The impact of Socio-Demographic variables on the Retirement Environment

Cross Mark

Chung Shin Fung[*1], Safurah Jaafar[2], Roslan Mohd Ismail[3], Azrin Syahida Abd Rahim[4]

[1,2,3,4]Business Healthcare Management, International Medical University, 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, Malaysia

ABSTRACT

Objective - Demands for Urban Retirement Environments have attracted much attention in the industry for senior citizens. This study aimed to examine the socio-demographic profile and antecedent factors influencing adults' decisions and preparedness toward retirement environment facilities in two urban settings.

Methodology/Technique – This study uses a quantitative cross-sectional approach using the descriptive-normative survey method with a modified self-administered questionnaire. Data was collected in Greater Kuala Lumpur and Kota Kinabalu. Mail survey respondents returned 369 usable questionnaires yielding a 14.5% response rate. Hypotheses were analyzed using the structural model.

Finding – The study found that the urban population was receptive to retirement preparation with financial Planning and health insurance commitments. The majority, 72%, engaged with exercise and 80% with lifelong learning activities and profited from a better health status. In addition, 69% to 72% were more well-prepared to welcome home care and daycare service packages. However, it was a natural preference to accept lower fees up to RM300, even though most hold health insurance plans, and the higher-income respondents with more than RM75,000 annual income showed a willingness to pay between RM1000 to RM5000 for institutional care services.

Novelty – This study has examined significant relationships between the level of retirement preparedness, namely the three elements, financial Planning, health insurance, and lifelong Learning, with their socio-demographic profile. It also provides the gaps and potential greenfield versus brownfield areas for investment. The aged care providers and insurance companies have a potential niche market in developing and collaborating using the above elements in developing retirement insurance and investment package strategies. Together they can generate more options to build sustainable retirement environment business agenda.

Type of Paper: Empirical

JEL Classification: I11, I12, I13,

Keywords: Retirement, Financial Planning, Health Insurance, Lifelong Learning, Technology Advancement

Reference to this paper should be referred to as follows: Fung, C.S; Jaafar, S; Ismail, R.M; Rahim, A.S.A. (2022). The impact of Socio-Demographic variables on the Retirement Environment, *GATR-Global J. Bus. Soc. Sci. Review,* 10(3), 190–219. https://doi.org/10.35609/gjbssr.2022.10.3(8)

1. Introduction

The lack of strategic Planning for a healthy retirement environment in Malaysia leads to the slow development of elderly ageing and wellness care based on the external environment.

These were often neglected by operators in the industry, where the policies and structure of services should be improved. Optimal retirement environment facilities need to address these inadequacies to provide a friendly ecosystem for retirees. Studies in Malaysia revealed that retirees are inadequately prepared for a sustainable living arrangement after retirement (Zabri, Ahmad, & Lian, 2016). This scenario not only refers to living expenses but also to the financial risk of the rapidly increasing medical costs related to unexpected illness and expensive medical treatment (Azhar, Rahman, & Arif, 2018). The health and medical insurance schemes are not yet popular among Malaysians. It will remain not promising unless a National Insurance Policy is established encouraging early age contribution when the premium for the insurance is low and affordable, which becomes expensive with age.

Notwithstanding, continuous Learning in old age, especially post-retirement, helps improve their capacities by enabling them to be autonomous and occupy their time with feelings of fulfillment. Ellis, in her study, highlighted the importance of non-formal community-based lifelong learning opportunities to cater to the evolving needs of active ageing communities (Ellis, 2015). Meanwhile, the informal and formal leisure curriculum can be equipped with exercise and social interaction activities as a holistic concept of adult or elderly Learning, bringing greater life satisfaction. Lifelong Learning in old age is the source of adaptation to encourage self-identity and self-expression (Hafford-Letchfield, 2010; Narushima, Liu, & Diestelkamp, 2018; Wang, 2008).

New technological innovations will likely contribute significantly to elderly use and care services. Many of the existing studies on the concepts of retirement homes and villages equipped with technological advances were conducted in developed countries (Abbas & Saruwono, 2012; Chansarn, 2013). However, these techniques and tools were not universally designed to be utilized by the ageing population. According to Yamamoto, factors influencing the decision to use technology include age, gender, socio-economic status, and social-cultural context (Yamamoto, 2008).

Thus far, most researchers are focussed on single or two variables that significantly affect healthy ageing and retirement among older adults. Therefore, this study aims to establish the significant relationship of four elements, financial Planning, health insurance, lifelong Learning, and technology advancement, with their socio-demographic profile, as antecedents to building successful retirement environment facilities and ecosystems. The results would be helpful for policy-makers, care service providers, and insurance companies of potential niche market opportunities for developing collaborative investment strategies and retirement insurance packages.

2. Literature Review

Healthy retirement leads to healthy ageing. Healthy ageing enables older people to be resilient to the changes around them. Retirement is a phase that changes one's time availability, social network, sources of income, and financial capacity (Apalasamy, Awang, Mansor, & Peng, 2020). The retirement patterns of every individual are dissimilar as it depends on their needs, living environment, and accumulated life experiences (Sprod et al., 2017). Inadequate antecedent retirement planning and the necessary social provisions can lead to deteriorating health conditions, retirement anxiety, and poor quality of life (Wildman JM, 2018).

Due to the changes in their lifestyle, pre-retirees need to plan and choose a retirement environment that offers options to live with dignity, integrity, freedom, independence, and quality of life (QOL) (WHO, 2015). Available literature has shared various factors influencing the preparation and decisions on retirement environment and facilities. According to Abbas et al., the peculiarities and differences of opinions about the

outdoor facilities in Klang Valley are influenced by their age, position, types of accommodation institutions, and affordability.

Researchers Abbas et al. ascertained the status of outdoor facilities and services for the elderly in Klang Valley, either in their homes or institutions. Abbas concluded that the peculiarities and differences of opinions about the outdoor facilities are influenced by their age, position, and type of accommodation institutions. There is space for improvement recommendations from the local authorities included in the study to ensure that the outdoor atmosphere is totally barrier-free, more inclusive, and thus more welcoming to the elderly (Kim, Kwon, & Anderson, 2005).

Another vital element is financial Planning. Chansarn et al. 2013 supported that financial grounding for retirement for the population of Thailand is critical to prepare the economic well-being of older adults, in turn, better secures indirectly healthy ageing (Chansarn, 2013). The study evaluated the environment's financial preparation for retirement in three dimensions: savings, retirement funds, and accommodation ownership. Elderly Thai citizens typically had modest economic preparedness, but findings showed that demographic and health status positively impacted retirement planning. More specifically, most respondents had low savings after retirement, creating risks of inadequate finance (Shafee, Mohamed, Suhaimi, & Ahmad, 2018).

Parker analyzed the health insurance and ageing relationship, particularly among the rural population in Mexico (Parker, Saenz, & Wong, 2018). The findings show that the health care policy has broad and substantial impacts on the use of diagnostic tests and health-seeking behaviour. This study is also essential to Malaysia as emerging literature on health insurance impacts in other developing countries such as Thailand, Ghana, and Indonesia introduced universal health care policies and lessons learned. (A-Plus, 2021; Doty, Cohen, Miller, & Shi, 2010; NHMS, 2018).

Amongst the research on the impact of technology on healthy ageing are specific studies on mobile monitoring devices or robotic management, primarily in assisted living, care centers, and retirement homes (Rohwedder & Willis, 2010; Vidal-Meliá, Ventura-Marco, & Pérez-Salamero González, 2018). Despite the significant relationship of the research, there is still research on the impact of technology on a healthy ageing environment in Malaysia.

In the Malaysian context, this study examined the gaps such as financial Planning in terms of savings, social interaction after retirement in terms of lifelong learning capability, health insurance, and technology that affect healthy ageing, which makes up the healthy retirement environment for the elderly.

