

Customer Loyalty and Profitability: Empirical Evidence of Frequent Flyer Program

Enny Kristiani¹, Ujang Sumarwan^{1,2}, Lilik Noor Yulianti^{1,2} & Asep Saefuddin^{1,3}

¹ Graduate School of Management and Business, Bogor Agricultural University, Indonesia

² Department of Family and Consumer Science, Bogor Agricultural University, Indonesia

³ Department of Statistics, Bogor Agricultural University, Indonesia

Correspondence: Enny Kristiani, Graduate School of Management and Business, Bogor Agricultural University, Jl Padjajaran, Bogor, Indonesia. Tel: 62-811-98-5443. E-mail: enny.kristiani@yahoo.com

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Abstract

The aim of loyalty reward program is to retain profitable customers to the organization. Airline loyalty program such as frequent flyer program (FFP) is a phenomenon in marketing strategy used by airline industries to maintain customer loyalty and gain more financial benefit. However most airlines have very little understanding of their FFP members yet have little knowledge about their most valuable customers. This study aims to determine customer value to the company in the context of aviation loyalty reward program in Indonesia based on RFM analysis as well as to analyze the correspondence between the members' value and their socio-demographic profile. This study used a proprietary dataset from a FFP' membership of an Indonesian airline. The empirical result shows that axiomatic 80/20 rule is fit well on this FFP. Around 75% of the revenues come from only 20% of the members. Furthermore, seven segments of the FFP members are identified sequentially from the most valuable to the least valuable customer to the airline. *Top Members* generate the highest revenue and the highest RFM whereas *Inactive Members* are the least valuable customers. In summary, high value members are dominated by male members, age 46-55 years, having elite tier levels (Platinum & Gold) and working as a director and or an owner of the companies. The result contributes to the industry in developing marketing strategy, enhancing customer loyalty and implementing accurate marketing functions in term of FFP. The study offers a more accurate model for FFP member valuation than just simply based on the miles flown.

Keywords: frequent flyer program, profitability, segmentation, RFM, correspondence analysis

1. Introduction

The key-roles of Loyalty Reward Program (LRP) are "loyalty" as the primary goal of loyalty program, and "reward" as the key instrument for attaining it (Yuheng, 2011). The basic concept of LRP is to enhance customers' long-term profitability in term of customers' lifetime value as a form of equity (Yuheng, 2011). Reward has proven strongly in influencing customers' making decision and also their behavior changes as well (Gomez et al., 2006). A successful loyalty program increases value-proposition of the product, retains loyalty and hence preserves the profitability from the customers (Kumar & Petersen, 2005).

The best known example of successful loyalty programs in airline industry is a frequent flyer program (FFP) (Kim et al., 2001; Browne et al., 1995). This marketing strategy is used by airline industries to maximize their profit and retain their loyal customers. Having grown at exponential expansion, FFPs are notorious as the largest membership of loyalty program with more than 120 million members enrolled in one or more of the 200 FFPs globally (McCaughy & Behrens, 2011). FFP awards generally reward loyal and frequent customers in the form of loyalty currency which can be used for free flights, upgrades, shop products, and other services. Having considered as a part of payment systems, frequent flyer miles represent one of the world's most popular currencies (Dreze & Nunes, 2004).

However the effectiveness of FFP has been argued because of the huge operating cost involved (Yang & Liu, 2003). How do the programs affect beneficial outcomes for the airline? FFP costs to the airline of \$2M to \$12M for the investment and about \$3 to \$20 per member per year just for offering the benefits (O'Connel, 2009). Economic benefits range from award and upgrade tickets to shop product, while social benefits include priority

check-in, boarding, reservation, extra baggage allowances or airport lounges access. In the meanwhile, most airlines commonly offer generic benefit scheme to their FFP members (Tirenni et al., 2007). This “one size fits all” strategy is indeed very costly yet ineffective because each type of customer segmentation has been exposed to the same treatment regardless their particular preferences pertaining to the benefits (Suzuki, 2003; Martin et al., 2011).

