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RESEARCH ARTICLE

KNOWLEDGE MANAGEMENT SYSTEM USE AND JOB PERFORMANCE: A MULTILEVEL CONTINGENCY MODEL

Xiaojun Zhang
School of Business and Management, Hong Kong University of Science and Technology,
Clear Water Bay, Kowloon, Hong Kong CHINA {xiaojunzhang@ust.hk}

Appendix A

Prior Research on Factors Affecting KMS Success

Authors	IVs	DV	Theoretical Perspectives	Methodology	Context	Nature of KMS	Major Findings	Role of Performance	Journal
McCall et al. (2008)	KMS use	Decision performance and knowledge acquisition	ACT-R theory	Experiment	Students who enrolled in a managerial accounting class	WebCT, an internet-based course portal	In the short term, KMS increased decision performance, but in the long term, it did not help development of domain expertise	Test scores, encoding of explicit knowledge and problem-solving skills	Journal of Information Systems
Gallivan et al. (2003)	Use of a "help desk" KMS	Employees' performance	Studies employing system dynamics	Case study	University employees in the computer service center	An integrated multi-function KMS that combines a call tracking system and a knowledge repository	KMS use decreased performance	Efficiency metrics to measure performance	Information Technology and People
Gonzalez et al. (2005)	Use of a knowledge management-centric help desk	Employees' performance	Literature related to knowledge management, help desk operations and technologies	Experiment	Help desk agents	A KMS serves as an intermediary between help desk agent and all data, information and knowledge sources	Use of a knowledge management-centric help desk improved employees' performance	Performance as time to resolve problems and the throughput of the help desk	Decision Support Systems

Authors	IVs	DV	Theoretical Perspectives	Methodology	Context	Nature of KMS	Major Findings	Role of Performance	Journal
Handzic (2009)	KMS use	Decision performance	Literature related to decision making and knowledge management	Experiment	Graduate students who enrolled in Master or Doctoral courses in IS	KMS as a decision-aiding component for a simulated production planning game	The effect of KMS use on decision performance was not conclusive	Performance as decision accuracy	Knowledge Management and Organizational Learning, Annals of Information Systems
Kankanhalli et al. (2011)	KMS reuse	Employees' performance	Literature related to KMS capability for knowledge reuse and KMS user motivation	Survey	Customer service officers supporting phone banking services in a multinational bank	Knowledge repository	Knowledge reuse was positively related to employees' performance	Performance as faster, better and less costly customer service due to use of the knowledge repository	Information and Management
Ko and Dennis (2011)	KMS use	Individual sales performance	Literature related to KMS implementation	Data collected from multiple sources, i.e., KMS system, personnel management system and third-party contractor	Knowledge workers, i.e., sales representatives from the pharmaceutical industry	Lotus Notes-based system for the mobile sales representatives and use of the system was not mandatory	KMS use had significant positive impact on individual performance and experience moderated the relationship such that the effect was stronger for individuals with more experience, but the effect of experience diminished over time	Employee sales performance	Information Systems Research
Quigley et al. (2007)	Knowledge sharing norms, shared knowledge, trust	Manager's performance as market share	Incentive theory and social motivation theory	Survey and experiment	Simulation game	CELCOM 21, a computer-based interactive management decision-making simulation	Trust in knowledge providers strengthened the effect of self-efficacy of knowledge seekers on their performance; knowledge sharing and self-set goals had both direct and interactive effects on individual performance	Performance measured as market share	Organization Science

