

Profitability, Customer Satisfaction and Promotion in the Service Industry: A Comparative Study of Life Insurance and Professional Sports Services in Japan

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■ Abstract

This study aims to empirically clarify the relationship between profitability and customer satisfaction in the service industry, focusing on the influence of promotions. Specifically, partial least squares structural equation modelling (PLS-SEM) is used to clarify the following two aspects. First, the profitability of Japanese professional soccer teams is not entirely explained by customer satisfaction to the same extent as that of life insurance. Second, contrary to life insurance, this profitability is negatively affected by promotions. In other words, marketers of professional sports services are in a dilemma, as the more marketing they do, the more they reduce profitability. Hence, the relationship between profitability and customer satisfaction varies in strength across services in the sense that promotion has contrasting effects in life insurance and professional sports services.

Keywords: customer satisfaction, profitability, promotion, sports marketing

1. Introduction

This paper intends to identify the relationship between profitability and customer satisfaction in the service industry, concentrating on the impact of promotions. Specifically, two questions are asked. First, whether the profitability of professional soccer teams is well explained by customer satisfaction and shows the same results as life insurance. Second, if they exhibit different results, can it be said that they are caused by differences in the impact of promotions?

In this paper, two answers are provided in response to these two questions. First, the profitability of professional soccer teams cannot be fully explained by customer satisfaction to the same extent as life insurance. Therefore, the results are different from those of life insurance. Second, it arises because promotion adversely affects customer satisfaction for professional soccer teams, in contrast to its positive impact on customer satisfaction for life insurance. Marketers of professional sports services face this dilemma as the more they market, the greater the reduction in their profitability.

In the field of sports marketing research, it has been argued that professional sports teams should improve profitability by increasing customer retention rates. However, it has also been stated that simply increasing customer retention rates is insufficient. The former is argued by Mahony et al. (2000)

and Trail et al. (2003); they state that teams should aim to improve profitability by stimulating antecedents, such as loyalty and motivation, that would increase customer retention rates. The latter was argued by Baker et al. (2016), who noted that each team's customer retention rate may have a theoretical value (i.e. optimal level) influenced by market penetration for observational reasons. Market penetration is defined as the percentage of the total market that has attended a team's game at least once during a given period. If this point is correct, then aiming for the same value of customer retention could be easy for one team because its target is below the theoretical value, and difficult for the other team because it is above the theoretical value. Accordingly, prior sports marketing studies present contrasting arguments for and against each other over customer retention.

The field of marketing research, a parent discipline, has also presented such conflicting claims. Much of the argument supporting the fact that customer retention should be increased to improve profitability is influenced by the empirical study of Reichheld et al. (1990), published in *Harvard Business Review* in 1990. Some of the arguments stating that simply increasing customer retention is inadequate to improve profitability are influenced by the classic findings of Ehrenberg et al. (1990), also published in the *Journal of Marketing* in 1990. Thus, a bias may arise whereby firms with higher market penetration are also observed to have higher customer retention rates.

Similar conflicts have been manifested in the marketing field as in the sports marketing field. In recent years, however, these studies have shown that there may be no contradiction between each other. For example, Sharp (2010) and Riebe et al. (2014) analysed financial services, such as credit cards and banking, and showed the following possibilities. First, it would be easier to compare the firms accurately if customer retention, which reflects the extent to which existing customers repeatedly consume, were measured as a deviation from the Negative Binomial Distribution Dirichlet Model (the Dirichlet Model). Second, if market penetration, which reflects the degree of consumption by new customers, is added to the analysis, and customer satisfaction, which is composed of market penetration and customer retention, is utilised in the analysis, customer satisfaction may positively impact the profitability of the company. Subsequent research using Japanese life insurance as a case study has partially revealed that this interpretation may have some validity (Wakuta, 2020).

Is the same interpretation possible in the market for professional sports services? This question is included in this paper. Similar to the life insurance industry, where customers compete with each other to keep their contracts for a long time, many teams in the professional sports service market encourage customers to continue their transactions by selling season tickets. Given that prior studies in sports marketing have presented similar arguments to those in the marketing field, the interpretation presented by Sharp (2010) and Riebe et al. (2014) may apply to the professional sports services market. This paper speculates the expansion of the applicability of this interpretation.

In contrast to this speculation, there is a possibility that such an interpretation may not be possible because, unlike other service markets, it has long been argued that the outcome uncertainty hypothesis may hold in the professional sports market. The outcome uncertainty hypothesis states that the more unpredictable the evaluation of a product is in advance, the greater the probability that consumers will purchase it. Normally, the more unpredictable the evaluation of a purchased product is in advance, the more consumers will avoid such a product because of the increased perceived risk. In sports games, consumers are more willing to watch a game if they are unaware of who is going to win in advance. In the J1 League, Japan's top professional soccer league, Watanabe (2012) noted that the outcome uncertainty hypothesis has validity.

If the J1 League market is analysed, where the outcome uncertainty hypothesis has some validity, we may find that team marketing that attempts to reduce perceived risk, especially promotions that serve to convey product information, may instead damage the attractiveness of the game and harm customer satisfaction. In other words, unlike life insurance, customer satisfaction may not fully explain the profitability of teams in the J1 League. Furthermore, the reason for such a phenomenon may be that, contrary to the case of life insurance, it is negatively affected by promotions. This notion denotes why professional sports marketers reduce their profitability the more they promote.

In this paper, we empirically test whether this interpretation is correct. First, we examine previous studies and derive some hypotheses (Section 2). Then, we describe the methodology of the survey (Section 3) and present the results of the study (Section 4). Finally, we summarise our conclusions and state our limitations (Section 5).