In general, most airlines have very little understanding of their FFP members and have yet little knowledge about their most valuable customers (O’Connel, 2009). They mistakenly use inaccurate model for customer valuation which is simply based on miles flown regardless of ticket fare (Tirenni et al., 2007; Yang & Liu, 2003). The customer values have normally been determined only by current tier of the loyalty program rather than lifetime values. As a matter of fact, the highest tier’ members are not necessarily the most profitable nor loyal customers to the airline (Tirenni et al, 2007). These kind of members might even not generate profitable revenue to the airline yet very costly in serving their premium services. Therefore, it is crucial for airline to accurately identify its valuable customers and effectively target them to sustain long-term relationship benefit of the firm as well as of the customers.

Profitability is not always aligned to the most loyal customers and hence they are not necessarily the most profitable (Reinartz & Kumar, 2000). Because profitability is the final outcome of business performance, it is important for the airlines to determine whether FFP members do add financial value to the firm considering profitable customers are not necessarily the loyal customers. Basso et al. (2009) found the possibility that even with higher ticket price, FFPs eventually erode airline profitability. The fact that prices and profits move in opposite directions with FFP caught airline in a prisoner dilemma situation. Airline must align its business objective by reducing the costs to running FFP while maximizing the lifetime value of its members in order to define the marketing effort and to target members accurately.

Loyalty is defined as repeated purchase of particular product or services during a certain period of time. Referring to the behavioral approach, a loyal customer is defined as customer who regularly purchases the same brand or about repeated transaction (Jacoby & Chesnut, 1978). Loyalty programs are strongly related to behavioral loyalty for frequent travelers. Behavioral loyalty is easy to be observed based on the customer database. Based on this behavioral approach, loyalty is measured by actual purchase behaviors, such as: purchase sequence, retention rate, RFM (Recency, Frequency, Monetary value), and purchase probability (Lichtle, 2008). In this study, behavioral loyalty is observed based on RFM elements which are observable in the FFP database. By having a better understanding on the targeted customer segment and what do they want, particularly in terms of determining consumer behavior and control market trends, airline could select customer to be nurtured to increase future profitability and run targeted marketing campaigns by performing customer tracking. Customer tracking and database marketing allow airline to access the values of individual customer for generating revenue (Baso et al., 2009). Kaymak (2001) pointed out that the RFM model is one of the well-known customer value analysis methods. Previous scholar also stated that RFM method is very attractive attributes for customer segmentation (Newell, 1997).

While FFP has attracted a great deal of attention in the transportation and marketing literatures, there has been relatively little formal segmentation modeling of FFP by academics (Basso et al., 2009). Market segmentation is developed through different marketing activities. It can be said that the process of segmentation requires the knowledge of the characteristics of its own customers in order to confirm if they are coherent with the corporate objectives (Montinaro & Sciascia, 2011). This study becomes unique by utilizing actual FFP data from an airline to determine the financial value of FFP members of an established airline. Research with access to actual FFP data from an airline is still uncommon (McCaughy & Behrens, 2011). Meanwhile, to our knowledge, there has been no research on frequent flyer program of Indonesian airlines. Hence, the identification of the value of FFP members to the airline has not been thoroughly observed yet. This result contributes to the knowledge of aviation loyalty reward program by improving the effectiveness of the program from the aspect of reducing the costs of the FFP while capitalizing on the lifetime value of the members. It revealed a correlation of the value of the members with their specific socio-demographic characteristics. The result contributes to the industry by defining more accurate FFP’ member valuation by involving transaction and socio-demographic profiles than just tier of the loyalty program.

The remainder of this paper is structured as follows. Section 2 describes the data & method, followed by Section 3 for the empirical result & discussion. Finally, Section 4 concludes the study.

2. Methodology, Variable and Data

2.1 Methodology

In the first part of the study, the value of the members is modeled by the development of RFM using Principal Component Analysis (PCA). The second part analyzes the segmentation of FFP members. Clustering evaluation using R-Square value is used to define the optimum number of clusters, followed by customer clustering by K-Means algorithm. In the third part, correspondence analysis is implemented to analyze the customers' segment and their socio-demographic profiles.

