THE INFLUENCE OF LOYALTY INDEX SCORE ON CONSUMER CREDIT PROFITABILITY

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ABSTRACT

The purpose of this research is to analyze and test the effect of loyalty on consumer credit profitability. The main theory used in this research were loyalty measurement by Churchill (2000) who states that there were three indicators could be used to measure loyalty i.e. customer retention, primary behavior and secondary behavior. Loyalty Index Score was then developed to determine the level of customer's loyalty level through 4 main variables: Longevity, Depth, Breadth and Referrals. The effect of Loyalty Index Score to profitability was further tested by regression analysis to see the significance of loyalty on 3 main aspects:

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revenue collected, credit loss and profitability (revenue collected – balance saved).

Hypothesis testing result showed that loyalty has positive effect to all 3 aspects significantly. It was proven that customer with higher Loyalty Index Score resulted in lower credit loss rate, higher average revenue collected and higher average profitability. the conclusion could be made by using data from personal loan customers in one of the biggest multinational bank in Indonesia during October 2010 until March 2011.

Keywords: Loyalty, Consumer Credit, Credit Risk, Credit Loss, Profitability

I. INTRODUCTION

A.Credit and Loyalty

In credit industry, consumer credit has been one of the main contributors in overall credit growth. The span of products from mortgage, credit card, personal loans, car loan, had made this portfolio grow significantly with the growth of consumer spending and economic improvement post crisis in 1997 until another crisis in 2008 (see Table 1). However, still after 2008 this portfolio leads the growth until now compared to the other portfolio. This fact is actually not so surprising given some supporting factors at macro and micro level such as market relax on credit policy, the salary growth of low level job, better interest rate compared to past years and other factors which finally evolve the business into as it is right now.

This growth however has its impact at individual customer level which will need further attention. As many banks and other financial credit institutions start to lend the products to their potential clients, it is the fact that many of those institutions attempts to approach the same market. The potential customers mainly live in city with an easy access to banks and high education level (at least High School level). Interestingly, other banks also lend multiple products to the same customer with its product variations either through co- branding in credit card, personal loan with car loan and other mix products that made the customer highly leveraged.

Table 1. Credit Lending Growth

Jenis Penggunaan	Dec	Dec	Dec	Dec	Dec	Aug
Type of Use	2005	2006	2007	2008	2009	2010
Kredit Modal Kerja (Working Capital)	142.633	171.118	204.765	247.442	279.264	341.675
Kredit Investasi (Investment)	33.049	37.147	44.578	54.209	63.762	79.803
Kredit Konsumsi (Consumption)	179.225	202.177	253.453	332.294	394.359	448.435
Total	354.907	410.442	502.796	633.945	737.385	869.913

The above practice was a common situation for the past decade especially with the enhancement of analytical software which made data compilation is possible and easy to be translated from one source to another. These practices are simple and very make sense from expense point of view. However, on the other side, this practice also has its own risk especially in consumer credit products where credit risk is one of the main determinants on sustaining the portfolio growth for long term profit. Credit risk will need to be considered especially when it comes to a mass lending through cross selling. Without this in mind, lending will only be aimed to increase sales volume either accounts or receivable inventory with no long term goals.

Long term goal discussion leads to the concept of loyalty, how to measure and strengthen customer's loyalty to gain better long term profit. In credit sector, Churchill (2000) explain some indicators to measure loyalty through a set of baseline data which may gauge whether the efforts to improve loyalty are or are not successful as follow:

1. Customer Retention: The most common indicator of customer loyalty is the retention (or desertion) ratio.
2. Primary Behavior 3-D Loyalty: Company should also monitor the three dimensions of customer loyalty: length (longevity), breadth (range of services), and depth (share of purchases). Longevity is the number of years that clients have accessed the company's services. For companies that offer a variety of voluntary financial services, another measure of client loyalty is the breadth of their relationship. Exclusivity (depth) is also an indicator of loyalty. In fact, the ultimate measure of loyalty is the customer share of purchases.
3. Secondary Behaviour: Referrals, endorsements, and spreading the word are examples of secondary behavior that indicate customer loyalty.

