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Impact of Increasing Retirement Age on Longevity Factor: An Empirical Study for Government Pensioners in Malaysia

(Kesan Peningkatan Umur Persaraan ke atas Faktor Kelanjutan Usia: Satu Kajian Emperikal bagi Pesara Kerajaan di Malaysia)

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ABSTRACT

Most contemporary research indicates that life expectancy in most countries is increasing. Since average life expectancy tends to increase over time for males and females, mortality risks tends to be smaller over time. Therefore, it is expected that pensioners will tend to live longer and cause an increase in pension liabilities to the government in the future. The government is looking for solutions to decrease the effects of increased longevity on pension costs. The most common changes recommended are to equalize the retirement age for males and females; and to increase the age of retirement. Since pensions are paid for the rest of pensioner's life; and to the spouse and child of the pensioner (if any) in the form of a derivative pension in the event of the death of the pensioner, the longevity factor can be considered as an important element when constructing an effective Government Pension Scheme. This paper estimates the longevity factor for case of government pensioners who survives and also dies at the particular age of retiement; and examines the impact of increasing retirement age on longevity factor. Based upon the findings, the overall longevity factors for a government pensioner who survives and dies are observed to decreases as retirement age increases.

Keywords: Derivative pension; life expectancy; longevity factor; pension liabilities

ABSTRAK

Kebanyakan penyelidikan kontemporari menunjukkan bahawa jangka hayat di kebanyakan negara semakin meningkat. Oleh kerana purata jangka hayat cenderung ke arah peningkatan mengikut masa bagi lelaki dan wanita, risiko kematian cenderung menjadi lebih kecil terhadap masa. Oleh itu, dijangka pesara-pesara akan cenderung untuk hidup lebih lama dan menyebabkan peningkatan di dalam liabiliti-liabiliti pencen kepada kerajaan pada masa hadapan. Kerajaan sedang mencari penyelesaian untuk mengurangkan kesan-kesan peningkatan kelanjutan usia terhadap kos persaraan. Perubahan paling biasa yang disyorkan adalah menyamakan umur persaraan bagi lelaki dan wanita; dan meningkatkan umur persaraan. Oleh kerana pencen dibayar sepanjang hidup pesara; dan jika berlaku kematian dibayar kepada pasangan dan anaknya (jika berkenaan) di dalam bentuk pencen terbitan, faktor kelanjutan usia boleh dianggap sebagai suatu elemen penting apabila membina Skim Pencen Kerajaan yang efektif. Makalah ini menganggarkan faktor kelanjutan usia bagi kes pesara kerajaan yang masih hidup dan juga meninggal dunia pada umur persaraan tertentu; dan menguji impak peningkatan umur persaraan terhadap faktor kelanjutan usia. Berdasarkan dapatan kajian, faktor kelanjutan usia keseluruhan untuk pesara kerajaan yang masih hidup dan meninggal dunia diperhatikan mengurang apabila umur persaraan meningkat.

Kata kunci: Pencen terbitan; jangka hayat; faktor kelanjutan usia; liabiliti-liabiliti pencen

INTRODUCTION

According to the Department of Statistics of Malaysia, there has been a considerable improvement in the life expectancy of the Malaysian population. For example, the life expectancy at birth of males has increased from 63.52 years in 1970 to 72 years in the year 2010, while the life expectancy of females has increased from 68.21 years in 1970 to 77 years in the year 2010. This fact represents an improvement of 8.48 years and 8.79 years, respectively. The rising number of years remaining for persons of retirement age represents an additional factor to be reckoned with in the examination of expenditures on pension benefits. In addition, the longer life expectancy of the population will increase the number of recipients of retirement benefits and derivative pensions since more pensioners and their survivors would be paid for a longer period of time. However, in the long-term future an increase in the compulsory retirement age will reduce the retirement span or in other words reduce the pension liabilities of the government.