2.1.1 Modeling RFM

RFM analysis depends on Recency (R), Frequency (F), and Monetary (M) variables based on customer's transaction profiles. Previous scholars (Hughes, 1994; Lin et al., 2010) mentioned that RFM is the most accurate method to predict customer future behavior compared to any possible combination of demographic analysis because RFM exactly measures what people do: when they buy, how often they buy, how much they buy. RFM score represents customer's purchasing behavior and his/her profitability value for the company (Wei J et al., 2010). From the view of the consuming behavior, RFM score is related to the strength of customer relationship and hence, it also represents customer loyalty (Schijns & Schroder, 1996).

Long-established literature believes that the three variables of the RFM model are equal in the importance; therefore, the weights of the three variables should be identical (Hughes, 1994). On the other hand, more recent literatures (Liu & Shih, 2005; Shen & Chuang, 2009) indicate that the three variables are different in the importance depending on the characteristic of industry. Thus, the weights of the three variables are not equal. In this study, the weight of the variables are defined using Principal Component Analysis (PCA), a statistical approach that is used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (Hair JF et al., 2010). The model of CLV RFM Score is represented by the following empirical model.

$$Y = a(R) + b(F) + c(M) \quad (1)$$

Where,

a,b,c = weighted principle component variable, in which a,b,c refer to Recency Score, Frequency Score and Monetary Score, respectively

R = Recency

F = Frequency

M = Monetary

2.1.2 Segmentation

The optimum number of FFP member clusters is defined by R-square (RS) analysis. RS is used to measure the dissimilarity of clusters. Formally it measures the degree of homogeneity between groups of FFP members. The values of RS range for 0 to 1 where 0 means there is no difference among the clusters and 1 indicates that there is significant difference among the clusters. K-means analysis is then used to segment the FFP members. The K-means algorithm for portioning is based on the mean value of the objects in the cluster.

Furthermore, correspondence analysis is used to identify the systematic correlation amongst variables. This analysis converts frequency table into graphical displays in which rows and columns are depicted as points. In this study, the sample is classified into 3 different customer value categories based on the RFM score: low, medium and high value segmentations. The RFM score is correlated with the socio-demographic profiles of the members (gender, age, and frequent flyer tier level). The result is then compared to the outcomes of K-Means clustering.

2.2 Variable & Measurement

The social-demographic variables are selected from three aspects, including age, frequent flyer tier level, and profession of the FFP members. The variables in this study refer to three measurements on RFM score, which include recency, frequency and monetary. Table 1 shows definition of basic RFM model parameters and adapted RFM parameters in this study.

Table 1. Variables RFM

No	Construct	Measurement	Scale
1	RFM	Recency + Frequency + Monetary Using Principal Component Analysis (PCA) for the weights	Ratio
2	Recency	Time period since the last purchase. It was transformed to ratio by assigning point based on the quintiles concept.	Ratio
3	Frequency	The number of purchase transactions that a customer has made within 2012	Ratio
4	Monetary	Revenues of the company from each member collected in 2012 in standardized unit (based on customer's transaction in purchasing the tickets).	Ratio

Total revenue obtained from the ticket payments is defined as total monetary amount made by the customers to the airline. The airline offers sixteen different fare types per flight hence the generated revenue per transaction was calculated based on each ticket fare. This monetary value is transformed to standardized unit (z-score). The type of raw dataset for frequency and monetary has been identified as a ratio, whereas the recency data was first converted into ratio by assigning point based on the quintiles concept. The date of last transaction is divided into five equal-sized groups with different score (assigned from 1 to 5) with the same allocated number for each score. Following the more recent the transaction date is the higher the score, the allocation for the recency score is presented in Table 2.

Table 2. Recency score detail

Score	1	2	3	4	5
Year	2012	2012	2012	2012	2012
Month	Jan 1 - Feb 16	Feb17- Mar 14	Mar15- May 03	May 04- Aug 21	Aug 22- Dec 31
Qty	1336	1327	1364	1344	1342

2.3 Data

This study used a proprietary dataset from a Frequent Flyer Program' membership of an Indonesian airline. Total 594,302 populations are identified. The sampling technique is a combination of stratified and systematic random sampling. Stratified sampling is determined based on the tier level then the individuals are chosen based on systematic random sampling.