2. Prior Research

2.1. Customer Retention and Profitability in Sports Marketing Researches

Most prior studies related to sports marketing point to the importance of team effort to retain customers. According to Mahony et al. (2000), teams that wish to improve their financial outcomes should increase their customer retention rates. Specifically, they segment the loyalty of spectators to a team according to how loyal they are to the team and suggest that teams should increase the loyalty of each of these segments as much as possible. Numerous studies have made similar arguments for sports teams to increase customer retention. For example, Wann et al. (1993) and Trail et al. (2005) found that team identification, which is conceptualised as loyalty in many marketing studies, is a leading factor in customer retention. Conversely, Matsuoka et al. (2003) and Trail et al. (2003) showed that customer satisfaction, which is believed to have a more positive short-term effect than loyalty, is also an important factor in customer retention. Furthermore, Laverie et al. (2000) asked whether loyalty or satisfaction

has a stronger influence on customer retention rates and found the former to be more influential. Gray et al. (2012) also presented a more generalised version of the finding that customer retention is influenced by loyalty and satisfaction. They show that such outcomes can be generalised to American football, basketball, baseball and soccer. Thus, teams need to work on improving customer retention. Quite differently from these antecedents, Yoshida et al. (2015) noted the importance of the antecedent factor of the sense of community among spectators. However, all of these prior studies argue that teams should improve on the identified antecedents to increase customer retention.

These studies assume that there is only one ideal customer retention rate in the market that should be benchmarked. Therefore, the practical implications of these prior studies are intuitive and easily understood. As customers of any team can respond to loyalty, customer satisfaction, or a sense of community among spectators, we can predict that if a team has a relatively low measured customer retention rate, there must be a problem with one of these antecedents. Abe (2014), who was a practising member of the Japan Professional Football League as of 2014, reported that J1 League spectators who didn't stop buying next season's annual tickets tended to continue to watch 10 out of approximately 17 games overall and shared this information with each team for consideration. Assuming that there is only one ideal customer retention rate in the market that should be benchmarked, it would be easier to share the implications with many teams and more quickly reflect them in the real market.

However, Baker et al. (2016) argued that a simple comparison of the values is insufficient to determine whether customer retention rates should be increased. There is no single ideal customer retention rate that should be benchmarked because it could exist for each team participating in the market. The authors examined the market penetration of 10 Melbourne-area teams in the Australian Football League (AFL), along with the number of customer visits, and found that teams with lower customer visits tended to have lower market penetration. They also noted that this distribution can be approximated by the Dirichlet model. In other words, the theoretical customer retention rate of professional sports teams is somewhat lower for teams with low market penetration (i.e. optimal level) and somewhat higher for teams with high market penetration, signifying that the ideal optimal customer retention rate may exist for each team.

Ehrenberg et al. (1990) argue that these trends are not due to organisational marketing, but rather because of observed customer behaviour. These tendencies arise simply because people who do not know the team do not come to the game. After all, the customer retention rate of the organisation in question must be measured using a population of people who have attended a game at least once.

If Baker et al.'s (2016) point is broadly valid for professional sports services in general, it is possible that aiming for the same value of customer retention could be easy for one team because its value is below the theoretical value and difficult for the other team because it is above the theoretical value.

Therefore, a simple increase in customer retention by the latter team may be insufficient to improve their profitability. Thus, prior studies in sports marketing present contrasting arguments for each other over customer retention.

2.2. Customer Retention and Profitability in Marketing Research

The above-mentioned contrasting claims have been presented so far in the field of marketing research. Reichheld et al. (1990), who argued that customer retention should be increased to improve profitability, is a representative study cited in numerous marketing studies. They argued that customer retention should be increased because cumulative transactions in some service industries increase the profit per customer. According to them, MBNA, a U.S. credit card company, lost \$51 in profit per customer in the first year of the contract, but in the second year, the profit was \$30, and in the third year, it was \$42.

As shown by Anderson et al. (2000), increasing customer loyalty through cumulative transactions can increase profitability through the following five paths. First, customers who exhibit high loyalty increase profitability because they increase future consumption (Fornell, 1992; Macintosh et al., 1997). Second, profitability rises because future transaction costs can be reduced by continuing to trade (Gupta et al., 2004; Kuroiwa 2002). Third, customers who show high loyalty have lower price sensitivity, so their purchase volume does not drop and profitability improves even when prices are higher than other companies (Yoon et al., 2011). Fourth, highly loyal customers have lower attrition rates, which increases profitability relative to other companies (Baldinger et al., 1996). Fifth, customers who exhibit high loyalty are more profitable because they actively market through word-of-mouth to other consumers (Gremler et al., 1999).

Notably, the argument that simply increasing customer retention is insufficient to improve profitability arises from two major perspectives. The first viewpoint assumes that there must be an optimal level of customer retention. Reinartz et al. (2000), for example, showed that increasing customer retention does not simply improve profitability in the catalogue retail service industry. Reinartz et al. (2005) explored the optimal level of customer retention by simulating a high-tech manufacturer of production goods, showing that a 10% excess of costs over the optimal level of customer retention rate results in a 1% decrease in long-term profitability from customers. The first perspective is concerned with the optimal level of customer retention.

The other perspective assumes that each organisation has a customer retention rate that should be benchmarked. Prior studies following this perspective have also recently shown the possibility of being consistent with previous studies, including Reichheld et al. (1990). For instance, Sharp (2010) and Riebe et al. (2014) analysed financial services, such as credit cards and banks, to show the following

possibilities. First, the variable customer retention rate, which reflects the degree of consumption of each firm's existing customers, is easily observed by most firms and thus tends to be evaluated with the biases described above. It would be easier to accurately compare the firms if customer retention, which reflects the extent to which existing customers repeatedly consume, were measured as a deviation from the Dirichlet Model. If market penetration, which reflects the degree of consumption by new customers, is added to the analysis, and customer satisfaction, which is composed of market penetration and customer retention, is used in the analysis, customer satisfaction may positively impact the profitability of the company. Subsequent studies using Japanese life insurance as a case study have partially revealed that this interpretation may have some validity (Wakuta, 2018, 2020).