The Malaysia government increased the compulsory retirement age from 55 to 56 years of age on 1st October 2001. The government further increased the compulsory retirement age from 56 to 58 years of age with an option to retire earlier on 1st July 2008. The latest amendmentoccurred on 1st January 2012, whereby the government again increased compulsory retirement age from 58 to 60 years of age with an option to retire earlier. The new legislation will offer longer periods of services for the government employee. From government's perspective, money will be saved in the form of the pension that is not payable to the pensioner who supposedly retired. For example, an individual employee that opts to retire at age 60, rather than age 55, results in the government not incur expenses relating to the pension of that individual for an additional five (5) years – money that can be considered to have been saved by the government. The present study considers longevity factors in relation to pension schemes in two distinct manners. First, the study considers the effects of longevity factors in instances where a pensioner survives. Under this study, we assumed that the individual choose to retire at age 55, 56, 57, 58, 59 or 60 and that person is still survive at the particular age of retirement. Second, the study examines the effects of longevity factors in instances where a pensioner dies between the ages of 55 and 60 in one year increments. For this study, we also assumed that the individual choose to retire at age 55, 56, 57, 58, 59 or 60 and that person is dies at the particular age of retirement.

LITERATURE REVIEW

Most contemporary research indicates that life expectancy in most countries is increasing. Since average life expectancy tends to increase over time for males and females, the mortality risk tends to be smaller over time. Therefore, it is expected that pensioners will live longer and result inan increase in the pension liabilities of the government. Lindell (2003) suggests that the problem of increasing life expectancy in a pension scheme can be solved by adjusting the accrued pension when granted to the latest discovered mortality rates and raising the set retirement age. Leibfritz (2003) states that in order to reduce the burden on pension financing, the employee should retire at a later age since people, on average, are living longer which consequently leads to increases in public pension payments. Furthermore, healthy people may wish to work longer, rather than stop working or accept low pensions. Rappaport (2002) concludes that increasing longevity, in the absence of other changes, affects a fundamental balance in society between those who work to provide goods and services; and those who have retired, but continue to consume goods and services. Both the individual and the family will be affected, as well as the private and public sectors of the society. Likewise, future governmental programs related to assisting the elderly and the poor in general will be affected. Therefore many voices worldwide have spoken out infavour of raising retirement ages to maintain this balance as our population ages. In addition, the impact of a decrease in the mortality rate is common to all pension schemes around the world. To counteract this effect, Machnes (2000) suggests an increase in the contributions of members of society who are still working; anincrease in the retirement age; or a decrease in the benefits given to pensioners.

Previously, changes in retirement age were uncommon. The trend was typically to offer opportunities for early retirement rather than the standard retirement age. Since the 1990s, the trend has changed. Countries are looking for solutions to decrease the effects of increased longevity on pension costs. The most common changes are to equalize the retirement age for males and females; and to increase the retirement age to 65 years old. For example, United Stateshas increased the retirement age to beyond 65 years of age, which is 67 years old. The retirement age for males and females in Great Britain is 65 years of age. Asian countries have reflected this trend, with Japan increasing the retirement age to 60 years of age(which is predicted to increase to 65 years of age in year 2013); the retirement age in Singapore currently being set at 62 years of age: the retirement age in Thailand being set at 60 years of age; and the retirement age in India being set at 58 years of age.

The pension is usually a stream payment made in the form of an annuity for pensionable government employees and their survivors. Thus, we can say that a pension is a special type of life annuity. To estimate the longevity factor, the theory of life annuities needs to be studied. Neill (1977), Jordon (1967) and Hooker (1957) state that life annuities consist of a regular series of payments which continue while the beneficiary is still alive, commonly referred to as a single life annuity. Usually, an annuity ends with the death of the beneficiary, but can be designed to be paid during the lives of more than one person, which is commonly referred to as a joint life annuity. In practice, annuities may be paid more frequently such as quarterly, semi-annually, or annually. However, pensions are often paid monthly. For example, under the Malaysian Government Pension Scheme, the payments of pension are usually made on a monthly basis and are payable at the end of the month. If the pension payment is payable at the end of the year in the form of an annual annuity, at a value of $1 per year, a_x denotes the amount of annuity payments received by a pensioner that survives until age x, at which point the annuity payments cease, is calculated as follows:

$$a_x = \frac{N_{x+1}}{D_x} \tag{1}$$

where,
$D_x = v_x\, l_x$ and $N_x = D_x + D_{x+1} + D_{x+2} + \ldots$

And $a_x^{(m)}$ denotes the amount of annuity payments received m times a year by a pensioner that survives until age x, at which point the annuity payments cease, is can be written as follows:

$$a_x^{(m)} = a_x + \frac{m-1}{2m} \quad (2)$$

The amount of annuity payments received by a pensioner that survives until age x for a fixed period of n years, at which point the annuity payments cease, is denoted by $a_{x:\overline{n}|}$, can be derived as follows:

$$a_{x:\overline{n}|} = a_x - {}_n/a_x = a_x - (v^n \times {}_n p_x \times a_{x+n})$$
$$= \frac{N_{x+1}}{D_x} - \left(\frac{D_{x+n}}{D_x} \times \frac{N_{x+n+1}}{D_{x+n}}\right) = \frac{N_{x+1} - N_{x+n+1}}{D_x} \quad (3)$$

