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FACTORS THAT AFFECT THE TRANSFER OF IT TRAINING AMONG CLERICAL WORKERS: A SEQUENTIAL MIXED METHOD APPROACH

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INTRODUCTION

In today's new economy, organizations are continuously facing a number of global developments such as increasing complexity of technologies, high economic uncertainty and increasing speed within which innovations take place. The rapid development of the Internet, coupled with the improved capacity and capability of computers, has hastened the business process, thus forcing most organizations to restructure and reorganize themselves accordingly. Such phenomenon also occurs in higher educational institutions. Acquiring large-scale information technology (IT) is seen as a strategic decision for some universities, even though the utilization of computer technology may not be maximized. IT competence among university staff needs to be aligned to the changes within the organization so that operational function is optimized in what Zuboff (1988) prophesized as the coming of the age of the smart machine.

The problem is further compounded at the clerical level. University clerical workers have traditionally been provided support, so that many IT related transaction processing and office automation systems can function effectively within their departmental unit. According to Karim (1999), in the higher educational environment, transaction processing systems at the operational level may include (a) administrative tasks involving students, such as admissions, enrolment

and registration; (b) tasks related to accounting such as budgeting, procurement and inventory; (c) personnel tasks such as employment forms and payroll; (d) physical plant operational tasks such as room assignment, planning and maintenance; and (e) a variety of record keeping tasks. At the same time the aforementioned tasks must be balanced with running the office automation systems which can include functions such as report writing and electronic and/or paper correspondence to various internal and external clients. Furthermore, Gerber and Velde (1996) have called for a more enlightened conception of competence for the clerical–administrative occupations, which have become both multi-faceted and holistic in nature.

Interestingly, there are limited studies on clerical workers - a group of employees who plays a big role in supporting the top management. In some organizations, they are the "invisible majority" that gets little credit for any achievement, but will be the first to be blamed for mistakes made. Like the professional bureaucracies, Mintzberg and Quinn (1988) believe that universities place faculty in their most prestigious roles. In many respects, professional bureaucracy discounts the role of middle management and the supporting staff. Mintzberg and Quinn (1988) argued that college and university mid-level administrators and clerical staff are not faculty and are typically a non-contract group. Within the context of IT utilization, Andersen and Kraemer (1994) believed that the bulk of problems in end-user computing are mainly in the clerical and administrative areas. In addition, Madon (1993) concluded that the administrative section is the first to be computerized and is where half the end-user computing occurs. Hughes et al. (2003) also indicated that more than 50% of employed Canadians are now moderate or high intensity computer users in the workplace and work in a fairly wide range of occupational and educational categories where about one-third of high intensity computer users are located in professional occupations, while one-fifth are in clerical jobs. These statistics highlight the importance of training to upgrade the IT competencies of clerical workers so that this group will not be neglected and will move forward as the organization progresses into the digital world

of information super highways and parallel processing.

With the advent of IT, office environment and organizational structures are now more 'IT oriented' to provide better services to the university population. Accordingly, Pelletier (2004) proposes the need for administrators to realise that they have to equip their staff with IT skills to ensure that the university operation would be efficient and effective at all levels. At the same time, conditions that affect the upgrading of IT competence of university clerical workers need to be properly researched to identify problematic areas in the transfer of IT training to the workplace. If university clerical workers are to adapt to a changing environment, it is vital that they become competent in the use of IT. As such, this study was conducted to empirically and systematically investigate the conditions for effective training in order to enhance IT competencies among Malaysian university clerical workers.

METHODOLOGY

Mixed methods were used for this study. According to Greene, et al. (1989), one advantage in using sequential mixed methods is for development purposes whereby results from the first method becomes the feeder for the second method. The first method starts with a three-round expert opinion assessment (EOA) which was used to identify conditions for training effectiveness. Thompson (1990) argues that an expert opinion method is an alternative to a number of techniques for combining experts' opinions under the assumption that the experts are statistically independent. According to Miller (1995), the EOA is a procedure to solicit opinion, judgment and consensus from a group of experts using carefully designed instruments.

