Impact of public space utilization frequencies on tacit knowledge sharing

KAYODE OLORUNTOBA, MOHD HISYAM RASIDI, ISMAIL SAID

Abstract— Public space influence on knowledge sharing acquisition has become an interesting issue among knowledge management, urban landscaper, and knowledge based development researchers. Thus, this study aim to investigate the contributing influences of the degree of public space usages on tacit knowledge sharing. Cyberjaya Malaysia was considered as the study area having been adjudged as a high technology park that foothold in knowledge sharing for its knowledge based development. A total of 384 survey questionnaires were administered by the residents of the study area in various public spaces within the city to collate the respondent's perception on their degree of public space utilization in relation to tacit knowledge sharing behaviour. Validated variables were adapted to measure knowledge sharing while the frequencies of public space utilization were measure with the user's degree of visits to public spaces. Data collated were analysed with statistical packages for social science "SPSS" to access the differences and similarities in respondents perception. Our findings revealed that the frequencies at which people utilized public spaces exhibited similarity differences in their tacit knowledge sharing tendencies. Human attitudes towards sharing their knowledge indicated to require much social interactions and public space utilization.

Index Terms— Cyberjaya, Human attitudes, Knowledge based development, Knowledge sharing, Public space, social interactions Tacit knowledge

1 INTRODUCTION

Public space can be considered as all social spaces that is easily accessible to users on non-conditional basis [1]. Public spaces are not just open spaces. Public space is characterised by the facilities, and infrastructures that geared towards providing comfortable natural environment for the users. The forms and settings of public space provide a defined demarcation from other surrounding of the city. Public space consists of numerous social spaces within the realm of a city. In the context of science or technological city, public space encompass majorly the communal spaces, public squares and urban courtyards, and the extended public parks that characterised in high tech amenities and facilities. It's served as a natural area that accord users the common sense of environmental appreciation [2]. In a landscape perspective, Public space is a tool that capable of attracting human mind and patronages. It provides avenue for human contact and togetherness. Human social discussion and interaction is foothold in the availability of natural environment [3]. When people visited public spaces, they meet others public space users which set a good platform for human contacts. However, human contact encourages interaction while social cohesion is an offshoot of the integration [4]. Thus, Informal study does occur when there's a group interaction. The meaningfulness of an area can be link with the public space standard. When a city has well maintained and high quality public spaces, users continue to increase and more people continue to visit the city and develop good idea about the area. Therefore such users psychologically developed good sense of association and images for the city. The potential of public space to facilitate social cohesion necessitates that it has an association with knowledge sharing. It has been argued that experiences sharing occur through human interactions [5] and public spaces provide an effective avenue for human social interactions [3], [5]. Therefore public space can be considered as an important tool for knowledge sharing. Human frequents contact develop social interaction that gives rise to social cohesion and social capital needed for sharing.

1.1 Study area

Cyberjaya is a modern science city that was designed to establish and sustained the Malaysia multimedia super corridor center. The conception of Cyberjaya originates from a study by management consultancy McKinsey towards Malaysia multimedia super corridor. The city was commissioned by the Federal Government of Malaysia in 1995 [23],[24]. Cyberjaya is situated in Sepang, Selangor and about 50 km south of Kuala Lumpur Malaysia. It occupied about 28.94 square kilometers of land with population of around 45,000 that comprises of 19,000 of workforces, 16,000 of students, and 10,000 that are residents [25].

2 TACIT KNOWLEDGE

Knowledge involved the act of exchanging the know-how among people for the purpose of rendering assistance or by way of solving problem [6]. Its involve getting to know about untold fact and skills. Validated information becomes knowledge [7]. Thus, knowledge can either be explicit or tacit. Explicit knowledge is obtained through analytical or scientific reasoning via the course of formal training. Tacit knowledge encompasses the act if gaining knowledge through experiences and interaction that occur among group of people. It's often informal and subjective [8] as it hinged on the social cognitive of people. However, tacit knowledge has held the power for innovation and technology productivity. Tangible knowledge can be obtained through group discussion and

experience exchange [9]. It's strongly rooted in human action as in difficult to be coded or store in explicit form. Human social environment is required for effective tacit knowledge development since individual or group of people can acquire tacit knowledge through social interactions [9]. Therefore, social interactions constitute a major factor that facilitates tacit knowledge.