The sampling unit is individual member who was registered in 2012. The optimum sample size (n) is 9,431 out of total members (594,302) according to Krejcie & Morgan (1970) for 95% of confidence level and 0,01of margin error.

Total financial transactions of 9,431 FFP members during 2012 as well as their characteristics are included in the dataset. The FFP program of the associated airline is offered based on four status tier categories e.g. Blue, Silver, Gold and Platinum.

3. Analysis & Discussion

3.1 Statistical Description

3.1.1 Correlation Analysis

PCA analysis requires the variance between the observed variables. Pearson correlation is used to calculate the correlation value between each variable: Recency, Frequency and Monetary. The result is presented in Table 3.

Table 3. The Pearson correlation among recency, frequency & monetary

	Recency	Frequency	Monetary
Recency	1.000	0.131	0.119
Frequency	0.131	1.000	0.686
Monetary	0.119	0.686	1.000

From table 3, the strongest correlation is 0.686 which lies between Frequency and Monetary. It indicates that the higher number of flight activity is always followed by the higher amount of transaction in financial form. This is

a normal situation because the more customers take flight traveling means the more customers spend money for purchasing activity. Hence, it shows high correlation between these variables. On the other hand, the correlation between Recency and Frequency is slightly weak so is the correlation between Recency and Monetary. It can be concluded there is no such a strong relationship between the latest transaction activity with the frequencies and the total amount of spending of this customer doing transactions.

3.1.2 RFM score

RFM score represents an accurate indicator of behavioral loyalty of FFP members to the airline. By having 89.5% of the total variance, the equation (1) of the weighted PCA for RFM score is found as the following:

$$RFM\ Score = 1.009 (R) + 0.546 (F) + 0.55 (M) \quad (2)$$

Based on equation (2), the maximum importance of the members' transaction behavior to the airline is recency. Meanwhile, monetary and frequency have a slight difference in affecting the profitability value for the airline. The fact that recency is the most important factor representing FFP member's purchasing behavior and their profitability is in accordance with the previous studies of Reinartz & Kumar (2000) and Tirenni et al. (2007). Frequency as the least important component of RFM score was also identified by Reinartz & Kumar (2000) on their non-contractual setting research.

The range of RFM Score of the members is found on a range -0.5759 until 87.7251.

3.1.3 Segmentation

Based on RS analysis, 7 (seven) clusters are found as the optimum number of FFP member clusters with total variance of 98%, as presented in Figure 1.

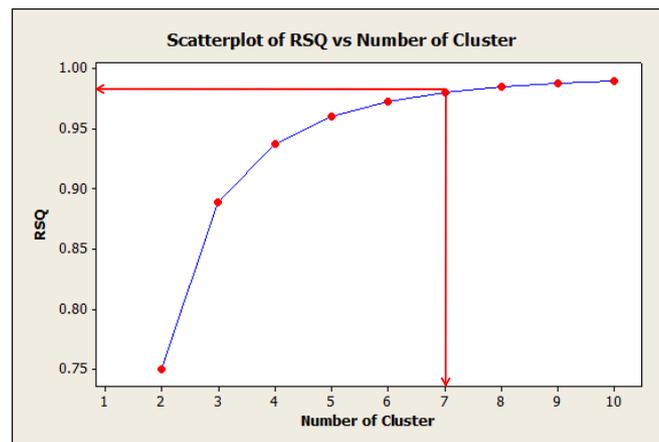


Figure 1. The optimum number of clusters

K-Means analysis then generates seven clusters in this dataset with the membership structure per segment as described in Table 4. Each cluster is assigned a unique named based on the rank of customer values for the airline. Specifically, "Top Members" is for the most valuable cluster, followed by "Next Best Members", "Active Members", "Average Members", "Base Members", "Infrequent Members", and "Inactive Members" as the least valuable customers.

