

Planning a Barrier Free Environment and Better Quality of Life Based on the Predictors of Out-of-Home Activities of Rural Older Malaysians

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Abstract

Engaging in more out-of-home activities are important elements in the quality of life of the older persons. The older persons have a wide range of social and physical constraints to participate in out-of-home activities and these have implications that require accurate interpretations of an ageing society which impacts on the whole built environment. Based on the study entitled 'Activities, Access and Ageing of Older Malaysians'¹ conducted by the author, factors that hinder or support the participation of older persons in out-of-home activities were identified. The purpose of the paper is to identify the patterns and predictors of out-of-home activities of rural older Malaysians and to understand their needs and expectations in barrier-free environment. The study found that there are significant relationships between age, perceived barriers to town and the number of out-of-home activities participated. Results highlight important factors relevant for the urban planners and policy makers in creating high quality barrier free environment that would enhance the older persons' quality of life.

Keywords: Older Persons, Access, Out-of-Home activities, Perceived Barriers, Barrier Free Environments, Quality of Life.

Introduction

Engagement in physical, social, cultural, economic and productive out-of-home activities are important elements in the quality of life of the older persons. This may include 'visiting', 'shopping', 'attending services and facilities', and 'recreational and leisure'. According to Connidis and McMullin (1992), engaging in social activities enhances independence and develops cognitive abilities and emotional feelings of individuals. It is also associated with the following positive outcomes: intergenerational solidarity; reduction of the individualization of lifestyles in old age; economic and social added value through the productive contribution of older people to society in formal and informal work; and reduced demand for health services due to the preserved independence of older persons (WHO, World

Health Organization, 2002). Older persons' engagement allows to use their skills, knowledge and experience as a cost-effective strategy to revitalize communities, improve the quality of life for all, and promotes a successful aging (WHO, World Health Organization, 2007).

There are many factors that hinder or support older persons from participating in their out-of-home activities. The socio-economic factors which include health and social resources, also personal restrictions associated with ageing and determinants related to the social and physical environment can further hinder participation of older persons (Bukov, A, Maas, I and Lampert, T, 2002; Leyden, K M, 2003). The progressive deterioration of physical and psychological abilities diminishes the capacity of the older persons to perform daily life activities (Verbrugge, L. M., Jette, A. M., 1994). One is excluded from participating in many out-of-home activities when faced with mobility-related "social exclusion" problems. Kenyon et al. (2002) defined the mobility-related exclusion as "the process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or in part to insufficient mobility in a society and environment built around the assumption of high mobility". It is thus important to analyze the feasibility of activity participation of the older persons under personal and environmental constraints they face in their daily lives.

For the older persons, the home and its close surroundings become the primary living space where they can perform their everyday activities. Services and commercial resources that can be reached within walking distance is ideal provided that the living environment is well planned and elderly friendly to cater for the needs of the older persons. In most cases, older persons need to go beyond the boundaries to reach to destinations desired. The accessibility and adequacy of public transport are important elements of an age friendly living environments. For those older persons who drive, their demand for good road design and signage is of utmost importance (Sharifah Norazizan, SAR et al, 2010). The reality is, availability of services and amenities within walking distance only facilitate opportunities for participation in activities when the use of the "opportunity structures" is perceived as safe (Baum, F and Palmer, C, 2002). Fear of crime and social isolation have a mutual influence. Older persons who live in an unsafe environment are less likely to get out (WHO, World Health Organization, 2002) and this calls for adequate design and maintenance of public spaces to avoid social exclusion of older persons. Obstacles and architectural barriers in the environment play an important role on the degree of outdoor mobility necessary to enjoy the facilities and opportunities available in the residential area.

With the coming age of new technology, the need to interact with machines in the external environment, like cash and ticket machines, the reduced level of familiarity of older persons with technology, and in understanding operational tasks are some of the additional problems that older persons face as evidenced in the usability research for the older personsⁱⁱ. This calls for the roles of planners and designers on designing environments with facilities and services meeting the needs and expectations the older persons. Finding out the needs and expectations of older persons is fundamental in creating accessible elderly friendly environments.