3. Methodology

This study adopted a theoretical model from a few researchers with a direct relationship model in similar topics related to long-term care systems, retirement planning, and retirement savings contribution. The study's findings were used to develop a gap study of the healthy retirement environment to explain the multiple factors influencing the consumer's decision. An empirical analysis was conducted using questionnaires to observe the framework.

A survey research methodology supported this study to explain variables and analyze relationships between variables. The study is sufficient to help analyse data from the respondents, which are then used to analyze the relationships between the determinants and the continuous exchange of information.

The following hypothesis is modelled based on the research structure framework adopted by previous researchers. The hypothetical structural model in Figure 1 formed the hypotheses of H1, H2, H3, and H4, as stipulated in the following:

H1: *Financial Planning is positively related to the perception of a healthy retirement environment*
H2: *Receptiveness Towards Health Insurance is positively associated with a healthy retirement environment*
H3: *Life-Long Learning Program is positively associated with a healthy retirement environment*
H4: *Technology advancement is positively associated with a healthy retirement environment*
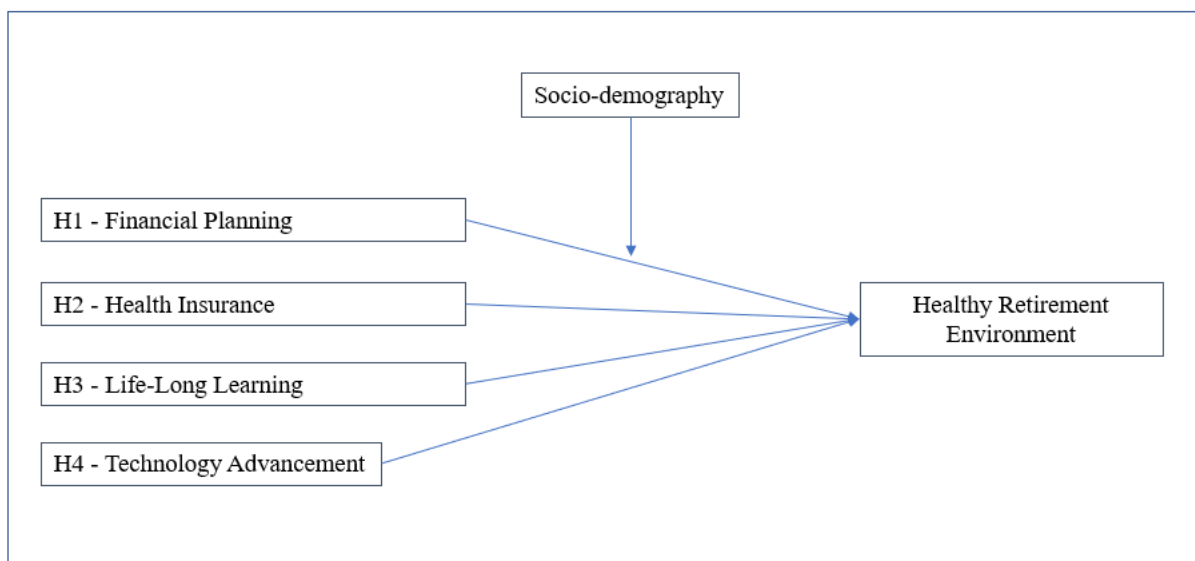
Adapted from: (1) Cheng (2008), (2) Moorthy MK (2012), (3) Hira, Rock and Loibl (2009), and (4) Stawski, Hershey   and Jacobs-Lawson (2007)

Figure 1: Conceptual Framework

This survey used a modified self-administered questionnaire. The questionnaire was derived from the related literature collected, and validators' suggestions were integrated. It was conducted in Greater Kuala Lumpur (KL) and Kota Kinabalu. The sample population focused on the future ageing population, now considered working adults. The age ranges from 21 to 60, comprising young people who finished their higher education and started working to retirement. Data was collected between October 2019 to January 2020 using distributed survey questionnaires. Two large insurance companies and two investment consultants were selected and volunteered for the study. They provided their clients' database as sample respondents. The questionnaires were distributed to all clients in their database.

From the 2750 samples who responded, they were approached by electronic platforms by e-mail and electronic communication applications (Whatsapp). They were given a written explanation of the objective of the survey and a guide to responding to the study using the google form provided. The participants were informed that their data would be protected under the Personal Data Protection Act 2010. Reminders through e-mails, Facebook postings to the identified samples, and search engine optimization were used to increase the response rate. This method helps reduce the participants' biases in their responses and harness the benefits of leaving participants to complete their survey independently.

The survey questionnaire, as shown in Appendix 1, is divided into six sections: Section A is the demography survey to understand the participants' basic information, including health conditions adopted from National Health &Morbidity Survey (NHMS) 2018. Section B explored participants' understanding of the healthy retirement environment. Section C examined participants' perceptions of their financial Planning and willingness to pay for types of care services. Section D was to explore participants' receptiveness towards their health insurance and observe the receptiveness of health insurance if care services were associated with the health program. Items for a healthy retirement environment, perception of financial Planning, and receptiveness towards health insurance were adapted from previous research (Cheng, 2008). Section E was to explore the active ageing of participants and the future social interacting trend with a lifelong learning program. Items for the construct of active ageing were adapted from Lin (Lin, 2014). Finally, section F explored the receptiveness of technology likely with smart-home systems and mobile devices as monitoring devices in retirement home development. Items for the construct of technology advancement were adapted from Backonja et al. (Backonja, Hall, & Thielke, 2014). Responses to statements in the questionnaire were measured using the 4-point Likert Scale ranging from 1 = Strongly agree to 4 = Strongly disagree and a scale of 1 = Never to 6 = daily. Demographic data were collected for analysis; most items were adopted from past literature.

This study used four-point Likert-type scales to develop constructs for the analysis. In total, there were 48 items adopted for Healthy Retirement Environment (Cheng, 2008), Perception towards Financial Planning (Cheng, 2008), Receptiveness towards Health Insurance (Cheng, 2008), Life-Long Learning (Lin, 2001), and Technology Advancement (Backonja et al., 2018). Two primary criteria for evaluating the goodness of measure are validity and reliability. Reliability has to do with the accuracy and precision of a measurement procedure, whereas validity is the extent to which a test measures what we wish to measure (Cooper, 2011).

4. Results

There were 369 complete responses and adequate for analysis. Garver and Mentzer recommended that the sample size be at least 200 to attain reliable estimates (Garver & Mentzer, 1999). Table 1 tabulates the demographic and socio-economic profile of the participants. The analyzed characteristics include gender, age, residing city, highest education level, marital status, living status, total household income, occupation, health condition, workout condition, family support, and health insurance ownership.

Socio-demographic profile
Based on the analytics, slightly more female respondents (53.9%) took part in this study than men. Approximately 72.1% of the participants were in the 31 to 50 age categories. Most of the respondents were married, living with spouses and children. There were 84.9% of the respondents in both these locations with higher university education. The household income of most participants (79.9%) was RM 50,000 and above.