Table 4. Membership structure per segment

Segmentation	Member Count %	Avg Age	RFM Score	Tiers	Avg Freq	Rev/member (IDR Mio)	Total Rev, cum %
Top Members	0.1%	49	48.3	Platinum, Gold	43	353.71	4%
Next Best Members	0.4%	52	45.3	Gold, Platinum	56	192.59	11%
Active Members	1.1%	48	32.1	Gold	43	98.99	23%
Average Members	3.5%	47	21.3	Gold, Silver	29	52.52	42%
Base Members	9.0%	45	12.7	Silver	17	25.77	65%
Infrequent Members	24.9%	42	7.3	Silver, Blue	8	10.08	91%
Inactive Members	61.0%	42	2.32	Blue	2	1.51	100%

3.2 Differences in Revenue Share

The sample shows that 20% of the members contribute to almost 75% of the total revenue as presented in Figure 2. The Law of Vital Few or the axiomatic 80/20 rule, a rule of thumb in business that 80% of revenues come from 20% of customer, is well applied in this frequent flyer program. The high-value segments (*Top Members*, *Next Best Members* and *Active Members*) contribute to 23% revenue of the company only by 1.6% of the members. These segments also produce active flight transactions. The mid-value segments constitute of 2 segments, involving *Average* and *Base Members* with 1185 members or 12.6% of the total FFP members. This mid-value segment contributes to 43% of the revenue. On the other hand, low-value clusters (*Infrequent* and *Inactive Members*) comprise of more than 85% of the total members but only contributing for 35% of the total revenue.

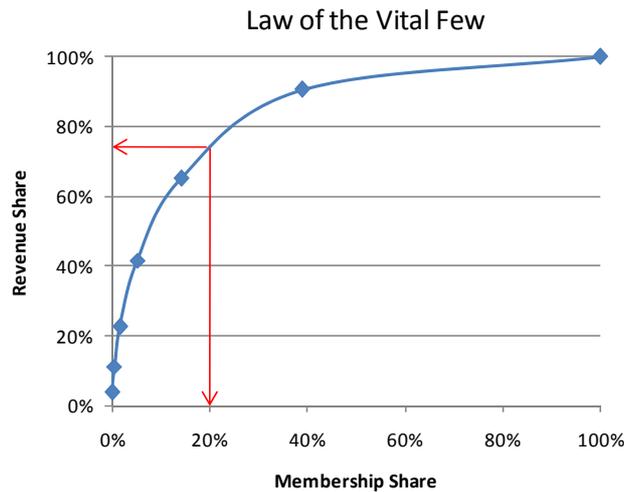


Figure 2. Law of the vital few

Segment of *Top Member* generates the highest revenue as well as the highest RFM per member. Hence, this cluster consists of the most valuable customers to the airline. The least valuable customer is identified as the cluster of *Inactive Members*, contributing the lowest RFM as well as the lowest profitability per member to the airline. Figure 3 shows the profitability of each cluster.

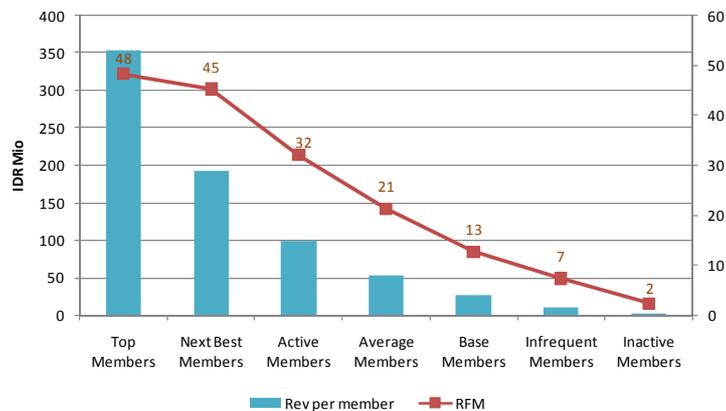


Figure 3. Average revenue and RFM per segment

3.3 Member Valuation

The following is member characteristic per each cluster sequentially from the most valuable to the least valuable

customer to the company.

