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Quality of Life of the Elderly in Singapore's Multi-Racial Society

by

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Abstract:

With Singapore having the fifth fastest aging population in the world, the implications associated with such a phenomenon have finally placed the elderly on the Singapore government's national agenda in 1999, which was coincidentally also the United Nations International Year of Older Persons. As the elderly constitute an increasing proportion of Singapore's population, it is pertinent to address their needs and concerns, which have direct impacts on their well-being and quality of life. This paper, which is the first of its kind to examine the quality of life of the elderly in Singapore, is also a study within the context of a multi-racial society. The quality of life of the elderly in Singapore is evaluated in terms of their overall life satisfaction as well as their perception of the importance and satisfaction towards the 17 domains of life identified for this study. Using a 5-point Likert scale, the study reveals that the elderly in Singapore are generally satisfied with their quality of life, which is significantly influenced by three demographic variables, namely, the level of education, type of housing and monthly personal disposable income. While the elderly perceive personal health condition, family ties and public safety to be more important, they tend to be more satisfied with family ties, public safety and public transportation, and are less satisfied with arts and culture as well as leisure and recreation facilities that are available in Singapore. The research therefore suggests that the quality of life of the elderly in Singapore is more likely to be determined by its socio-cultural context rather than along racial lines.

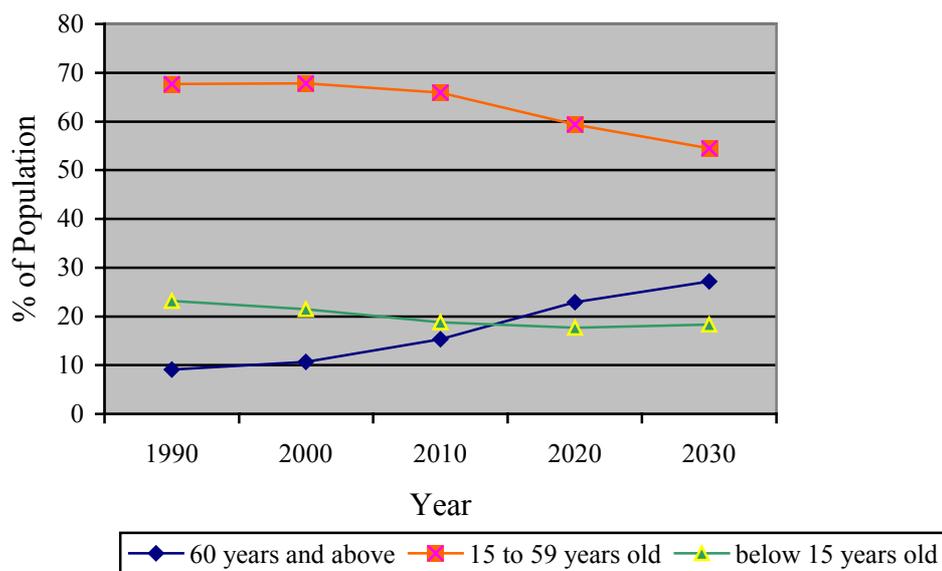
Introduction

Social definitions of the elderly vary from one society to another. In general, the conventional age set for retirement reflects the social recognition of old age, as well as the socio-economic context of that society. When the socio-economic attributes of society change, the age limit for retirement is also likely to be affected. In Singapore, the official retirement age limit has been raised from 55 to 62 in 1999, but 55 remains as the voluntary retirement age since it coincides with the statutory age for Central Provident Fund[1] withdrawal for retirement. In

this paper, the elderly is defined as one who is 55 years and above. This is also the definition employed by the Singapore government when it conducted the national survey of senior citizens in 1995 (Department of Statistics, 1995).

Continuing decline in fertility and mortality rates in the past three decades as well as improvement in health care facilities and services have changed the demography of Singapore from a “pyramid-shape” young post-war baby-boomers population to a rapidly aging population. In fact, Singapore has the fifth fastest aging population in the world, growing at a rate of 3.8% and ranking between that of Hong Kong’s (4.6%) and Japan’s (2.8%) (Kua, 1994; Shantakumar, 1994). In the 2000 Census of Population, the elderly aged 60 years and above constitute 10.7% of the population in Singapore. This is projected to increase to about 27% in 2030. In numerical terms, the population of elderly aged 60 years and above in 2000 (348,729) is expected to increase to approximately 898,500 in 2030 (Shantakumar, 1994; Department of Statistics, 2001). Figure 1 shows the projected demographic changes in Singapore from 1990 to 2030. In view of the fact that the elderly will form a significant proportion of Singapore’s population, addressing the issues associated with an aging population has been highlighted as one of the major challenges on the national agenda.

Figure 1. Population Changes in Singapore (1990-2030)



Sources: Compiled from Shantakumar 1994; Department of Statistics, 2001.