Table 1: Respondents' profile

Demographic	Categories	Responses	
		Frequency (No)	Percentage (%)
Gender	Male	170	46.1
	Female	199	53.9
Age	21-30	45	12.2
	31-40	153	41.5
	41-50	113	30.6
	51-60	45	12.2

194

	61 above	13	3.5
Residing City	Greater Kuala Lumpur	178	48.2
	Kota Kinabalu	179	48.5
	Others	12	3.3
Education Level	Secondary school	9	2.4
	Vocational/Technical school	9	2.4
	College	89	24.1
	University	204	55.3
	Graduate school and above	58	15.7
Marital Status	Married and live with a spouse	251	68
	Widower or widow	4	1.1
	Divorce or separate	13	3.5
	Single	101	27.4
Living Status	Living alone	64	17.3
	Living with relatives	53	14.4
	Living with children	16	4.3
	Living with spouse	37	10
	Living with spouse and child	199	53.9
Total Household Income	Under RM 30,000	51	13.8
	RM 30,001 to RM 50,000	61	16.5
	RM 50,001 to RM 75,000	97	26.3
	RM 75,001 to RM 100,000	160	43.4
Occupation	Unemployment	4	1.1
	Employed	204	55.3
	Retired	11	3
	Homemaker	6	1.6
	Professional	60	16.3
	Senior Management	29	7.9
	Owned business	55	14.9

Health status

Health status information provides the level of health investment everyone has made. Self-declared health status was surveyed as interpreted in Table 2. Respondents with good, very good, and excellent health status scores accounted for 71.5% and gravitated amongst the age group 50 years and below. For the number of times they exercised, the same group collectively responded, with 72.6% of them exercising at least one time per week. Only 27.4% of them said "zero" times. Both analyses showed substantive significance for health status (φc =27.214, p<0.05) and workout trend (φc =28.583, p<0.05) with Cramer's V score of 0.005 and less.

Table 2: Health status and workout trend (exercise per week)

Variables	Age					Frequency (No)	Percentage (%)	Cramer's V (φc)
	21-30	31-40	41-50	51-60	61 and above			
Health Status								
Poor	2	2	1	-	-	5	1.4	
Fair	9	27	39	19	6	100	27.1	
Good	29	103	59	22	4	217	58.8	0.039
Very Good	3	18	11	3	2	37	10	
Excellent	2	3	3	1	1	10	2.7	

Total	45	153	113	45	13	369	100	
Exercise							
0 time	9	43	29	17	3	101	27.4	
1 time	20	53	32	14	2	121	32.8	
3 times	11	47	39	10	2	109	29.5	0.005
5 times and above	5	10	13	4	6	38	10.3	
Total	45	153	113	45	13	369	100	

Marital Status

Most respondents (78.9%) were married and lived with spouses and children (Table 3). Although the number appears small, the widows/er and divorcees lived with their children compared to singles who reported living alone or with relatives. Married respondents with a Total Household Income of more than RM 75,000.00 were most prevalent in this group. These test results indicated a significant difference in terms of living status (φc =441.737, p<0.001) and total household income (φc =33.702, p<0.001).

Table 3: Marital status

		Marital Status										
		Married	%	Widow/Widower	%	Divorce	%	Single	%	Total	%	Cramer's V (φ_c)
Living Status	Living Alone	6	2.4	1	25.0	4	30.8	53	52.5	64	17.4	
	Living with Relative	4	1.6	-	-	2	15.4	47	46.5	53	14.4	
	Living with Children	6	2.4	3	75.0	7	53.8	-	-	16	4.3	<0.001
	Living with Spouse	37	4.7	-	-	-	-	-	-	37	10.0	
	Living with Spouse and Children	198	78.9	-	-	-	-	1	1.0	199	53.9	
Total Household Income	Under RM 30,000	25	10.0	1	25.0	1	7.7	24	23.8	51	13.8	
	RM 30,001-RM 50,000	31	12.4	-	-	5	38.5	25	24.8	61	16.5	
	RM 50,001-RM 75,000	67	26.7	2	50.0	4	30.8	24	23.8	97	26.3	<0.001
	RM 75,001-RM 100,000	128	51.0	1	25.0	3	23.1	28	27.7	160	43.4	

Health Insurance

Based on Table 4, most of the respondents (85.4%) have insurance compared to the 14.6% who do not own insurance. Respondents in the age group of 31 – 40 years with a total household income of < RM 75,000.00 and healthy (no disease) accounted for the highest percentage of individuals owning insurance that given significant results for age ($\varphi c = 29.042$, p<0.001), total household income ($\varphi c = 14.095$, p=0.003) and health condition ($\varphi c = 9.442$, p=0.023). However, gender and education level did not indicate any significant relationship in owning insurance.

Table 4: Insurance Ownership

Demography	Categories	Yes		No		Total		
		n	%	n	%	n	%	Cramer's V (φ_c)
Age	21-30	28	8.89	17	31.48	45	12.20	
	31-40	136	43.17	17	31.48	153	41.46	
	41-50	105	33.33	8	14.81	113	30.62	.000
	51-60	37	11.75	8	14.81	45	12.20	
	61 and above	9	2.86	4	7.42	13	3.52	
Gender	Male	142	45.08	28	51.85	170	46.07	
	Female	173	54.92	26	48.15	199	53.93	.356
Education	Secondary school	7	2.22	2	3.70	9	2.44	
	Vocational school/Technical school	5	1.59	4	7.41	9	2.44	
	College	74	23.49	15	27.78	89	24.12	.073
	University	180	57.14	24	44.44	204	55.28	
	Graduate school and above	49	15.56	9	16.67	58	15.72	
Total Household Income	Under RM 30,000	36	11.43	15	27.78	51	13.82	
	RM 30,001-RM 50,000	49	15.56	12	22.22	61	16.53	
	RM 50,001-RM 75,000	85	26.98	12	22.22	97	26.29	.003
	RM 75,001-RM 100,000	145	46.03	15	27.78	160	43.36	
Health Condition	None	272	86.35	38	70.37	310	84.01	.024
	Diseased	43	13.65	16	29.63	59	15.99	
Type of Care	Day Care	99	31.43	20	6.35	119	32.25	
	Home Care	105	33.33	21	38.89	126	34.15	.276
	Institutional Care	111	35.24	13	24.07	124	33.60	

The respondents were followed with questions on their willingness to pay across a range of suggested care packages for three types of facility services: daycare, home care, and institutional care, reflecting on their financial preparedness. Their responses are described below.

Daycare Services

As shown in Table 5, 43.4% of those with the highest total household income asserted their willingness to pay for daycare services across all ranges (RM 150 to RM 3,000). However, the Phi/Cramer's V value demonstrated less effect on the total household income. Although the willingness to pay among respondents from Greater KL and Sabah was similar, the test results indicated a significant difference between these

residing cities (φc=12.943, p=0.044. Moreover, those with family support revealed their preferences for the lowest daycare fees of RM 150 to RM 300 (φc=14.642, p=0.023).

Table 5: Willingness to pay for daycare services

	Fee Categories	RM 150 – RM 300	%	RM 300 – RM 500	%	RM 500 – RM 1000	%	RM 1000 – RM 3000	%	Total	%	Cramer's V (φc)
Total Household Income	Under RM 30,000	38	14.34	11	14.47	1	5.26	1	11.11	51	13.82	.068
	RM 30,001-RM 50,000	49	18.49	7	9.21	4	21.05	1	11.11	61	16.53	
	RM 50,001-RM 75,000	70	26.42	23	30.26	-	-	4	44.44	97	26.29	
	RM 75,001-RM 100,000	108	40.75	35	46.05	14	73.68	3	33.33	160	43.36	
Residing City	Greater Kuala Lumpur	127	47.92	37	48.68	9	47.37	5	55.56	178	48.24	.044
	Sabah	132	49.81	37	48.68	7	36.84	3	33.33	179	48.51	
	Others	6	2.26	2	2.63	3	15.79	1	11.11	12	3.25	
Family Support		265	71.8	76	20.6	19	5.1	9	2.4	369	100.00	.023

Home Care Services

A separate analysis of the willingness to pay for home care services revealed similar findings to the daycare services (Table 6). The results indicated a significant difference between total household income (φc=22.100, p=0.009) and family support (φc =26.122, p<0.001) in opting for home care services. Meanwhile, the Phi/Cramer's V value demonstrated less effect on the residing city variable.