Top Member, has the smallest portion of the total members, only 0.1%. However, they contribute to 4% of the total revenue of the airline as they generating the highest average revenue per member. This cluster also has the highest average of RFM score. The members consistently use this airline throughout the year. It indicates that the members do not only contribute to the highest profitability but also the most loyal to the company. They are the most valuable members to the airline. Almost all of the members come from Platinum Tier with the average of age 49 years old. From the mileage balance point of view, the company has the biggest liability towards these members.

Next Best Member, has a few members, only 0.4% of the total members. Members on this cluster are classified as the highest frequent of transactions throughout the year, reaching the average number on 56 transactions per year. Moreover, they generate the second highest average RFM score and revenue per member. The members mostly come from Gold Tier and smaller portion of Platinum members. The average of age is 52 years old.

Active Member, has also a few members, 1.1% of the total members. Members do frequent flights, 43 transactions throughout the year. This cluster has the third rank of average RFM score as well as revenue per member. Most members come from Gold with the average age of 48 years old. The value of the members from this cluster is slightly above average.

Average Member, is composed of 334 members or 3.5% of the total members. Members from this cluster do average transactions which are represented by having average of RFM score, recency, frequency, and monetary per member. Most members come from Gold and Silver Tiers with the average age of 47 years old.

Base Member, has 851 members or 9% of the total members. Members on this cluster are classified as below average member as the RFM score, recency, frequency and monetary of each member is below means. Members come from Silver Tier with the average age of 45 years old. The company should effectively target this segment to enhance the profitability value. This clustering result could be of particular interest for the airline in developing different marketing policies and specific campaigns tailored to this segment. By doubling up the average revenue per *Base Member*, the airline can then count this segment up as the *Average Members*.

Infrequent Member, is composed of almost a quarter of the total members. Members on this cluster contribute low benefit to the company. They are classified as *Infrequent Members* because they only take not more than 8 flights per year in average. Most members come from Blue and Silver Tiers with the average age of 42 years old.

Inactive Member, is a major portion of the members, 61% of the total members. Members on this cluster contribute the least benefit to the airline and hence classified as *Inactive Members* because not only the monetary but the recency and frequency values are also very low. Therefore, this cluster indicates the lowest value of the customer. Most members come from Blue Tier with the average age of 42 years old.

In summary, the result of K-Means segmentation analysis indicates that high & mid-value members only constitute 14.2% of the total members while they generate 65% of the revenue to the airlines. The value of the member moves in the same direction with the tier level of FFP, the revenue generated, and the RFM of the member. The high-value segments involve *Top Member*, *Next Best Member*, and *Active Member*. Platinum and Gold Tier dominated the high value members. In term of age, the members generate more value as getting older. Members with age beyond 48-52 dominated high value segments. It is surprisingly that most of the members, almost 85% of the total members, are classified as low valuable customer (*Infrequent* and *Inactive Members*). *Average* and *Base Members* can be classified as one of the next valuable members who need to be targeted intensively by the airline due to their consistent engagement of transaction behavior with the company. By focusing of the value enhancement on these segments, the airline will minimize the cost and maximize the profit.

3.4 Correspondence Analysis of Segmentation and Socio-Demography of Members

The segmentation of member value based on RFM score is only captured the behavioral transactions of the members. The other aspects, such as demographic and psychographic approaches, are also important to be considered in developing accurate marketing strategy per each segment. The result gives much better figures on what segment to be approached, what segment to be further developed and what segment to be left. The RFM score is divided into three equal-sized group, specifically: low ($RFM \leq 5.2981$), medium ($5.2995 \leq RFM \leq 8.4152$) and high ($8.4162 \leq RFM \leq 87.7251$) value segmentations.

3.4.1 Member Valuation by Ages

The RFM score which representing customer value category is correlated with the age of the members. The following chart presents the similarity of each segment with age of the members. Marketing treatment for

segment with different age is not necessarily similar. Young members will certainly need different marketing approach to mature members.