Expert Opinion Assessment

A pilot study of the EOA was tested by seven post graduate students

for three rounds. After the instrument were deemed to be reliable, 25 experts comprising of academicians and professionals with at least eight years of experience and are knowledgeable on the subject matter were invited to become the panel of experts for the study. The first round survey asked only one question: "List as many conditions for IT training effectiveness that affect the performance of clerical staff at Higher Education Institutions." With reference to Table 1, the responses to this question were analysed and common responses were reworded to avoid duplication. The second and third rounds of the EOA produced mean and group rank for each factor. The changes in ranking throughout the latter round are brought about by review of each expert's rational for each factor. Following the completion of the second and third rounds of the study, the Kendall's Coefficient of Concordance (W) was computed to measure the level of consensus among the experts for the factors proposed. According to Siegel (1956), Kendall's W is a measure designed to determine to which a set of ranked scores agree.

Code Name	Experience	Qualification	Organization	Position
A	9 Years	Master	University	IT Manager
B	8 Years	Master	University	Lecturer
C	18 Years	MBA	Government Agency	Human Resource Director
D	15 Years	BA, MBA	Training Centre	Department Head
E	8 Years	Master	University	Doctoral Student
F	9 Years	B Engg, MBA	Multinational Corporation	CEO

G	7 Years	Bsc, Master	University	Lecturer
H	13 Years	Bsc, Master	University	Ex-IT manager, Lecturer
I	8 Years	Msc	University	Lecturer
J	9 Years	Msc	University	Lecturer
K	15 Years	DBA	Government Agency	Consultant
L	20 Years	B Engg, MBA	Government Agency	System Engineer
M	25 Years	B Engg	Multinational Corporation	Company Chairman
N	16 Years	MBA	Government Agency	Consultant
O	11 Years	Master	University	IT Manager
P	13 Years	Ph D	University	Ex-IT manager, Deputy Dean
Q	12 Years	MBA	Government	Consultant
R	14 Years	Diploma	Government Agency	HR Assistant Manager
S	12 Years	PhD	University	Head of Department
T	15 Years	PhD	University	Ex-IT Manager, Department Head
U	18 Years	B Sc	Government Agency	HRM Manager
V	10 Years	MMT	Multinational Corporation	Logistic Manager
W	15 Years	MBA	Government	Service Research Manager
X	13 Years	MBA	Multinational Corporation	Regional Manager

Y	15 Years	MSc	Multinational Corporation	Regional Manager

Table 1: Expert Opinion Assessment participants

SURVEY QUESTIONNAIRE

After several rounds of pilot testing, the finalized survey questionnaire comprised of 61 items designed to obtain university clerical workers' perceptions on conditions for training effectiveness and IT competence and several demographic questions. The questionnaires were distributed to 2,000 randomly selected university clerical workers from 24 public universities and their branch campuses. Based on Table 2, the returned responses of 554 clerical workers were treated as the finalized sampling frame for this study.

UNIVERSITY	Chief Clerk	Clerk	Senior Stenographer	Steno-grapher	Total
Kolej Agama Sultan Zainal Abidin (KUSZA)	1	4	0	1	6
Kolej Universiti Islam Malaysia	0	18	0	2	20
Kolej Universiti Kejuruteraan & Teknologi Malaysia	0	13	0	1	14
Kolej Universiti Kejuruteraan Utara Malaysia	0	4	0	0	4

Kolej Universiti Sains & Teknologi Malaysia	1	10	0	0	11
Kolej Universiti Teknikal Kebangsaan Malaysia	1	11	0	1	13
Kolej Universiti Teknologi Tun Hussein Onn	0	27	0	5	32
Universiti Islam Antarabangsa (UIA)	3	20	1	1	25
Universiti Kebangsaan Malaysia (UKM)	1	30	2	9	42
Universiti Malaysia Sabah (UMS)	0	10	0	1	11
Universiti Malaysia Sarawak (UNIMAS)	2	10	1	3	16
Universiti Pendidikan Sultan Idris (UPSI)	0	22	0	3	25
Universiti Putra Malaysia (UPM)	20	33	1	1	55