Table 6: Willingness to pay for home care services

	Fee Categories	RM 150 – RM 300	%	RM 300 – RM 500	%	RM 500 – RM 1000	%	RM 1000 – RM 3000	%	Total	%	Cramer's V (φc)
Total Household Income	Under RM 30,000	37	16.59	9	7.14	4	26.67	1	20.00	51	13.82	.009
	RM 30,001-RM 50,000	46	20.63	11	8.73	3	20.00	1	20.00	61	16.53	
	RM 50,001-RM 75,000	53	23.77	42	33.33	1	6.67	1	20.00	97	26.29	
	RM 75,001-RM 100,000	87	39.01	64	50.79	7	46.67	2	40.00	160	43.36	
Residing City	Greater Kuala Lumpur	104	46.64	64	50.79	8	53.33	2	40.00	178	48.24	.088
	Sabah	113	50.67	59	46.83	5	33.33	2	40.00	179	48.51	
	Others	6	2.69	3	2.38	2	13.33	1	20.00	12	3.25	
Family Support		223	60.4	126	34.1	15	4.1	5	1.4	369	100.00	.000

Institutional Care Services

The willingness to pay for institutional care (Table 7 see appendix) manifested differential preferences compared to home and daycare services. Those in the higher income bracket were more willing to pay for costly institutional care services, RM 1,000 – RM 5,000, with a significant difference (φc =62.929, p<0.001). Respondents in both cities and with family support also exhibited greater willingness to pay for institutional

care under higher fee categories (residing city (φc= 26.969, p=0.001) and family support (φc =4.0799, p<0.001).

Life-long Learning

Respondents were assessed on their plans and commitments to life-long Learning on how frequently they get involved. The following were the list of activities that were included in the questionnaire: Outdoor activities, sports hobbies, and indoor activities, cultural activities and entertainment, family and social activities, and volunteer activities. Having analyzed the sets of responses, the following analyses in Table 8 showed that four activities were significant. More than 80% of the respondents will participate in outdoor and social activities. However, Kuala Lumpur residents were more frequent in involving with outdoor, hobbies, social, and volunteer activities, and for each, the analyses were significant for outdoors (φc= 9.637, p<0.05), hobbies (φc= 11.699, p<0.05), family and social activities (φc= 6.996, p<0.05) and volunteer activities (φc= 13.280, p<0.05). Further analyses on the relationship between Education, Occupation, and Total household income, although not all, but the majority of the activities were significant for higher educational level, outdoor, hobbies (and volunteer activities, higher level of the profession for volunteer activities, and income for hobbies as shown in Table 7.

Technology Advancement

This analysis assessed the likeliness of exploring and using new monitoring device technology. Based on Table 7, most analyses did not show a significant difference for variables, health insurance ownership, gender, age, residing city, and total household income. The only important variable was the educational level of respondents (φc =25.146, p<0.001) with technology advancement.

Table 7: Likeliness to use monitoring devices - Technology advancement

		Yes	%	No	%	Total	%	Cramer's V (φ_c)
Health Insurance Ownership	Yes	310	98.4	5	1.6	315	100.0	.887
	No	53	98.1	1	1.9	54	100.0	
Gender	Male	168	98.8	2	1.2	170	100.0	.528
	Female	195	98.0	4	2.0	199	100.0	
Age	21-30	45	100.0	-	-	45	100.0	.666
	31-40	149	97.4	4	2.6	153	100.0	
	41-50	112	99.1	1	0.9	113	100.0	
	51-60	44	97.8	1	2.2	45	100.0	
	61 and above	13	100.0	-	-	13	100.0	
Residing City	Greater Kuala Lumpur	174	97.8	4	2.2	178	100.0	.632
	Sabah	177	98.9	2	1.1	179	100.0	
	Others	12	100.0	-	-	12	100.0	
Highest Education	Secondary school	7	77.8	2	22.2	9	100.0	.000
	Vocational school/Technical school	9	100.0	-	-	9	100.0	
	College	88	98.9	1	1.1	89	100.0	
	University	201	98.5	3	1.5	204	100.0	
	Graduate school and above	58	100.0	-	-	58	100.0	
Total Household	Under RM 30,000	50	98.0	1	2.0	51	100.0	.116

Income	RM 50,000	30,001-RM	58	95.1	3	4.9	61	100.0
	RM 75,000	50,001-RM	97	100.0	-	-	97	100.0
	RM 100,000	75,001-RM	363	98.4	6	1.6	369	100.0

Hypotheses were used to observe which variables were supported by the analysis. This study utilized the strength of the path coefficient values suggested by Hair et al. (2010), whereby the value of less than 0.2 is weak, 0.2 to 0.5 is moderate, and more than 0.5 is strong. In testing the hypotheses, Table 8 indicated that the hypotheses H1, H2, and H3 were statistically significant and in the hypothesized direction. The standardized estimate for these hypotheses was all significant (ß = 0.155, 0.263, 0.308, respectively). Thus, these three hypotheses were supported. Hypothesis H4 was rejected because they were not statistically significant (ß = 0.079).

Table 8: Path Coefficient

Hypotheses	Path Coefficient	Std Error	T-Value	Results
Financial Planning has a direct positive relationship with a healthy retirement environment	0.155	0.047	3.159*	Supported
Health Insurance has a direct positive relationship with a healthy retirement environment	0.263	0.058	4.526*	Supported
Lifelong Learning has a direct positive relationship with a healthy retirement environment	0.308	0.052	5.951*	Supported
Technology Advancement has a direct positive relationship with a healthy retirement environment	0.079	0.054	1.437	Not Supported

Note: * $p < 0.05$

The measurement of the construct of the study demonstrated adequate convergent and discriminant validity. In addition, composite reliability (CR) was used to test the reliability of each construct. The CR was Healthy Retirement Environment (0.880), Perception towards Financial Planning (0.746), Receptiveness towards Health Insurance (0.733), Life-Long Learning (0.851), and Technology Advancement (0.845). Hence, based on the composite reliability, it is to conclude that the measurement is reliable.

5. Discussion

The respondents' profile in this study represents the socio-economic configuration and inclination of their decisions and preparedness towards healthy retirement facilities and the environment. These findings would offer information on focal areas for enhancing local or national policy development, for commercial and financial sectors, and for caregivers in sculpturing targeted service package plans according to the socio-economic profile that will provide maximum reception.

Healthy ageing comes with good dividends of health investment from the young. In this study, the respondents (62.3%) maintained an excellent workout habit (1 to 3 times per week). It was encouraging to note that almost 99.4% of the respondents self-declared they were healthy with no diseases across the ages. The profile of this study population fairs better than the general population. As reported in the most recent NHMS study in 2019, the non-communicable diseases among adults in Malaysia continue to increase. Conditions such as diabetes, hypercholesterolemia, and hypertension did not decline over the last decade,

maintaining 18.3% for diabetes and 38.1% for hypercholesterolemia (Sooryanarayana et al., 2020). These conditions could have huge implications on the post-retirement safety net due to their high morbidity, usually accompanied by a hefty medical bill.

Retirement can be very lonely if one is unprepared to build relationships with families and friends. Families and retirement are closely linked. In this study, there was a significant relationship between marital status and living status with a higher total household income that can secure better economic stability. Of the 251 respondents who were married, 198 (82.7%) participants were staying together with their spouses and children. In his paper, Muratore commented that being married or in a relationship has more positive retirement outcomes (Alexa M. Muratore, 2014). Another 17.3% of the respondents were noted as staying away from their families due to work commitments or by choice. Leaving home to earn a living is necessary when the job nature changes (Chen, Leeson, & Liu, 2017). There is growing migration to reside in urban cities where work opportunities prevail and are often the reason to spend their retirement in an urban environment permanently. Multigenerational family relationships over time have also developed, and close networks with families have improved with the availability of various social media platforms. Nevertheless, those who retire without families find creative ways to get relevant support. Without looking for a strong network of friends, families, and companions, the retirement years may be spent in isolation (Weiss, 2005).