Accessibility and Predictors of Out-of-Home Activities

Accessibility is defined as the ease of reaching destinations (Levine & Garb, 2002). It is a broad term covering all aspects of assuring that the older persons can participate and have the same choices as other members of the population. This includes access to transportation, technology, services and infrastructure facilities by eliminating all forms of barriers preventing equal access for all members of a community. A barrier is anything that prevents a person, who is ageing and/or with a disability from fully participating in all aspects of society. This includes physical, cultural, social, psychological, attitudinal and economic barriers.

According to Cross (1981) situational barriers are defined as those barriers that relate to an individual's life context which include both the social and physical environment surrounding one's life. Attitudinal barriers or the psychosocial barriers, are defined by Cross (1981) as those individually held beliefs, values, attitudes or perceptions that inhibit participation. Johnstone and Rivera (1965) earlier found that barriers to participation fell into two categories: internal and external. Internal barriers included the attitudinal factors; and external barriers were situational in nature. Johnstone and Rivera found age, gender and socioeconomic status to be of importance when determining the barriers to participation. They also found that older adults cited more attitudinal barriers and individuals with low socioeconomic status cited both situational and dispositional barriers as impacting their participation activities. In the context of the study, a perceived barrier is defined as a person's estimation of the level of challenges of social, attitudinal, environmental and economic barriers to a specified behavior. The following detail out the various barriers that hinder out-of-home activities.

According to Lawton & Simon (1968), persons with lower capacity are much sensitive to the demands of the environment than persons with higher capacity, and thus activity limitations will arise if there are physical barriers in older persons' close environment. In Japan and United State, the concept of universal design is being applied to a variety of fields, such as architecture and product design for the promotion of barrier-free environments for persons with disabilities and for older persons (Saito, 2004). On the other hand, better transportation system for older persons is also needed in improving the levels of accessibility to desire activities, as well as to contribute towards the improvement of their quality of life (Alsnih&Hensher, 2003).

Cultural factors impact the participation of older persons in out-of-home activities. Goldman & Hino (2005) reported that the Arab culture forbid their women to go out unaccompanied unless if it is within the 'safe' radius around their homes. In the South East Asian region, the culture of being facetious has been a factor as to why the older persons do not participate in out-of-home activities. From the cultural barriers perspective, Komardjaja (2001) in his paper noted that it is not easy for disabled especially the elderly to be accepted in a society. When persons with disabilities wish to be independent, they have to face the external authority of normalcy. The situation engenders conflict when they have to make a choice between values that they conceive to be superior, essential, real and rational, and the more conventional values.

Attitudinal factors are ways of thinking or feeling, resulting in a behavior which discriminates and limits the potential of people with disabilities to be independent individuals. Historically, Malaysian society had placed greater emphasis on the institutionalization of elders and disabled people who needed assistance. This had the effect of relegating these people to environments which inhibited the development of self-sufficiency and community integration (Rosen et al., 1977). In many instances, terms or phrases to describe them were developed to justify their exclusion from the larger society. For people with mental retardation, for example, the words moron, imbecile, and retarded have been used. Each term creates its own stigma which actually encourages the social isolation of the elderly and disabled from the rest of society (Sarason and Doris, 1979).

Many cities in the world are still not barrier free. There are no clear signs and symbols in place to assist the disabled and older person's use of facilities such as banks, post offices, schools, shopping centers, leisure and cultural centers. Many older persons avoid going out at certain times because of darkness, heavy traffic or heavy use of facilities (Tacken, 2003). All of these factors are psychological barriers to the older persons and have serious consequences, including a decline in their ability to perform out-of-home activities of daily living. With advancing age, economic barriers tend to limit older person's choices of their activities. Data from the nation-wide study funded by IRPA project entitled "Economic & Financial Aspects

of Aging in Malaysia' under the research program on Quality of Life of Older Malaysians reported that factors like compulsory retirement, lack of skills, health reasons, and family responsibilities might introduce work accessibility barriers among the older Malaysians (Chan, 2006). He also proposed that skills upgrading training, reemployment and promoting active aging program need to be addressed to minimize the work accessibility gap of this older population. Besides, the cost of transportation is the primary economic accessibility barrier to older persons. The limited availability and high cost of public transport impact significantly on their mobility pattern.