3 KNOWLEDGE SHARING

Knowledge sharing encompasses the transfer of relevant ideas among people. It's a process that involve individual or groups of people sharing there know- how, experiences and skills among others that were in need [10]. In recent time, numerous researches have emphases on the significant of knowledge sharing in innovation [11], [12]. Valuable part of knowledge resides in the tacit knowledge [13]. Knowledge without sharing retards development and limit the development of such knowledge itself. It's through sharing that knowledge expanded and becomes productive. One of the easier channels for firms and organizational innovation and technological development is through knowledge sharing [14]. Knowledge sharing provides conducive avenue for competitive advantage [15] and refined professionalism. In the context of science city, knowledge sharing can be defined as exchanges or transfer on individual or group know – how among others that exhibits social bond and cohesiveness within a defined environment.

4 METHODOLOGY AND MEASURES

In this study, 384 questionnaires were administered to collate the regularity of respondent frequencies of visit to public space. The regularity of respondent utilization of public space were categorized on everyday visit; twice weekly visit; weekly visit; monthly visit; and occasional visit graded with Likert-scale ratings of 5 point to 1 point for dialy visit to the occasional visits to public space respectively. Knowledge-sharing was measured by three constructs (subjective norms to share knowledge, attitude to share knowledge, and intention to share knowledge), adopted from [16], and [17]. The collated data were analyzed using "ANOVA" analysis of variance to obtain the data average mean, and the groups mean discrepancies. Attitude toward sharing encompasses transferring knowledge and experience that arising from individual desires to share. Subjective norms to share are the influence by others friends or community associates to share. Intention to share can be define as the degree of human belief that will be engaged in the knowledge sharing behavior. Hence, the test of data reliability was done using Cronbarch's Alpha while data collated consistency was tested using factor analysis.

5 ANALYSIS AND DISCUSSIONS

5.1 Demographical survey

Demographical influences of resident's status of age, and gender were used to explore their effects on public space utilization. The finding consisted with literature that hypothesized knowledge city as a community of advanced literacy residents [18], [19]. Higher fractions of respondent were university degree and post graduate degree holders having 66.1% and 17.7% respectively as showed in Table 1. The population percentages of the male and female respondents recorded 65.3% and 34.7% respectively thereby reflecting a gender justification.

Table 1 Demographical valuation

Measure	Items	Per cent (%)
Gender	Male	66.4
	Female	33.6
Residents Status	Yes	75.5
	No	24.5
Duration of Residents	0 – 3yrs	28.9
	4 – 6yrs	18.2
	7 – 9yrs	41.9
	10 yrs. and above	10.9
Educational status	High School or equivalent	2.1
	undergraduate	14.1
	graduate	66.1
	postgraduate degree	17.7
Types of public space visited	neighbourhood/communal spaces-	56.3
	public parks-	10.9
	public square/urban cluster courtyards-	16.7
	other (canopies, entrance porch, etc.)	16.1

N =384

5.2 Analysis and Results

Cronbarch's Aphal of the variables exceeded 0.700 which demonstrating reliable value [20]. The confirmatory factor analysis (CFA) applied to check the measurement model variables as recommended [21]. The indicators factor loadings were all significant at 0.01 which is considered as good model [22]. One-Way ANOVA (Analysis of variance) applied to measure collated data. Thus, statistically significant different was establish between the five levels of public space visitations indicators in relation to knowledge sharing measuring constructs (subjective norm to share knowledge, intention to share knowledge, and attitude to share knowledge).

The analysis of variance showed that; subjective norm to share knowledge exhibited F (4, 379)= 636.864, p = .000. Intention to share knowledge exhibited F (4, 379)=13.412, p = .000. Attitude to share knowledge exhibited F (4, 379) =459.009, p = .000 as showed in Table 2.