Also, the amount of annuity payments received m times a year by a pensioner that survives until age x for a fixed period of n years,at which point the annuity payments cease, is denoted by $a_{x:\overline{n}|}^{(m)}$, can be written as follows:

$$a_{x:\overline{n}|}^{(m)} = a_x^{(m)} - {}_n/a_x^{(m)} = a_x^{(m)} - v^n \times {}_n p_x \times a_{x+n}^{(m)}$$
$$= \left(a_x + \frac{m-1}{2m}\right) - \frac{D_{x+n}}{D_x}\left(a_{x+n} + \frac{m-1}{2m}\right)$$
$$= \left(\frac{N_{x+1} - N_{x+n+1}}{D_x}\right) + \frac{m-1}{2m}\left(1 - \frac{D_{x+n}}{D_x}\right) \quad (4)$$

Joint life annuities are also important in the study because the pension factor for the spouse and the child are of interest. A joint annuity payable to an individual agedy, m times a year, and commencingat the end of the year that the pensioner, aged x, dies is denoted by $a_{x/y}^{(m)}$, which can be formulated as:

$$a_{x/y}^{(m)} = a_y^{(m)} - a_{xy}^{(m)}$$
$$= \left(\frac{N_{y+1}}{D_y} + \frac{m-1}{2m}\right) - \left(\frac{N_{x+1:y+1}}{D_{xy}} + \frac{m-1}{2m}\right) \quad (5)$$

The joint annuity payable to an individual agedy, m times a year after the pensioner, aged x, dies with no payments to be made after n years from the present time is denoted by $a_{x/y:\overline{n}|}^{(m)}$, which can be written as:

$$a_{x/y:\overline{n}|}^{(m)} = a_{y:\overline{n}|}^{(m)} - a_{xy:\overline{n}|}^{(m)}$$
$$= \left[\left(\frac{N_{y+1} - N_{y+n+1}}{D_y}\right) + \frac{m-1}{2m}\left(1 - \frac{D_{y+n}}{D_y}\right)\right]$$
$$- \left[\left(\frac{N_{x+1:y+1} - N_{x+n+1:y+n+1}}{D_{xy}}\right) + \frac{m-1}{2m}\left(1 - \frac{D_{x+n:y+n}}{D_{xy}}\right)\right] \quad (6)$$

where,

$$D_{xy} = v^{\frac{1}{2}(x+y)} l_{xy} \text{ and } N_{xy} = D_{xy} + D_{x+1:y+1} + D_{x+2:y+2} + \dots$$

METHODOLOGY

The data of Malaysia government employees will be used in this study with the exception of members of parliament; political secretaries; judges; members of all government commissions; and members of the military. Raw data concerning pensioners and their survivors as well as pensioners who retired at age 55 and died during retirement and their survivors (spouse and children) are collected from the Pension Department Public Service Department (PSD) Malaysia. The referred set was from year 1991 to 2000 and the information regarding required consists of the date of birth: the date of entry into the scheme; the date of retirement; the date of death; gender; final monthly basic salary; and information regarding the dependants of the pensioner, including date of birth, status and gender.

To estimate the longevity factor for case of pensioners who survive and also for case of pensioner who dies at the particular age of retirement, the longevity factor for pensioner, spouse and child need to be estimated separately using the theory of annuities. Before we can estimate these factors, we need to formulate the formula for the longevity factor of the pensioner, spouse and child separately, as follows:

(i) The Longevity factor for the pensioner(i) who chooses to retire at age (x), $L_i^x(p)$:

From the theory of annuities, $L_i^x(p)$ can be written as

$$L_i^x(p) = a_x^{(12)} = a_x + \frac{11}{24} = \frac{N_{x+1}}{D_x} + \frac{11}{24} \quad (7)$$

(ii) The Longevity factor for the spouse of a pensioner (i)who chooses to retire at age (x), $L_i^x(s)$:

