

An Analysis on Various approaches used for Determining the Life Insurance cover for Policyholders in Life Insurance Industry in India

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ABSTRACT

Life insurance is a contract between an insured and an insurer, where the insurer promises to pay a designated beneficiary a sum of money in exchange for a premium, upon death of the insured person. This paper analyzes about the various approaches used for determining the life insurance cover for a potential life insurance policy holder. A sample portfolio of an individual is taken for the study and it applied in five different approaches for calculating the amount of life cover needed for that individual. The results provided by all the approaches are analyzed and based on which the appropriate approach, that can be used by the life insurance industry was found. This paper suggest Human Life Value (HLV) approach for calculating the amount of life cover to avoid underinsurance and over-insurance of an individual.

Keywords: Human Life Value(HLV), Underinsurance, Life cover, Capital Retention.

INTRODUCTION:

This paper analyzes about the various approaches used for determining the life insurance cover for a potential life insurance policy holder. Life insurance is a contract between an insured and an insurer, where the insurer promises to pay a designated beneficiary a sum of money in exchange for a premium, upon death of the insured person. There are various approaches used for calculating the amount of life cover that an individual should possess to meet the financial obligations upon the death of the policy holder.

Approaches for calculating Life cover:

The following are the approaches used for calculating the life cover of an individual.

- Multiplier Approach
- Human Life Value Approach (HLV)
- Need Based Approach
- Income Replacement Approach
- Capital Retention Approach

Multiplier Approach:

This is one of the simple method used for calculating the amount of life cover needed for an individual. In this method based on the age of the individual, the current annual income and the outstanding loan the life cover will be decided. The Thumb Rule is,

Age Between (Years)	Life cover Recommended
25 - 35	15 -18 times of Annual Income + Outstanding Loans
36 - 45	10 -15 times of Annual Income + Outstanding Loans
46 -55	5 -10 times of Annual Income + Outstanding Loans

In this approach, three parameters are taken into account age, annual income and outstanding loans. But, the changes in the inflation rate, tax rate, interest rate are not considered and number of dependents, amount required for children education and marriage are also not taken into consideration. This method is generally used by the advisors but it is not technically proved.

Human Life Value (HLV) Approach:

According to the definition of S. S. Huebner(1959) " Human Life Value (HLV) of any person can be measured by capitalized value of that part of his income or income earning capacity devoted or meant for dependants arising out of economic forces incorporated within his being, like character, health, education, training, experience and ambition"

The formula used for calculating Human Life Value(HLV) is:

$$\text{Human Life Value} = (E - M) \times a_n$$

where,

E = Earnings per annum

M = Self Maintenance charges + Tax paid + Present Life Insurance Premium

a_n = Annuity factor at a given rate of discount

n = The working span (Retirement Age - Present Age)

In this method the human life value is calculated by subtracting the self maintenance charges of an individual from the annual earnings and by multiplying the amount by the annuity factor. Accordingly, the Human Life Value calculated through this formula can be taken as a sum assured by the individual.

The advantage of this method is taxes, present life insurance premium, rate of discount are taken into account. The disadvantage of this method, the outstanding loans are not taken into consideration while calculating HLV. The factors like number of dependents, amount required for children education and marriage are also not taken into consideration.

Need Based Approach:

This approach of calculating the life cover is based on Maslow's hierarchy of needs. The following funds are needed by an individual's dependent after his/her demise.

Funds	Purpose of fund
Clean up funds	Hospital Bills, Funeral Expenses
Education funds	Children education
Mortgage funds	Repayment of loans
Dependents fund	Maintenance expenses of spouse & dependents

The addition of all these funds will give the Life cover needed for the individual under this approach. The advantage of this method, factors such as hospital bills, funeral expenses and dependents funds are taken into consideration. The disadvantage of this method is inflation rate is not considered. It is also difficult to determine accurately the funds required for children education and marriage. As Life insurance is only coverage of risk against the loss of present income of the bread winner of the family, allocating funds for the dreams of an individual in determining the life cover is unrealistic.

Income Replacement Approach:

In this approach, the life cover of an individual is calculated using the formula:

$$\text{Required Life cover} = \text{Annual Income} * \text{No. of years left for retirement}$$

The only advantage of this method is its simplicity, it is easy to calculate even for a common individual. The disadvantages of this approach are inflation rate, number of dependents and their future needs are taken into account. The possibility of increase in annual income over years are also not taken for consideration.