Universiti Sains Malaysia (USM)-Main Campus	3	29	1	5	38
Universiti Sains Malaysia (USM)-Kubang Kerian	0	10	1	0	11
Universiti Teknologi Malaysia (Main Campus)	5	57	2	11	75
Universiti Teknologi Malaysia (Kuala Lumpur)	1	12	0	2	15
Universiti Teknologi MARA (Melaka)	1	6	0	1	8
Universiti Teknologi MARA (Segamat)	0	11	0	3	14
Universiti Teknologi MARA (Main Campus)	3	40	1	3	47
Universiti Teknologi MARA (Terengganu)	0	3	0	3	6
Universiti Teknologi MARA (Perak)	3	12	0	0	15
Universiti Utara Malaysia (UUM)	2	13	2	1	18

| Universiti Malaya | 2 | 26 | 2 | 3 | 33 |
| Total sample from 24 public Malaysian universities | 49 | 431 | 14 | 60 | 554 |

Table 2: Finalized sampling frame of the study

According to Borg and Gall (1993), research by survey is a typical way to determine the opinions, attitudes, preferences, and perceptions of people of interest to the researchers. Close-ended questions which comprised of five-point impact scale developed by Kerlin (1992) were used to measure differences in perceptions where 1 represents maximum impact and 5 represents minimum impact. According to Oppenheim (1992), reliability of the five-point scale is good and permits a greater range of answers to respondents than smaller point scales.

EOA RESULTS

Altogether, 3 rounds of EOA were conducted for this study. In data from Table 1 shows that for the first round of the EOA, the 25 experts provided 59 responses which was synthesized and categorized into seven factors.

Trainer Competency	Trainee Characteristics	Organisational System	Organisational Management	Training Delivery and Methodology	IT Facilities	Work Culture
Language Proficiency Professional exposure Knowledge ICT skills Communication Instruction Preparation	Self efficacy IT awareness Locus of control Current IT skills Language proficiency Rationale Preparation Aptitude Interest Education background	Compensation & incentives Work performance Clarity of work instructions Job description Justification for training Career advancement Performance appraisal Immediate benefit Career development Group productivity	Management commitment IT awareness Openness Management support Management effectiveness Leadership Organisational image	Training contents Modular Lecture Demonstration OJT Notes and manual Informal Combination Training delivery Course material Practical oriented Class size Duration of training	Hardware Software Equipment support Computer availability Software availability Technical support User friendly Reliability of technology Software relevance	Peer support Teamwork Learning organisation
7 items	10 items	10 items	7 items	13 items	9 items	3 items

Table 3: Round 1EOA results

The second round survey presented a synthesized list of responses from the first round. The remaining 21 experts were asked to rank each factor based on their importance whereby "1" is rated as most important and "7" is rated as least important. Table 4 reports that for the second round of the EOA, the Kendall's Coefficients of Concordance and p-value for scored ranking were calculated at 0.037 and 0.732 respectively. Since the p-value was more than 0.05, the findings are deemed to be insignificant implying that the ranking of the 21 experts are not consistent.

In the third round, a separate survey was constructed for the 13 members of the panel by boldfacing factors that differed from the consensus opinion based on each factor's mean rank scores. Each expert was given an opportunity to change his/her response or to present an argument for disagreement. These arguments were incorporated as comments in subsequent sections allowing the experts to look beyond the calculated data. However as shown in Table 5, for the third round of the EOA, the Kendall's Coefficients of Concordance and p-value for scored ranking was 0.303 and 0.001 respectively. Therefore, the study was found to be statistically significant (p-value < 0.05) and consistent at the third round.

The focus will be on the outcome from the third round of the EOA due to its high consistency level. Based on the mean ranking of the variables, the order of ranked importance for variables that affect the transfer of IT training are as follows: organizational management, trainee characteristics, IT facilities, trainer competency, training methodology, organizational system and work culture. This finding implies that the experts view organizational management as most important, while work culture is the least important factor, which affect the transfer of IT training to the workplace.