According to the Pensions Laws of Malaysia (2001), if the pensionable government employee dies in service or in retirement within the period of 12.5 years, the spouse will receive 100% of the monthly pension and, after this period, the amount will reduce to 70%. But if the pensionable government employee dies after the period of 12.5 years, then the spouse will only receive 70% of the monthly pension. Therefore, $L_i^x(s)$ can be written as:

$$L_i^x(s) = 100\% a_{x/y:\overline{12.5}|}^{(12)}$$
$$+ 70\% \left[\frac{l_x - l_{x+12.5}}{l_x} * \frac{l_{y+12.5}}{l_y}\right] v^{12.5} a_{y+12.5}^{(12)}$$
$$+ 70\% \left[\frac{l_{x+12.5}}{l_x} * \frac{l_{y+12.5}}{l_y}\right] v^{12.5} a_{x+12.5/y+12.5}^{(12)} \quad (8)$$

where;
x is the retirement age of the pensioner;
y is the age of the spouse;
l_x is the number of lives at age x; and
v is $1/(1+i)$, where i is the interest rate.

(iii) Longevity factor for child of a pensioner (i) who chooses to retire at age (x), $L_i^x(c)$:

If the pensionable government employee dies in service or during retirement, within a period of 12.5 years, the children will receive 100% percent of the monthly pension and, after this period, the amount reduces to 70%. But if the pensionable government employee dies after the period of 12.5 years, the children will receive 70% of the monthly pension. The children are eligible for the derivative pension until 21 years of age or the completion of their first degrees (Pensions Laws of Malaysia (2011)). In this study, the assumption is made that children will only be eligible for the derivative pension until 21 years of age. Because of these two constraints, the longevity factor for the child is divided into two, depending on the age of the child, which are:

(a) For a child aged one year through nine years:

$$\begin{aligned} L_i^x(c) = {} & 100\% a^{(12)}_{x/z:\overline{12.5}|} \\ & +70\% \left(\frac{l_x - l_{x+12.5}}{l_x} * \frac{l_{z+12.5}}{l_z}\right) v^{12.5} a^{(12)}_{z+12.5:\overline{n}|} \\ & +70\% \left(\frac{l_{x+12.5}}{l_x} * \frac{l_{z+12.5}}{l_z}\right) v^{12.5} a^{(12)}_{x+12.5/z+12.5:\overline{n}|} \end{aligned} \quad (9)$$

(b) For the child aged between 10 years and 21 years:

$$L_i^x(c) = a^{(12)}_{x/z:\overline{n}|} \quad (10)$$

where;
x is the retirement age of the pensioner; and
z is the age of the child.

However, equations (8)-(10) can be simplified using the theories of annuities.

To estimate the longevity factor for a pensioner who survives, we built four types of family models which are:

Model I: The *pensioner* is single (p).
Model II: The *pensioner* has the eligible *spouse* only (ps).
Model III: The *pensioner* has the eligible *children* only (pc).
Model IV: The *pensioner* has the eligible *spouse* and *children* (psc).

Let:
$L_i^x(ps)$ = The longevity factor for a particular *pensioner (i)* who chooses to retire at age (x) and has the eligible *spouse* only;
$L_i^x(pc)$ = The longevity factor for a particular *pensioner (i)* who chooses to retire at age (x) and has the eligible *children* only;
$L_i^x(psc)$ = The longevity factor for a particular *pensioner (i)* who chooses to retire at age (x) and has the eligible *spouse* and *children*; and
p_p, p_{ps}, p_{pc}, and p_{psc} are the probability for each type of family model mentioned above.

Thus, the longevity factor for the *pensioner who survives*, given by L_i^x, can be written as:

$$\begin{aligned} L_i^x = {} & p_p \times L_i^x(p) + p_{ps} \times L_i^x(ps) + p_{pc} \times L_i^x(pc) \\ & + p_{psc} \times L_i^x(psc) \end{aligned} \quad (11)$$

where;

$$L_i^x(ps) = L_i^x(p) + L_i^x(s);$$
$$L_i^x(pc) = L_i^x(p) + L_i^x(c);$$
$$L_i^x(psc) = L_i^x(p) + L_i^x(s) + L_i^x(c).$$

For the *pensioner who dies*, we built three types of family models which are:

Model I: The pensioner has the eligible *spouse* only (s).
Model II: The pensioner has the eligible *children* only (c).
Model III: The pensioner has the eligible *spouse* and *children* (sc).