Table 2. One-Way Analysis of Variance Summary Table Comparing respondents Public space visitation on Knowledge sharing

Source		Sum of Squares	*df*	Mean Square	F	*p*
Subjective norm to share knowledge	Between Groups	245.787	4	61.447	636.864	.000
	Within Groups	36.567	379	.096		
	Total	282.354	383			
Intention to share knowledge	Between Groups	8.189	4	2.047	13.412	.000
	Within Groups	57.851	379	.153		
	Total	66.040	383			
Attitude to share knowledge	Between Groups	461.309	4	115.327	459.009	.000
	Within Groups	95.225	379	.251		
	Total	556.533	383			

In Table 3, all the public space degree of usages indicators exhibited statically significant on knowledge sharing constructs except the subjective norm to share knowledge that exhibited non-significant mean of 1.9 to respondents that visits public space on occasional basis. Also, attitudes to share knowledge exhibited non-significant to those respondents that visit public spaces on monthly and occasional basis (See Figure 3). People's intention to share knowledge exhibited average mean of 4.2 to 4.5 that indicates high significant to occasionally visit, monthly visit, weekly visit, twice a week visit, and daily visits to public.

Table 3. Means and Standard Deviations Comparing public space visitation indicators

Knowledge Sharing Variables	Degree of Public Space Visits	Number of Respondents	Mean	SD
Subjective norm to share knowledge	Occasional	59	1.9379	.35274
	Monthly	120	4.1222	.27983
	Weekly	58	4.0230	.24868
	Twice weekly	100	4.0733	.31633
	Daily	47	4.4255	.37880
	Total	384	3.7960	.85861
Intention to share knowledge	Occasional	59	4.4271	.36852
	Monthly	120	4.2400	.38944
	weekly	58	4.1517	.41263
	Twice weekly	100	4.1760	.40129
	Daily	47	4.5957	.36946
	Total	384	4.2823	.41524
Attitude to share knowledge	Occasional	59	2.0305	.75275

		Monthly	120	2.1200	.47697
		weekly	58	4.1862	.31313
		Twice weekly	100	4.2160	.46509
		Daily	47	4.5234	.42437
		Total	384	3.2583	1.20544

The Post hoc HSD Test was used to compare mean difference of verified variables. It was shown that the significant mean differences occur among respondents that visited public space on daily basis and those respondents that do visits public space on weekly, twice a week, monthly, and occasionally basis (See Table 4). Table 4 reflect the Post Hoc HSD summary of the respondent's knowledge sharing behaviour. It indicates that the respondents perceptions defers on their understanding and responses to knowledge sharing in the context of the degree on public space visitation. On the basis of occasional visits to public space, the respondents demonstrated no significant differences with those that do visit public space monthly, weekly, twice a week, and on daily basis.

Table 4. Post Hoc table of group differences

	How often do you visit the public space?	Mean Difference (I-J)
Occasional	Monthly	.18712*
	Weekly	.27539*
	Twice weekly	.25112*
	Daily	-.16863
Monthly	ocational	-.18712*
	Weekly	.08828
	Twice weekly	.06400
	Daily	-.35574*
Weekly	Occasionally	-.27539*
	Monthly	-.08828
	Twice weekly	-.02428
	Daily	-.44402*
Twice weekly	Occasional	-.25112*
	Monthly	-.06400
	Weekly	.02428
	Daily	-.41974*
Daily	Occasional	.16863
	Monthly	.35574*
	Weekly	.44402*
	Twice weekly	.41974*

Table 5: Summary of significant relationships among tested variables

Knowledge Sharing Variables	Degree Of Public Space Visitation				
	Daily Visit	Twice weekly Visit	Weekly Visit	Monthly Visit	Occasional Visit
Attitude to share knowledge	•	•	•		
Subjective norm to share knowledge	•	•	•	•	
Intention to share knowledge	•	•	•	•	•