The wealth-needs ratio demonstrated by Alaudin et al. showed that 69% of Malaysian households have adequate retirement income and that 30% and more of them will not be able to sustain their present level of spending during retirement (Alaudin, Ismail, & Isa, 2017). The relationship between financial Planning and healthy retirement depends on an individual's intention of retirement planning. Lusardi et al., in their study, showed that preference for types of retirement facilities and homes is very dependent on their financial efficacy (Lusardi & Mitchell, 2007). Suhaimi alluded that most Malaysians depended on the Employee Provident Fund (EPF) as their retirement fund (Suhaimi Abd Samad, 2013). Hence, individuals must be alerted to plan early for retirement as they would have sufficient time and alternatives for meaningful and healthy retirement choices. This study similarly showed that respondents with higher income were willing to pay higher prices for costlier services for home care, daycare and even more for institutional care. Those with higher income correspondingly owned health insurance. In short, this study revealed a positively significant attitude among participants to start saving at an early age for retirement. Shafee et al. also found that 'intention about retirement' was positive amongst Malaysian youth and is significant with financial Planning for retirement (Shafee et al., 2018). Thus, the government must leverage this notion that the young are showing more concern about the future. Hence insurance packages should be made available and targeted to the young to encourage this growing interest in a sustainable retirement environment.

As expected, most respondents who participated in the study are clientele of insurance and investment agents who demonstrated a high level of understanding and receptiveness towards health insurance. Table 1 shows that the majority (72.7%) of this study's respondents had higher educational levels and owned health insurance. This percentage is three times the general population, which reported that only 23.7% of Malaysians own health insurance (NIH, 2015). Hence, there is potential for booming care-related insurance. Some insurance companies have already begun promoting the Private Retirement Scheme (PRS) in 2012 (Zabri et al., 2016). Other newly launched benefits include reimbursement of post-hospitalization charges, including caretaker charges which are regarded as another milestone for health insurance (A-Plus, 2021). However, the current health insurance policies available in the market offering long-term care have been limited.
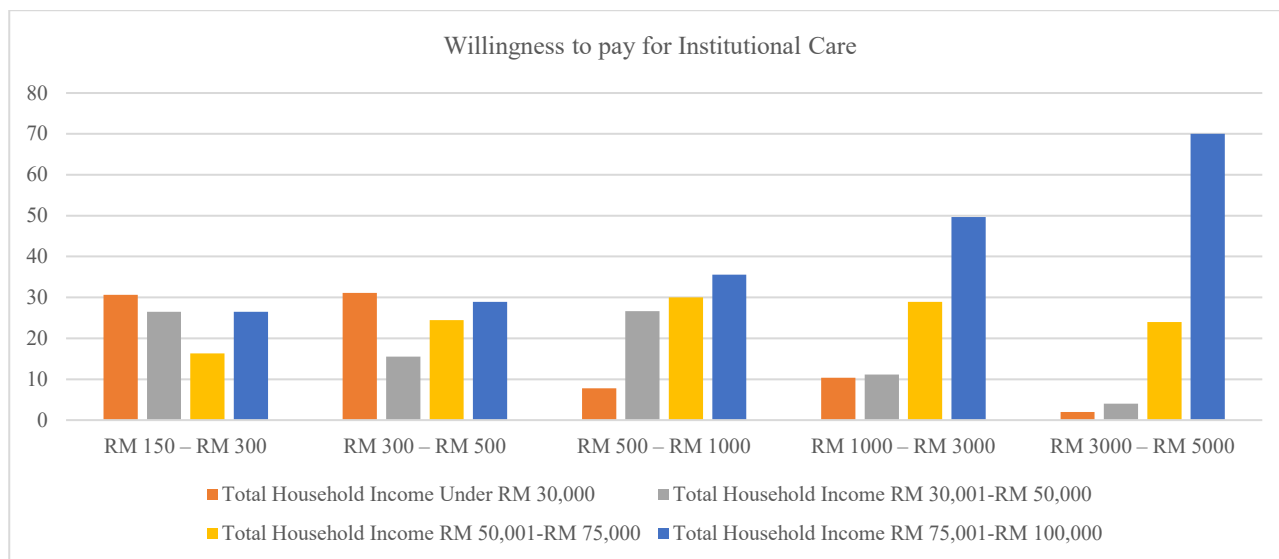
Figure 2: Willingness to pay for Institutional Care by Total Household Income

As shown in Figure 2, in this study, higher-income respondents indicated a willingness to pay for institutional care services. This was suggestive that the population might gravitate towards better utilization of aged-care services, particularly on long-term care insurance utilizing home care and assisted living. Doty et al. also found that insurance holders engaged with home care and assisted living use long-term care insurance (Doty et al., 2010). Ageing was more successful for those with long-term care insurance coverage in care settings. Therefore, a population with a more pervasive health insurance coverage may have better and more comprehensive plans in line with an available healthy retirement environment.

Malaysia does not have a National Social Health Insurance policy like a long-term health insurance policy for the elderly. Suppose such an insurance policy was to be introduced, it is recommended that the care services for the elderly are incorporated into the insurance policy as part of an overall retirement strategy rather than limited to medical insurance. Through financing insurance and care services, policyholders could enjoy a more efficient scheme with optimal choices for a healthy retirement environment (Vidal-Meliá et al., 2018).

Retirement can lead to increased leisure, less stress, and a healthier lifestyle. However, this may be contrary to another group of the population, who may have to endure social isolation, a lack of a sense of purpose, and reduced physical and intellectual exercise, which may affect both mental and physical health (Rohwedder & Willis, 2010; Shai, 2018). Hence partnership of learning communities is essential for improving the optimal achievement of learning goals. The encouragement of Learning, especially in the age of active retirement, is not only seen as a substitute for daytime entertainment but serves the real purpose of sharing information, social networking, establishing coping skills, and providing service opportunities (Ellis, 2015). In this study, the respondents demonstrated they were socially well connected, with more than 70% of Greater KL and Sabah frequently involved in activities. It was significantly higher in Greater KL and Others in the peninsula than in Kota Kinabalu, in most likelihood, are the availability of arrays of options and spreads of activities, and easy access. Selvaratnam and Poo also found that social connectedness is common amongst most elderly in rural and urban Malaysia (Selvaratnam & Tin, 2007).

Many older adults affirmed the use of innovative home technology in helping them improve safety and security, age in place, achieve optimal ageing, maintain independence, and detect cognitive decline

202

conditions (Imamura, 2014). In addition, the majority were also comfortable staying connected with their care providers and caregivers to conduct monitoring using information.

Although this present study did not demonstrate a significant relationship in terms of consumers' points of view, Yamamoto identified that technology was helpful for caregivers and administrators in an institution as a compensation tool for the loss of mobility and other health problems (Yamamoto, 2008). Hence, it could benefit the elderly if they appreciate the usefulness of communication technology for their ageing needs. The development of an innovative home solution that facilitates the detection of residents' activity could strongly depend on the correct adjustment and configuration to the resident's necessities and the perceived benefits on one's daily life.

6. Conclusion

This study demonstrated that the three significant elements of lifelong Learning, financial willingness, and technology advancement positively influence building a retirement environment. In the practicality of the subject matter, the factors customers consider for selecting a healthy Retirement are summarised in Figure 3, the theoretical framework below.

This study showed that the potential greenfield areas are urban adults younger than 30 years of age, working adults with income lower than RM75000 RM, and older adults with little family support who are less receptive and less prepared for a healthy retirement. The results of this study provide a foundation for future studies that can further demonstrate the application and effectiveness of the above theoretical model.

The age care service is a sunrise industry, and the demand for healthcare can be seen as both a healthcare burden and an opportunity for business investment. There should be more studies to examine gaps in government policies to provide better protection for care for the elderly and the need to have more pervasive health insurance reform regarding long-term care services, active independent living, and assisted living. Opportunities could be explored to identify types of dynamic living retirement packages in collaboration with financial institutions and venture capitalists for better retirement planning that address the various strata of the population in need. Notwithstanding the multiple kinds of activities to be created, such as creative handwork and crafting hobbies, volunteering activities in assisted living can delay cognitive impairment within communities to encourage social connection.

