

# **WHEN THE CUSTOMER WRITES HIS OWN STORY**

## ***A SEGMENTATION SCHEME FOR THE LIFE INSURANCE MARKET***

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### **ABSTRACT**

The marketing strategies of life insurance companies are quite different compared to other businesses because life insurance products are not “bought” but are “sold”. Insurance agents play a significant role in sales and market segmentation analysis for most insurance companies. In this paper, a supplementary marketing scheme using mind-mapping, Fuzzy Analytic Hierarchy Process and Network Analysis is proposed.

The scheme is a customer-based market segmentation in which the decision of the company on which products to be offered is mainly based on the customer-fed information taken by its agents. This customer-focused idea can be captured by doing a mind-mapping activity. The customer can tell and express the essential things they see important in buying insurance. The mind-mapping technique is like letting the clients write their own story. Fuzzy AHP is the extension of mind mapping. It gives quantitative ranks to the top factors determined from the mind map.

Network Analysis is a new technique used to segment the customers. The Network Analysis is the integration of all the outputs from the mind map and Fuzzy AHP. This will group the customers based on demographics, psychographics, priorities and other factors. This is helpful in customer profiling in two ways: Product Matching and Semi-Personalized Customer Care.

Keywords: Fuzzy AHP, Mind Mapping, Network Analysis, Market Segmentation, Insurance

## INTRODUCTION

Life insurance is not just about business, it is also personal. It is personal because it addresses very personal issues of the policyholder. Life insurance gives a policyholder peace of mind, as it assures financial assistance to the policyholder's family when untimely demise or illness happens to the policyholder. It is known to provide protection against financial losses for a variety of perilous incidents.

The marketing strategies of life insurance companies are quite different compared to other businesses because life insurance products are not "bought" but are "sold". Unlike the products offered in the grocery stores, insurance policies are usually offered through agents. Insurance sales agents act as financial consultants, i.e. they help individuals to choose the most applicable insurance products. Functions of insurance agents include preparing of reports, keeping of records and looking for new clients. And since life insurance is personal for the policyholder, the approach of selling could also be personal.

Insurance agents play a significant role in market segmentation analysis for most insurance companies. Good market segmentation analysis is a key for the success of the insurance business, especially during financial crisis. In this paper, three techniques were incorporated, namely mind mapping, Fuzzy Analytic Hierarchy Process (Fuzzy AHP) and Network Analysis, to devise a market segmentation scheme. The scheme is a customer-based market segmentation in which the decision of the company on which products to be offered is mainly based on the customer-fed information taken by its agents. This supplementary scheme would help in developing marketing strategy, especially in taking good care of the clients.

It is now a trend to focus more on the customer than to focus on the products or operations of the business establishment. This customer-focused idea can be captured by doing a mind-mapping activity while selling insurance policies. The customer can tell and express the essential things they see important in buying insurance.

The mind-mapping technique is like letting the clients write their own story. The story that can be derived from this activity is not just useful during the selling stage but also to future dealings. It is vital to remember that the success of insurance does not lie on the 1<sup>st</sup>-year premium payments alone, but also on the renewal payments. Moreover, this technique is also useful in the up-selling and cross-selling of other insurance products.