Appendix B

Loadings and Cross-Loadings

	FI	TD	HE	CO	CU	TSK	OWN	TRV	IND	MUL	EMG	INF	MOT	STM	ICN	CUN	CUT	PER	CON	CMS	TRN
FI1	**.82**	.32	.32	.40	.29	.27	.25	.21	.32	.42	.39	.26	.34	.27	.37	.26	.25	.37	.24	.39	.24
FI2	**.81**	.25	.39	.17	.19	.21	.27	.26	.17	.23	.26	.17	.25	.40	.33	.29	.17	.24	.34	.33	.44
FI3	**.73**	.18	.24	.23	.31	.43	.31	.29	.27	.22	.39	.22	.25	.41	.35	.30	.31	.28	.27	.31	.39
FI4	**.80**	.35	.42	.34	.29	.32	.41	.39	.44	.24	.25	.26	.43	.41	.44	.20	.24	.26	.42	.40	.17
TD1	.44	**.81**	.42	.23	.29	.40	.27	.38	.18	.23	.36	.43	.36	.18	.23	.29	.36	.21	.23	.18	.23
TD2	.40	**.82**	.24	.27	.42	.17	.26	.21	.33	.41	.41	.19	.37	.34	.37	.33	.28	.20	.44	.42	.24
TD3	.36	**.71**	.43	.24	.41	.43	.23	.40	.25	.24	.19	.24	.21	.42	.20	.24	.32	.32	.19	.18	.29
TD4	.37	**.80**	.17	.42	.44	.24	.37	.32	.34	.24	.39	.40	.34	.34	.44	.26	.41	.33	.32	.19	.28
HE1	.32	.44	**.82**	.28	.37	.39	.20	.42	.19	.27	.36	.27	.30	.38	.32	.18	.19	.25	.43	.28	.42
HE2	.36	.18	**.72**	.43	.18	.27	.24	.36	.39	.19	.26	.21	.43	.38	.34	.24	.32	.27	.31	.35	.35
HE3	.30	.17	**.74**	.20	.29	.17	.35	.42	.27	.21	.39	.20	.44	.26	.20	.39	.32	.25	.34	.41	.33
CO1	.42	.28	.25	**.78**	.29	.22	.43	.40	.38	.33	.43	.25	.18	.17	.30	.17	.33	.26	.36	.20	.31
CO2	.24	.32	.34	**.72**	.36	.17	.17	.38	.32	.27	.38	.35	.37	.41	.24	.35	.21	.19	.33	.31	.36
CU1	.36	.39	.29	.19	**.83**	.41	.34	.21	.21	.20	.40	.36	.40	.19	.33	.18	.33	.29	.44	.41	.44
CU2	.25	.41	.37	.44	**.70**	.29	.41	.22	.24	.35	.31	.43	.27	.30	.32	.43	.21	.36	.17	.28	.25
CU3	.37	.26	.36	.44	**.76**	.36	.33	.18	.20	.37	.23	.33	.40	.37	.27	.29	.20	.39	.33	.38	.22
TSK1	.43	.43	.41	.39	.27	**.71**	.24	.42	.36	.25	.21	.37	.31	.38	.29	.41	.25	.44	.22	.27	.25
TSK2	.24	.36	.41	.36	.38	**.76**	.44	.30	.36	.44	.43	.37	.24	.34	.37	.36	.17	.36	.44	.31	.29
TSK3	.27	.42	.34	.29	.18	**.76**	.31	.19	.24	.29	.26	.30	.34	.31	.18	.40	.41	.44	.22	.42	.17
OWN1	.35	.33	.35	.37	.17	.29	**.74**	.36	.33	.42	.34	.20	.21	.32	.23	.33	.30	.18	.21	.27	.19
OWN2	.23	.26	.30	.34	.34	.20	**.73**	.24	.39	.34	.28	.42	.17	.42	.29	.44	.26	.38	.43	.42	.38
TRV1	.36	.20	.39	.18	.42	.18	.17	**.69**	.21	.43	.44	.34	.38	.28	.19	.31	.34	.40	.27	.36	.21
TRV2	.19	.28	.37	.37	.44	.34	.44	**.78**	.18	.21	.18	.33	.27	.31	.24	.21	.25	.35	.33	.33	.42
TRV3	.21	.43	.37	.38	.42	.30	.20	**.83**	.21	.20	.32	.17	.24	.27	.37	.32	.36	.19	.27	.18	.39
IND1	.38	.23	.33	.31	.42	.26	.21	.34	**.75**	.30	.24	.35	.40	.17	.17	.42	.40	.44	.40	.25	.37
IND2	.36	.22	.35	.19	.44	.31	.23	.38	**.75**	.19	.17	.25	.25	.25	.39	.36	.37	.20	.23	.31	.24
MUL1	.35	.20	.36	.40	.35	.18	.39	.17	.31	**.81**	.31	.20	.26	.18	.31	.27	.44	.40	.19	.24	.37
MUL2	.44	.24	.18	.39	.28	.35	.29	.42	.28	**.80**	.26	.23	.38	.32	.40	.27	.26	.18	.25	.37	.17
EMG1	.21	.20	.31	.28	.42	.26	.42	.27	.25	.36	**.70**	.24	.34	.31	.21	.40	.32	.26	.39	.19	.23
EMG2	.37	.19	.43	.31	.34	.24	.20	.24	.24	.35	**.81**	.43	.30	.43	.22	.37	.20	.19	.44	.33	.24
INF1	.21	.34	.24	.35	.21	.28	.24	.41	.44	.34	.33	**.71**	.32	.30	.29	.43	.23	.40	.31	.41	.38
INF2	.35	.41	.40	.22	.30	.25	.26	.30	.39	.42	.17	**.76**	.27	.30	.39	.22	.22	.30	.43	.35	.30
INF3	.38	.18	.34	.17	.27	.18	.28	.17	.43	.41	.44	**.71**	.31	.44	.36	.18	.22	.21	.25	.22	.28
INF4	.29	.43	.42	.27	.29	.19	.21	.38	.24	.27	.17	**.70**	.41	.44	.20	.20	.22	.35	.44	.44	.26
INF5	.29	.40	.33	.37	.39	.17	.43	.42	.21	.17	.38	**.70**	.33	.40	.29	.38	.20	.25	.26	.39	.24
INF6	.19	.38	.19	.27	.38	.39	.30	.42	.22	.35	.21	**.78**	.25	.18	.19	.44	.24	.23	.37	.22	.25
INF7	.18	.20	.30	.36	.28	.27	.27	.28	.26	.32	.39	**.79**	.35	.19	.41	.20	.36	.32	.44	.19	.42
INF8	.27	.27	.30	.26	.32	.35	.21	.39	.27	.19	.32	**.73**	.37	.30	.39	.35	.28	.31	.25	.28	.41
MOT1	.22	.30	.43	.18	.30	.22	.34	.36	.22	.31	.32	.29	**.72**	.43	.38	.17	.43	.23	.23	.18	.28
MOT2	.43	.25	.35	.24	.40	.44	.24	.36	.23	.34	.24	.20	**.79**	.43	.31	.38	.44	.20	.33	.41	.18
MOT3	.36	.39	.29	.29	.43	.28	.31	.43	.39	.33	.35	.23	**.71**	.22	.26	.39	.31	.35	.37	.38	.34
MOT4	.21	.27	.23	.43	.20	.35	.23	.32	.24	.43	.17	.17	**.81**	.19	.36	.43	.28	.19	.41	.39	.17
STM1	.28	.20	.36	.40	.32	.28	.36	.35	.40	.43	.35	.38	.31	**.78**	.37	.39	.25	.40	.22	.34	.35
STM2	.22	.17	.34	.40	.40	.38	.19	.20	.41	.26	.17	.24	.17	**.82**	.25	.24	.36	.39	.27	.34	.42
STM3	.19	.32	.22	.25	.40	.24	.22	.36	.44	.27	.34	.20	.30	**.70**	.43	.32	.42	.18	.44	.22	.27
STM4	.39	.29	.43	.41	.24	.41	.24	.36	.32	.29	.28	.43	.20	**.83**	.39	.32	.18	.24	.17	.34	.36
ICN1	.25	.39	.44	.31	.30	.41	.17	.18	.33	.37	.21	.33	.22	.37	**.69**	.25	.22	.36	.27	.29	.42
ICN2	.24	.20	.24	.21	.17	.29	.20	.41	.18	.39	.29	.33	.25	.34	**.71**	.34	.22	.29	.23	.26	.19
ICN3	.33	.42	.19	.24	.41	.32	.37	.22	.34	.29	.21	.28	.44	.17	**.80**	.39	.40	.40	.29	.34	.20
ICN4	.33	.27	.44	.24	.34	.33	.24	.40	.19	.26	.33	.44	.43	.17	**.83**	.41	.43	.23	.41	.39	.38
CUN1	.44	.26	.26	.35	.20	.43	.19	.17	.44	.35	.41	.25	.25	.29	.31	**.75**	.26	.24	.42	.19	.27
CUN2	.39	.23	.17	.41	.17	.25	.23	.41	.44	.37	.39	.27	.41	.21	.31	**.83**	.21	.34	.33	.26	.23
CUN3	.18	.44	.29	.26	.24	.19	.17	.17	.28	.35	.33	.37	.31	.19	.31	**.76**	.18	.17	.30	.26	.38
CUN4	.26	.31	.27	.38	.44	.42	.23	.38	.21	.28	.39	.42	.28	.41	.21	**.74**	.18	.41	.19	.19	.18