Even though this study showed that technology advancement was not significant to retirement decision-making, in light of growing technology-assisted services, the author would recommend that efficient and productive technological products being offered. It should be designed and made acceptable to the community, such as sensors and devices in smart homes to monitor fall management, pain monitoring, and drug administering management system, including robotic caregivers.

The study is subject to several significant limitations. Firstly, the cross-sectional survey was conducted for a limited duration. Although questionnaires were distributed to many members in the database, the response rate was relatively low at 4%. While respondents completed the self-administered surveys, social desirability bias may have been a limitation and motivated them to provide answers viewed favorably by insurance or investment companies. Furthermore, the study involved non-probability sampling. This can be improved by conducting a longitudinal study to a randomized probability sampling at selected existing retirement homes to comprehensively explore the elderly's perception of a healthy retirement environment. In addition, this study only involved the concept development of a retirement environment, which has yet to be validated. Thus, further exploration of this Retirement Environment be further improved by looking into a specific dimension, for example, the infrastructure, the facilities provided by care providers, and care service satisfaction in active retirement living.

Acknowledgments

Author Contributions

Shin Fung Chung conceived and conducted the survey, analysis, and draft manuscript. Safurah Jaafar, Roslan Mohd Ismail, and Azrin Syahida Abdul Rahim drafted and copy-edited the manuscript. All authors agreed on the manuscript before submission.

References

A-Plus. (2021). A-Plus Health-i Medical Protection, Access July 15, 2021.

Abbas, M. Y., & Saruwono, M. (2012). Our 'golden citizens with 'golden facilities? *Procedia-Social and Behavioral Sciences, 49*, 127-146.

Alaudin, R. I., Ismail, N., & Isa, Z. (2017). Determinants of retirement wealth adequacy: A case study in Malaysia. *Institutions and Economies*, 81-98.

Alexa M. Muratore, J. K. E., Catherine G. Collins. (2014). Understanding Heterogeneity in Adaptation to Retirement: A Growth Mixture Modeling Approach. *The International Journal of Aging and Human Development, 79*(2), 131-156.

Apalasamy, Y. D., Awang, H., Mansor, N., & Peng, T. N. (2020). Post-Retirement Experience among Retirees: A Case Study in Malaysia. *Pertanika Journal of Social Science and Humanities, 28*(3).

Azhar, A., Rahman, M. M., & Arif, M. T. (2018). Willingness to pay for health insurance in Sarawak, Malaysia: a contingent valuation method. *Bangladesh Journal of Medical Science, 17*(2), 230-237.

Backonja, U., Hall, A. K., & Thielke, S. (2014). Older adults' current and potential uses of information technologies in a changing world: A theoretical perspective. *The International Journal of Aging and Human Development, 80*(1), 41-63.

Blessinger, P. (2015). Lifelong Learning as a human right. Retrieved from https://www.universityworldnews.com/post.php?story=20150303150758108

Chansarn, S. (2013). Economic preparation for the retirement of population aged 50–59 years old in Thailand. *Procedia-Social and Behavioral Sciences, 91*, 640-647.

Chen, T., Leeson, G. W., & Liu, C. (2017). Living arrangements and intergenerational monetary transfers of older Chinese. *Ageing & Society, 37*(9), 1798-1823.

Cheng, Y. H. (2008). *Investigating the attitudes and perceptions of Taiwan's senior citizens regarding assistance from Long-Term Care service systems*: Spalding University.

Doty, P., Cohen, M. A., Miller, J., & Shi, X. (2010). Private long-term care insurance: value to claimants and implications for long-term care financing. *The Gerontologist, 50*(5), 613-622.

Ellis, B. (2015). Learning opportunities in the 'Golden Years' in a regional city. *Australian and International Journal of Rural Education*, 28-43.

Garver, M. S., & Mentzer, J. T. (1999). Logistics research methods: employing structural equation modeling to test for construct validity. *Journal of business logistics, 20*(1), 33.

Hafford-Letchfield, T. (2010). The age of opportunity? Revisiting assumptions about the life-long learning opportunities of older people using social care services. *British journal of social work, 40*(2), 496-512.

Imamura, P. G. (2014). *The role of technology in older adult healthcare: A content analysis of existing literature*: California State University, Long Beach.

Kim, J., Kwon, J., & Anderson, E. A. (2005). Factors related to retirement confidence: Retirement preparation and workplace financial education. *Financial Counseling and Planning, 16*(2), 77-89.

Lin, W.-I. (2014). Active ageing in Taiwan. In *Active Ageing in Asia* (pp. 86-104): Routledge.

Lusardi, A., & Mitchell, O. S. (2007). Baby Boomer retirement security: The roles of Planning, financial literacy, and

housing wealth. *Journal of Monetary Economics, 54*(1), 205-224. doi:https://doi.org/10.1016/j.jmoneco.2006.12.001

Narushima, M., Liu, J., & Diestelkamp, N. (2018). Lifelong Learning in active ageing discourse: its conserving effect on well-being, health, and vulnerability. *Ageing & Society, 38*(4), 651-675.

NHMS, N. H. a. M. S. E. H. (2018). National Health and Morbidity Survey 2018: Elderly Health. from NHMS

NIH. (2015). National Health and Morbidity Survey 2015, Ministry of Health Malaysia. *Institute for Public Health, National Institutes of Health*.

Parker, S. W., Saenz, J., & Wong, R. (2018). Health insurance and the aging: Evidence from the Seguro Popular program in Mexico. *Demography, 55*(1), 361-386.

Rohwedder, S., & Willis, R. J. (2010). Mental Retirement. *Journal of Economic Perspectives, 24*(1), 119-138. doi:10.1257/jep.24.1.119

Selvaratnam, D. P., & Tin, P. B. (2007). Lifestyle of the elderly in rural and urban Malaysia. *Annals of the New York Academy of Sciences, 1114*(1), 317-325.

Shafee, N. B., Mohamed, Z. S. S., Suhaimi, S., & Ahmad, N. N. (2018). Future Retirement Planning Among Malacca Youth. *Global Business & Management Research, 10*(3).

Shai, O. (2018). Is retirement good for men's health? Evidence using a change in the retirement age in Israel. *Journal of Health Economics, 57*, 15-30. doi:https://doi.org/10.1016/j.jhealeco.2017.10.008

Sooryanarayana, R., Wong, N. I., Ahmad, N. A., Razak, M. A. A., Yusoff, M. F. M., Chan, Y. Y., . . . Aris, T. (2020). An overview of the methodology and general findings from the National Health and Morbidity Survey (NHMS) 2018: Older persons' health in Malaysia. *Geriatrics & gerontology international, 20*, 7-15.

Sprod, J., Olds, T., Brown, W., Burton, N., van Uffelen, J., Ferrar, K., & Maher, C. (2017). Changes in use of time across retirement: A longitudinal study. *Maturitas, 100*, 70-76.

Suhaimi Abd Samad, N. M. (2013). Population Ageing and Social Protection in Malaysia. *Malaysian Journal of Economic Studies, 50* (December 2).

Vidal-Meliá, C., Ventura-Marco, M., & Pérez-Salamero González, J. M. (2018). Social insurance accounting for a notional defined contribution scheme combining retirement and long-term care benefits. *Sustainability, 10*(8), 2832.

Wang, C.-C. (2008). *Leisure participation, leisure motivation, and life satisfaction for elders in public senior resident homes in Taiwan*: University of the Incarnate Word.

Weiss, R. S. (2005). Retirement, Marriage, and Social Isolation. *Illness, Crisis & Loss, 13* (1), 75-84. doi:10.1177/105413730501300107

WHO. (2015). *World report on ageing and health, World Health Organisation*: World Health Organization.