## THE SEGMENTATION SCHEME

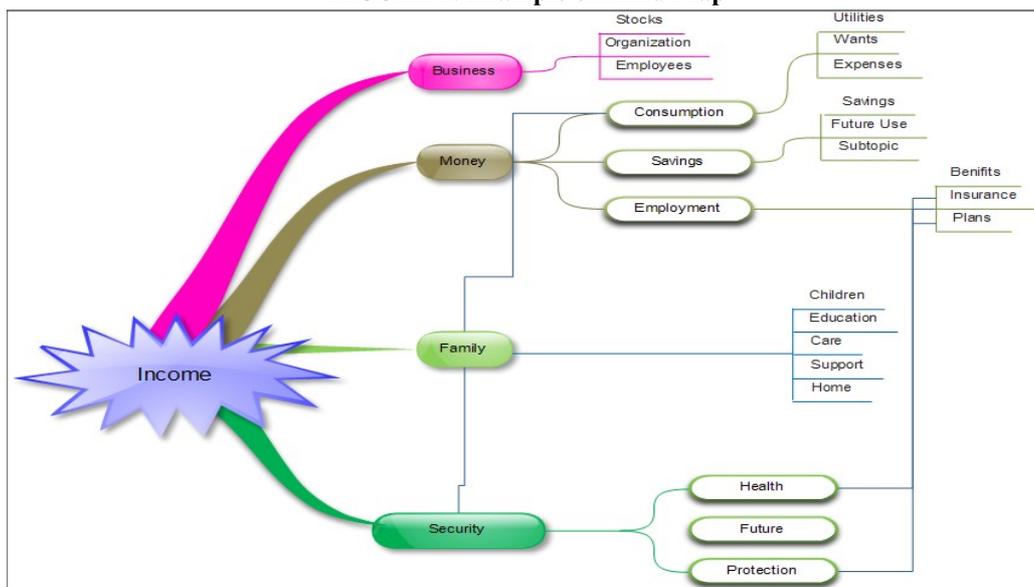
### *Mind Mapping*

The process of mind mapping, popularized by Tony Buzan (Parker & Nozza, 2008) is like making a concept map. It starts with a central concept and then branches out to more, related concepts.

In this process, the insurance sales agents and the clients are the key players. One assumption that must be considered is that the agents must have enough knowledge of carrying out the process of mind mapping. Four things to remember in employing mind maps are: focus on the purpose, keep the map simple, write less but talk more, and have a comprehensive view of the map (Parker & Nozza, 2008). In mind-mapping, the insurance company can give the agents scripts, so that uniform format will be attained.

Before getting insurance, there are factors that need to be considered such as customer's need and wants, demographics, psychographics and behavior. The sales agent collects demographical and psychographical data from each person. The latter is gathered through the use of mind mapping. The sales agent which acts as the interviewer will show a concept to the client and ask him to associate things to the given concept. From each newly generated idea, the agent will further ask them to connect things to it. This will be done until enough information is gathered. The top factors are selected based on the number of connections they have generated.

FIGURE 1. Example of Mind Map



### **Fuzzy AHP**

Fuzzy AHP is the extension of mind mapping. It gives quantitative ranks to the top factors determined from the mind map (Taha, 2007). Fuzzy AHP is used instead of traditional AHP to capture the uncertainty in human judgment.

In the works of Feng Kong and Hongyan Liu (2005), they applied the Fuzzy AHP in determining the key factors affecting success in E-commerce that may be useful for manager in determining its drawbacks and opportunities and for further researches. Lin *et al* (n.d.) used AHP in determining marketing strategy for private hotels in Taiwan for competitive advantages on managerial capabilities, customer linking capabilities, market innovation capabilities, human resource assets and reputational assets. Another useful application of Fuzzy AHP in marketing can be seen in the works of Verma (n.d.) which showed the application of Fuzzy AHP in vendor selection in a highly dynamic marketing environment.

To decide which priorities (called as criteria) should be ranked first, second, third, and so on, Fuzzy AHP is used. The traditional AHP employs Saaty's scale in which the priorities are given weights based on the judgment of the client involved.

**TABLE 1. Saaty's Scale for Pairwise Comparison**

Saaty's scale	Relative importance between two priorities
1	Equally important
3	Moderately important with one over another
5	Strongly important
7	Very strongly important
9	Extremely Important
2,4,6,8	Intermediate Values

The comparison matrix  $A$ , which follows on the client's judgment between the relative importance between two factors, is constructed.

$$(1) \quad A = \begin{matrix} & \begin{matrix} \text{Factor 1} & \text{Factor 2} & \text{Factor n} \end{matrix} \\ \begin{matrix} \text{Factor 1} \\ \text{Factor 2} \\ \vdots \\ \text{Factor n} \end{matrix} & \begin{bmatrix} a_{11} & a_{12} \dots & a_{1n} \\ a_{12} & a_{22} \dots & a_{2n} \\ \vdots & \vdots & \vdots \\ a_{n1} & a_{n2} \dots & a_{nn} \end{bmatrix} \end{matrix}$$

The matrix above is transformed into a fuzzy comparison matrix with a different membership scales shown below (Kong and Liu, 2006).