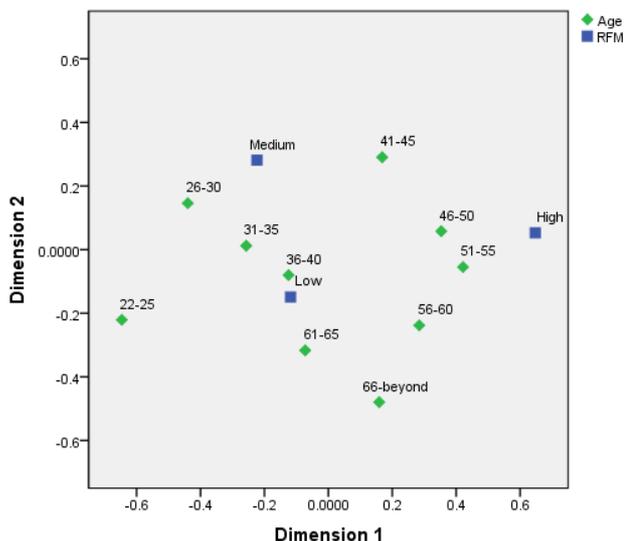


Figure 4. Correspondence analysis of RFM score by ages

From the above chart, high value segment is dominated by members whose age range 51-55 and then followed by 46-50 years old members. Segment of young members (26-30 years) are prospective members of whom the airline should effectively target to improve the customer value to the company. This result confirms the outcome of K-Means segmentation analysis that high valuable customers (*Top Members, Next Best Members and Active Members*) are in the range of 48-52 years old.

3.4.2 Member Valuation by Tier

The RFM Score which representing customer value category is correlated with Frequent Flyer Tier levels of members.

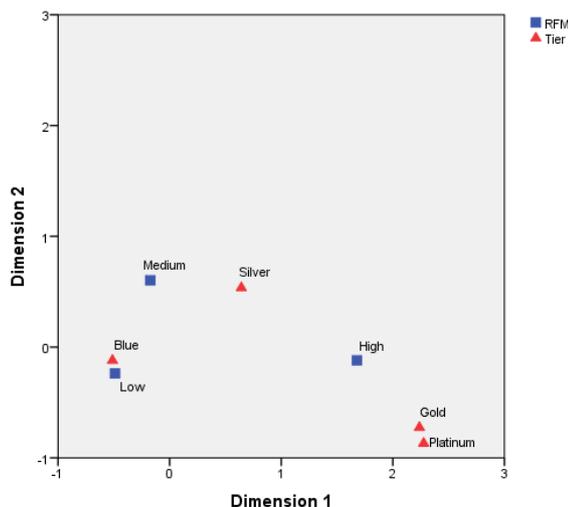


Figure 5. Correspondence analysis of RFM score by tiers

This above chart also supports the outcome of K-Means segmentation analysis that Platinum and Gold Tiers are high valuable customers while Blue Tiers are on the contrary. Silvers Tiers are close to medium segmentation. This analysis enriches the determination of FFP member valuation by also considering the transaction profiles (RFM) instead of sole tier level.

3.4.3 Member Valuation by Profession

The RFM Score which representing customer value category is correlated with the position of members.

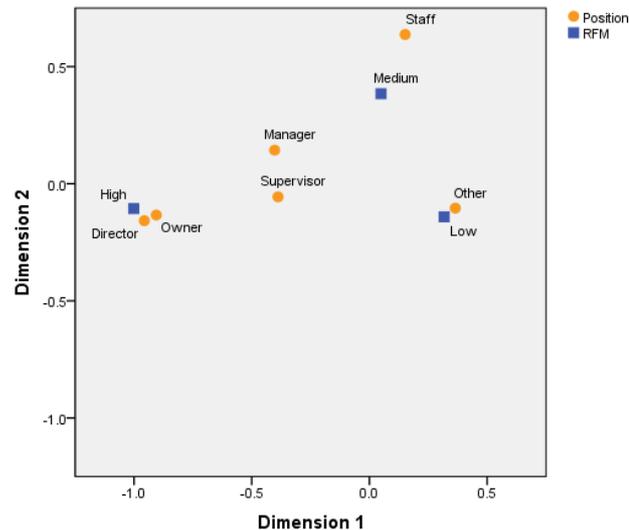


Figure 6. Correspondence analysis of RFM score by position

The corresponding chart above shows that high value segment is mainly composed by members who are the owner and or director of the companies.