This above approach will be used as the main theory in this paper, mainly on measuring loyalty in credit sector.

II. LITERATURE REVIEW

A. Loyalty and Credit Loss

In general, the risk level of debtors in a portfolio may vary from one to another. To differentiate this, the debtor is grouped into their product type. Depends on its rule and regulations for each company and country, product type is determined mainly by some key points based on (Finlay 2008): Whether credit is provided on a secured or unsecured basis; Whether repayments are amortizing or balloon; Whether the credit agreement is fixed sum or running account; Whether credit is provided on a restricted or unrestricted basis; Whether credit is provided on a credit sale, conditional sale or hirepurchase basis (for restricted credit only); Whether the credit agreement is a debtor-creditor or a debtor-creditorsupplier agreement; The amount of credit available; The term (duration) of the agreement; The cost of credit. If several different charges are applied, then each of these can be considered to be a separate sub-feature of the product.

The product type determines which accounting principles to be followed especially related to revenue and loss recognition. A credit card product will have a different rule with a mortgage product due to its risk level. The difference commonly can be seen on the timing of when the accounts will be written off or how long the days past due to be decided in a portfolio or product.

In real situation service level is also correlated inline with the days past due numbers. Obviously, the highest service level can be seen when the customer stay current, always pay their installment or minimum payment and along with higher days past due, lower service level will be felt by the customer. This is for a simple reason, the money lender will focus on getting the payment to save their asset in the first place rather than serving the customer needs. The trust level for both parties (customer and money lender) will be at risk because both parties has a different interest and priority. Hence, there is a point along the days past due line where customer payment is the only thing matter. This is where Risk mitigation play a big part, to give more alternative options for the customer in making their payment, most of it in terms of payment discount or delayed payment with schedule. Based on this explanation, the first hypothesis can be stated as follow : There is significant influence of loyalty to credit loss (H1)

B. Loyalty and Revenue Collected

Chiung, Wen and Farquhar (2008) develops an empirically tests a model examining the relationship between customer perceptions and financial performance of a merchant bank. The test results for this model indicate that, customer perceptions positively affect financial performance; and customers purchase financial services with dissimilar benefits, all of which come with corresponding attributes, and hence result in different levels of customer satisfaction and behavioral sequence, which is important in reinforcing customers' trust, commitment, repurchase intentions and corporate financial performance.

In other research, Al-Wugayan, Pleshko and Baqer (2007) investigate the relationships among customer satisfaction, customer loyalty, and market share in nearly 700 users of Kuwaiti bank loan services. The investigation results show that only a relationship between loyalty and market share is supported. Based on this explanation, the second hypothesis can be stated as follow: There is significant influence of loyalty to revenue collected (H2)

C. Loyalty and Profitability
D.

Another research by Reicheld, Markey and Hopton (2000) and Oliver (1997) shows the relationship between loyalty and profit. Even though the measurement was made at the high level, it was confirmed that loyalty significantly influence profitability mainly in a long term perspective. Given the result of previous literature review on the relationship between loyalty to revenue collected and loyalty to credit loss, it is also expected that the combination of both revenue collected minus credit loss will give a good hints on profitability at customer level. Hence, based on this statement, the third hypothesis can be proposed as follow: There is significant influence of loyalty to profitability (H3)

III. DATA AND METHODOLOGY

A. Data Collection

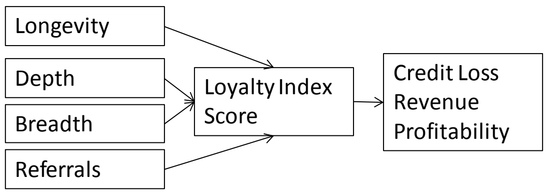
This research was done in one of multinational banks in Indonesia from October 2010 – March 2011. Location of research includes Jakarta, Bandung, and Surabaya. Research was conducted by using descriptive analytical methods to describe processes and phenomena that occur through a quantitative approach based on past historical records for each customer in the sample.