6 DISCUSSIONS AND CONCLUSION

This study indicates that knowledge sharing is obtainable in public spaces as primary social place. Human intention to share knowledge as part of the knowledge sharing determinants can be obtained through public space usage. The respondents in the study area demonstrated that occasional usage of public space is capable of trigger their intention towards sharing of knowledge among friends and co- workers. However, intention to share knowledge cannot independently determined people actual knowledge sharing behaviour. As such, attitudes towards sharing of knowledge and the subjective norm towards sharing knowledge should be considered as well. In this study, people's attitudes to share knowledge reflect no significant relationship with monthly visit, and occasional visit to public space. Daily visit, weekly visit, and twice weekly visit are the minimum requirement exhibited by human attitude towards sharing of knowledge in the study area. Subjective norm to share knowledge exhibited significant relationship with daily visit, twice a week visit, weekly visits, and monthly visits to public space but demonstrated poor significant relationship with occasional visits to public space. Therefore, it's of importance to argue that the respondents in this study area needed to be utilizing public spaces at the minimum visits of monthly basis to develop subjective norms among others towards sharing of their knowledge.

Visiting social places and engaging in social activities in public space provides opportunity to meet others and facilitates trust and confidence among neighbours. Constant relationship can facilitates social bonds and close familiarity [26]. Familiarity refines human minds and ideas of others about life and taught. Therefore, it implies that much of time is needed for people to develop habit that capable of shaping their subjective norms. The result of this study supported the aforementioned as it indicates that subjective norms prove unattainable in the situation where the people choose to visit social places (public space) only on occasional basis. More so, individual attitudes to share knowledge demonstrated to be more time demanding to acquire among the respondents. Attitudes associated with human personal ways of reacting to issues, it's has much to do with the state of human minds. Therefore, social contacts and mutual relationship are required in reshaping human inborn characters and attitudes. The frequency in human interaction and friendship possess the potential to influence their attitudes. Monthly and occasional visits to public spaces proved not sufficient to facilitate human attitudes towards sharing their know-how among others (See Figure 5). Therefore, our findings revealed that human attitudes is needed more social engagement. Thus, public space remains a freely accessible social arena in every community and urban centres. Regular visits to public space can develop sharing habit among neighbourhood and groups of users. The study area is a high technology parks that foothold in knowledge sharing for its knowledge based development. Its advised that knowledge community and technological oriented cities that foothold in knowledge sharing should imbibes in public space frequent utilization culture as a functioning tools towards knowledge sharing actualisation while public space should be accord outstanding consideration in the urban and rural dwellers community.

REFERENCES

[1] J. Gehl, ''Three types of outdoor Activities and quality of outdoor space in Gehl(1996).life between Buildings using public space,ArkitektensForlag, skive, 2001. pp. 11-40

[2] Y C..Jim, and W.S Chen 'Comprehensive green space planning based on landscape ecology principles in compact Nanjing city, China. Landscape and Urban Planning 998 (2003) 1–22

[4] M. armona, C. Magalhães, and L. Hammond. 'Public Space: The management dimension'' Firstpublished 2008 by Routledge, 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN. Simul taneously published in the USA and Canada by Routledge 270 Madison Avenue, 2008. New York, NY 10016, USA.ISBN 0-203-92722-2 Master e-book ISBN

[5] R. Putnam. 'Bowling along. America's declining social capital. *Journal of Democracy*, 1993. 6(1),65-78

[6] K. Peters, B. Elands, and A. Buijs, 'InteraCtions in urban parks: Stimulating social cohesion? Urban Forestry & Urban Green ing 9 (2010) .pp. 93–100

[7] K. E. Kelloway, 'Labor unions and safety: Conflits and cooperation'' in J. Barling and M Frone (eds). Psychology of occupation and safety. Washington DC. APABooks. 2003. Pp. 249 - 264

[8] M. Alavi, and E.D Leidner. 'Knowledge maagement and knowledge managementsystems'': Conceptual foundations and research issues",*MIS Quarterly*, 2001.Vol. 25 No. 1, pp. 107-36.