An increase in the proportion of the elderly in Singapore has wide-ranging implications on the country in terms of health care, housing provision and financial support. On the other hand, the quality of life of the elderly themselves is also likely to be affected by the changing socio-demographic structure, as well as the lack of an elderly-friendly environment and physical infrastructure necessary for an aging population. In order that the multifarious needs and concerns of the elderly could be adequately addressed, in addition to the Singapore government's efforts, it is also crucial to reflect the elderly population's point of view. Thus, this paper evaluates the quality of life of the elderly in Singapore from their perspective, discusses the aspects of life they deem as important, as well as highlights those aspects they are most satisfied or dissatisfied with. As Singapore is a multi-racial society, it is within this context that the study is conducted. In this paper, the term "quality of life" is used interchangeably with the concept of overall life satisfaction, which is expressed over a spectrum ranging from very satisfied to very dissatisfied.

Over the years, the measurement of quality of life has gradually evolved from applying only objective indicators such as Gross National Product (GNP) and income per capita to employing more subjective and human indicators like family ties, social network and religion. Researchers in Singapore have also administered the subjective method of assessment in their quality of life studies, which often entail large cross-sectional surveys so as to reduce any inaccuracy and bias. Although quality of life studies in the context of Singapore have been several in the past decade, they tend to focus on the population as a whole (for instance, Wang, 1993; Kau and Wang, 1995; Chua, 1997; Foo, Yuen and Chin, 1998; Wong and Lim, 2001). In their research, Wang (1993), Kau and Wang (1995) as well as Foo, Yuen and Chin (1998) examine the quality of life of Singaporeans aged between 15 and 54. On the other hand, the studies by Chua (1997) as well as Wong and Lim (2001) are geographically restricted to only the residents of a few selected locations in Singapore. In terms of specific population segments, the research by Wong, Foo and Lim (2000) evaluates the quality of life of the expatriate population in Singapore, and the study by Kau and Jung (2000) assesses the life satisfaction of the younger Singaporeans aged 23 to 24. It therefore appears that the quality of life studies in Singapore have not focused on the elderly segment of the population who are 55 years and above. As the elderly are at the late stage of the family life cycle, their perspectives and needs are likely to be different from the rest of the

population. Thus, this paper aims to bridge this gap, and at the same time highlight the likely issues or life domains that have an impact on the quality of life of the elderly in Singapore.

Methodology

Research approach

The research approach administered in this study is the subjective method of measurement whereby the quality of life of the elderly is assessed in terms of their overall life satisfaction illustrated over a 5-point Likert scale ranging from “very satisfied” to “very dissatisfied”. This method is also adopted in previous studies conducted in the context of Singapore (for instance, Kau and Wang, 1995; Foo, Yuen and Chin, 1998; Kau and Jung, 2000; Wong, Foo and Lim, 2000; Wong and Lim, 2001). The value in employing the same method of measurement is that comparisons could be made between different studies on quality of life in Singapore. Similar to the work by Andrews and Withey (1976), Day (1987), Kau and Wang (1995), Foo, Yuen and Chin (1998), Kau and Jung (2000), Wong, Foo and Lim (2000) as well as Wong and Lim (2001) where they formulate their own set of life domains to suit the nature of their quality of life research, this paper suggests a set of 17 life domains to evaluate the quality of life of the elderly in Singapore. Each domain of life is then rated on a 5-point Likert scale by the elderly to indicate their perception of importance and satisfaction with that domain.

Domains of life

As highlighted by Lee (1992), the domains of life contributing to overall life satisfaction could cover a very wide spectrum of aspects ranging from personal events to world situations, from psychological to social-political well-being, from material to spiritual concerns, as well as from private to public life. It is therefore essential that the domains of life influencing life satisfaction be identified specifically for the population understudy. For instance, in their research on the quality of life of the Americans, Andrews and Withey (1976) as well as Campbell, Converse and Rodgers (1976) have formulated 15 and 17 domains of life respectively. Following on their work, Day (1987) identifies 13 separate domains of life, and for each domain, sub-domains are generated which best illustrate the nature of that particular domain. In the Singapore context, Wang (1993) employs a set of 12 life domains while Wong and Lim (2001) administer a set of 18 aspects of life to assess the

quality of life of Singaporeans. In general, the domains include family life, personal health, living environment, spiritual life and religion, leisure, working life, material possessions and wealth, social life, self development, school life and education, consumer goods and services, information and mass media, life within the country as well as public services such as health care and housing provision (Wang, 1993; Wong and Lim, 2001).

In recent years, a number of health-related measures have been developed to evaluate what has been referred to as 'health-related quality of life', which is actually a component of the overall life satisfaction. As the health-related measures, which include the Sickness Impact Profile (SIP) (Bergner, Bobbit, Carter and Gibson, 1981) and the Quality of Well-Being (QWB) scale (Brook et al., 1979; Stewart, Ware and Brook, 1981), tend to relate health condition to physical functions to quality of life, they assess quality of life largely from the medical perspective. According to Lawton (1983), some health-related measures also evaluate social well-being since physical illness or its treatment could adversely affect the other non-health aspects of life. Although health-related and physical function measures may be especially relevant to the elderly, the concept of quality of life is essentially a multi-dimensional one where the emotional, social and spiritual aspects of life may even play the role of an antidote.