Sampling for this research was done by simple random sampling from list of customers in Bank X. Total sample were 31,700 from population of 100,000 customers. To be included in the sample, minimum month on book was determined at 12 months. In addition, Sampling was done by classifying the population into 4 groups (Non Delinquent – Normal Capacity to pay, and Delinquent – Non Normal Capacity to pay: Early delinquent, Late delinquent and Restructuring accounts).

B. Conceptual Framework and Analysis Step

The conceptual framework in this research can be illustrated as follow:

Figure 1. Conceptual Framework



From Figure 1, the main conceptual framework in this research is Loyalty and Profitability. Loyalty will be measured by 4 indicators: Longevity, Breadth, Depth and Referrals where all of this indicators will be blended and converted into a single score as overall Loyalty Index Score. Loyalty Index Score will be used as independent variable to profitability. To determine this score range, central tendency value was calculated (mean, median, mode, max and min) where those value will be used as basic reference.

Profitability measurement was calculated through payment tracking which was made by the customers within a particular period. The payment will show whether or not it can save the accounts from further flowing to the next bucket (balance saved) and at the same time, whether or not the payment can cover the interest and late charge fees (revenue collected).

The next analysis was mainly related to test the relationship between variables through linier regression. Linier regression will be used between Loyalty Index Score and to each of average revenue collected, credit loss rate and average of profitability (revenue collected – credit loss).

IV. EMPIRICAL RESULT

A. Longevity

Longevity in credit management terminology is equal to Month On Book (MOB). MOB starts when banks disburse the credit to the customer's account. Table 2 shows the Longevity distribution across all samples.

Table 2. Longevity Distribution

Longevity	Total	%	Cummulative	Cummulative%
12	48	0.15%	48	0.15%
13	2,229	7.03%	2,277	7.18%
14	1,797	5.67%	4,074	12.85%
15	2,531	7.98%	6,605	20.84%
16	2,332	7.36%	8,937	28.19%
17	2,356	7.43%	11,293	35.62%
18	2,263	7.14%	13,556	42.76%
19	2,140	6.75%	15,696	49.51%
20	2,042	6.44%	17,738	55.96%
21	1,995	6.29%	19,733	62.25%
22	2,039	6.43%	21,772	68.68%
23	1,511	4.77%	23,283	73.45%
24	1,642	5.18%	24,925	78.63%
25	1,479	4.67%	26,404	83.29%
26	1,164	3.67%	27,568	86.97%
27	1,554	4.90%	29,122	91.87%
28	1,212	3.82%	30,334	95.69%
29	1,347	4.25%	31,681	99.94%
30	9	0.03%	31,690	99.97%
31	10	0.03%	31,700	100.00%
Grand Total	31,700			
Max	31			
Min	12			
Mean	20			
Median	20			
Mode	15			

As shown on Table 2, accounts sample were distributed with MOB 12 (the lowest) and MOB 31 (the highest). The average MOB were 20 with the same Median numbers which means that the accounts sample is quite focus at the center value. Based on that, range of 30 points will be given to the range of 15 - <20, 10 Points for range 12 – <14, 50 points for range >=30. In addition, 20 and 40 points will be given to the range of 14 - <15 and 20 - <30.

B. Depth

Depth is the second variable in Loyalty Index Score development. Depth itself can be defined as total monetary amount or frequency payment has been made by the customer to the bank as compared to the total monetary amount or tenure that they need to pay till the last installment. Depth numbers will be converted into a percentage number which shows the level of loan completion from beginning till the end. A customer who has paid the loan installment for 18 months in a 36 months total tenure will have 50% of depth value (18/36 = 50%). The detail distribution can be seen as follow:

Table 3. Depth Distribution

Depth	Total	%	Cummulative	Cummulative %
<26%	577	1.82%	577	1.82%
<41%	6,735	21.25%	7,312	23.07%
<56%	10,010	31.58%	17,322	54.64%
<71%	7,617	24.03%	24,939	78.67%
<86	4,709	14.85%	29,648	93.53%
>=86%	2,052	6.47%	31,700	100.00%
Grand Total	31,700			
Max	105.0%			
Min	14.6%			
Mean	55.9%			
Median	54.2%			
Mode	50.0%			