2.3. Focus on Customer Satisfaction and Profitability

Could the same interpretation as Sharp (2010) and Riebe et al. (2014) be possible in the professional sports services market? Similar to the life insurance industry, where customers compete with each other to keep their contracts for a long period, many teams in professional sports services encourage customers to continue their transactions by selling season tickets. Can the interpretation proposed by Sharp (2010) and Riebe et al. (2014) be applied to the market for professional sports services?

Such an interpretation may not be possible because, unlike other service markets, it has long been argued that the uncertainty of outcome hypothesis may hold in professional sports service markets (Neale, 1964; Rottenberg, 1956). The uncertainty of outcome hypothesis states that the more unpredictable the evaluation of a product is in advance, the greater the probability that consumers will purchase it. Generally, the more unpredictable a product's evaluation in advance, the more perceived risk consumers are willing to take; therefore, the less likely they are to purchase such a product (Mitchell, 1999). However, in sports games, consumers are more likely to find such games interesting and willing to watch them if they do not know in advance who is going to win. For example, Abuhamdeh et al. (2015) reported that in the case of sports games and services, such as movies and mystery novels, consumers did not seek product evaluation in advance (i.e. they do not try to reduce perceived risk, but rather tend to enjoy the game more when they do not know product information in advance). Hence, consumers perceive lower perceived risk despite having insufficient product information in advance. According to Guseman (1981), the perceived risk of financial services, such as life insurance, is much higher than that of professional sports services. Furthermore, Watanabe (2012) and Wakuta (2022) noted that the outcome uncertainty hypothesis has validity in Japan's top professional soccer league, the J1 League.

If the J1 League market, where the outcome uncertainty hypothesis has some validity, is the target

of the study, team promotions that attempt to reduce perceived risk may instead damage the attractiveness of the game. Moreover, attempts to increase customer satisfaction may still be costly, leading to a negative impact on customer satisfaction. In other words, the promotion of teams in the J1 League may harm customer satisfaction. In other words, the profitability of teams in the J1 League, unlike life insurance, cannot be fully explained by customer satisfaction and may be adversely affected by promotions.

3. Methodology

3.1 Hypothesis Model and Two Studies

Based on the above discussion, this study uses a model derived from previous studies to test the hypotheses that “customer satisfaction in J1 teams positively affects profitability” (H1), “promotions in J1 teams negatively affect customer satisfaction” (H2) and “promotions in J1 teams negatively affect profitability” (H3). To this end, we test the hypotheses by Partial Least Squares Structural Equation Modeling (PLS-SEM) using software from Ringle et al. (2015). The reason for using PLS-SEM was due to the limited sample size: as of 2015, there were 42 life insurance companies registered with the Financial Service Agency (FSA), and only 18 teams participated in J1 as of 2013. According to Reinartz et al. (2009), the results obtained by PLS-SEM are unlikely to produce larger differences than those obtained by ordinary SEM (Covariance Based Structural Equation Modeling, hereafter CB-SEM). For these reasons, this study uses PLS-SEM.

H1: Customer satisfaction positively affects profitability in J1 teams.

H2: Promotion negatively affects customer satisfaction in J1 teams.

H3: Promotion in J1 teams negatively affects profitability.

In this research, we test these three hypotheses with two different hypothetical models. First, we test H1 using the hypothetical model 1 on the left of Figure 1 for J1 teams. As shown in the left side of Figure 1, Hypothetical Model 1 is a model wherein profitability, as reflected in the four observed variables of return on assets (ROA), return on equity (ROE), operating margin and market share, is the explained variable, and these are explained by the latent variable of customer satisfaction. For customer satisfaction, both market penetration and customer retention were employed as antecedent variables, in line with a previous study on a life insurance case study (Wakuta, 2020). In this paper, we refer to this as Study 1. Based on the findings of prior studies, Study 1 may not fully support H1.

Second, we test the remaining two hypotheses, H2 and H3, for life insurance and J1 using the

Hypothetical Model 2 on the right side of Figure 1. In this paper, we refer to this as Study 2. As shown in Figure 1, Hypothesis Model 2 is a model of Hypothesis Model 1, with promotion observed at the depth of price promotion added as a prior variable. If consistent with the findings of prior studies, both H2 and H3 would be supported in Study 2.

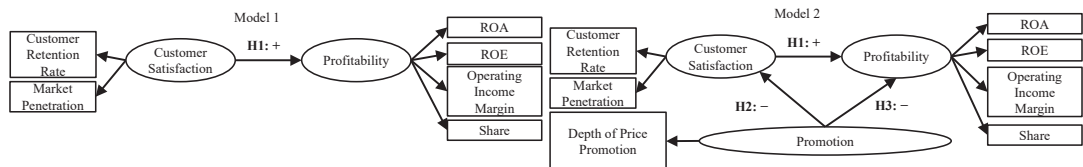


Figure 1. The Hypothesised Model.

3.2. Data Collection

For the data on profitability, which is the explained variable, we used publicly available financial statements, and for the data on J1, the *Fiscal Year 2013 J Club Individual Information Disclosure Data* published on the website of the Japan Professional Football League was utilized. Teams that were promoted or relegated to J1 or J2 after FY2013 were excluded because it was impossible to average the data. For life insurance data, we used data from both the financial reports of each company and *Kaisha Shikiho* (Company Handbook) published by Toyo Keizai Inc, as done in previous studies. Companies not listed in both documents were excluded.