VARIABLES	Experts																					Mean	Group Rank
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U		
Organisational Management	1	6	1	1	1	7	4	1	4	2	4	4	1	6	6	3	7	1	1	5	1	3.1904	1
Trainee Characteristics	3	1	3	7	3	3	1	6	5	7	1	2	5	3	2	7	2	6	6	1	3	3.6667	2
Trainer Competency	5	3	1	4	5	1	2	5	6	6	6	5	2	4	3	6	5	3	2	2	6	3.9047	3
IT Facilities	4	5	6	6	6	4	5	2	2	4	2	3	7	5	1	4	1	2	4	6	4	3.9524	4
Organisational System	6	7	2	2	2	6	6	3	3	3	3	7	6	1	7	1	4	4	5	3	5	4.0952	5
Training Methodology	2	2	4	3	7	2	3	4	7	5	5	6	3	2	4	5	6	5	3	4	7	4.2381	6
Work Culture	7	4	5	5	4	5	7	7	1	1	7	1	4	7	5	2	3	7	7	7	2	4.6667	7

Kendall's W = 0.037, p-value = 0.732

Table 4: Round 2 EOA results

VARIABLES	Experts													Mean	Group Rank
	A	B	C	D	E	F	G	H	I	J	O	Q	R		
Organisational Management	1	6	1	1	1	7	4	1	4	2	1	3	1	2.5385	1
Trainee Characteristics	2	1	4	5	3	3	1	3	5	3	2	2	2	2.7692	2
IT Facilities	3	5	6	6	2	4	5	2	2	1	4	1	4	3.4615	3
Trainer Competency	5	3	3	3	4	1	2	4	6	6	3	6	3	3.7692	4
Training Methodology	4	2	5	4	5	2	3	6	7	5	6	5	6	4.6154	5
Organisational System	6	7	2	2	6	6	7	5	3	7	5	7	5	5.2308	6
Work Culture	7	4	7	7	7	5	6	7	1	4	7	4	7	5.6154	7

Kendall's W = 0.303, p-value = 0.001

Table 5: Round 3 EOA results

SURVEY RESULTS

The descriptive analysis on the data collected, illustrated the diverse background of respondents even though they originated from 24 public Malaysian universities. With reference to Table 6, it is evident that the majority of the respondents are SPM holders - a qualification which is equivalent to the British O levels (54.7%). Most of the respondents (33.6%) are from the registrar's office. As expected, most of the respondents are clerks (77.8%). Finally, a majority of respondents are new employees (48.7%), who have been employed for less than 5 years and are permanent staff (76.0%). These data are considered to be reflective of the characteristics of the population.

Background	Frequency	Percent
Education		
SRP/PMR	13	2.3
SPM	303	54.7
STPM	85	15.3
Diploma	114	20.6
Bachelor	20	3.6
Work Unit		
Chancellory	38	6.9
Registrar	186	33.6
Student Affair	19	3.4
Bursar	76	13.7
Maintenance	3	0.5
Computer	5	0.9
Library	8	1.4
Faculty	122	22.0
Other	97	17.5

Job Classification		
Chief clerk	49	8.8
Clerk	431	77.8
Secretary	14	2.5
Junior secretary	60	10.8
Years Employed		
Less than 5 years	270	48.7
5 – 10 years	121	21.8
More than 10 years	163	29.4
Employment Status		
Permanent	421	76.0
Temporary/part-time/ contract	133	24.0
Total	554	100.0

Table 6: Clerical workers' demographic background

TESTING FOR VALIDITY

Factor analysis was conducted in order to identify the strongest cluster of questionnaire items related to clerical workers' perception on conditions for IT training effectiveness. Hair et al. (1998) proposed for construct validity using factor analysis to be used to reduce and summarize data in which redundant items and inappropriate items were deleted.