**TABLE 2. Scale for Fuzzy Pairwise Comparison**

Scale values	Relative importance between two criteria
0.5	Equally Important
0.55(or 0.5, 0.6)	Slightly Important
0.65(or 0.6, 0.7)	Important
0.75(or 0.8, 0.9)	Strongly Important
0.85(or 0.8, 0.9)	Very Strongly Important
0.95(or 0.9, 1.0)	Extremely Important

The scales used in the table follows the relationship:

$$(2) \quad r_{ij} = \frac{a_{ij}}{a_{ij} + 1}$$

The priority weights  $W = (w_1, w_2, \dots, w_n)$  are determined using the following formulas:

$$(3) \quad w_i = \frac{b_i}{\left[ \sum_{j=1}^n b_j \right]}$$

where,

$$b_i = \frac{1}{\left[ \sum_{j=1}^n \frac{1}{r_{ij}} \right] - n}$$

The consistency of the generated comparison matrix is determined using the consistency ratio,  $CR = (\text{Consistency Index of matrix } A) / (\text{Random Consistency of matrix } A)$ .

As an example, the three priority rankings namely family, business and leisure are considered. Take for example that each priority is compared with each other using the Saaty's scale: Business is three times more important than Family, Leisure is fives more important than Business and Family is eight times more important than Leisure.

Using this, a comparison matrix presented below is constructed showing the relative importance between two priorities.

$$(4) \quad \begin{array}{c} \text{Business} \quad \text{Family} \quad \text{Leisure} \\ \left[ \begin{array}{ccc} 1 & 1/3 & 1/5 \\ 3 & 1 & 8 \\ 5 & 1/8 & 1 \end{array} \right] \begin{array}{l} \text{Business} \\ \text{Family} \\ \text{Leisure} \end{array} \end{array}$$

The original comparison matrix is then transformed into a fuzzy comparison matrix using the relationship  $r_{ij} = \frac{a_{ij}}{a_{ij} + 1}$ .

$$(5) \quad \begin{array}{c} \text{Business} \quad \text{Family} \quad \text{Leisure} \\ \left[ \begin{array}{ccc} 0.111 & 0.25 & 0.167 \\ 0.75 & 0.107 & 0.094 \\ 0.883 & 0.899 & 0.755 \end{array} \right] \begin{array}{l} \text{Business} \\ \text{Family} \\ \text{Leisure} \end{array} \end{array}$$

Using the transformed matrix, the priority weights are calculated.

$$(6) \quad W = \begin{bmatrix} 0.283905 \\ 0.336879 \\ 0.379216 \end{bmatrix}$$

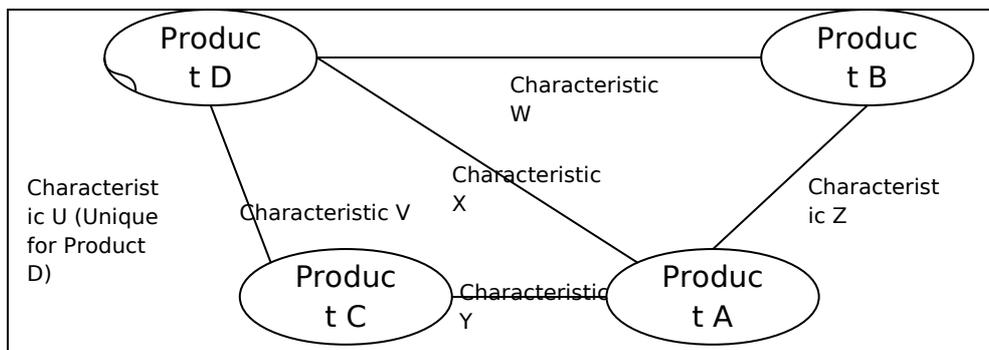
### *Network Analysis*

Network Analysis, which uses concepts in Graph Theory, is usually used in Sociometry and Organizational Network Analysis (Hart, 2005). In this paper, the authors are proposing Network Analysis as a new technique in grouping the customers. Not just demographic and psychographic profiles are to be considered, but also the relatedness of the stories of the customers. This segmentation scheme will help in the product matching and follow-up marketing activities of the insurance companies. The companies can create semi-personalized marketing strategies based on the identified segments.