The J1 data were obtained from the Japan Professional Football League's website, the *Pia J-League Spectator Guide 2013* and the *J-League Stadium Spectator Survey 2013 Summary Report*, which is published on the J-League's website. *The J-League Stadium Spectator Survey 2013 Summary Report* summarises the results of a survey of J1 game spectators. According to this report, the survey period was from April 21 to October 27, 2013, and 7,687 respondents were selected for J1, with a male-to-female ratio of 63:37. Data on explanatory variables for the life insurance industry were collected through a survey of monitors of My Voice.com, Inc. The survey period was November 19, 2015. The monitors were asked whether or not they used life insurance, and the 400 respondents who answered "yes" were selected. The target age group was set at 30 years old and above, and 100 individuals were equally assigned to each of the age groups up to 60 years of age. The male/female ratio was 58:42.

3.3. Operating Variables

The variables used in this research are summarised in Table 1. The observed variable of profitability, the explained variable, was manipulated exactly the same in both Study 1 and Study 2. ROA was net income for the current year divided by the average of total assets for the previous year and the

current year. ROE was net income for the current year divided by the average of equity capital for the previous year and the current year. Operating income margin is operating income divided by the average of net sales for the previous year and the current year. Market share was calculated by dividing each firm's and each team's sales for the current year by the total market's sales.

The observed variable of customer satisfaction, which serves as an explanatory variable, was manipulated differently for the J-League and the life insurance industry. First, the market penetration of J1 was manipulated as follows. The number of visitors for each team on the aforementioned J-League website was divided by the total number of visitors for the league as a whole. This value was then used as the market penetration for each team in this paper. Additionally, the customer retention rate in J1 was operationalised as follows. First, the average length of attendance for each team's spectators was estimated using the distribution of spectator attendance for each team as summarised in the aforementioned *J-League Stadium Spectator Survey 2013 Summary Report*. The survey asked spectators, "How long have you been regularly watching the selected soccer team match at the stadium?", offering eight options. These options were: (1) before 1992, (2) from 1993 to 1995, (3) from 1996 to 1998, (4) from 1999 to 2002, (5) from 2003 to 2006, (6) from 2007 to 2012 and (7) from the current season. Next, we set (1) to 22 years, (2) to 20 years, (3) to 17 years, (4) to 12.5 years, (5) to 8.5 years, (6) to 4.5 years and (7) to 1 year, multiplied by the number of respondents who selected the relevant option and then divided by the number of team respondents. This value was the customer retention rate for each team in this paper. Finally, the depth of price promotion, an observed variable that reflects the explanatory variable of promotion, was acquired from the *Pia J-League Spectator Guide 2013* as the ticket price and discounted ticket price for each team, which were then averaged and standardised for each team.

Table 1. Details of the operational variables.

Market	Latent Variables	Observed Variables	Operational Definition	N	Mean	SD
J1	Customer Satisfaction	Customer Retention Rate	“How long have you been watched regularly the selected soccer team match at the stadium?”	13	12.962	1.386
		Market Penetration	= Game attendance per a team ÷ Total league attendance	13	0.061	0.021
	Profitability	ROA	= Net income ÷ Average total assets	13	0.063	0.084
		ROE	= Net income ÷ Equity	13	0.279	0.286
		Operating Income Margin	= Operating Profit ÷ Sales	13	0.032	0.049
		Share	= Ordinary income ÷ Total league market income	13	0.039	0.014
	Promotion	Depth of Price Promotion	= Average discount price ÷ Average ticket price	13	0.000	0.961
	Life Insurance	Customer Satisfaction	Customer Retention Rate	“How long have you had a contract with the selected life insurance company?”	24	12.403
Market Penetration			1) “Which life insurance company do you have a contract with? Select all the companies you have contracts with.” 2) Share of each company	24	0.064	0.056
Profitability		ROA	= Net income ÷ Average total assets	24	0.048	0.224
		ROE	= Net income ÷ Equity	24	0.021	0.181
		Operating Income Margin	= Operating Profit ÷ Sales	24	-0.038	0.372
		Share	= Ordinary income ÷ Total market income	24	0.039	0.049
Promotion		Depth of Price Promotion	1) “What was your discount rate?” 2) Standardized average discount rate per a firm	24	0.000	1.000

Meanwhile, the life insurance industry variable was operationalised as follows. For market penetration, the selected monitors were first asked whether they had life insurance coverage and then were requested to select all firms that did. These figures, aggregated by company, were then divided by the total number of respondents (400), and that value was utilized as the market penetration for each company in this paper. In particular, customer retention was operationalised as follows. First, the selected monitors were asked how long they had been doing business with each of the subscribing firms. These numbers (averaged for each firm) were then divided by the number of subscribers, and that value was used as the customer retention rate for each firm in this paper. Lastly, depth in price promotions, an observed variable that reflects the explanatory variable of promotions, was obtained by asking the extracted monitors about the value discounted at the time of the transaction. The average value of the discount rate responded to for each firm was extracted and standardised. Notably, data from firms and teams for which no response data were available and all these variables could not be calculated were excluded from the analysis.

4. Results of the Study

4.1. Results of Study 1

This section presents the results of Study 1. In Study 1, J1 was analysed using Hypothesis Model 1

to test H1. First, to confirm whether J1 can be explained by the Hypothetical Model 1 described above, we proceeded with the analysis using PLS-SEM. Following the procedure of Hair et al. (2014), we first examined the Measurement Model, and then the Structural Model.

The Measurement Model, according to Wong (2013), should be evaluated from the following four perspectives. First, the Indicator Reliability (IR) of the observed variables should be evaluated. Second, the reliability of the internal consistency of the latent variables should be gauged. Third, we should confirm the convergent validity of the latent variables. Fourth, the discriminant validity of the latent variables should be confirmed.