Table 3 shows data distribution in Depth category. Using the same approach with Longevity category, 30 points will be given to the midlle value 56% (with Mean 55.9% and Median 54.2%), while 10 points and 50 points will be given to those value at the range of Min and Max numbers (14.6% and 105%) respectively. The cut off for 20 points will be given to the range of 36% - 56%. The criteria cut off at 36% is used as the mid point between the lowest depth % (14.6%) and the mean dept % (56%). On the other side, cut off at 91% is used due to more as judgemental approach to differentiate those who will finish the loan versus those who still below 90%. Based on that, 40 points will be given to the range of 56% - <91% and 50 points will be given to those customer with Depth value equal or more than 91%.

C. Breadth

Breadth is the total products which was enjoyed or bought by the customer. Based on data collections, we were able to identify 3 other products which the customer may have besides personal loan product that they keep at the moment. The other 3 products were Credit Card, Credit

Guard Insurance and Life Protector Insurance. Sample distribution based on breadth category is as follow:

Table 4. Breadth Distribution

Breadth	Total	%	Cummulative	Cummulative %
1	16,805	53.01%	16,805	53.01%
2	12,779	40.31%	29,584	93.32%
3	2,116	6.68%	31,700	100.00%
Grand Total	31,700			
Max	3.0			
Min	1.0			
Mean	1.5			
Median	1.0			
Mode	1.0			

Based on Table 4 Accounts distribution under breadth category were 53% customer hold 1 product, 40.31% enjoy 2 products and 6.68% has 3 products in hand. Using slightly modified approach, score cut off were determined based on its Max, Min and Mean value. Due to max number of products in hand stop at 3 products, we can conclude that 10 points will be given to those customer with 1 product, 30 points for those who hold 2 products and 50 points to those who have 3 products in hand. This approach were inline with the first 2 category, Longevity and Depth.

D. Referral

The last category in Loyalty Index Score development is called Referral. Referral is the total accounts which was referred by the existing customer to also enjoy the products that they enjoy. This is one of the so called active Loyalty concept where the customer reccomend the product to other people. In consumer credit term, this is called Member Get Member program (MGM) and most of the time, customer who did this is the best customer in the portfolio. They are the one who speak positively about the products and help the company to get free advertisement from them. Referral data distribution can be seen as follow on Table 5.

Table 5. Referral Distribution

Referral	Total	%	Cummulative	Cummulative %
0	22,669	71.51%	22,669	71.51%
1	9,020	28.45%	31,689	99.97%
2	9	0.03%	31,698	99.99%
3	1	0.00%	31,699	100.00%
9	1	0.00%	31,700	100.00%
Grand Total	31,700			
Max	9.00			
Min	0.00			
Mean	0.29			
Median	0.00			
Mode	0.00			

From Table 8, it was found that 28.45% referred this personal loan product to another 1 customer. Less than 0.5% referred more than 1 while the other 71.51% had never referred the accounts to the other potential customer. This can be, referral was in place but the applications was rejected by the bank due to many reasons. Scoring approach for this category was done by direct simple approach i.e. 0 points for no referral, 10 points for 1 referral, 20 points for 2 referrals, 30 points for 3 referrals, 40 points for 4 referrals and 50 points for 5 referrals and more. This approach is choosed becasue there is no difference in median and minimum value on referals while maximum value reach 9 referrals.

D. Overall Scaling

To ease the overall understanding, Table 6. shows the summary of Score level and scaling per Loyalty Index Score indicators.

Table 6. Summary of Loyalty Index Score Scaling

Loyalty Index Score	0	10	20	30	40	50
Longevity	NA	<14	14 - <15	15 - <20	20 - <30	> = 30
Depth	NA	<36%	36% - < 46%	46% - <56%	56% - <91%	> = 91%
Breadth	NA	1 Product	NA	2 Product	0	3 Product
Referrals	0	1	2	3	4	> = 5

As summarized on Table 6, the same approach had been used by Cheng and Chen (2009). Scaling for each indicator was done by specific criteria, considering central tendency value for each indicator. Score 0 (zero) was applied only for Referrals, while Breadth did not have Score 20 and 40. The rest of score level had been applied to all scaling.