Capital Retention Approach:

In this approach, the Life cover is calculated using the following steps:

1. Preparation of Balance Sheet of the individual:

It involves listing of all the assets and liabilities of an individual. The assets includes house, vehicles, financial

assets, ornaments, cash in hand etc., The liabilities includes home loan, vehicle loan, Education fund, Emergency fund etc.,

2. Determining the amount of income generating capital:

After deducting all the liabilities from the assets, the individual will get the balance of assets. From this balance the non income generating assets such as house, vehicles should be deducted. The balance amount is the amount of income generating capital.

3. Determining the amount of additional capital required:

Now, individual have to compute the difference between actual income required by the dependents and the current income available through the accumulated capital. This difference amount is the additional capital required.

This approach says that an individual should be insured for this amount of additional capital required.

The advantages of this method is that, it takes all assets and liabilities of an individual into account. It also considers the income generating capital for computation of life cover. The disadvantage of this approach is that, the amount of income required by the dependent have to be assumed while calculating the additional capital required. The fluctuations in inflation rates and interest rates are taken into consideration.

LITERATURE REVIEW:

Peng chen et al. (2006) in a research paper on Human capital, Asset Allocation and Life insurance discussed about the importance of human capital while building optimum portfolio for individual investors. It was mentioned that the investor need to make life insurance decisions and asset allocation decisions jointly. It was also mentioned that the conservative investors should invest relatively more in risk free assets and buy more life insurance.

Aurelija Ulbinaite et al(2014) studied about the complexity of the insurance purchase decision making process. This paper proposed a model on insurance consumer behavior, with includes the customers' characteristics such as life quality, exposure to risk, perception, affordability etc., The results of the paper showed that, income level and purchase decision are non linear and perceived affordability and purchase decision of insurance are inclined.

Manimegalai(2014) examined about the major problems faced by the life insurance policy holders revealed with Henry Garrett Ranking Technique. This paper found that Initial claim formalities, Delay in the settlement of claim amount, Ambiguity in the terms & conditions of the policy, Benefits of insurance policy is not clear, Delay in the claim due to legal formalities, Formalities in the final claim, Lack of proper claim facilitators, Low publicity & advertisements of claim settlements are the major problems faced by the life insurance policy holders. This paper suggested that, the insurance companies should concentrate on the need based products and build the confidence among the people. These three papers concentrated on the insurance purchase decisions and providing the need based products to the life insurance customers.

Monika Halan(2013) studied on estimating losses to customers on account of mis-selling of life insurance policies in India. This paper mentioned about the IRDA's list of rules regarding the sale of products. In which IRDA suggested the life insurance providers to prepare a Prospect Product Matrix from which the matched product for the investors should be arrived through need analysis. From this paper we can identify the need for following an appropriate approach for calculating the life cover and providing the right product for the right customer.

Arnika Srivastava(2012) researched about the changing trends in Indian life insurance industry. The paper mentioned that the entry of private players brought tough competition among insurers and forced them to provide customized products according to the needs of the customer. It was also mentioned that, the insurers are in the position to provide meaningful and affordable products to their customers targeting the specific segment of the population.

Ashfaque Ahmed(2013) studied about the perception of life insurance policies in rural India. This paper attempted to explore the issues and challenges that led to poor life insurance penetration in rural parts of India. In this paper, it was suggested that life insurance companies should provide innovative and unique products with multiple benefits to the customers. It was mentioned that good quality products with lower premium is the need of the rural customers, and intense research for identifying the specific needs and attributes of rural customers is also needed.

Babita Yadav(2012) studied about the factors affecting customer investment towards life insurance products. It was found that the features that attracted the policyholders are company reputation, low premium, risk coverage, money back guarantee and easy access to agents. From these three reviews it is inferred that customers are in need of low premium products with the necessary risk coverage. So, there is need to analyse about the optimum life cover that is needed for an individual. This particular research gap is taken in this study,

to find the better approach to calculate the correct amount of life cover that is needed for an individual.

METHODOLOGY:

This paper is based on Descriptive research, the researcher tried to identify the best method that can be adopted by the life insurance industry for calculating the amount of life cover for an individual. A sample portfolio of an individual is taken for the study and it applied in five different approaches for calculating the amount of life cover needed for that individual. The results provided by all the approaches are analyzed and based on which the appropriate approach, that can be used by the life insurance industry was found.