Table 2. Results of the measurement model in Study 1.

Latent Variables	Observed Variables	Loading	IR	VIF	CR	AVE	Correlation and The Square Root of AVE	
							Customer Satisfaction	Profitability
Customer Satisfaction					.808	.678	.823	
	Customer Retention Rate	.830	.689	1.144				
	Market Penetration	.816	.666	1.144				
Profitability					.716	.737	.700	.858
	ROA	.864	.746	1.424				
	ROE	-.900	.810	4.574				
	Operating Income Margin	.865	.749	2.638				
	Share	.801	.642	1.509				

Note: Square root of AVE is in bold italics.

First, the reliability of the observed variables was assessed by checking whether the IR, the squared value of the external loading (Loading) of the observed variables, was greater than 0.400, as mentioned by Hulland (1999). The findings revealed that the IRs for all variables were above 0.400. However, ROE showed negative values for the external loadings, suggesting that the profitability of the J1 teams may not be fully reflected in ROE.

Second, the reliability of the latent variables was assessed according to Bagozzi and Yi (1988), by checking whether the CR (Composite Reliability) was above 0.700. The CR for customer satisfaction was 0.808 and the CR for profitability was 0.716, confirming that the criteria were met. Third, to confirm convergent validity, we checked whether the AVE (Average Variance Extracted) was greater than 0.500 according to Bagozzi and Yi (1988). The AVE for customer satisfaction was 0.678 and the AVE for profitability was 0.737, validating that the criteria were met. Fourth, we followed Fornell and Lacker (1981) to check discriminant validity. We assessed whether the square root of the AVE was greater than the absolute value of the correlation coefficient between the latent variables. The square root of the AVE for customer satisfaction was 0.823, the square root of the AVE for profitability was 0.858 and the

absolute value of the correlation coefficient between customer satisfaction and profitability was 0.700. It was confirmed that the square root of the AVE is greater than the absolute value of the correlation coefficient; hence, the scale has a certain degree of reliability and validity.

Table 3. Results of the structural model in Study 1.

Path	Standard β	Standard Error	t
Customer Satisfaction → Profitability	.700***	.156	4.496
Customer Satisfaction → Customer Retention Rate	.830*	.356	2.334
Customer Satisfaction → Market Penetration	.816***	.224	3.642
Profitability → ROA	.864***	.239	3.611
Profitability → ROE	-.900 (n.s.)	.561	1.603
Profitability → Operating Income Margin	.865*	.380	2.277
Profitability → Share	.801**	.231	3.462

$R^2 = .490^{**}$, Adjusted $R^2 = .448^{**}$

Note: ** $p < 0.001$, * $p < 0.01$, * $p < 0.05$ (two-tailed).

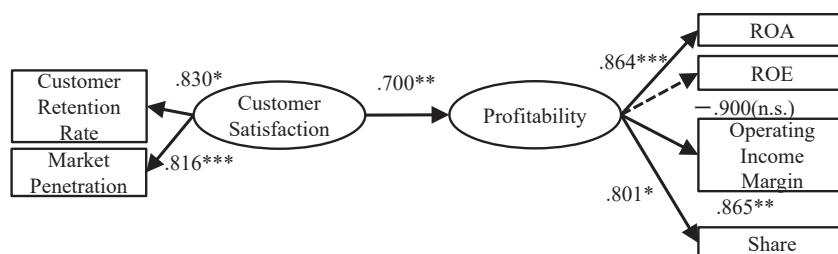


Figure 2. Results of Study 1.

Note: ** $p < 0.001$, * $p < 0.01$, * $p < 0.05$ (two-tailed).

Thereafter, we examined the structural model by confirming whether the VIF (Variance Inflation Factor) is smaller than 5.000, as per the criteria of Hair et al. (2012) (refer to Table 2). According to Hair et al. (2012) and Tagashira and Morimura (2017), PLS-SEM differs from CB-SEM as it does not make assumptions about the probability distribution. Hence, we used a resampling-based method to test the significance of the path coefficient. Specifically, the standard deviation obtained by 5,000 resamplings utilizing the bootstrap method was used to test whether the path coefficient was zero or not. The findings also confirm that although customer satisfaction has a significantly positive impact on profitability at the 0.1% level, the profitability explained by it is not fully reflected (statistically insignificant) in ROE (refer to Table 3). This outcome can be interpreted as only partial support for H1.

4.2. Results of Study 2

The results of Study 1 confirm that, unlike the life insurance industry, the profitability of J1 affiliated teams cannot be fully explained by customer satisfaction. Therefore, we examined the hypothesis that this result might be caused by negative influences from promotions. To this end, we treated life insurance and J1 as objects of comparison and examined the extent to which the Hypothesised Model 2 applied to each, thereby testing H2 and H3.

First, as in Study 1, the results of the measurement models in life insurance and J1 were checked. We assessed the reliability of the observed variables, checking whether the IR, the squared value of the external loadings (Loading) of the observed variables, was greater than 0.400, as per Hulland (1999). The results specified that the IRs for all variables were above 0.400. However, as in Study 1, the ROE in J1 showed negative values for the external loading amount, suggesting that the profitability of the teams in J1 may not be fully reflected in the ROE.

Table 4. Results of the measurement model in Study 2.