Thus, the longevity factor for a *pensioner who dies*, given by $L_i^{d(x)}$, can be written as:

$$L_i^{d(x)} = p_s \times L_i^x(s) + p_c \times L_i^x(c) + p_{sc} \times L_i^x(sc) \quad (12)$$

Where;
$L_i^x(sc) = L_i^x(s) + L_i^x(c)$;
p_s, p_c, and p_{sc} are the probability for each type of family model mentioned above, respectively.

NUMERICAL RESULTS AND DISCUSSION

The longevity factor is determined by considering both the interest rate and mortality rate (Ibrahim 2008).

ESTIMATED LONGEVITY FACTOR FOR PENSIONER, $L_i^x(p)$

Table 1 demonstrates that the longevity factor for males and females decreases as the interest rate increases at age 55 to 60. Also, the longevity factor for males and females decreases as age increases. In addition, for the same interest rate and retirement age, the longevity factor for females is always greater than males. This is because the mortality rates for females are smaller than males.

TABLE 1. Summary of the Longevity Factor at a Reference Rate of Interest 3%, 4% and 5% of Male and Female Aged 55 to 60 years

Age, (x)	i = 3% (Male)	i = 3% (Female)	i = 4% (Male)	i = 4% (Female)	i = 5% (Male)	i = 5% (Female)
55	14.65360	15.90544	13.26245	14.31196	12.08264	12.96941
56	14.25319	15.48356	12.93285	13.96997	11.80889	12.68967
57	13.85163	15.05807	12.60038	13.62281	11.53125	12.40394
58	13.44937	14.62944	12.26542	13.27082	11.25004	12.11247
59	13.04689	14.19819	11.92838	12.91443	10.96558	11.81558
60	12.64468	13.76485	11.58971	12.55406	10.67825	11.51360

TABLE 2. Summary of the Estimated Longevity Factor at a Reference Rate of Interest 3% for Widow and Widower Aged 49 to 54 years

Age of pensioner, x	Age of spouse, y	$L_i^x(s\text{–}widow)$	$L_i^x(s\text{–}widower)$
55	49	3.92211	2.71480
56	50	3.95871	2.75795
57	51	3.99237	2.80008
58	52	4.02290	2.84108
59	53	4.05010	2.88078
60	54	4.07377	2.91903

TABLE 3. Summary of Estimated Longevity Factor for Child without Spouse and Child with Spouse, for Both Male and Female Pensioners

x	Male $L_i^x(c\text{–}w/o\ spouse)$	pensioner $L_i^x(c\text{–}withspouse)$	Female $L_i^x(c\text{–}w/o\ spouse)$	pensioner $L_i^x(c\text{–}withspouse)$
55	6.75749	6.34357	6.95412	6.50509
56	6.30449	5.84567	6.97655	6.43753
57	5.81206	5.30547	6.44113	6.12584
58	5.27744	4.71984	5.85623	5.51112
59	4.69737	4.08512	5.21770	4.84063
60	4.06808	3.39702	4.52066	4.10926

ESTIMATED LONGEVITY FACTOR FOR THE SPOUSE, $L_i^x(s)$

From the analysis of data between the years 1991 and 2000, the average age gap between the husband and wife is found to be six years. However, based upon the report on Sample Design for 1984/85 Malaysian Population and Family Survey (Paranjothy 1988), the husband is found to be five or more years older. Therefore, in this study, the assumption is made that the age gap between the husband and wife is six years. This implies that the range age of a widow or widower is between 49 and 54 years. In the study, the estimated longevity factors for the spouse are calculated at an interest rate of 3%.

When the retirement age of a government employee is increased, the estimated longevity factor increases significantly for both widow and widower, as depicted in Table 2. As expected, the longevity factor for a widow is greater than that of a widower because the mortality rate for females is smaller than males.

ESTIMATED LONGEVITY FACTOR FOR THE CHILD, $L_i^x(c)$:

The interest rate of 3% will be used to estimate the longevity factor for child. From the analysis of past data regarding years of 1991 to 2000, the average age of a child for pensioners that do not have a spouse is found to be 12 years of age; whereas the average age of a child for pensioners who have a spouses is 13 years of age. Thus, equation (10) is utilized to estimate the $L_i^x(c)$. Additionally, the ratios between male and female child without spouse and with spouse are found to be 0.45:0.55 and 0.47:0.53, respectively. Thus, the ratios are utilized as assumptions in the estimation of the longevity factor for the child.