	FI	TD	HE	CO	CU	TSK	OWN	TRV	IND	MUL	EMG	INF	MOT	STM	ICN	CUN	CUT	PER	CON	CMS	TRN
CUT1	.38	.38	.39	.36	.25	.28	.29	.25	.22	.23	.41	.42	.42	.31	.35	.41	**.75**	.31	.34	.19	.38
CUT2	.28	.18	.34	.35	.36	.23	.21	.36	.32	.33	.38	.39	.36	.33	.34	.34	**.76**	.43	.33	.20	.30
CUT3	.28	.23	.26	.31	.31	.35	.24	.34	.23	.42	.26	.38	.37	.23	.17	.32	**.74**	.28	.42	.22	.23
PER1	.36	.35	.35	.39	.19	.35	.19	.39	.18	.37	.32	.37	.36	.23	.28	.39	.29	**.78**	.42	.28	.42
PER2	.42	.26	.40	.38	.40	.36	.41	.17	.34	.33	.17	.29	.39	.23	.23	.21	.28	**.77**	.36	.44	.21
PER3	.17	.33	.35	.38	.40	.39	.34	.22	.30	.41	.44	.40	.33	.31	.20	.24	.43	**.76**	.35	.42	.23
CON1	.37	.31	.40	.27	.44	.34	.31	.21	.22	.32	.40	.17	.35	.37	.38	.36	.18	.25	**.82**	.41	.34
CON2	.17	.18	.19	.36	.39	.22	.33	.37	.37	.20	.31	.39	.27	.40	.32	.36	.21	.31	**.73**	.23	.17
CON3	.27	.44	.37	.43	.41	.22	.44	.37	.32	.32	.42	.31	.29	.39	.30	.35	.22	.35	**.82**	.35	.38
CON4	.42	.23	.27	.42	.27	.22	.42	.41	.30	.39	.17	.42	.27	.19	.18	.32	.36	.39	**.83**	.31	.31
CON5	.44	.32	.39	.39	.29	.21	.42	.18	.25	.23	.35	.36	.32	.32	.44	.28	.24	.28	**.81**	.33	.20
CMS1	.18	.17	.28	.26	.18	.25	.20	.28	.19	.36	.42	.29	.42	.28	.24	.37	.29	.33	.34	**.69**	.34
CMS2	.29	.34	.37	.27	.27	.35	.41	.36	.19	.25	.43	.20	.42	.34	.17	.37	.24	.36	.24	**.83**	.18
CMS3	.24	.18	.31	.38	.39	.21	.20	.33	.39	.36	.28	.33	.37	.17	.31	.23	.32	.35	.24	**.79**	.41
TRN1	.18	.27	.43	.31	.31	.21	.37	.17	.40	.40	.21	.24	.28	.20	.42	.28	.26	.32	.34	.34	**.81**
TRN2	.32	.19	.31	.27	.25	.39	.20	.32	.21	.32	.32	.25	.19	.36	.30	.43	.43	.39	.24	.18	**.78**
TRN3	.39	.22	.24	.32	.18	.44	.36	.24	.18	.26	.42	.17	.21	.39	.22	.17	.28	.21	.25	.37	**.80**