For factor validity, an exploratory factor analysis was performed on the data to determine the desired explanatory concepts. According to Petty (1995), factor analysis is a technique for achieving parsimony by identifying the smallest number of descriptive terms to explain the maximum amount of common variance in a component matrix. A principals-component analysis was the chosen extraction method. Varimax with Kaiser Normalisation was applied prior to

factor rotation, thus keeping factors with an eigenvalue of one or greater. Tinsley and Tinsley (1987) feel that this procedure should be chosen to eliminate error variance.

For these 61 items, as there are 554 cases in the sample, which are sufficiently large for conducting a single factor analysis using varimax rotation method with Kaiser normalisation and principal component analysis. The factors extracted have explained almost 67% of the total variance, meaning that they are satisfactory solutions.

Table 7 illustrates the high value of 0.964 for the Kaiser-Meyer-Olkin Measure of Sampling Adequacy which implies that the proportion of variance in the variables be caused by underlying factors thus allowing for the application of factor analysis. This is supported by the Bartlett's test of sphericity value of 0.00 that is less than 0.05 thus proving that the analysis is significant.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	23102.100
	Df	1653
	Sig.	.000

Table 7: KMO and Bartlett's test

With reference to Table 8, fifty of the original 61 items are loaded into nine factors. Eleven items were excluded. The first factor can be classified as trainer's competency and evolves around the following seven items: language used by trainer (English and Malay), trainer's professional exposure, trainer's knowledge, trainer's Information and Communication Technology (ICT) skills, trainer's communication skills, Instructions given by trainer during training,

and preparation of training material by trainer.

No.	ITEM	COMPONENT								
		1	2	3	4	5	6	7	8	9
1.	Language used by trainer (English & Malay)			.557						
2.	Trainer's professional exposure			.743						
3.	Trainer's knowledge			.761						
4.	Trainer's ICT skills			.712						
5.	Trainer's communication skills			.749						
6.	Instructions given by trainer during training			.699						
7.	Preparation of training material by trainer			.668						
8.	Trainee's attitude (e.g.: commitment, confidence and openness)									
9.	Trainee's awareness of IT literacy									

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10.	Trainee's motivation									
11.	Trainee's current IT skills				.667					
12.	Trainee's language/ communication mastery				.685					
13.	Understanding of the rationale for training				.675					
14.	Trainee's preparation before training				.629					
15.	Trainee's aptitude (e.g.: visualisation skills)				.663					
16.	Trainee's interest towards IT				.575					
17.	Trainee's education background				.725					
18.	Compensation/ incentives given after training							.594		
19.	Work is performance oriented									
20.	Clear work instruction given									
21.	Opportunity for promotion							.803		

22.	Contributes towards performance appraisal							.756		
23.	Job description is relevant to IT training									
24.	Immediate organisational benefits after training							.599		
25.	Understand IT training importance for career development									
26.	Management commitment at work place		.597							
27.	Importance of IT training is made known		.619							
28.	IT awareness among management		.657							
29.	Openness among management		.721							
30.	Support by management		.749							
31.	Management effectiveness at work place		.755							
32.	Leadership quality		.714							

33.	Organisational image towards IT		.566								
34.	Lecture base training (chalk and talk)							.623			
35.	Demonstration oriented							.539			
36.	Training contents										
37.	Modular base (e.g.: word, excel, Internet etc)										
38.	On Job Training (OJT)							.524			
39.	Using notes and manual							.715			
40.	Informal (e.g.: learn from peers or self study)							.537			
41.	Combination (e.g.: lecture and practical)							.584			
42.	Training & teaching delivery (e.g.: training instruction)							.582			
43.	Course material (e.g.: notes, CD ROMs etc.)							.546			

44.	Practical oriented (i.e., workplace applicability)									
45.	Class size during training									
46.	Hardware for training (e.g. computer)									.601
47.	Software for training (e.g.: windows, Lotus etc)									.657
48.	Supporting equipment for training (e.g.: LCD, OHP)									.613
49.	Technical support (e.g., maintenance) at training site									.574
50.	Computer system (e.g., networking) at training site									.527
51.	Reliability of equipment and peripherals at training site	.665								
52.	Versions of software used at training site	.655								
53.	Computers at work place	.700								
54.	Software at work place	.745								