Drawing from the literature and taking into consideration the unique nature of the elderly population, this paper proposes 17 domains of life which are divided into six major categories, namely, social networks, housing, personal aspects of life, provision of services and facilities, environmental factors as well as leisure.

Social networks, defined as the "set of personal contacts through which the individual maintains his social identity, and receives emotional support, material aid, services and information" (Walker, MacBride and Vachon, 1977), are assessed using two life domains: family ties and social life with other elderly. As it is the family and relatives who tend to provide care when the health of the elderly deteriorates (Ward, 1983; Hess and Soldo, 1985), the sub-domains for family ties include the spouse, children, grandchildren and relatives. With friends often being the next level of informal caregivers after family and relatives (Penning and Chappell, 1987), the sub-domains for social life with other elderly consist of friends, the community and social activities.

Housing for the elderly is one of the most important aspects because it affects physical health, status, social interaction, access to services, independence and mobility. Housing is thus evaluated in terms of three domains of life: living conditions, type of housing as well as amenities and facilities. As the elderly are likely to spend more time in the home but have more difficulty managing it, the sub-domains for living conditions include size of the unit, floor level and accident hazards. With regards to the type of housing, the sub-domains are basically public or private housing, and specialized housing. The sub-domains identified for amenities and facilities comprise senior citizens' corners, parks and sports facilities.

Personal aspects of life are examined as personal health, wealth status as well as religion and spiritual life. As health is often related to quality of life by referring to the impact of health condition on physical function (Kaplan, 1988), this domain of life is particularly relevant to the elderly. In the study by Poloma and Pendleton (1990), the religious domain ranks fourth out of 11 aspects of life in predicting overall life satisfaction. It therefore suggests that religion plays a crucial role in affecting one's psychological and emotional well-being, and at times it even acts as a source of mental strength. This is especially applicable to the elderly, as more of them tend to experience incidents of illness and bereavements. As financial security in retirement could be an issue for some elderly, the sub-domains of wealth encompass cash, income, assets and Central Provident Fund withdrawals.

Provision of public services is measured in terms of its role in preserving and enhancing the quality of life of the elderly. The four domains of life illustrating this category include the provision of public transportation such as buses, taxis and the Mass Rapid Transit; health care services like hospitals, specialist clinics and doctors; community facilities such as community centers, day-care centers and public parks; as well as consumer goods and services where price, variety and quality are the sub-domains. The level of satisfaction derived by the elderly could determine the effectiveness, efficiency and quality of these public services in providing for the fast expanding elderly population in Singapore.

Environmental factors are assessed in terms of the physical environment, public safety as well as information and media coverage. The physical environment is illustrated by the elderly-friendly infrastructure and features while the sub-domains of public safety include

security, crime rate and freedom of movement. The information and media coverage domain consists of newspapers, magazines, media and the Internet, all of which may affect some elderly more than others.

Leisure is important for people of all ages, but is especially so for the elderly since they are likely to be retired and have more time to engage in leisure activities. The two domains of life in this category are the leisure and recreation domain including hobbies, entertainment, sports, relaxation, as well as the arts and culture domain, which is further sub-divided into festivals, performances and exhibitions.

Questionnaire design

The research instrument comprises two sections. The first section collects the respondents' personal, employment, household and housing profile as well as their health condition. The second section lists the 17 domains of life where the respondents are asked to rate, from 1 meaning "very unimportant" to 5 meaning "very important", how important each aspect of life is to them. The elderly are also asked to indicate how satisfied they are with regards to each aspect of life, using the scale from 1 meaning "very dissatisfied" to 5 meaning "very satisfied". In the second section, there are two questions regarding the overall life satisfaction of the elderly, one is positioned at the beginning and the other at the end. The purpose is to allow the elderly to take into consideration all 17 aspects of life, and then provide an answer to the same question. By averaging the answers to both questions, possible measurement errors and inaccuracies would be reduced. For those elderly who provided low satisfaction scores for any of the domains of life, they are additionally asked to state their reasons. As Singapore is a multi-racial society with 80.0% of its elderly being Chinese (Department of Statistics, 2001), a Mandarin version of the questionnaire is also administered in the study.

Sample

The sample consists of 1,519 elderly aged 55 years and above who are either Singapore citizens or permanent residents. Random stratified sampling is administered according to the elderly ethnic distribution in the 2000 Census of Population in Singapore. The method of data collection is via personal interviews with the elderly at their own homes as well as in public areas such as community centers, senior citizens' corners and parks. The sample survey, which is conducted in July 2001, covers the entire island of Singapore with its 20 public

housing new towns and numerous private housing estates. A total of 1,800 questionnaires have been disseminated but only 1,519 are completed and useable, thus registering a response rate of 84%.

