-enhancing practices and KMB. Before introducing OL, the direct relationship from ability-enhancing practices to KMB was weak and statistically non-significant ($\beta = 0.105$; $t = 1.875$; $p = 0.061$). The direct path became significant ($\beta = 0.207$; $t = 6.568$; $p < 0.001$) with the ability-enhancing practices and OL mediating path ($\beta = 0.447$; $t = 12.563$; $p < 0.001$). In turn, OL and KMB ($\beta = 0.465$; $t = 7.553$; $p < 0.001$) became significant, indicating *full mediation* and supporting H11.

6. Discussion

This study showed KM capabilities had a positive relationship with KMB (H1), which was consistent with previous studies (Ho et al., 2012) that found KM capabilities facilitated decision-making, enhanced social interaction, and built organisational memory (Dalkir, 2017; Ryan et al., 2010). Technology offers a large capacity for information storage and allows information retrieval whenever necessary to leverage innovation (Veer Ramjeawon & Rowley, 2017). On the other hand, this result contradicts previous studies, which found that IT could have a negative impact on knowledge sharing if the employees lack the required IT skills (Jääskelä et al., 2017).

Comparing the effect of extrinsic and intrinsic motivation (H2 and H3) showed that H2 was not supported, but H3 was supported. Previous studies reported that extrinsic motivation had a negative effect (Bock et al., 2009; Titi Amayah, 2013). However, intrinsic motivation has been consistently shown to have a positive impact on organisational performance and productivity in the public sector, as employees had high self-efficacy (Mansor & Saparudin, 2015) and have positive relationships with innovation (Fischer et al., 2019).

Both opportunity- and ability-enhancing practices (H4 and H5) had direct negative effects on KMB. This is consistent with previous studies that investigated the impact of opportunities on knowledge sharing (Ma et al., 2017; Wu & Chaturvedi, 2009). In contrast, ability-enhancing practices had a negative effect on KM, which contradicts previous studies that reported positive results on knowledge sharing (Amroun et al., 2016; Hsu et al., 2007).

OL had a positive effect on KMB (H6). This was consistent with previous research that demonstrated OL influenced the development of capabilities to enhance an organisation's competitiveness (Njuguna, 2009) and organisational innovation (Zhang & Kwan, 2018). The result is similar to other studies showing how OL had positive relationships in decision making and innovation (Bao et al., 2012).

The importance of the mediation effect of OL is reflected in the model proposed in this study. Also, OL had a partial mediation effect between KM capabilities and KMB, which supported H7. Moreover, OL had a full mediation effect on the relationship between intrinsic motivation and KMB (supporting H8), and a partial mediation effect on the relationship between extrinsic motivation and KMB (supporting H9). This highlights the importance of intrinsic motivation for KMB in a policing organisation. OL did not have a mediating effect between opportunity-enhancing practices and KMB, meaning H10 was not supported. However, OL had a full mediation effect between ability-enhancing practices and KMB, suggesting KMB can be enhanced by improving employees' abilities and offering an OL strategy.

7. Conclusion

This study tested 11 hypotheses that explored the mediation impact of OL on KM capabilities, HREP, and KMB. The results clarified how KM capabilities and HREP influences differ when OL was introduced as a mediator. This study focused on a policing organisation, which may limit the generalisation of the findings. The results may also be limited as the sample was skewed towards males. However, this study provides a basis for future studies and may encourage research on the impact of KM capabilities and HREP on OL as a dependent factor.

The theoretical contribution of this study is that it adds to existing KM literature by examining the relationships between KM capabilities, HREP, OL, and KMB. Additionally, it proposed a new model that can be tested in other Gulf Cooperation Council (GCC) countries and organisations. In addition, this study also provides insights for researchers conducting KM-related studies in the region, which have only been narrowly explored to date.

The practical implication of this study is that it provides insight and important implications for government leaders, policymakers, and KM practitioners for deepening understanding of KMB, which will support policies and environments that are conducive to KM. This will also assist researchers in explaining related theories, such as knowledge-based theory and social exchange theory.

In terms of the economic impact, this research will help police and related organisations to strengthen their KM systems, which will support achievement of the UAE vision 2030 of building a knowledge-based economy. Furthermore, the findings will help the policing organisation in maintaining safety and security through enhancing its KM initiatives, and assist KM practitioners in performing benchmarking related to study variables

8. Recommendations

This paper makes several recommendations. First, different parts of the organisation have different cultures, job functions, and objectives. It may, therefore, be worth having dedicated knowledge management strategies for each function. Second, the organisation should work to develop a core organisational learning approach or methodology, because this will have a substantial impact on knowledge management benefits.

Third, the strong use of information technology is essential for knowledge management. The organisation must ensure that staff, especially senior managers, understand the importance of technology in organisational learning and knowledge management. HR managers can also help to increase the use of IT tools, including artificial intelligence, across the organisation. HR managers should also review reward schemes and ensure that the right incentives are in place. In particular, they should examine the use of opportunity-enhancing HR practices because these did not affect either organisational learning or knowledge management benefits in this study. It is thought that this may be because of time constraints or workloads of participating managers. It may, therefore, be helpful to review workloads to ensure that staff has time to share their knowledge.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A.

Table A1. Study constructs and measurement sources.