55.	Technical support at work place	.737									
56.	IT systems used at work place	.804									
57.	Reliability of equipment and peripherals at work place	.787									
58.	Versions of software used at work place	.699									
59.	Support from colleagues									.799	
60.	Working in teams or groups									.783	
61.	Learning/ knowledge culture									.798	

Table 8: Rotated factor matrix - varimax with Kaiser normalisation

     The second factor can be classified as trainee characteristics and consists of the following seven items: trainee's current IT skills; trainee's language/communication mastery; understanding of the rationale for training; trainee's preparation before training; trainee's aptitude (e.g.: visualisation skills); trainee's interest towards IT; and trainee's education background. Three items from the original listing are considered as redundant and are recommended to be excluded from the analysis: trainee's attitude, trainee's awareness of IT literacy; trainee's motivation.

     The third factor can be classified as organizational management and comprises of the following items: management commitment at

work place; importance of IT training from the university's perspective is made known; IT awareness among management; openness among management; support by management; management effectiveness at work place; leadership quality; and organisational image towards IT.

The fourth factor consists of four components: compensation/incentives given after training, opportunity for promotion, contribute towards performance appraisal and immediate organizational benefits after training. The components can be classified as organizational system as per the original classification. The following four items are recommended to be excluded: work is performance oriented, clear work instructions given, job description is relevant to IT training and understanding of the importance of IT training for career development.

The fifth factor can be categorized as training and delivery method and comprises of the following items: lecture base training (chalk and talk); demonstration oriented; On Job Training (OJT); using notes and manual; informal (e.g.: learn from peers or self study); combination (e.g.: lecture and practical); training and teaching delivery (e.g.: training instructions); and course material (e.g.: notes, CD ROMs etc.). Four items recommended to be omitted are practical oriented, class size, training contents and modular base.

The sixth factor consists of five components: hardware for training (e.g., computer); software for training (e.g.: windows, Lotus etc); supporting equipment for training (e.g.: LCD, OHP, etc); technical support (e.g., maintenance) at training site; and computer system (e.g., networking) at training site. The seventh factor consist of eight components: reliability of equipment and peripherals at training site; versions of software used at training site; computers at work place; software at work place; technical support at work place; IT systems used at work place; reliability of equipment and peripherals at work place; and versions of software used at work place. As per the recommendations of Wan Jusoh (1999), Factors 6 and 7 were consolidated as IT facilities. No items were recommended to be omitted.

The eighth factor can be classified as work culture and consists of the following three items: support from colleagues; working in

teams or groups; and learning/knowledge culture. No items were recommended to be excluded.

TESTING FOR RELIABILITY

Cooper and Schindler (1988) recommended scale reliability using Cronbach's Coefficient Alpha which was then used to assess the consistency of homogeneity among items. Reliability coefficients were computed for the seven constructs identified from the factor analysis. In assessment of perceptions, Fraenkel et. Al (1999) recommended a reliability coefficient of at least .70 for comparison among groups. Table 9 presents the results of the reliability tests for each construct identified from the factor analysis.

ITEM	Item Mean	Cronbach's alpha
1. Trainer's Competency		0.9091
- Language used by trainer (English & Malay)	2.0830	
- Trainer's professional exposure	2.1065	
- Trainer's knowledge	1.9296	
- Trainer's ICT skills	1.9928	
- Trainer's communication skills	2.1516	
- Instructions given by trainer during training	2.2816	
- Preparation of training material by trainer	2.2310	
2. Trainee Characteristics		0.8704
- Trainee's current IT skills	2.2491	
- Trainee's language/ communication mastery	2.2906	