Wildman JM, M. S., Pearce M. (2018). Quality of life at the retirement transition: Life course pathways in an early 'baby boom' birth cohort. *Soc Sci Med, Jun*(207), 11-18. doi:doi: 10.1016/j.socscimed.2018.04.011

Yamamoto, T. (2008). *Interactive video communication technology and successful aging in place: applying the selective optimization with compensation model*: Oregon State University.

Zabri, S. M., Ahmad, K., & Lian, A. (2016). The awareness of private retirement schemes and the retirement planning practices among private sector employees in Malaysia. *International Journal of Economics and Financial Issues, 6*(6), 120-124.

Appendix 1: Questionnaires (English)

FACTORS INFLUENCING CONSUMER'S DECISION ON SELECTION OF HEALTHY RETIREMENT ENVIRONMENT

*Required

1. Email address *

   _____

Study Information Sheet

Ageing population in Malaysia estimated approaching 18% of the total population by 2040. However, the attention to older person in Malaysia still far behind compare to other developed countries. There is a lot of discussions and talks in the market about opportunities in building retirement living to cater the need of ageing population.

This research study explores the factors influencing the consumer's decision on the selection of healthy retirement living development in Malaysia. The results of this study will be used in academic organizations and published in a scholarly journal.

The following information will be used to give us a better idea of the type of individual who completed these surveys. We appreciate your assistance in this research and thank you for your time. Please remember that your responses will remain anonymous.

For more information, kindly contact:
Student Name: Chung Shin Fung (Email: chung.shinfung@student.imu.edu.my)
Research Supervisor: Asso. Prof. Dr. Safurah Bt. Ja' afar (Email: safurahjaafar@imu.edu.my)

Written Consent Form

I have read or have been verbally informed and understood all information given to me about my participation this study. I have been given the opportunity to discuss it and ask questions. All my questions have been answered to my satisfaction and I voluntarily agree to take part in this study.

> This study looks into the need of healthy retirement environment for consumer to understand and points to consider what do they need during their retirement age. This is useful to consumer to understand the quality of life during old age and to prepare themselves for retirement.

2. Do you own any private health insurance or medical insurance?

Mark only one oval.

◯ Yes

◯ No

Section A. Demography and Basic Data

3. Gender *

Mark only one oval.

◯ Male

◯ Female

4. Age *

Mark only one oval.

◯ 21-30

◯ 31-40

◯ 41-50

◯ 51-60

◯ 61 and above

5. Residing city *

Mark only one oval.

◯ Petaling Jaya, Selangor

◯ Shah Alam, Selangor

◯ Cheras, Selangor

◯ W.P. Kuala Lumpur

◯ Kota Kinabalu, Sabah

◯ Other: _____

6. Highest education level *

Mark only one oval.

- Secondary School
- Vocassional / Technical School
- College
- University
- Graduate school and above

7. Marital Status *

Mark only one oval.

- Married and live with spouse
- Widower or widow
- Divorce or separate
- Single and never been married

8. Living status - most of the time *

Mark only one oval.

- Living alone
- Living with relative
- Living with children
- Only living with spouse
- Living with spouse and children

9.   What is your total annual household income? *

Mark only one oval.

◯ Under RM 30,000

◯ RM 30,001 to RM 50,000

◯ RM 50,001 to RM 75,000

◯ RM 75,001 to RM 100,000

◯ RM 100,001 and above

10.   What is your current occupation? *

Mark only one oval.

◯ Unemployed

◯ Employed

◯ Retired

◯ Homemaker / Full Time Parent

◯ Professional

◯ Senior Management

◯ Owned Business / Proprietor

11.   Would you describe your health as? (Select one) *

Mark only one oval.

◯ Poor

◯ Fair

◯ Good

◯ Very Good

◯ Excellent

12. How many times per week do you exercise for a minimum of 30 minutes? *

Mark only one oval.

◯ 0 time

◯ 1 time

◯ 3 times

◯ 5 times and more

13. If I had some type of health problems, I could count on my family and/or friends for support *

Mark only one oval.

◯ Always

◯ Sometimes

◯ Never

14. I currently have one or more of the following health conditions. (Please mark all that apply) *

Tick all that apply.

☐ Heart Disease

☐ Diabetes

☐ Respiratory Disease

☐ Obesity

☐ Arthritis

☐ Stroke

☐ Cancer

☐ None

Section B. Healthy Retirement Environment

Chung Shin Fung, Safurah Jaafar, Roslan Mohd Ismail and Azrin Syahida Abd Rahim

15. This part of the survey comprises questions about your expectation of aging. Please check ONE box that you think BEST corresponds with your feelings. *

Mark only one oval per row.

	Definitely True	Somewhat True	Somewhat false	Definitely False
When people get older, they need to lower their expectation of healthy living	◯	◯	◯	◯
The human body, is like a car; when it gets old, it gets worn out.	◯	◯	◯	◯
Having more aches and pains is an accepted part of ageing	◯	◯	◯	◯
Every year that people age, their energy levels go down a little more	◯	◯	◯	◯
I expected that as I get older I will spend less time with friends and family	◯	◯	◯	◯
Being lonely is just happens when people get old	◯	◯	◯	◯
As people get older they worry more	◯	◯	◯	◯
It's normal to be depressed when you are old	◯	◯	◯	◯
I expected that as I get older I will become more forgetful	◯	◯	◯	◯
It is an accepted as part of ageing to have trouble remembering names	◯	◯	◯	◯
Forgetfulness is a natural occurrence from growing old	◯	◯	◯	◯
It is impossible to escape the mental slowness that happens with ageing	◯	◯	◯	◯

Section C. Perception of financial planning

16. Please check the ONE box that you think BEST corresponds with your feelings. *

Mark only one oval per row.

	Strongly Agree	Agree	Disgree	Strongly Disagree
Financial planning is important for my future retirement	⬭	⬭	⬭	⬭
I have enough saving for my future retirement	⬭	⬭	⬭	⬭
If the Retirement Home is separated its area to Independent Living and Assisted Living, then it will change my perception towards Retirement Home	⬭	⬭	⬭	⬭
Despite no personal income, I think it is not going to affect my choice of selecting retirement lifestyle	⬭	⬭	⬭	⬭
If I have my personal income, I will choose to live in the retirement home	⬭	⬭	⬭	⬭
If I have my personal income, I will follow my own desire to choose my own long term care styles	⬭	⬭	⬭	⬭
I have better knowledge to the concepts of retirement home than home care services	⬭	⬭	⬭	⬭
If no one takes care of me at home, I will choose to live in the retirement home	⬭	⬭	⬭	⬭

17. I am willing to accept below services when I retired *

Tick all that apply.

☐ Day care at retirement home

☐ Home Care Services eg. short term caregiver

☐ Institution Care eg. independent living / assisted living

18.   How much would you pay for the following services? *

Mark only one oval per row.

	RM 150 - RM 300	RM 300 - RM 500	RM 500 - RM 1,000	RM 1,000 - RM 3,000	RM 3,000 - RM 5,000
Senior Welfare Home / Retirement Home (Per Month)	◯	◯	◯	◯	◯
Home Care (Per Visit)	◯	◯	◯	◯	◯
Day Care at Retirement Home (Per Visit)	◯	◯	◯	◯	◯

Section D. Receptiveness towards Health Insurance

19.   Please check the ONE box that you think BEST corresponds with your feelings. *

Mark only one oval per row.

	Strongly Agree	Agree	Disagree	Strongly Disagree
Medical health insurance is important for my future retirement	◯	◯	◯	◯
I have enough health protection for my future retirement	◯	◯	◯	◯
If the retirement home participate in retirement service schemes, then it will change my attitudes towards the perception of retirement home	◯	◯	◯	◯
I will retire healthily	◯	◯	◯	◯
I have health screen check yearly	◯	◯	◯	◯
I am receiving medical treatment now: one or more conditions like hypertension, diabetes	◯	◯	◯	◯

Section E. Life-Long Learning Program

20. For this part, please choose the appropriate box for each activities that you are currently doing or have done in the past year. Choose only those activities that you consider are LEISURE or FREE TIME ACTIVITY. *

Mark only one oval per row.