The Network Analysis is the integration of all the outputs from the mind map and Fuzzy AHP. This will group the customers based on demographics, psychographics, priorities and other factors. This is helpful in customer profiling in two ways: Product Matching and Semi-Personalized Customer Care. The reciprocal of ranks from the Fuzzy AHP can be converted into weights of the connections or edges, making the connections bidirectional. Or, the weight of a directed edge can be equal to the summation of the reciprocals of priority ranks of connections between two nodes. Network Analysis can be done using freewares such as Agna (Benta, 2003) and Ucinet (Borgatti, 1996).

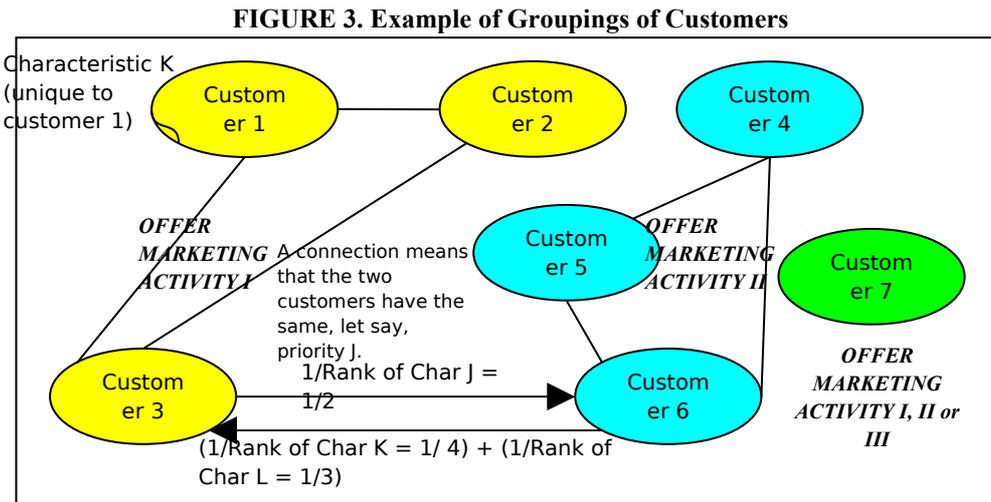
*Product Matching:* If Product A is for people with Characteristics X, Y and Z; then this product could be offered to the customer having Characteristics X, Y and Z. Characteristics can be demographics, psychographics, priorities, stories, etc. of the customers.

**FIGURE 2. Example of Product Matching Based on Customer's Characteristics**



*Semi-Personalized Customer Care:* If a certain advertisement or marketing activity is for people with Characteristics J, K and L, then this activity could be exhibited to the clique closely possessing these characteristics. Currently, Artificial Neural Networks, Cluster Analysis and other multivariate statistical analysis are used for grouping customers. However, Network Analysis is a new data mining technique, which

does not only give list of groups but can also give visualization of the grouping. From this technique, the insurance company can also determine what kind of customers the agents tap. A purely personalized customer care is very costly, so a partially personalized customer care is acceptable.



Outside underwriting considerations, the customers can be grouped based on the combination of factors, which includes: demographics (age, gender, civil status, income, education, profession/occupation, location, family size, religion, nationality, etc.) and psychographics/lifestyle (spending patterns, future plans, brand preference, etc.). The choice of insurer based on the price of insurance policies is not a major concern for customers since the prices are usually uniform in the industry (Philippine setting).

### CONCLUDING REMARKS

There are limitations of the model. Customer profiles need to be updated frequently, e.g. 2 to 3 years. Powerful softwares should be used for a large database. However, the possible benefits that can be obtained from the model offset the costs and limitations.

The insurance agents play a significant role in the implementation of the proposed market segmentation model. From mind mapping to Fuzzy AHP until the Network Analysis, the information taken by the agents from the customers is vital. Personalized customer care is the main goal of this market research strategy. The

demographics and psychographics of each customer should be considered by the insurance companies, in order to have a robust product matching. Indeed, the customer “stories” must be heard, and this will help the insurance industry spread the benefits of having financial protection.

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