The Case Study: Activities, Access and Ageing of Older Malaysians

A study entitled 'Activities, Access and Ageing' was conducted to collect information about out-of-home activities of older persons in Malaysia and the experienced barriers that they faced. The study also aimed to understand the needs and expectations of older Malaysians in barrier-free environment. Basic characteristics (age and gender) of the respondents were collected. Perceptions of the financial status, health status, state of psychological well-being and functional ability were assessed. The extent to which the older persons were not willing to go out and the total of out-of-home activities were also assessed in the study. It is crucial to distinguish the different geographical areas of the respondents. Choosing more districts would increase area representation but, it also introduces other variables that can affect the homogeneity of the groups. Sample drawn from an area would provide better depth to the make-up of the groups, minimizing major geographical differences that can interfere with the findings. For this purpose, a local planning area under the Kajang Municipality was chosen. It is clearly seen that the ageing effect is more pronounced in rural areas than urban locations due to migration of young people to urban area or other country. Therefore, the rural areas are ageing more rapidly due to the loss of younger population to the city. This study will only explore the predictors for a rural older person to the urban areas.

Methodology

Population and Sampling Method

The sampling frame for this study was located in the rural Enumeration District No 28 within Kajang Municipal Council (MajlisPerbandaranKajang, MPKj) in the state of Selangor. Before the recruitment process, a mini census was carried out in the district of Kajang to assess the number of older persons. A total of 11,948 residences were enumerated and 2,231 of the households contained at least one elderly aged 50 years or over as shown in Table 1. A total of 9,505 households were enumerated and 915 of the households contained at least one elderly aged 50 years and above from the mini census. Only 350 potential respondents were selected randomly using SPSS Version 13.0 stratified by three age groups (50-59, 60-69, 70 and above) and gender. The face-to-face interview protocol was carried out with only 253 respondents thus marked a record of 76 per cent response rate.

Table 1: List of Enumeration Districts, Enumeration blocks and Listed Household

No.	Enumeration District	No. of Enumeration Blocks	Total Listed Households
1	28 (rural area)	119	9,505
2	49 (town area)	117	660
3	69 (town area)	96	1,573
4	74 (town area)	2	210
	Total	334	11,948

Instruments for Data Collection

The instrument for data collection was in the form of questionnaire divided into five sections: respondent's backgrounds, activities of daily living (ADL), financial status, self-rated health, perceived barriers to town and the last section determines the respondents' out-of-home activities. The functional ability of the respondents was measured using activity of daily living instrument by Barthel (1965). The study used general health questionnaires 0-12 to assess the psychological wellness of the rural elderly and the scoring is based on Goldberg's original scoring method, ranging from 0 (happiness) to 12 (depressed). For financial status, each respondent was given five possible answers and each of them was required to give the most suitable answer of their present income adequacy using 5-point-likert-type scale. Income felt as inadequate will be quoted as "1", "2" was quoted as "adequate for basic needs", "3" for "Adequate for most things but not all", "4" for "Adequate for all things needed" and "5" referred to "Adequate for all needed and enough to save".

Self-rated health was assessed using the three-point-likert scale of good, moderate, and bad). The study also employed environment quality of life instrument by Margaret (2000) which covers eleven domains namely neighborhood, housing, schools, police, safety, roads, health services, refuse removal, jobs, recreational facilities and transportation. Respondents were asked to rate, on a ten-point scale where 10 equals the best and 1 equals the worst, for the 11 facilities provided within their residential area. Out-of-Home activities refer to the frequency of visiting certain places within the respondents' city per month. The study identified twenty public facilities available within the study location. For each facility, the respondents were asked about their motives, duration and with whom they visited these facilities. The greater the number of out-of-home activities indicates a better quality of life among the older persons.

Perceived Barriers to Town is a self-created instrument with 0.559 of Alpha Cronbach value. It consists of ten statements with dichotomous scale (yes or no). The statements include: too crowded; climatic factors; financial, no transport; restricted by spouse or family members; no companion/s; disability; communication barriers, phobia in getting lost and the cultural barriers. The greater the score indicates that one might face more barriers to go to town.