- Understanding of the rationale for training	2.2708	
- Trainee's preparation before training	2.5217	
- Trainee's aptitude (e.g.: visualisation skills)	2.4657	
- Trainee's interest towards IT	1.8628	
- Trainee's education background	2.4206	
3. Organisational System		0.8011
- Compensation/incentives given after training	2.6318	
- Opportunity for promotion	2.7798	
- Contributes towards performance appraisal	2.5578	
- Immediate organisational benefits after training	2.5523	
4. Organizational Management		0.9260
- Management commitment at work place	2.2166	
- Importance of IT training is made known	2.1606	
- IT awareness among management	2.1173	
- Openness among management	2.2130	
- Support by management	2.1769	
- Management effectiveness at work place	2.3014	
- Leadership quality	2.1805	
- Organizational image towards IT	2.0975	

5. Training and Delivery Method		0.8856
- Lecture base training (chalk and talk)	2.6047	
- Demonstration oriented	2.1895	
- On Job Training (OJT)	2.2726	
- Using notes and manual	2.5397	
- Informal (e.g.: learn from peers or self study)	2.4422	
- Combination (e.g.: lecture and practical)	2.3917	
- Training & teaching delivery (e.g.: training instruction)	2.3069	
- Course material (e.g.: notes, CD ROMs etc.)	2.3953	
6. IT Facilities		0.9526
- Hardware for training (e.g. computer)	2.0451	
- Software for training (e.g.: windows, Lotus etc)	2.1426	
- Supporting equipment for training (e.g.: LCD, OHP)	2.2040	
- Technical support (e.g., maintenance) at training site	2.3213	
- Computer system (e.g., networking) at training site	2.1625	
- Reliability of equipment and peripherals at training site	2.3177	
- Versions of software used at training site	2.2690	
- Computers at work place	2.0812	
- Software at work place	2.1877	
- Technical support at work place	2.3466	

- IT systems used at work place	2.2455	
- Reliability of equipment and peripherals at work place	2.3809	
- Versions of software used at work place	2.3628	
7. Work Culture		0.8832
- Support from colleagues	2.1083	
- Working in teams or groups	2.1877	
- Learning/knowledge culture	2.1570	

Table 9: Reliability test and mean analysis

CONCLUSION

The sequential mixed method approach was able to systematically identify and test conditions that IT training effectiveness among university clerical workers. The applicability of the sequential mixed-method was proven to be necessary to ascertain the consistency of response from both methods, i.e., EOA was answered by experts, while survey questionnaire was responded by practitioners (clerical workers). The EOA results were demonstrated to possess high consistency level and were able to identify based on the order of ranked importance, factors that affect the transfer of IT training. Rigorous statistical tests incorporating factor analysis and reliability tests were able to conclude that the groupings of attributes under the aforementioned variables are valid and reliable.

The most important factor that affects the transfer of IT training is organisational management. Studies by Holton and Baldwin (2003) and Baldwin and Ford, (1988) were able to show the importance of organisational management as the principal driving force that encourages or inhibits the transfer of training to the work place. This study was able to identify trainee characteristics as the second most important factor, a finding which is consistent with that

by Weidner et al. (2001) on the influence of trainee characteristics on the effectiveness of training for professional site workers. The third most important factor that affects the transfer of IT training is IT facilities or 'infostructures' that support the transfer of IT training (Rasli et al. 2002).

The third most important factor that affects the transfer of IT training is trainer competency, which according to Shank (2004) relates to competencies in the areas of administration, design, facilitation, evaluation and technical matters and could influence the outcome of training. The third most important factor that affects the transfer of IT training is training methodology, which according to Costello (1997), if it is not provided at the front end of the implementation process may cause the failure to realize the full benefits of the technology.

The lowest ranked factors are organisational systems and work culture respectively. Southern and Allistair (1994) believed that there are many benefits of using IT as the main driver in an "information-based" work culture, however, within the Malaysian clerical perspective, the findings failed to be proven so. According to Doolen et al. (2003), organisational systems that provided teams with the necessary information were found to have a significant and positive linear relationship with both team leader ratings of effectiveness.

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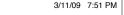
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