Statistical Analysis

ANOVA tests are employed to examine the relationships between the demographic characteristics of the elderly and their overall life satisfaction scores. To assess the perception of the elderly with regards to the importance and satisfaction with each of the 17 domains of life, the means and standard deviations are computed for each aspect. Analyses across race and age categories are also conducted to compare the similarities and differences between the various races and age groups of elderly in Singapore.

Results

Profile of respondents

In the sample, 44.2% of the elderly surveyed are males and 55.8% are females. The sample comprises 77% Chinese, 13.1% Malays, and 9.9% Indians and others. 41.2% of the elderly respondents are between 55 to 59 years while about half of them belong to the age group 60 to 79 years. In terms of marital status, although 78.1% of the sample are married, widowhood is higher among elderly females with 35%, compared to only 6% for elderly males. About half of the sample (56.9%) has either nil or primary education with the younger age groups being better qualified than their older counterparts, and with elderly males having slightly higher qualifications than elderly females. The majority of the elderly respondents (68.9%) are Buddhists with only 8.7% Christians, 7.7% Muslims, 4.8% Catholics and 9.9% either practicing Hinduism or do not have any religion.

More than three-quarters of the elderly respondents live in public housing with 21.8% residing in 3-room or smaller apartments, and another 54.8% living in 4-room or larger units. On the other hand, 13.1% of the sample reside in private apartments/condominiums while the remaining 10.3% live in either private terrace, semi-detached or detached houses. The average household size of the elderly respondents comprises 3.6 persons with the majority (67.1%) living in households of three to five persons. It is additionally observed that while the elderly aged 55 to 59 years tend to live in smaller households of four persons and less,

those aged 60 years and above generally have larger households comprising six or more persons. Although the majority (64.2%) of the sample live together with their spouse and children, 2.7% of the elderly respondents live alone while another 2.9% live with only their spouse. Those elderly respondents who either live alone or with only their spouse are found to be mainly between 70 to 79 years. While 94.3% of the 55 to 59 age group generally have only two generations under one roof, all the elderly respondents in the 80 and above age group live together with three or more generations.

Half of the sample has a monthly personal disposable income of less than S\$1,000[2]. Out of this poorest group of elderly respondents, 80.7% receive their incomes from family members or relatives. Only 15.4% of the sample have incomes above S\$3,000 and these elderly respondents are likely to be from the 55 to 59 age group who are probably still in employment before the official retirement age limit at 62. Out of the 40.4% of the elderly respondents who are still working, 26.7% consist of females and 73.3% are males. Other than family and salary, the elderly respondents' other sources of income include income generated from assets (16.6%) such as shares, interest and investment, as well as retirement-related finances (9.6%) like Central Provident Fund savings, retirement benefits and government pensions. Financial support from the family and relatives (58.3%) is the major source of income for the elderly respondents especially where females (79.3%) are concerned, compared to only 20.7% for males. This observation is closely related to the employment pattern between male and female elderly. It is further found that while only 29.6% of the elderly respondents aged 55 to 59 years receive income from their families and relatives, all elderly respondents aged 80 and above do so.

Following the discussion on income, it is observed that 59.6% of the sample is economically inactive, that is, they are either retired or not working. Most of the elderly respondents who are still working tend to be holding higher skilled jobs in administrative, managerial, professional and technical fields (22.4%), followed by services and sales occupations (11.3%), and clerical and secretarial work (6.7%). The proportion of the sample that are economically inactive is found to rise with age, from 40.3% among the elderly aged 55 to 59 years to a high of 74% for those aged 70 years and above. The employment status of male elderly also differs from that of females whereby within the most economically active age group (55 to 59 years), only 29% are females compared to 71% males.

In their self-evaluation of their own health condition, 83% of the elderly respondents consider themselves to be in either “good”, “very good” or “excellent” health. Those who assess their health to be “fair” or “poor” seem to be mainly from the older age groups. In terms of gender, more (88.5%) male elderly respondents regard themselves to be in good health compared to 79.2% in females.

Overall life satisfaction

When the responses of the two questions on overall life satisfaction of the elderly are averaged to reduce bias and inaccuracy, the resulting ratings still range from 1 to 5 but with a gap of 0.5 instead of 1, see Table I. In general, the sample indicates that they are rather “satisfied” with their life at a mean value of 3.82. The elderly respondents aged 70 to 79 years appear to be more satisfied (3.96) compared to their younger (3.81) and older (3.77) counterparts.

Table I. Overall Life Satisfaction by Age Group

Satisfaction level	Score	55 to 59 (n = 628)	60 to 69 (n = 536)	70 to 79 (n = 233)	80 & above (n = 122)
Very dissatisfied	1.0	-	-	-	-
	1.5	-	-	-	-
Dissatisfied	2.0	-	-	-	-
	2.5	-	7.4%	-	-
Neither satisfied nor dissatisfied	3.0	24.4%	13.3%	-	-
	3.5	10.5%	11.5%	30.6%	48.7%
Satisfied	4.0	50.6%	46.8%	56.0%	51.3%
	4.5	9.8%	21.0%	-	-
Very satisfied	5.0	4.7%	-	13.4%	-
Mean*		3.82	3.81	3.96	3.77

Source: Author’s survey.