Notes:

1. FI = focused immersion, TD = temporal dissociation, HE = heightened enjoyment, CO = control, CU = curiosity, TSK = task nonroutineness, OWN = ownership, TRV = easy travel, IND = indeterminancy, MUL = multiple perspectives, EMG = emergence, CUN = capability to understand knowledge, CUT = capability to utilize knowledge, INF= idealized influence, MOT = inspirational motivation, STM = intellectual stimulation, ICN = individual consideration, PER = performance with reference to the KMS, CON = conscientiousness, CMS = change management support, TRN = training satisfaction.

2 Cross-loadings less than .25 are not shown.

Appendix C

Variance and Weight Range

Formative Constructs	Variance	Weight Range
Cognitive absorption	.65	between .42 and .61
Deep structure use	.66	.77 and .64
Depth of use	.62	between .32 and .53
Perceived support for contextualization	.58	between .25 and .40
Absorptive capacity	.52	.35 and .57
Transformational leadership	.62	between .33 and .61
Job performance without reference to the KMS	.60	between .30 and .50
Previous job performance without reference to the KMS	.66	between .28 and .66

Appendix D

Initial Set of Semi-Structured Interview Questions

1. Please tell me why the organization needed to implement the system.
2. Please comment on the training that you were given during the implementation of the system.
3. Please comment on the organizational support made available to you after the roll-out of the system.
4. Please describe how your work has been affected by the system.
5. Please comment on the major benefits of using the system.
6. Please comment on the major challenges you encounter in doing your job after the implementation of the system.
7. Please describe how you use the system to support your job.
8. Please describe how you tackle the various problems arising from using the system.

Note: Other questions were asked depending on the responses received.

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