Sample Portfolio of an individual:

Let us consider a sample portfolio of an individual with the following information, Annual Earnings: Rs. 3,60,000, Current age: 30 yrs, Retirement age: 60 yrs, Outstanding Loans: Rs. 4,00,000, Self Maintenance Charges: Rs. 40,000, Income tax paid: Rs. 18,000, Clean up funds expected: Rs. 5,00,000, Children Education and marriage fund required: Rs. 10,00,000, Funds required for dependents: Rs. 10,00,000, Total assets: 10,00,000. Now, this portfolio is applied to various approaches and Life cover calculated as follows:

Approach	Calculation	Life cover
Multiplier Approach	(15 -18 times of Annual Income + Outstanding Loans) $= 15 * 3,60,000 + 4,00,000$ to $18 * 3,60,000 + 4,00,000$	58 Lakhs to 68.8 Lakhs
Human Life Value (HLV) Approach	$(E - M) \times a_n$ $= (3,60,000 - 58,000) * 12.4090$ (discounting factor applicable for the interest rate of 7% for 30yrs)	37.47 Lakhs
Need Based Approach	Clean up funds+ Education funds+ Mortgage funds+ Dependents fund $= 5,00,000 + 10,00,000 + 4,00,000 + 10,00,000$	29 Lakhs
Income Replacement Approach	Annual Income * No. of years left for retirement $= 3,60,000 * 30$	1.08 Crores
Capital Retention Approach	Liabilities - Assets - Income generating capital $= 29,00,000 - 10,00,000 - 0$	19 Lakhs

Interpretation:

For the same portfolio of an investor, every approach is giving different life cover. The value of life cover varies from 19 lakhs to 1.08 Crores.

The least life cover of Rs. 19 lakhs is calculated using Capital Retention approach. The value is minimum because of the major reason that the assets are subtracted from liabilities. The assets can be land, buildings, vehicles, ornaments etc., Even after the demise of the bread winner of the family these assets are needed and it cannot be sold. And similarly increase in liabilities due to inflation is not taken into account. So, the life cover of Rs. 19 lakhs calculated through this approach is not sufficient for an individual, which may lead to underinsurance.

The highest life cover of Rs. 1.08 crores is calculated through the Income replacement approach. In this approach, the interest that can be earned through the receipt of sum assured in case of sudden demise of the bread winner is not taken into account. The possibility of increase in annual income is also not considered. So, the life cover of Rs. 1.08 crores is very high which may lead to over-insurance.

In need based approach, the life cover calculated is Rs. 29 lakhs. In this approach, other than mortgage fund, the other funds such as education fund, dependent fund and clean fund are assumed. The assumption and expectation may become unrealistic. The education fund and marriage fund are derived out of the expectations and dreams of an individual and it is not based on the capability of the bread winner. The expectation and dreams can be huge but life cover cannot be decided based on these things. Hence, the life cover of Rs.29 lakhs is based on the expectations which may not be realistic.

In Multiplier Approach, the life cover calculated is in the range of Rs 58 lakhs to Rs. 68.8 lakhs. Age is the important factor considered in this approach, if age varies the multiplier will also vary. In this approach also the increase in annual income over the years is not considered for calculation. The range received through this approach is also very high with the difference of 10.8 lakhs (68.8 - 58). So, this method has not provided the necessary clarity to an individual in deciding the exact life cover.

In Human Life Value(HLV) approach, the life cover calculated is Rs. 37.47 lakhs. This method considers the increase in earnings and maintenance charges by multiplying with the annuity factor. The outstanding loans, education funds, clean up funds, dependents funds and all other expenses can be met only with the annual earnings of an individual. So, the risk of absence of such earnings should only be covered with a life insurance policy. This approach has clearly taken this point. Hence, whatever be the dreams, expectations and outstanding loans of an individual, the life cover can be provided only based on the earnings of that individual. So, this approach is a realistic approach that can be taken for calculating the life cover of an individual.