Note: *Overall mean = 3.82; standard deviation = 0.51.

Using the ANOVA test, pegged at a significance level of 0.05 ($p < 0.05$), only three demographic characteristics, namely, the level of education, monthly disposable income and type of housing, are found to be statistically significant in influencing the overall life satisfaction scores of the elderly respondents, see Table II. In general, the elderly with higher education level and larger housing are observed to be more satisfied with their quality of life. In terms of income, the elderly in the highest income group are the most satisfied followed by

those in the lowest income category. Although it appears that the Chinese (3.80) elderly tend to be less satisfied compared to their Malay (3.95) and Indian (3.93) counterparts, from the ANOVA results, the difference between the means is not significant, see Table II.

Table II. Comparison of Overall Life Satisfaction by Demographic Stratification

Demographic Characteristics	%	Mean*	F-value	p
Age group			0.74	0.53
55 to 59	41.2	3.82		
60 to 69	34.9	3.81		
70 to 79	15.5	3.96		
80 and above	8.4	3.77		
Gender			3.67	0.06
Male	44.2	3.73		
Female	55.8	3.91		
Race			0.80	0.47
Chinese	77.0	3.80		
Malay	13.1	3.95		
Indian and others	9.9	3.93		
Highest level of education attained			3.31	0.02
Primary and below	56.9	3.77		
Secondary	24.1	4.01		
Vocational/junior college/polytechnic	12.6	3.60		
Tertiary	6.4	4.07		
Monthly disposable income			5.42	0.00
Less than S\$1,000	51.3	3.98		
S\$1,000 to S\$1,999	21.2	3.46		
S\$2,000 to S\$2,999	12.1	3.96		
S\$3,000 to S\$3,999	9.4	3.81		
S\$4,000 to S\$4,999	3.9	3.80		
S\$5,000 and above	2.1	4.00		
Religion			0.75	0.54
Christianity	8.7	3.89		
Buddhism	68.9	3.73		
Muslim	7.7	3.92		
Catholicism	4.8	3.93		
Others	9.9	4.11		
Occupation			1.41	0.20
Manager	8.6	3.97		
Professional	6.6	3.55		
Administrator	4.6	4.20		
Technician and skilled worker	2.6	3.73		
Clerical and secretarial	6.7	3.84		
Services and sales		11.3	3.80	
Others	43.4	3.81		
Retired	16.2	3.78		
Type of housing			3.59	0.00

3-room and smaller public housing	21.8	3.97		
4-room public housing	23.9	3.62		
5-room public housing	18.2	3.58		
Executive public housing	12.7	4.30		
Private apartment/maisonette	13.1	3.83		
Private terrace house	1.8	4.49		
Private semi-detached house	3.0	4.01		
Private detached house	5.5	3.88		
Household size			0.64	0.63
1 to 2	3.5	4.01		
3	15.1	3.73		
4	30.0	3.90		
5	22.0	3.78		
6 and above	29.4	3.80		
Type of living arrangements			0.41	0.86
Alone	2.7	4.00		
With spouse	2.9	4.02		
With children	4.1	3.82		
With spouse and children	64.2	3.85		
With children and grandchildren	13.5	3.79		
With spouse, children & grandchildren	12.6	3.72		

Source: Author's survey.

Notes: *Overall life satisfaction score = 3.82.

Importance of various aspects of life

When the elderly respondents are asked to rate the importance of the 17 domains of life, they indicate that “personal health condition” (4.36) is the most important aspect followed by “family ties” (4.26), “public safety” (4.22), “health care” (4.20), and “public transportation” (3.94), see Table III. When examined in terms of age, the elderly aged 55 to 59 years rate “personal health condition” (4.56), “health care” (4.48) and “public safety” (4.43) as the three most important aspects of life. The next age group (61 to 69 years) indicates that they are also concerned with “personal health condition” (4.38) but differ in that they select “family ties” (4.26) and “public transportation” (4.22) as their second and third most important aspects of life. For those elderly aged 70 to 79 years, “family ties” (4.26) is the most important aspect, followed by “personal health condition” (4.13) and “social life with other elderly” (4.09). In the oldest age group (80 years and above), the responses tend to cluster within a narrow range from a mean value of 2.82 to 3.83. To this group of very-old elderly, “health care” (3.83), “family ties” (3.75) and “physical environment” (3.67) are highlighted as the three most important domains in their quality of life. With regards to race, despite being a multi-racial society, all races indicate the importance of family ties, personal health condition, health care services and public safety as the more important domains of life.