Table 3 shows that as the retirement age of pensioner increase, the estimated longevity factor for the child slightly decreases. The estimated longevity factor for a child of a female pensioner is found to be greater compared to that of a male pensioner. Again, this is because the mortality rate for females is smaller than the males.

ESTIMATED LONGEVITY FACTOR FOR PENSIONER WHO SURVIVES AND DIES AT AGE X:

Following the analysis of the data collected, it is concluded that 3% of the data collected falls in Family Model I, while 94.1% of the data collected falls in Family Model II; 1.79% of the data collected falls in Family Model III; and 1.11% of the data collected falls in Family Model IV. Therefore, these probabilities are utilized as assumptions to estimate the longevity factor for pensioner who survives. Thus, the longevity factor for pensioner who survives becomes:

$$L_i^x = 0.03 \times L_i^x(p) + 0.941 \times L_i^x(ps) + 0.0179 \times L_i^x(pc) + 0.0111 \times L_i^x(psc)$$

TABLE 4. Summary of Estimated Longevity Factors for Case of Pensioner Who Survives and Also for Case of Pensioner Who Dies at the Particular Retirement Age of x

Age of pensioner, x	L_i^x - Male	L_i^x - Female	L_i^x - Male	L_i^x - Female
55	18.57672	18.68437	4.03139	2.87988
56	18.19761	18.30327	4.04795	2.92130
57	17.81338	17.90492	4.06009	2.94257
58	17.42421	17.49813	4.06751	2.95823
59	17.03030	17.08592	4.06987	2.97049
60	16.63183	16.66851	4.06683	2.97898

And, for the case of pensioner who dies, 96% of the data collected falls in Family Model I, 3% of the data collected falls in Family Model II and 1% of the data collected falls in Family Model III. Thus, the longevity factor for the pensioner who dies becomes:

$$L_i^{d(x)} = 0.96 \times L_i^x(s) + 0.03 \times L_i^x(c) + 0.01 \times L_i^x(sc)$$

Table 4 demonstrates that as the retirement age of the pensioner increases the estimated longevity factors for both male and female pensioners surviving slightly decreases; and the estimated longevity factor for females surviving male pensioners is greater compared to males surviving female pensioners. This is because the values of $L_i^x(ps)$, $L_i^x(pc)$ and $L_i^x(psc)$ for female pensioners are greater compared to male pensioners; and the fact that the mortality rate for female pensioners is lower than male pensioners.

In addition, as the retirement age of pensioners increases, the estimated longevity factor for both male and female pensioners who die increases slightly. This is because when the retirement age increases, the probability of death increases. Also, the table indicates that the estimated longevity factor for a male pensioner who dies is greater compared to a female pensioner who dies. This is because the longevity factor for the spouse of a male pensioner who dies (widow) is greater than the longevity factor for the spouse of a female pensioner who dies (widower).

However, the important result of the study is that the percentage of decrease in longevity factors for both male and female survivors are larger compared to the percentage of increase for both males and females who die when after the increase of the retirement age. For example, if the retirement age is increased from 55 to 60 years, the percentage of decrease in longevity factors for both male and female survivors are 11.7% and 12.1%, respectively; where as the percentage of increase for both males and females who die are 0.9% and 3%, respectively. Therefore, overall longevity factors will decreaseas the retirement age increases. In other words, the pension liabilities faced by the government can be reduced if the retirement age is increased.

CONCLUSION

Based upon the numerical results, the percentage of decrease in longevity factors incases of both male and female pensioners who survive are larger compared to the percentage of increase in cases of both male and female pensioners who die at the particular retirement age of x. However, overall longevity factors will decrease as the retirement age increases. Hence, the conclusion reached is that the compulsory retirement age should be increased in the future in order to decrease the effects of increased longevity on pension costs.

As the retirement age increases, the pension liabilities of the government will be reduced, allowing the government to save a substantial amount of money. Therefore, it is important for the government to estimate and establish the pension trust fund in order to address the financial burden in the future due to the fact that the number of pensioners entering the pension scheme increases annually. However, this study indicates that the current government pension scheme in Malaysia needs to be reformed immediately to reduce the pension liabilities of the government due to the gradual increase of the average life expectancy of the Malaysian population from year to year.

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