Factors in Estimating Compensation in Personal Injury and Wrongful Death using Actuarial Approach

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Abstract. Personal injury and death will surely cause the plaintiff and their dependents facing financial problems due to loss of income, medical treatment expenses, future medical care treatment expenses and other possibilities. Court award for compensatory damages are intended to give victims a sum of money in the form of damages which will be restore the individual, in financial terms, as nearly as possible to the position they would have been in if the wrong had not been committed. The most fair settlement amount result can only be achieved based on the accuracy of a whole series of forecasts. And in order to calculate the settlement amount, various factors should be taken into consideration. Currently in Malaysia, courts use the traditional multiplicand-multiplier approach when assessing the economic losses and damages as specified by the Malaysian Civil Law Act 1956. In the United Kingdom, judges use a series of actuarial tables known as the Ogden Table that would help courts assess the size of awards to be made to personal injury and fatal accident cases. While in the United States, the human life value method is often used in court cases attempts to measure the compensatory economic damages. Therefore, this paper will discuss the factors in the Ogden Tables and human life value concept that can be used by Malaysian courts in order to develop a standard benchmark in calculating compensation for personal injury and wrongful death.

Keywords: court awards for compensatory damages, personal injury, wrongful death

1. Introduction

Court award for compensatory damages are intended to give victims a sum of money in the form of damages which will restore the individual and his or her beneficiaries in financial term, as nearly as possible to the position they would have been in if the wrong had not been committed. The compensation comprises an award for economic losses that often referred to as monetary losses; include loss of income, medical treatment expenses, future medical care treatment and other out-of-pocket expenses. In Malaysia, when wrongful personal injury or death happens, the negligence party will be sued. Malaysian Civil Law Act 1956 stated that,

> Whenever the death of a person is caused by wrongful act, neglect or default, and the act, neglect or default is such as would, if death had not ensued, have entitled the party injured to maintain an action and recover damages in respect thereof, the party who would have been liable if death had not ensued shall be liable to an action for damages, notwithstanding the death of the person injured, and although the death has been caused under such circumstances as amount in law to an offence under the Penal Code [Act 574] (Malaysia Civil Law Act 1956).

In Malaysia, there is no scientific method assigned by the judges in calculating the award of economic damages in personal injury and wrongful death. It is always depends on the lawyers to calculate and determine the compensation amount and the result is based on judges' decisions. Even though there are many factors that lawyers and judges should take into account but only few were considered. Nevertheless, the realistic of the factors should be accurately determined.

2. Methods in Estimating Compensation

2.1. Multiplier-Multiplicand Approach

The loss of future earnings is calculating by multiplying the multiplier (the annual loss of future earning) with multiplicand (the number of years from the trial date until the year that he or she is predicted to separate from workforce). To calculate the loss of future earnings, the pre-accident earning must subtracts with the post-accident earnings.

Multiplier = Pre-accident Earning – Post-accident Earning

Multiplicand = Retirement Age – Age at Trial Date

The lawyer will refer multiplier use in Malaysian court based on previous cases that brought up during the hearing. As a result, different lawyer will bring different reference cases based on their studies.

2.2. The Ogden Tables

In the United Kingdom, the use of actuaries or forensic economists in calculating economic damages in personal injury and wrongful death is rare. In the past, judges have used their own 'common law' and 'common sense' standards for calculating damages (Ward, 2005). These standards usually consisted of multipliers that could be applying to a plaintiff's income or medical costs to estimate their economic loss. These multipliers were derived from past court decisions and had little scientific basis. In an attempt to bring some sound actuarial principles to the use of multipliers, the Government Actuary's Department, United Kingdom (GAD) produced a set of multipliers in year 1984 named "Actuarial Tables with Explanatory Notes for Use in Personal Injury and Fatal Accident Cases", also known as the "Ogden Table" named after the first chairman of a multi-disciplinary working party that developed the actuarial tables, Sir Michael Ogden. The first Actuarial Tables with Explanatory Notes for Use in Personal Injury and Fatal Accident Cases was published in 1984 and the edition subsequently improved and updated, and the latest edition which is the 6th edition published in 2007.

The Ogden Tables are based on the assumption that a victims would invest his or her award in index-linked gilts, which are a risk-free vehicle producing an income in accordance with the fluctuations of the Retail Price Index. The purpose of the Ogden Tables is to provide scientific guidance to the courts in England and Wales in their effort of determining the economic losses suffered by plaintiff (Verrall *et. al.,* 2005).

2.3. Human Life Value

The human life value concept is nothing new; it is generally associated with life insurance. The concept however is not limited to life insurance in its application and has been used in many other areas – an analysis of population to estimate the value of nation, life insurance programs, judicial awards in accidental death and disability liability cases particularly in the United States, assessment of public policies and key value of a man.

John E. Scarbrough in his article titled 'Measuring Human Life Value from the Courtroom to the Living Room' published in 1998, attempted to bring the life insurance industry's consideration of human life value concept, which in practice, particularly in the United States, human life value is more often used in wrongful death litigation. In example, for the victims of the terrible terrorist attack of 11 September 2001, courts decided the amount of settlement should be based on the human life value concept.