Market	Latent Variables	Observed Variables	Loading	IR	VIF	CR	AVE	Correlation and The Square Root of AVE			
								Customer Satisfaction	Profitability	Promotion	
J1	Customer Satisfaction						.804	.674	.821		
		Customer Retention Rate	.761	.579	1.144						
		Market Penetration	.877	.769	1.144						
	Profitability						.717	.736	.696	.858	
		ROA	.865	.749	1.424						
		ROE	-.898	.807	4.574						
		Operating Income Margin	.864	.746	2.638						
		Share	.802	.643	1.509						
	Promotion						1.000	1.000	-.629	-.424	1.000
		Depth of Price Promotion	1.000	1.000	1.000						
Life Insurance	Customer Satisfaction						.781	.641	.801		
		Customer Retention Rate	.776	.602	1.087						
		Market Penetration	.825	.680	1.087						
	Profitability						.840	.570	.602	.755	
		ROA	.861	.741	2.963						
		ROE	.788	.620	2.976						
		Operating Income Margin	.684	.468	1.593						
		Share	.671	.451	1.126						
	Promotion						1.000	1.000	.598	.382	1.000
		Depth of Price Promotion	1.000	1.000	1.000						

Table 5. Results of the structural model in Study 2.

Path	J1			Life Insurance		
	Standard β	Standard Error	t	Standard β	Standard Error	t
Customer Satisfaction → Profitability	.710*	.357	1.987	.582**	.184	3.171
Promotion → Customer Satisfaction	-.629*	.295	2.129	.598***	.126	4.741
Promotion → Profitability	.023 (n.s.)	.411	0.056	.034 (n.s.)	.210	0.160
Customer Satisfaction → Customer Retention Rate	.761*	.352	2.163	.776***	.154	5.048
Customer Satisfaction → Market Penetration	.877***	.226	3.884	.825***	.089	9.228
Profitability → ROA	.865**	.312	2.777	.861***	.083	10.378
Profitability → ROE	-.898(n.s.)	.604	1.487	.788**	.275	2.869
Profitability → Operating Income Margin	.864*	.377	2.291	.684***	.118	5.815
Profitability → Share	.802***	.224	3.587	.671***	.119	5.622
Promotion → Depth of Price Promotion	1.000	—	—	1.000	—	—
	R ² Customer Satisfaction = .395(n.s.)			R ² Customer Satisfaction = .358*		
	Adjusted R ² Customer Satisfaction = .345(n.s.)			Adjusted R ² Customer Satisfaction = .329*		
	R ² Profitability = .485**			R ² Profitability = .363**		
	Adjusted R ² Profitability = .391*			Adjusted R ² Profitability = .303*		

Note: **p<0.001, *p<0.01, *p<0.05 (two-tailed).

Afterwards, the reliability of the latent variables was checked according to Bagozzi and Yi (1988) by confirming whether the CR was above 0.700. The CR for customer satisfaction in J1 was 0.804, the CR for profitability was 0.717 and the CR for Promotion was 1.000, verifying that the criteria were fulfilled. The CR for customer satisfaction for life insurance was 0.781, CR for profitability was 0.840 and CR for promotion was 1.000, confirming that the criterion was met. Third, to check convergent validity, we followed Bagozzi and Yi (1988) to determine if the AVE (Average Variance Extracted) was greater than 0.500. The AVE for J1 customer satisfaction was 0.674, the AVE for profitability was 0.736 and the AVE for promotion was 1.000, validating that the criteria were met. The AVE for customer satisfaction for life insurance was 0.641, the AVE for profitability was 0.570 and the AVE for promotion was 1.000, confirming that the criterion was satisfied. Fourth, to check for discriminant validity, we followed Fornell and Lacker (1981) to check if the square root of the AVE was greater than the absolute value of the correlation coefficient between the latent variables. The square root of the AVE for J1 customer satisfaction was 0.821, the AVE for profitability was 0.858, the square root of the AVE for promotion was 1.000, the absolute value of the correlation coefficient between customer satisfaction and profitability was 0.696, the absolute value of the correlation coefficient between customer satisfaction and promotion was 0.629 and the absolute value of the correlation coefficient between profitability and promotion was 0.424. Hence, it was validated that the square root of AVE is greater than the absolute value of the correlation coefficient. The findings confirm that the square root of AVE is larger than the absolute value of the correlation coefficient. The square root of the AVE for customer satisfaction for life insurance was 0.801, the square root of the AVE for profitability was 0.755 and the square root of the

AVE for promotion was 1.000. The absolute value of the correlation coefficients between customer satisfaction and profitability was 0.602, between customer satisfaction and promotion was 0.598 and between profitability and promotion was 0.382, verifying that the square root of AVE is greater than the absolute value of the correlation coefficient. These outcomes indicate that the scale in J1 has a certain degree of reliability and validity and that the scale in life insurance has sufficient reliability and validity.

The structural model was then examined (refer to Table 5). For life insurance, there was no direct impact of promotion on profitability ($\beta = 0.034$, n.s.), while there was a positive impact of promotion on customer satisfaction ($\beta = 0.598$, $p < 0.001$). In J1, as in life insurance, there was no direct impact of promotion on profitability ($\beta = 0.023$, n.s.), while there was a negative impact of promotion on customer satisfaction ($\beta = -0.629$, $p < 0.05$), contrary to the results for life insurance.

We first use the measurement invariance of composite (MICOM) presented by Henseler et al. (2016) to question the validity of the result that, unlike life insurance, customer satisfaction of J1 affiliated teams was negatively affected by promotions. Second, we use the Partial Least Squares Multigroup Analysis (PLS-MGA).

According to Henseler et al. (2016), measurement model invariance is evaluated in three stages: placement invariance, composite invariance and mean and variance invariance of composite variables. In the first stage, configural invariance was ensured as the same measurement items, the number of items and data processing were used. In the second step, compositional invariance was checked by performing permutations based on 0.05 (one-sided) and 5,000 resamplings between the J1 and life insurance markets (refer to Table 6). Synthetic invariance was supported because the original c-value, representing the correlation between markets for each synthetic variable, exceeded the lower 5% limit of the c-value distribution created by Permutation. Finally, the invariance of the mean and variance of the synthetic variables in the third step was confirmed by performing a similar Permutation with a significance value of 0.05 (two-sided). As illustrated in Table 6, no significant difference was present in the mean between life insurance and J1, but there was a significant difference in the variance. It could be interpreted that partial invariance was observed between life insurance and J1.