Combination of score from each indicator shows the total Loyalty level of each account in the sample. It is one from so many ways to predict customer's loyalty level and therefore, it can be used to further check its impact to profitability on all or specific segment.

E. Hypothesis Testing

Hypothesis 1 state that there is significant influence of loyalty to balance saved.

Table 7. Loyalty Index Score and Credit Loss Rate

Loyalty Index Score	30	40	50	60	70	80	90	100	110	120	130	140	150	Total
Credit Loss Rate (%)	45.51	35.26	37.92	19.12	12.88	9.8	7.47	4.32	3.8	1.81	2.45	1.06	0	9.37

From regression analysis (data from Table 7), Loyalty Index Score has a very strong correlation with Credit Loss rate. It was proven by R square numbers at 0.815 and significant at $p<0.01$. Based on this, we can conclude that H0 is rejected and it means Loyalty has a significant effect on credit loss.

Hypothesis 2 state that there is significant influence of loyalty to revenue collected.

Table 8. Loyalty Index Score and Average Revenue Collected

Loyalty Index Score	30	40	50	60	70	80	90	100	110	120	130	140	Total
Average Revenue (Rp 000)	1,777	1,676	1,535	1,802	2,084	1,831	2,095	2,465	2,539	2,814	2,653	2,868	2,141

Regression analysis (data from Table 8) shows that Loyalty Index Score has a very strong correlation with average revenue collected. It was proven by R square numbers at 0.875 and significant at $p<0.01$. Based on this, we can conclude that H0 is rejected and it means Loyalty has a significant effect on Revenue collected.

Hypothesis 3 state that there is significant influence of loyalty to profitability.

Table 9. Average Profit by Loylaty Index Score Group

Loyalty Index Score	30	40	50	60	70	80	90	100	110	120	130	140	Total
Average Profitability (Rp 000)	(6,938)	(4,279)	(4,463)	(993)	19	471	958	1,646	1,823	2,386	2,118	2,578	565

Regression analysis (data from Table 9) shows that Loyalty Index Score has a very strong correlation with average profit per accounts. It was proven by R square numbers at 0.841 and significant at $p<0.01$. Based on this, we can conclude that H0 is rejected and it means Loyalty has a significant effect on Profitability.

V. CONCLUSION

There were interesting findings can be found in this research. Through hypothesis testing, the findings are as follow:

- It was confirmed that loyalty significantly influences credit loss. This was done by way of regression between Loyalty Index Score and Credit Loss rate.

- It was confirmed that loyalty significantly influences revenue collected. This was done by way of regression between Loyalty Index Score and Average Revenue collected.
- It was confirmed that loyalty significantly influences profitability. This was done by way of regression between Loyalty Index Score and Average Profitability. Profitability itself was determined by subtracting total revenue collected at a given period with written off balance at a given period.

REFERENCES

1. Al-wugayan, A., Pleshko, L., & Baqer, S. (2008), An investigation of the relationships among consumer satisfaction, loyalty, and market share in Kuwaiti loan services, *Journal of Financial Services Marketing, 13*(2), 95-106.
2. Chiung-Ju Liang, Wen-Hung Wang, & Jillian Dawes Farquhar. (2009), The influence of customer perceptions on financial performance in financial services, *The International Journal of Bank Marketing, 27* (2), 129-149.
3. Churchill, C. (2000), Banking on Customer Loyalty, *Journal of Microfinance*, Vol.2.2, pp. 1 – 21.
4. Finlay, Steven (2008), The Management of Consumer Credit: Theory and Practice, *Palgrave Macmillian*, New York, 1 – 57
5. Oliver, R.L. (1997), Loyalty and profit: long – term effects of satisfaction, satisfaction: A behavioural perspective on the Consumer, *MC Graw – Hill Companies*, Inc., New York, NY.
6. Reicheld, F.F., Markey, R. G. J., and Hopton C. (2000), The Loyalty effect – the relationship between loyalty and profits, *European Business Journal*, 12 (3), 134 - 9