Table III. Importance of Various Aspects of Life as Rated by the Elderly

Aspect of life	Ratings*						Mean	Standard Deviation
	1.0 (%)	2.0 (%)	3.0 (%)	4.0 (%)	5.0 (%)	N.A. (%)		
Family and social aspects								
Family ties	0.0	0.0	10.2	52.1	37.7	0.0	4.26	0.62
Social life with other elderly	0.0	4.1	24.3	61.6	7.2	2.8	3.63	0.89
Personal aspects								
Wealth	0.0	5.4	28.6	47.8	18.2	0.0	3.77	0.81
Health	0.0	2.6	10.6	36.0	50.8	0.0	4.36	0.76
Religion and spiritual life	1.8	3.1	26.3	47.0	20.3	1.5	3.79	0.93
Provision of services and facilities								
Public transportation	1.9	1.1	15.4	63.9	17.7	0.0	3.94	0.74
Health care	0.0	2.5	6.2	61.5	29.8	0.0	4.20	0.67
Consumer goods and services	6.9	24.1	52.9	16.1	0.0	0.0	3.78	0.77
Community facilities	0.0	3.4	44.9	38.8	11.2	1.7	3.51	0.90
Housing								
Amenities and facilities	0.0	3.8	40.1	46.8	8.1	1.2	3.54	0.80
Type of housing	0.0	6.8	45.2	39.0	9.0	0.0	3.50	0.78
Living conditions	0.0	9.4	41.4	31.3	17.9	0.0	3.57	0.89
Environment								
Physical environment	0.0	7.0	28.3	43.4	21.3	0.0	3.78	0.88
Public safety	0.0	2.2	7.1	58.3	32.4	0.0	4.22	0.65
Information and media coverage	0.0	5.7	37.7	33.8	22.1	0.7	3.72	0.94
Arts and culture								
Leisure and recreation	0.0	9.8	47.5	28.3	13.8	0.6	3.42	0.87
Arts and culture	1.9	26.9	43.7	24.3	3.2	0.0	2.92	0.95

Source: Author's survey.

Note: *1 = very unimportant; 2 = unimportant; 3 = neither important nor unimportant; 4 = important; 5 = very important; N.A. = not available.

Satisfaction with various aspects of life

From the mean values of the satisfaction scores indicated by the sample, see Table IV, the elderly respondents are generally more satisfied with their family life (4.01) followed by public transportation (3.86), public safety (3.86), health care (3.83) as well as religion and spiritual life (3.79). While all age groups are similarly satisfied with family ties and religion, the elderly from 55 to 69 years tend to be more contented with the physical environment and public transportation system, and those aged 70 years and above are more satisfied with health care services, housing amenities like senior citizens' corners as well as their own wealth situation. In terms of race, all races are generally more satisfied with family ties,

religion and health care services than the other aspects of life. The two domains of life that the elderly respondents are most dissatisfied with are leisure and recreation (3.42) as well as arts and culture (3.32). This dissatisfaction seems to be more obvious among the older categories of elderly aged 70 years and above, as well as among Malays, Indians and other races. The main reasons provided by the respondents, as to why they are dissatisfied with the arts and leisure scene in Singapore, include a lack of variety of programs, events and activities that are suitable for the elderly, as well as a limited number of elderly-friendly public spaces such as parks and exercise areas.

Table IV. Satisfaction with Various Aspects of Life as Indicated by the Elderly

Aspect of life	Ratings*					N.A. (%)	Mean	Standard Deviation
	1.0 (%)	2.0 (%)	3.0 (%)	4.0 (%)	5.0 (%)			
Family and social aspects								
Family ties	0.0	2.2	18.2	58.4	21.2	0.0	4.01	0.68
Social life with other elderly	0.0	2.1	26.8	64.6	6.5	0.0	3.75	0.62
Personal aspects								
Wealth	1.9	6.8	32.5	50.7	8.1	0.0	3.55	0.85
Health	2.7	2.0	31.7	56.2	7.4	0.0	3.66	0.75
Religion and spiritual life	0.0	0.0	32.3	51.8	14.3	1.6	3.79	0.81
Provision of services and facilities								
Public transportation	0.0	3.0	21.7	57.3	18.0	0.0	3.86	0.88
Health care	1.8	6.5	9.5	71.4	10.8	0.0	3.83	0.77
Consumer goods and services	0.0	6.1	50.6	31.2	12.1	0.0	3.47	0.78
Community facilities	0.0	0.0	63.6	22.2	13.0	1.2	3.42	0.86
Housing								
Amenities and facilities	0.0	2.1	37.9	44.3	13.6	2.1	3.62	0.89
Type of housing	0.9	2.1	45.7	37.0	14.3	0.0	3.65	0.77
Living conditions	2.7	4.0	45.7	39.8	7.8	0.0	3.47	0.81
Environment								
Physical environment	0.7	4.3	45.7	38.4	10.9	0.0	3.54	0.79
Public safety	2.2	0.0	21.8	63.7	12.3	0.0	3.86	0.70
Information and media coverage	0.0	2.1	41.2	43.5	12.6	0.6	3.66	0.78
Arts and culture								
Leisure and recreation	0.0	2.9	56.9	32.8	6.9	0.5	3.42	0.75
Arts and culture	0.0	6.5	58.6	27.1	7.2	0.6	3.32	0.87

Source: Author's survey.