FINDINGS:

- 1.Capital Retention approach includes the assets which the family of the breadwinner is currently using and these assets cannot be sold. So, the amount of life cover provided by this approach is very less and may lead to underinsurance.
- 2.In Income Replacement Approach, the interest that can be earned form the receipt of sum assured is not taken into account. So, the amount of life cover provided by this approach is very high and may lead to over insurance.
- 3.In Need Based Approach, other than mortgage fund all the other funds such as education fund, dependent fund and clean fund are assumed. The expectation and dreams can be huge but life cover cannot be decided based on these. So, the life cover provided by this approach can be unrealistic.
- 4.In Multiplier approach, age is the important factor considered in this approach, if age varies the multiplier will also vary. It only provides the range of amount of life cover. So, it has not provided the necessary clarity to an individual in deciding the exact life cover.
- 5.In Human Life Value(HLV) approach, the increase in earnings and maintenance charges by multiplying with the annuity factor. As all the expenses and loans of an individual can be met only with the earnings of the person, this method exactly provides the value for which an individual's life should be covered. So, this approach is a realistic approach that can be taken for calculating the life cover of an individual.

SUGESSTIONS:

1. In Indian Life Insurance Industry, every insurance provider is using different method for calculating the amount of life cover. If we apply the same sample portfolio in different Life insurance companies websites, the following results are found.

Life Insurance Companies	Amount of Life Cover
HDFC Life Insurance Co Ltd	19 Lakhs
ICICI Prudential Life Insurance Co Ltd	96.50 Lakhs
SBI Life Insurance Co Ltd	58 Lakhs

2. These kinds of results will confuse the individuals who are planning to take life insurance and this may lead to underinsurance or over-insurance.
3. Hence, there is need to follow an appropriate approach for calculating the amount of life cover. Based on the analysis it found that, Human Life Value(HLV) approach will provided exact value of an individual based on his/her earnings. The risk of losing this earnings have to be covered through a life insurance.

CONCLUSION:

Life insurance is a risk covering tool, should be used to cover the financial risk involved in losing the bread winner of a family. In case any unfortunate event, the family's financial position should not be affected, so that life insurance should give the protection through the payment of sum assured. Such sum assured should be decided based on the earning potential of an individual and should not be based on the expectations. Dreams cannot be insured. Every insurance provider and policyholder should remember this and should go for an appropriate policy with appropriate amount of life cover.

REFERENCES:

- Arnika Srivastava, Sarika Tripathi and Amit Kumar (2012). Indian life insurance industry – the changing trends. *Journal of Arts, Science & Commerce*, Vol. – III, Issue 2(3), 93-98.
- Ashfaque Ahmed. (2013). Perception Of Life Insurance Policies In Rural India. *Kuwait Chapter of Arabian Journal of Business and Management Review*, Vol. - 2(6), 17-24.
- Aurelija Ulbinaite, Marija Kucinskiene and Yannick Le Moullec. (2014). The complexity of the insurance purchase Decision making process. *Transformations in Business and Economics*, Vol. 13(3).
- Babita Yadav And Anshuja Tiwari. (2012). A Study On Factors Affecting Customers Investment Towards Life Insurance Policies. *International Journal of Marketing, Financial Services & Management Research*. Vol. 1(7). 106-123.
- HDFC life insurance co ltd. (2018). <https://www.hdfclife.com/financial-tools-calculators/human-life-value-calculator>. Retrieved November 10, 2018 from <https://www.hdfclife.com>
- ICICI prudential life insurance co ltd. (2018). <https://www.iciciprulife.com/insurance-guide/financial-planning-tools-calculators/human-life-value-calculator.html>. Retrieved November 10, 2018 from <https://www.iciciprulife.com>
- Manimegalai. V and Sathyapriya. P. (2014). Examining the major problems faced by the life insurance policy holders revealed with Henry Garrett Ranking Technique. *International Journal of Engineering and Management Research*, Vol. 4(3), 1-7.
- Monika Halan, Renuka Sane and Susan Thomas. (2013). Estimating losses to customers on account of mis-selling life insurance policies in India. *Working paper of Indira Gandhi Institute of Development Research, Mumbai*. Retrieved on March 11, 2017 from <http://www.igidr.ac.in/pdf/publication/WP-2013-007.pdf>
- Peng Chen, Roger G. Ibbotson, Moshe A. Milevsky and Kevin X. Zhu. (2006). Human Capital, Asset Allocation, and Life Insurance. *Financial Analysts Journal*, Vol. 62 (1), 97-109.
- SBI life insurance co ltd. (2018). <https://www.sbilife.co.in/en/learn/tools-calculators/hlv-calculator>. Retrieved November 10, 2018 from <https://www.sbilife.co.in>
- Solomon S. Huebner (1959). *The Economics of Life Insurance*, 3rd ed., New York: Appleton-Century- Crofts, Inc.,