Table 6. Permutation results.

Group	Latent Variables	Original c-value	5% c-value	p	Mean difference	95% permutation Intervals	p	Variance difference	95% permutation Intervals	p
Life Insurance and J1	Customer Satisfaction	0.996	0.271	0.897	0.292	[-0.549; 0.582]	0.211	-1.711	[-1.060; 1.045]	0.000
	Profitability	0.805	0.519	0.208	0.031	[-0.583; 0.557]	0.468	-1.041	[-1.599; 1.241]	0.150
	Promotion	1.000	1.000	0.095	0.000	[-0.565; 0.565]	0.491	-0.032	[-0.848; 0.765]	0.569

As partial invariance was found for life insurance and J1, the PLS-MGA was conducted between

these two groups. The results are summarised in Table 7, and only the path from promotion to customer satisfaction showed significant differences. Specifically, the impact from promotion to customer satisfaction is statistically significant between life insurance and J1, with life insurance having a stronger positive impact than J1. Accordingly, H2 is supported and H3 is rejected.

Table 7. Results of PLS-MGA.

Path	Customer Satisfaction→Profitability		Promotion→Customer Satisfaction		Promotion→Profitability	
	Difference	p	Difference	p	Difference	p
	-0.128	.598	1.227	.001	0.011	.966

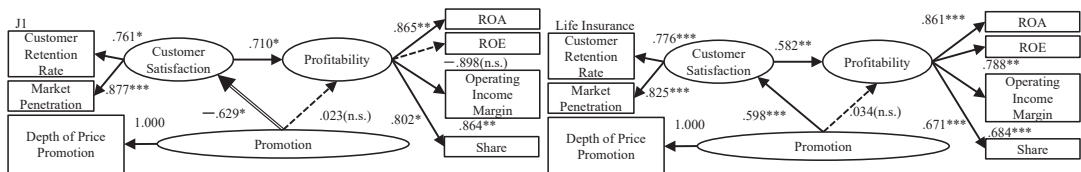


Figure 3. Results of Study 2.

Note: **p<0.001, *p<0.01, *p<0.05 (two-tailed).

5. Conclusions and Limitations

This research identified the relationship between profitability and customer satisfaction in the service industry, focusing on the impact of promotions. Specifically, we asked the following two questions. First, whether the profitability of J1 teams can be adequately explained by customer satisfaction and whether it shows results similar to that for life insurance. Second, if they show different results, can we say that they are caused by differences in the impact of promotions?

In this paper, we propose two answers to these two questions. First, the profitability of J1 teams is not fully explained by customer satisfaction to the same extent as life insurance. Team profitability was not fully reflected in ROE. Second, this occurrence was due to the negative impact of promotions on customer satisfaction for J1 teams, in contrast to the positive impact of promotions on customer satisfaction for life insurance. In other words, marketers of professional sports services were in a dilemma - the more they marketed, the more they reduced their profitability.

This conclusion makes one theoretical contribution to marketing research and one practical contribution to sports marketing research. The theoretical contribution is that we have shown that there may be certain limits to the applicability of the findings of marketing research (Ehrenberg et al., 1990; Reichheld et al., 1990). The contradiction between previous studies that developed contrasting claims in

marketing research was not apparent in financial services but could be resolved through interpretations, such as improved profitability as customer satisfaction increases, which is reflected in both customer retention and market penetration. However, in sports marketing research (Baker et al., 2016; Mahony et al., 2000; Trail et al., 2003), which faces similar contradictions, such an interpretation was difficult. Marketing research findings may be difficult to apply to the phenomena addressed in sports marketing research.

A practical contribution is that they reveal that marketers of professional sports services, unlike when dealing with other services, are required to make extremely careful decisions during promotions. This paper reveals that marketers of professional sports (J1), for which the outcome uncertainty hypothesis has some validity, are in a dilemma. Given the analysis's finding that life insurance customer satisfaction was positively affected by promotions, this situation may be one of the unique characteristics of sports marketing.

This research also has several limitations. First, as the survey was limited to a small number of subjects, the external validity of the results of this analysis is extremely unclear. As most professional sports services are structured as leagues of 20 to 40 teams in each country, it is difficult to broaden the scope of the survey. It may be necessary to consider expanding the scope of the study by dividing it into professional sports services for which the outcome uncertainty hypothesis has a certain validity. Second, it is necessary to question the validity of the results of this research by expanding the scope of services other than life insurance that can be compared to professional sports services. For instance, Abuhamdeh et al. (2015) argued that services such as movies and mystery novels have the same characteristics as professional sports services. Therefore, it will be necessary to verify whether the results would be similar to those of this research if these services were analysed as targets.

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References

- Abe, Shunsuke (2014), "Visualization and Utilization of Customer Data in J-League," *Journal of Regional Activation*, 20, 8-15.
(in Japanese)
- Abuhamdeh, S., Csikszentmihalyi, M., & Jalal, B. (2015), "Enjoying the Possibility of Defeat: Outcome Uncertainty, Suspense, and Intrinsic Motivation," *Motivation and Emotion*, 39(1), 1-10.
- Anderson, E., & Fornell, C. (2000), "Foundations of the American Customer Satisfaction Index," *Total Quality Management*, 11(7), 869-882.