Note: *1 = very dissatisfied; 2 = dissatisfied; 3 = neither satisfied nor dissatisfied; 4 = satisfied; 5 = very satisfied; N.A. = not available.

Discussion

With the population in Singapore aging rapidly in the next few decades and the elderly dependency ratio increasing from 15.8% in 2000 to approximately 50.0% in 2030 (Shantakumar, 1994; Department of Statistics, 2001), it is one of the government's objectives to promote a physically and mentally healthy elderly population, which can integrate into the community and continue to contribute to society rather than become a burden on the family or country (Ministry of Community Development, 1999). As life satisfaction often provides a good indication of one's future mental health (Green et al., 1992; Baruffol, Gisle and Corten, 1995), the way the elderly view their quality of life in Singapore has become of interest and importance. At present, the elderly in Singapore are relatively satisfied with their life at a mean value of 3.82 for the overall life satisfaction index.

When examined in terms of age, the paper highlights that even at this late stage of the life cycle, the elderly often have to undergo major lifestyle changes, which have considerable impact on their life satisfaction. For instance, the lower satisfaction level registered by the elderly aged 55 to 69 years (3.81) could be largely due to adjustment problems after retirement such as the "empty nest" syndrome, loss of regular income, establishing new friendships with other elderly, and managing their leisure time, which many of them do not know how to after working for the most part of their lives. However, when the elderly are more settled into their retirement lifestyles, they appear to be more satisfied as shown by the age group from 70 to 79 years (3.96). When the elderly enter the oldest age group of 80 years and above, they again become less satisfied (3.77) basically because of health-related reasons. Although there are limits to what the government or voluntary welfare organizations could implement to influence the health condition of the elderly, these authorities could assist the elderly in their adjustments after retirement by providing appropriate social networks and community services as well as pre-retirement public education on financial security, planning and investments.

The one-way ANOVA tests reveal that three demographic characteristics play a significant role in contributing to the overall life satisfaction scores of the elderly. The elderly with higher education levels, drawing higher monthly disposable incomes and living in larger housing tend to be more satisfied. As these elderly generally have more financial security after retirement, it could be inferred that financial security does not only provide the daily sustenance but also a sense of confidence, dignity and independence that is crucial to life

satisfaction. This finding therefore emphasizes the importance of financial security in old age and pre-retirement planning. In its Report on the Aging Population, the Inter-Ministerial Committee established by the Singapore government in 1999, states that the onus to plan for retirement financial security is on the individual rather than on the family and nation, although family members should form the next level of financial support (Ministry of Community Development, 1999). With the recent establishment of a multitude of new financial investments, savings as well as insurance schemes and funds, the future elderly in Singapore are likely to be better equipped financially than the present cohort.

Besides the financial impacts associated with the three demographic characteristics, the level of education, monthly disposable income and type of housing are also related to the socio-cultural environment. It is observed that despite being in the lowest income group and living in the smallest and cheapest housing, the elderly in these categories express higher satisfaction levels compared to some of the elderly who are in a better financial situation. There are therefore some elements in the quality of life that out-weigh the financial aspects. The study further highlights that regardless of race, the elderly from the poorest category tend to be more satisfied with their family ties and religion. It could thus be inferred that the poorest elderly are likely to have lower education, with little or no income of their own, and are receiving financial support from their families. Although the financial contribution given to these lowest income elderly by their families may be relatively smaller, the strength of the psychological support and commitment of their families have provided them with considerable satisfaction in their quality of life. This conclusion is additionally reinforced by the perception of the elderly with regards to the importance of the various aspects of life. While “family ties” is considered as the most important aspect by the elderly, “wealth” is ranked at only the eighth position out of a total of 17 domains of life, see Table III.

In a multi-racial Asian society where the bulk of traditions and cultures similarly perpetuate the concept of family cohesion, and where the Singapore government emphasizes participation of the family in supporting the elderly (Ministry of Community Development, 1999), the life satisfaction of the elderly is more likely to be influenced by the country’s overall socio-cultural context rather than by any individual culture or race. The financial and socio-cultural implications of the three significant demographic characteristics have upheld this hypothesis. In further support of this hypothesis, the ANOVA results also indicate that

although Chinese elderly tend to be less satisfied compared to the elderly of minority races, the difference between the races is not significant.

The impact of Singapore's socio-cultural environment on the elderly population's perception of importance with regards to the various aspects of life is evident in this research. In general, the elderly in Singapore view "personal health condition", "family ties", "public safety", "health care services" and "public transportation" as the five most important domains of life. These five aspects coincide with the Singapore government's agenda to promote cohesion within the family, integration among the various strata of society, continuing employment of the elderly, financial security, a healthy lifestyle as well as elderly-friendly housing and infrastructure (Ministry of Community Development, 1999). In contrast, racial influence on the perception of the elderly appears to be insignificant with all races indicating the same aspects, that is, "family ties", "personal health condition", "health care services" and "public safety", as the more important domains of life. In terms of quality of life implications, it is understandable that strained family relations, poor health care services, anxiety about safety as well as mobility and transportation difficulties could lead to considerable physical and psychological health problems which would in turn lower the life satisfaction for the elderly.