In summary, the result of correspondence analysis indicates that high-value members based on RFM concept is dominated by FFP members whose age 46-55 years, Platinum & Gold Tiers, and having profession as director and or owner.

3.5 Segmentation and Customer Loyalty

The outcome of the study is FFP' member segmentation in a quantifiable way based on actual purchase transactions to analyze the profitability of the customers and also identify their behavioral loyalty to the airline. Key drivers of behavioral airline loyalty depend on market segmentations. Each customer segment has different behaviors and needs from the airline, and therefore needs different relationship marketing approach.

The high-value creating members (*Top Member, Next Best Member, Active Member*) are not only generating high profitability but also the most loyal customers referring to the consistently repeated transactions behavior. They are identified with high recency-high frequency-high monetary. These segments, the lifeblood of the business, should be properly managed to maintain a strong relationship with the airline, i.e. engagement program. It is significant to keep loyal customer as the cost for retaining existing customer is only one fifth of cost for acquiring new customer (Reichheld, 1996). Moreover, customer who is engaged in strong attitudinal attachment and high behavioral patronage with a product or service will form true loyalty (Backman & Crompton, 1991). This type of loyalty has the strongest immunity against alternative offering and also the most active partner-like activities to the company, such as spreading worth of mouth, making business referrals and providing feedback (Bowen & Shoemaker, 2003).

Customers having low recency-low frequency-high monetary or high recency-low frequency-high monetary are generating high profitability but not loyal to the airline. On the contrary, members with low recency-high frequency-low monetary are considered as loyal customer but not generating profitability yet. These clusters have relatively modest RFM scores and grouped as medium-value creating members. They are much easier to be transformed to high-value creating members due to similarity of the characters. Value creation of this segment

can be enhanced through program of customer capitalization, i.e. up-selling revenue by campaign on increasing & upgrading flights and also the need fits program.

The least-value creating members (*Infrequent Member* and *Inactive Member*) cover the majority of the members. They are identified with low recency-low frequency-low monetary and amongst the least in value creation for being low profitable and not loyal customer. This segment is associated with silent and trial members. Therefore, the customer relation strategy should focus on customer reactivation program to win customer back.

From this segmentation it is expected that company can make a better marketing approach toward each segment thus it can minimize the cost, enhance the loyalty and maximize the profit.

4. Conclusion

As a development from previous analysis that was focused only on the level of tier, the values of FFP members are determined based on RFM. This analysis represents more accurate lifetime value of the customer than previous tier analysis. As recency is the most important factor of RFM on customer value than the other components, monetary and frequency, airline should prioritize keeping the members to renew the transaction.

The result segmented the FFP members of the associated airline into 7 (seven) clusters, which are: *Top Member*, *Next Best Member*, *Active Member*, *Average Member*, *Base Members*, *Infrequent Member* and *Inactive Member*, sequentially from the most valuable to the least valuable customer to the airline.

The high-value segments (*Top Member*, *Next Best Member*, and *Active Member*) are composed of Platinum and Gold Tiers. Constituting only 1.1% of the members, they generate 23% of the revenues. These types of members become the largest revenue producing segments.

Members generate more value as getting older. Members with age beyond 48-52 dominated high-value segments. Moreover, male members with profession of director/owner are dominated the high value segment.

From this segmentation analysis, a better marketing approach toward each segment can be developed to minimize the cost of the loyalty reward program and maximize the profit to the airline. High-value members should be retained whereas the mid-value of *Average* and *Base Members* should be enhanced to be more productive. The mid-value clusters are classified as one of the next value members who need to be targeted intensively by the airline due to their consistent engagement of transaction behavior with the company. By focusing of the value enhancement on these segments, the airline will minimize the cost and maximize the profit. On the contrary, the airline should not waste its resources other than reactivate program in approaching the least valuable customers (*Inactive Members*) which count around 61% of the members.

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