Research Findings

Respondents Profile

A total of 253 older persons with a mean age of 56 years were interviewed with a 6:2:2 ratio of Malay: Chinese: Indians. There were 51% males and 49% females. The overall median age of the respondent in this study is still considered young-old age group. Majority of the respondents (88.1%) were married and the remaining were either widow or widower (11.5%) or single (0.4%). Females live longer giving rise to more widowed females in the study. The education level attained by respondents was relatively low, three out of every ten female respondents never have formal schooling compared to every two out of ten for male respondents. (see Table 2). Majority of the respondents has a high score of ADL with 91% having a full score for ADL, indicating that they are able to perform their daily activities. 91 percent of them have a full score for ADL.

Table 2: Profile of Respondents

	MALE (n= 129)		FEMALE (n= 124)	
	n	%	n	%
AGE GROUP	93	36.8	84	33.2
50-60	28	11.1	27	10.7
61-70	8	3.2	13	5.1

71 and above				
ETHNICITY				
Malay	87	34.4	58	22.9
Chinese	22	8.7	31	12.3
Indian	20	7.9	35	13.8
Educational Attainment				
Never attend school	21	8.3	43	17.0
Primary education	65	25.7	55	21

Functional Ability

The majority of the rural older persons were able to perform their daily activities in this study. They are able to feed, bath, groom, dress, toilet use, mobile and going up and down the staircase independently. This study found that there are no significant functional ability differences by gender, ethnicity, education attainment and age group among the rural older persons.

Financial Status:

This study did not measure the financial status of the rural older persons objectively. The reasons for this were twofold. Firstly, the survey was conducted in MPKjarea where the range of income of individual households is much smaller compared to Malaysian society as a whole. Secondly, although poverty exists in objective terms, it is perceived divergently by individuals (Singh & Pandey, 1989). The study revealed that about fifteen percent of the total respondents answered inadequate income adequacy and most of them are from “Young-Old” age group and are notably the Malays.

Self-Rated Health:

Self - perceived health among the respondents is quite positive considering 90% of them rate their own health as “good” and “very good”. Only 10.7% thinks that their health is in poor condition. Females have a higher percentage compared to males in perceiving both in “good” and “very good” health status. This study concurs with the findings by H. Tengku-Aizanet. al (2006).

General Health Questionnaire-12

Psychological well-being is the ultimate outcome in a causal model of the open type and it may be defined as the weighted evaluated level of the person’s competence and perceived quality in all domains of contemporary life (Lawton, 1991). Ryff and Keyes (1995), defined psychological wellbeing as “free of distress or other mental problems”. According to Asmidawati, A. et. al (2005), health satisfaction and perceived control are the two important key factors in determining the psychological well-being of poor older female Malaysians.

Perceived Barriers to Town

The study found that an individual’s perceived barriers to town was positively correlated with his functional disability ($r = 0.177$; $P < 0.01$). Older rural females tend to face more barriers than the male respondents ($t = 2.243$; $p < 0.05$). Further analysis found that an individual’s perceived barriers to town were associated with his financial status, where the poor were reported to have more barriers to go to town. ($X_2 = 54.721$, $df = 3$, $p < 0.01$). In short, older poor females tend to have more barriers than other groups. However, there is no significant

functional ability difference by gender, ethnicity, education attainment and age group among the rural elderly.

For perceived barriers to town, the study found the three main reasons that hinder the older rural persons from going to town. These include firstly, the town is crowded; secondly, the town is hot/humid and thirdly, financial factors. Further analysis also found that perceived barriers to town marked a significant negative correlation with ADL age ($r = -0.18, p < 0.05$), which clearly showed their physical status will influence the perceived barriers directly and vice versa. Again, older females tends to have higher score than male ($t = 2.24, p < 0.05$). There is also a significant difference between perceived income adequacy and perceived barriers ($\chi^2 = 54.721, p < 0.01$). In short, perceived barriers of poor older female tends to be higher than any other groups.