Comparing with other quality of life researches conducted in Singapore on the local population (Kau and Wang, 1995; Foo, Yuen and Chin, 1998; Wong and Lim, 2001) as well as expatriate population (Wong, Foo and Lim, 2000), the importance rankings of "personal health condition" and "family ties" are observed to be similar. Thus, it could be inferred that regardless of age, race and nationality, one is likely to place personal health condition and family life as the two most important priorities in life.

Although the ANOVA tests conclude that age is not a significant variable in influencing the perception of the elderly, it is interesting to highlight some salient similarities and differences among the various age groups. First, all age groups similarly consider their "personal health condition" as well as the availability and access to "health care services" as very important. This is understandable since health problems are likely to increase as one reaches the late stage of the life cycle, and hence the issue of health care also becomes of greater concern. While the younger elderly aged 55 to 69 years tend to place higher importance on mobility aspects such as "public safety" and "public transportation", the older elderly aged 70 years

and above are generally more concerned with “family ties”, “social life with other elderly” and the surrounding “physical environment”. This observation reflects the different lifestyles of the elderly with the younger age groups leading more mobile, active and independent lives, and the older ones being more confined to their immediate surroundings and more dependent on their families and friends for support.

With regards to the satisfaction scores of individual aspects of life, the elderly tend to be more satisfied with “family ties”, “public transportation”, “public safety”, “health care services” as well as “religion and spiritual life” in descending order. As these five most satisfied aspects coincide with the six most important domains of life ranked by the elderly, the major concerns of the elderly in Singapore appear to have been generally satisfied at the present time, hence their positive outlook with their quality of life (3.82).

Although age and race are found to be insignificant in the ANOVA tests, this by no means implies that they are irrelevant in the life satisfaction of the elderly. For instance, the younger elderly from 55 to 69 years, who are probably to be more active and independent, seem to be more satisfied with the “physical environment” and “public transportation system”. On the other hand, the older elderly aged 70 years and above, who are likely to be frailer and less mobile, are generally more contented with “health care services” and the “housing amenities” near their homes. In terms of race, other than their satisfaction with “family ties”, there are slight variations in that Chinese elderly are generally more contented with “public transportation” and “public safety” while Malay elderly are more satisfied with “religion” and “health care services”, and the Indians and other races are more contented with their “personal health condition” and “wealth” situation. As these observations would require further in-depth analyses into the lifestyles of the individual races before any conclusions could be drawn, in the context of this paper it suffices to only highlight these differences.

The two domains of life that the elderly are most dissatisfied with are “leisure and recreation” facilities as well as the “arts and culture” scene in Singapore. This dissatisfaction seems to be more pronounced among the older categories of elderly aged 70 years and above, as well as among Malays, Indians and other races. The main reasons for their dissatisfaction include a lack of variety of programs, events and activities that are suitable for the elderly, as well as a limited number of elderly-friendly public spaces such as parks and exercise areas. As

Singapore has been actively providing for a young post-war baby-boomers population since the 1960's, the majority of its housing stock, physical infrastructures as well as leisure and recreation facilities are not suitable for an elderly population. Similarly, with the arts and culture scene, the bulk of the programs and activities are targeted at the majority of the population, which comprises mostly Chinese, and the young and working population. This therefore explains the relatively higher dissatisfaction indicated by the elderly, especially the older age groups and minority races.

Concluding Remarks

This paper has detailed an exploratory research, which evaluates the quality of life of the elderly in Singapore by using the concepts of overall life satisfaction and life domains. The domains of life have been specially formulated to suit the unique nature of the elderly population as well as the multi-racial society in Singapore. With the subjective method of assessment where the perception of the elderly are clearly reflected, policy makers and service providers from both the public and private sectors would be able to gain a better insight on the type of initiatives, services and facilities that could improve the built environment, socio-cultural context as well as the quality of life for the elderly in Singapore. By examining the levels of satisfaction associated with each aspect of life, policy makers and service providers are also better able to review and refine their existing measures, policies, products and services, which target the elderly population in Singapore. Finally, from the knowledge of the emphasis given to the various domains of life by the elderly, policy makers and service providers could be more efficient and effective in providing for the rapidly aging population in Singapore by focusing on those aspects that matter most in the life of the elderly.

Notes

- [1] The Central Provident Fund (CPF) is a compulsory savings fund into which all employees contribute 20% of their salary and employers are expected to contribute a similar sum. With the occurrence of the Asian economic crisis, employers currently provide only 16% of the employee's salary. Although CPF is basically a savings scheme

for retirement, it can also be applied for the purchase of housing, education and health care services.

[2] At the time of writing, US\$1.00 = S\$1.74.

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