Lewis *et.al,* (2002) suggested alternative method of awards calculations based on a stylized US approach. In his frame work, the discounted stream of future earnings, until final departure from the labour force, take into account individual and economy wide productivity growth. That is, the net present value of the future earnings is given by:

$$NPV(W) = \sum_{j=0}^{T} \frac{W_j \prod_{i=1}^{j}(1+g_i)}{\prod_{i=1}^{j}(1+r_i)}$$

Where g_i is the yearly economy wide growth rate and r_i is the yearly discount rate. The stream of future earning W_j represent the net wages adjusted by the probability of being alive and active, and allow for individual productivity growth.

3. Factors in Calculating Compensation

The multiplier for each person is different. The uniqueness of the multiplier is as complex as thumbprint. It is difficult to set a new multiplier for each person but a set of tables can be produced and the multiplier can be choose to the most nearest to the persons criteria. To set up the multipliers, we need to develop a standard benchmark or factors in calculating the compensation amount.

3.1. Demographic Factors

Gender and age are the first criteria to look into in calculating compensation in personal injury and wrongful death. In order to determine the multiplier for loss of earnings for someone who has not yet started work, it is first necessary to determine an assumed age at which the plaintiff would have commenced work and to find the appropriate multiplier for that age. Based on Malaysian Labour Law, there is a section for "Employment of Children and Young Persons". It is defined in the Act that a child means a person who is under fourteen years of age while a young person means a person of fourteen years and above; but below sixteen years of age. They are restricted to work in professional field until they reach sixteen years old. However, in current Malaysia situation the minimum requirement to enter work force is *Sijil Pelajaran Malaysia* (Malaysian Certificate of Education) which the result will be awarded when they are eighteen years old.

3.2. Mortality Assumption

The second factor needs to take into consideration in calculating compensation in personal injury and wrongful death is the mortality assumption. Unless there are medical prove that a person will face short life or prolonged life no changes will be made to the existing mortality table.

3.3. Rate of return

An essential factor in arriving at the right amount of compensation for personal injury and wrongful death is the choice of the appropriate rate of return. For Malaysian case scenario, the rate of return of *Amanah Saham Bumiputera* (ASB) unit trust will be used as an indicator of the appropriate real rate of return for valuing future income streams. This is because it is a government share offered to public; hence, it is low risk investment. However, the return is quite competitive.

3.4. Different Retirement Ages

Problem will arise if the plaintiff's retiring age is different from that assumed in the calculation. Such a problem may arise in valuing the loss or expense beginning immediately but ending at retirement; or in valuing a loss or expense, which will not begin until the claimant reaches retirement but will continue until death. Where the plaintiff's actual retiring age would have been between two of these retirement ages for which tables are provided, the correct multiplier can be obtained by consideration of the tables for retirement age immediately above and below the actual retirement age, keeping the period to retirement age at the same.

For example, a woman of forty-two who would have retired at fifty-eight can be considered as being between the cases of a woman of thirty-nine with a retirement age of fifty-five and a woman of forty-four with a retirement age of sixty. The steps take are as follows:

1. Determine between which retirement ages, for which tables are provided, the plaintiff's actual retirement age R lies. Let the lower of these ages be A and the higher be B.
2. Determine how many years must be subtracted from the plaintiff's actual retirement age to get to A and subtract that period from the plaintiff's age. If the plaintiff's age is x, the result of this calculation is $(x+A-R)$.
3. Look up this new reduced age in the Table corresponding to retirement age A at the appropriate rate of return. Let the resulting multiplier be M.

4. Determine how many years must be added to the plaintiff's actual retirement age to get *B* and add that period to the plaintiff's age. The result of this calculation is (*x+B-R*).

5. Look up this new increased age in the Table corresponding to retirement age *B* at the appropriate rate of return. Let the resulting multipliers be *N*.

6. Interpolate between *M* and *N*. In other words, calculate (*B-R*) × *M* + (*R-A*) × *N*. And finally divide the result by [(*B-R*) + (*R-A*)], or equivalently [*B-A*].

3.5. Contingencies

The Ogden Tables before sixth edition does not take account of the other risks and vicissitudes of life, such as the possibility that the plaintiff would for periods have ceased to earn due to ill-health or loss of employment. Nor do they take account of the fact that many people cease work for substantial periods to care for children and other dependents. It is important to determine contingencies other than mortality because this can reduce the multiplier value. Death is not the only reason for people to quit their work. Hence the future economic loss will be more accurate.

3.6. Impaired Lives

In some cases, medical evidence may be available which asserts that a claimant's health impairments are equivalent to adding a certain number of years to their current age, or to treating the individual as having a specific age different from their actual age.

3.7. Worklife Expectancies

The first attempt to estimate lifetime employment risks for the United Kingdom was undertaken by the actuarial profession in the context of the valuation of loss of earnings in England and Wales (Butt *et.al*, 2008). They also clarify that the work life expectancy represents the number of years that a person age *x* is likely to spend working until his or her final separation from the labour market, through death or retirement.

In many personal injury cases the problem becomes essentially a matter of carefully utilizing revised probabilities. These situations occur when an injury does not immediately remove a person from the labour force, but in fact increases the probabilities that such an event will occur. Traditionally, the economic losses are determined in the United Kingdom courts as the product of the multiplicand and the multiplier. The latter is computed as a discounted measure of expected time (usually the future life or worklife expectancy) over which the loss occurred, assuming that the losses would be incurred on a continuous basis (Verrall *et. al.,* 2005).

4. References

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