Environment Quality of Life:

To evaluate the respondent's satisfaction towards their living environment, each rural elderly were asked to rate, on a ten-point scale where 10 equals the best and 1 equals the worst, for the 11 facilities provided within their residential area. The score ranging from 11 to 110. For this study, the average environment quality of life score was 72.89 ($SD=11.01$) indicating that respondents were satisfied with their overall living environment. In general, the respondents' satisfaction towards environment quality of life was homogeneous in this study as there is no significant difference of environment quality of life score by gender, age groups and ethnicity. There was also no correlation between the environment quality of life score with respondents' ages. The majority of the rural older persons were satisfied with their neighborhood but were less satisfied with the transportation facilities in their living environment.

Out-of Home Activities:

The out-of home activities in this study refer to the traveling action by the respondents out of their homes to the 20 locations (as in the questionnaire) located in town. When asked whether the respondents do out-of-home activities by going to the identified location/s, about forty percent of the respondents never do out-of-home activities going to any of the locations during the past month. Further analysis found that older males have a higher mean of out-of-home activities compared to older females ($t = 2.731; p < 0.01$). The younger group (50-59) was the most active group that go to town compared to the other two age groups (60-69 and 70+). Education attainment and ethnicity factors were not associated with their out-of-home activities in this study.

Predictors of Out-Of-Home Activities

The main concern of this study is to explore the predictors of a rural elderly to town. A simple linear multiple regressions were used to determine the extent to which the variables used in this study can be used to explain the variance of out-of-home activities among the rural elderly. Pearson Product Moment Correlations were computed on selected pairs of variables as shown in Table 3. This was conducted to test for direction and strength of the correlation between variables. It was found that the total number of out-of-home activities was significantly related to age ($r = -0.204$), psychological wellbeing ($r = -0.126$), perceived barriers to town ($r = -0.167$) and Income Adequacy ($r = -0.291$). There is no significant relationship between the respondents' functional ability, health status and environment quality of life with their out-of-home activities. Table 4 summarized the multiple regression analyses of Out-of-Home Activities. Eight variables were used for the multiple regression analysis. Of the eight variables, two variables (income adequacy and barriers to town) were statistically significant for Out-of-Home Activities. It can be concluded that those rural older persons who have less

perceived barriers to town and with less or no financial problems might go to townie participating in out-of-home activities more frequently than the other groups.

Table 3: Pearson Product Moment Correlations of Out-Of-Home Activities

No.	Variables	Strength of Correlation (r)
1	Functional ability	n.s
2	Self-Rated Health	n.s
3	Environment quality of life	n.s
4	Age	- 0.204**
5	Psychological wellbeing (reverse coding)	- 0.126*
6	Barriers to Town	- 0.167**
7	Financial status	0.291**

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 4: Multiple regression analyses in Out-of Home Activities

No	Mode	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	2.745	1.340		2.048	.042
1	Function ability	.004	.011	.022	.353	.725
2	Self-Rated Health	-.014	.114	-.008	-.126	.900
3	Environment quality of life	-.004	.006	-.045	-.723	.470
4	Age	-.015	.009	-.108	-1.726	.086
5	Psychological wellbeing (reverse coding)	-.063	.046	-.088	-1.362	.174
6	Barriers to town	-.110	.042	-.167	-2.595	.010
7	Financial status	.396	.077	.328	5.166	.000
8	Gender (female=1)	-.229	.128	-.107	-1.798	.073

Discussion, Conclusions and Implications

The findings of the study showed that majority of the elderly are able to perform their daily activities. The study also showed that the majority of the respondents were in a state of psychological wellness. The older males have a higher mean of out-of-home activities compared to the older females. In general, most of the respondents were satisfied with their EQoL. There are significant relationships between age, GHQ-12, Perceived Barriers to Town,

income adequacy and the number of Out-of-Home activities among the older persons. However, income adequacy and perceived barriers to town were identified to be significant contributors for Out-of-Home activities. The findings provide insights to the authorities on the need to plan and design a barrier free environment that are safe, welcoming, accessible and legible.

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ⁱ Research Entitled 'Activities, Access and Ageing in Malaysia' headed by SharifahNorazizan, SAR, University Putra Malaysia.

ⁱⁱ Unpublished raw data from Research entitled Accessibility and Usability of Public Transport Service System Among Older Malaysians. Experimental Research Grant Scheme (ERGS), University Putra Malaysia.