[9] I. Nonaka. 'The knowledge-creating company. *Harvard Business Review*, 1991. 69, 96-104.

[10] B. Choi and H.Lee. 'An empirical investigation of KM styles and their effect on corporate performance. *Information & Management*, 2003. *40*, 403–417.

[11] D. Hong, E. Suh, and C. Koo. 'Developing strategies for overcoming barriers to knowledge sharing based on conversational knowledge management: A case study of a financial company. Expert Systems with Applications 38 (2011) 14417–14427

[12] C.Huang. ''Knowledgesharingandgroup cohesiveness on performance:An empirical study of technolgy&D teamsinTaiwan. Technovation 29 (2009) 786–797

[13] N. Mooradian, "Tacit knowledge: Philosophical roots and role in KM", *Journal of Knowledge Management*, 2005. Vol. 9 No. 6, pp. 104-13.

[14] I. Nonaka and H. Takeuchi. "*The Knowledge Creating Company": How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, New York, NY. 1995.

[15] F.H. Lin, "Knowledge sharing and firm innovative capability:An empirical study",*International Journal of Manpower*, 2007. Vol. 28 No. 3/4, pp. 315-32.

[16] F. Requena, "Social capital, satisfaction and quality of life in the workplace",*Social Indicators Research*,2003. Vol. 61No. 3, pp. 331-60.

[17] W.S. Chow and L.S. Chan. "Socialnetwork, social trust and sharedgoals inorganizational knowledge sharing",*Information and Management*, Vol. 45 (2008)pp.458-465

[18] A.Anttiroiko, Global Competition of high-Tech centre. Journal of technology Management. 2004. Vol 28 number 3/4/5/6. Pp259-294. 259-294.

[19 K. Ergazakis, K. Metaxiotis, and J Psarras, 'An Emerging Pattern of Succesful Knowledge Cities: Main Features' in Francisco Javier Carillo (ed.), Knowledge Cities: Approaches, Experiences and Perspectives, Oxford: Butterworth-Heinemann,2006. pp. 3-16.

[20] H.J Nunnally and H.I Bernstein, ' *Psychometric Theory*, McGraw-Hill, New York, NY.1994

[21] C.J. Anderson and W.D Gerbing, "Assumptions of the two-step approach to latentvariable modeling", *Sociological Methods and Research*, 1992. Vol. 20 No. 3, pp. 321-33.

[22] R.P. Bagozzi and Y. Yi, "On the evaluation of structural equtionmodel", *Journal of Academy of Marketing Science*, 1998. Vol. 16 No. 1,pp. 74-94.

[23] SetiaHaruman. 'Cyberjaya: Over view.2011.' Retrieved 17 Oct, 2012, http://www.cyberjaya-msc.com/cyberjaya-town.asp.

[24] Federal Department of Town Planning. The physical plannibg guidelines for the multimedia super corridor. Kuala Lumpur: ministry of housing and local government Malaysia. 2000.

[25] SetiaHaruman. 'Cyberjaya: Over view.2011.' Retrieved17 Oct, 2012,http://www.cyberjaya-msc.com/cyberjaya-town.asp.

[26] J. Macinko and B. Starfield. "The utility of social capital in re search on health determinants. Milbank Quarterly, 2000. 79(3), pp. 387–427.

Kayode OLORUNTOBA *received Masters Degrees in Architecture from Federal University of Technology, Akure, Nigeria. He is currently a Doctoral Candidate in the Depart. of Architecture, Universiti Teknologi*

Malaysia. +60102117988,+2348035072012 kayodetoba@yahoo.com

Mohd Hisyam RASIDI *received PhD in Regional Environment Systems, Shibaura Institute of Technology .He is a Senior Lecturer, Depart. Landscape Architecture, Universiti Teknologi Malaysia b-hisham@utm.my*

Ismail Said *received PhD in Architecture from Universiti Teknologi Malaysia. He is an Associate Professor at Depart. Landscape Architecture, Universiti. Teknologi Malaysia. b-ismail@utm.my*