	Never	Seldom (couple times per year)	Occasionally (once a month)	Frequently (couple times per month)	Very Often (every week)	Daily
Outdoor activities: walking; mountain climbing; excursion; fishing; gardening; cycling etc	◯	◯	◯	◯	◯	◯
Sports: Gymnastics; Taichi; Qi Gong; Dance; Swimming; Jogging; Table Tennis; Badminton etc	◯	◯	◯	◯	◯	◯
Hobbies and Indoor Activities: Painting and art; calligraphy; crafts; playing cards; musical instruments; singing; reading; raising pets; shopping; gardening etc	◯	◯	◯	◯	◯	◯
Cultural activities and entertainment: Watching TV; listening to radio; movies; museums; concerts etc	◯	◯	◯	◯	◯	◯
Family and social activities: Playing with children/grandchildren; visiting or socializing with friends; travelling etc	◯	◯	◯	◯	◯	◯
Volunteer activities: Service organization; worship places; community service etc	◯	◯	◯	◯	◯	◯

Section F. Technology Advancement

21. Home technologies that may help people as they age are becoming available rapidly, but little is known about the attitudes and preferences of older people about these technologies. This study will explore your attitudes, familiarity, comfort and preferences regarding the use of several home technologies. Your answers will help us to understand older adults' perceptions of these technologies. *

Mark only one oval per row.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I am not interested in exploring new technologies	◯	◯	◯	◯
I do not think technology can enhance my life	◯	◯	◯	◯
I lack confidence in using new technologies	◯	◯	◯	◯
I enjoy trying out new technologies	◯	◯	◯	◯
I enjoy buying new technologies	◯	◯	◯	◯
I will try out a new technology if my friends or relatives highly recommend it	◯	◯	◯	◯
I wait to see how a new technology works out before buying it for myself or for others	◯	◯	◯	◯
My favorite type of store is one that sells electronics and gadgets	◯	◯	◯	◯
My favorite section in a department store is the electronics section	◯	◯	◯	◯

22. Smart home meant by controlling home devices using motion sensor and portable digital devices and can be controlled remotely. Have you seen or heard about smart home? *

Mark only one oval.

◯ No

◯ Yes

23. If Yes, have you ever experience yourself what is smart home about? *

Mark only one oval.

◯ No

◯ Yes

Appendix 2

Table 9

Willingness to pay for institutional care services

	Fee Categories	RM 150 – RM 300	%	RM 300 – RM 500	%	RM 500 – RM 1000	%	RM 1000 – RM 3000	%	RM 3000 – RM 5000	%	Total	%	Cramer's V (φ_c)
Total Household Income	Under RM 30,000	15	30.61	14	31.11	7	7.78	14	10.37	1	2.00	51	13.82	.000
	RM 30,001-RM 50,000	13	26.53	7	15.56	24	26.67	15	11.11	2	4.00	61	16.53	
	RM 50,001-RM 75,000	8	16.33	11	24.44	27	30.00	39	28.89	12	24.00	97	26.29	
	RM 75,001-RM 100,000	13	26.53	13	28.89	32	35.56	67	49.63	35	70.00	160	43.36	
Residing City	Greater Kuala Lumpur	21	42.86	21	46.67	28	31.11	72	53.33	36	72.00	178	48.24	.001
	Sabah	27	55.10	21	46.67	59	65.56	58	42.96	14	28.00	179	48.51	
	Others	1	2.04	3	6.67	3	3.33	5	3.70	-	-	12	3.25	
Family Support		49	13.3	45	12.2	90	24.4	135	36.6	50	13.6	369	100.00	.000

Table 10: Life-long learning activities

Life-long Learning Programme on Indoor and Outdoor Activities

Characteristics	Outdoor Activities		Cramer's V (φc)	Hobbies /Indoor Activities		Cramer's V (φc)	Family/ Social Activities		Cramer's V (φc)	Volunteer Activities		Cramer's V (φc)
	Never	Frequent		Never	Frequent		Never	Frequent		Never	Frequent	
Residing City												
Greater Kuala Lumpur	12 (7%)	166 (93%)	0.008	8 (4%)	170 (96%)	0.003	5 (3%)	173 (97%)	0.030	20 (11%)	158 (89%)	0.001
Sabah	29 (16%)	150 (84%)		27 (15%)	152 (85%)		16 (9%)	163 (91%)		47 (26%)	132 (74%)	
Others	0 (0%)	12 (100%)		2 (17%)	10 (83%)		0 (0%)	12 (100%)		2 (17%)	10 (83%)	
	41(11%)	328 (89%)		37 (10%)	332 (90%)		21 (6%)	348 (94%)		69 (19%)	300 (81%)	
Highest Education												
Secondary school	3 (33%)	6 (67%)	0.000	3 (33%)	6 (67%)	0.004	0 (0%)	9 (100%)	0.118	4 (44%)	5 (56%)	0.008
Vocational /Technical school	2 (22%)	7 (78%)		2 (22%)	7 (78%)		0 (0%)	9 (100%)		1 (11%)	8 (89%)	
College	19 21%)	70 (79%)		15 (17%)	74 (83%)		10 (11%)	79 (89%)		25 (28%)	64 (72%)	
University	14 (7%)	190 (93%)		13 (6%)	191 (94%)		9 (4%)	195 (96%)		34 (17%)	170 (83%)	
Graduate school and above	3 (5%)	55 (95%)		4 (7%)	54 (93%)		2 (3%)	56 (97%)		5 (9%)	53 (91%)	
	41 (11%)	328 (89%)		37 (10%)	332 (90%)		21 (6%)	348 (94%)		69 (19%)	300 (81%)	
Occupation												
unemployed	0 0%)	4 (100%)	0.110	0 (0%)	4 (100%)	0.337	0 (0%)	4 (100%)	0.678	0 (0%)	4 (100%)	0.017
employed	29 (14%)	175 (86%)		26 (13%)	178 (87%)		14 (7%)	190 (93%)		49 (24%)	155 (76%)	
retired	3(27%)	8 (73%)		1 (9%)	10 (91%)		1 (9%)	10 (91%)		3 (27%)	8 (73%)	
homemaker	0 (0%)	6 (100%)		0 0%)	6 (100%)		0 (0%)	6 (100%)		1 (17%)	5 (83%)	
professional	3 (5%)	57 (95%)		4 (7%)	56 (93%)		2 (3%)	58 (97%)		4 (7%)	56 (93%)	
senior management	1 (3%)	28 (97%)		0 (0%)	29 100%)		0 (0%)	29 (100%)		1 (3%)	28 (97%)	
owned business	5 (9%)	50 (91%)		6 (11%)	49 (89%)		4 (7%)	51 (93%)		11 (20%)	44 (80%)	
	41	328 (89%)		37 (10%)	332 (90%)		21 (6%)	348 (94%)		69 (19%)	300 (81%)	
Total Household Income												
Under RM 30,000	5 (10%)	46 (90%)	0.084	9 (18%)	42 (82%)	0.011	4 (8%)	47 (92%)	0.075	9 (18%)	42 (82%)	0.337

RM 30,001-RM 50,000	9 (15%)	52 (85%)	5 (8%)	56 (92%)	2 (3%)	59 (97%)	11 (18%)	50 (82%)
RM 50,001-RM 75,000	16 (16%)	81 (84%)	15 (15%)	82 (85%)	10 (10%)	87 (90%)	24 (25%)	73 (75%)
RM 75,001-RM 100,000	11 (7%)	149 (93%)	8 (5%)	152 (95%)	5 3%)	155 (97%)	25 (16%)	135 (84%)
	41	328 (89%)	37 (10%)	332 (90%)	21 (6%)	348 (94%)	69 (19%)	300 (81%)