Factor	Measurement source	Cronbach's alpha
Knowledge Management Capabilities	Gold et al. (2001)	0.872
HR Practices	Mao et al. (2016)	
Extrinsic-motivation-enhancing HR practices	Andreeva and Sergeeva (2016)	0.792
Intrinsic-motivation-enhancing HR practices	Kianto et al. (2011)	
	Andreeva and Sergeeva (2016)	0.811
	Foss et al. (2009)	
	Kuvaas et al. (2012)	
Opportunity-enhancing HR practices	Andreeva and Sergeeva (2016)	0.928
	Wu et al. (2007)	
Ability-enhancing HR practices	Andreeva and Sergeeva (2016)	0.859
	Jackson et al. (2006)	
Organisational Learning	Kohtamäki et al. (2012)	0.927
Knowledge Management Benefit	Dalkir (2017)	0.906
	Sundiman et al. (2013)	

Appendix B. Survey Items

Section A: Demographic information

1	Gender
	(1) ☐ Male 2 ☐ Female
2	How old are you?
	
3	What is the function of your job?
	(1) ☐ Technical
	(2) ☐ Administrative
	(3) ☐ Operational (Field Work)
	(4) ☐ Others (Please specify)
4	Your highest level of education
	(1) ☐ Below High School
	(2) ☐ High School
	(3) ☐ Higher Diploma/Bachelor
	(4) ☐ Master Degree and above
5	Job type:
	(1) ☐ Police officer
	(2) ☐ Civilian
6	How many years of experience?
	
7	General Directorate:
	Commander -In-Chief departments
	General Headquarters Sector
	Criminal Security Sector
	Security and Ports Sector
	Special Tasks Sector
	Finance and Services Sector
	Central Operations Sector
	Community Security Sector
	Human Resources Sector
8	Do you work in police station?
	(1) ☐ Yes 2 ☐ No
	If yes, name the police station

Questions

Which of the following statements best describes your perception towards knowledge management benefits? Please indicate your level of AGREEMENT or DISAGREEMENT with the following statements about knowledge management on a scale of 1 to 5; where 1 = strongly disagree and 5 = strongly agree. Please circle one number that best represents your opinion.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
Section B						
Knowledge management capabilities						
1	My organisation has processes to gain knowledge of our suppliers, customers, and partners.	1	2	3	4	5
2	Computerised information systems are available and can be accessed to share information with others.	1	2	3	4	5
3	My organisation has processes in place to distribute knowledge throughout the organisation.	1	2	3	4	5
4	In my organisation, knowledge is accessible to those who need it.	1	2	3	4	5
Section C: HR practices for knowledge sharing						
Extrinsic-motivation-enhancing HR practices						
5	Our organisation specifically rewards knowledge sharing with monetary incentives.	1	2	3	4	5
6	Our organisation specifically rewards knowledge sharing with non-monetary incentives.	1	2	3	4	5
7	In our organisation, knowledge sharing is a component in employees' performance evaluation	1	2	3	4	5
Intrinsic-motivation-enhancing HR practices						
8	The freedom to carry out my job the way I want to	1	2	3	4	5
9	The opportunity for suggesting work improvement initiatives	1	2	3	4	5
10	High level of variety in my job	1	2	3	4	5
Opportunity-enhancing HR practices						
11	The organisation holds informal gathering to promote friendly relationship among colleagues.	1	2	3	4	5
12	The organisation invites high-performance employees to share their knowledge with others in meetings.	1	2	3	4	5
13	The organisation invites employees who have just acquired new knowledge from outside sources to share what they have learned with others.	1	2	3	4	5
14	The organisation holds regular meetings where colleagues can share successful experiences or resolve work problems.	1	2	3	4	5
15	The organisation allows employees to consult their colleagues on problems during work time.	1	2	3	4	5
16	There are annual conferences concerning certain issues that require in-depth discussion among colleagues in our organisation.	1	2	3	4	5
17	There are rest rooms available where employees can talk to each other and share experience in our organisation.	1	2	3	4	5
18	The company assigns every new employee a senior employee and coaching to help him/her during orientation.	1	2	3	4	5
19	The company has mentoring programmes in which employees can receive their mentor's help at any time.	1	2	3	4	5
Ability-enhancing HR practices						
20	In our organisation there are trainings to develop interpersonal communication skills.	1	2	3	4	5
21	In our organisation there are trainings for teamwork skills.	1	2	3	4	5
22	The organisation provides trainings to develop skills of self-reflection and knowledge externalisation.	1	2	3	4	5
Section D						
Organisational learning						
23	Our employees are encouraged to learn from experience.	1	2	3	4	5
24	Our employees are encouraged to share knowledge.	1	2	3	4	5
25	Our management and employees are continuously encouraged to share their thoughts, goals and ideas.	1	2	3	4	5
26	We appreciate trying out new ideas so much that we tolerate occasional error.	1	2	3	4	5
Section E						
Knowledge management benefits						
27	KM benefit helps drives strategy.	1	2	3	4	5
28	KM benefit solves problems quickly.	1	2	3	4	5
29	KM benefit diffuse best practices.	1	2	3	4	5
30	KM benefit improves knowledge embedded in services.	1	2	3	4	5
31	Cross-Fertilises ideas and increased opportunities for innovation.	1	2	3	4	5
32	KM benefit enables organisation to stay ahead of the competition better.	1	2	3	4	5
33	KM benefit builds organisations memory.	1	2	3	4	5