- Bagozzi, R., & Yi, Y. (1988), "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Baker, B., McDonald, H., & Funk, D. (2016), "The Uniqueness of Sport: Testing against Marketing's Empirical Laws," *Sport Management Review*, 19(4), 378-390.
- Baldinger, A., & Rubinson, J. (1996), "Brand Loyalty: The Link between Attitude and Behavior," *Journal of Advertising Research*, 36(6), 22-34.
- Brandes, L., & Franck, E. (2007), "Who Made Who? An Empirical Analysis of Competitive Balance in European Soccer Leagues," *Eastern Economic Journal*, 33(3), 379-403.
- Ehrenberg, A., Goodhardt, G., & Barwise, T. (1990), "Double Jeopardy Revisited," *Journal of Marketing*, 54(3), 82-91.
- Fornell, C. (1992), "A National Customer Satisfaction Barometer: The Swedish Experience," *Journal of Marketing*, 56(1), 6-21.
- Fornell, C., & Larcker, D. (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18(1), 39-50.
- Gray, G., & Gray, S. (2012), "Customer Retention in Sports Organization Marketing: Examining the Impact of Team Identification and Satisfaction with Team Performance," *International Journal of Consumer Studies*, 36(3), 275-281.
- Gremler, D., & Brown, S. (1999), "The Loyalty Ripple Effect: Appreciating the Full Value of Customers," *International Journal of Service Industry Management*, 10(3), 271-291.
- Gupta, S., Lehmann, D., & Stuart, J. (2004), "Valuing Customers," *Journal of Marketing Research*, 41(1), 7-18.
- Guseman, D. (1981), "Risk Perception and Risk Reduction in Consumer Services," *Proceedings of the American Marketing Association*, editor Donnelly, J. & George, W., Chicago (IL), 200-204.
- Hair, J., Sarstedt, M., Ringle, C., & Mena, J. (2012), "An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research," *Journal of the Academy Marketing Science*, 20, 414-433.
- Hair, J., Tomas, G., Hult, M., Ringle, C., & Sarstedt, M. (2014), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2016), "Testing Measurement Invariance of Composites Using Partial Least Squares," *International Marketing Review*, 33(3), 405-431.
- Hulland, J. (1999), "Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies," *Strategic Management Journal*, 20(2), 195-204.
- Kuroiwa, K. (2002), "The Impact of Customer Retention on Profitability - A Simulation Study in the Office Building Leasing Business," *Japan Marketing Journal*, 83, 58-66. (in Japanese)
- Laverie, D., & Arnett, D. (2000), "Factors Affecting Fan Attendance: The Influence of Identity Salience and Satisfaction," *Journal of Leisure Research*, 32(2), 225-246.
- Macintosh, G., & Lockshin, L. (1997), "Retail Relationships and Store Loyalty: A Multi-level Perspective," *International Journal of Research in Marketing*, 14(5), 487-497.
- Mahony, D. F., Madrigal, R., & Howard, D. A. (2000), "Using the Psychological Commitment to Team (PCT) Scale to

- Segment Sport Consumers Based on Loyalty," *Sport Marketing Quarterly*, 9(1), 15-25.
- Matsuoka, H., Chelladurai, P., & Harada, M. (2003), "Direct and Interaction Effects of Team Identification and Satisfaction on Intention to Attend Games," *Sport Marketing Quarterly*, 12(4), 244-253.
- Mitchell, V. (1999), "Consumer Perceived Risk: Conceptualisations and Models," *European Journal of Marketing*, 33(1/2), 163-195.
- Neale, W. (1964), "The Peculiar Economics of Professional Sports," *The Quarterly Journal of Economics*, 78(1), 1-14.
- Reichheld, F., & Earl Sasser, W. (1990), "Zero Defections: Quality Comes to Services," *Harvard Business Review*, 68(5), 105-111.
- Reichheld, F., & Teal, T. (1996), *The Loyalty Effect*, Harvard Business School Press.
- Riebe, E., Wright, M., Stern, P., & Sharp, B. (2014), "How to Grow a Brand: Retain or Acquire Customers?," *Journal of Business Research*, 67, 990-997.
- Reinartz, W., & Kumar, V. (2000), "On the Profitability of Long-Life Customers in a Noncontractual Setting: An Empirical Investigation and Implications for Marketing," *Journal of Marketing*, 64, 17-35.
- Reinartz, W., Haenlein, M., & Henseler, J. (2009), "An Empirical Comparison of the Efficacy of Covariance-based and Variance-based SEM," *International Journal of Research in Marketing*, 26, 332-344.
- Reinartz, W., Thomas, J. S., & Kumar, V. (2005), "Balancing Acquisition and Retention Resources to Maximize Customer Profitability," *Journal of Marketing*, 69(1), 63-79.
- Ringle, M., Wende, S., & Becker, M. (2015), *SmartPLS 3*. Boenningstedt: SmartPLS GmbH, <http://www.smartpls.com>.
- Rottenberg, S. (1956), "The Baseball Players' Labor Market," *Journal of Political Economy*, 64, 242-58.
- Sharp, B. (2010), *How Brands Grow*, Oxford University Press.
- Tagashira, T & Morimura, F. (2017), "An Empirical Research on the Relationship between MD Standardizations, Retail expansion and Performance," *Journal of Marketing & Distribution*, 20(1), 1-21. (in Japanese)
- Trail, G. T., Anderson, D. F., & Fink, J. S. (2005), "Consumer Satisfaction and Identity Theory: A Model of Sport Spectator Conative Loyalty," *Sport Marketing Quarterly*, 14(2), 98-112.
- Trail, G. T., Fink, J. S., & Anderson, D. F. (2003), "Sport Spectator Consumption Behavior," *Sport Marketing Quarterly*, 12(1), 8-17.
- Wakuta, R. (2018), "Retention Rate and Profitability in Japanese Life Insurance Services: Using the Dirichlet Model," *Studies on Commodities*, 61(3 · 4) 1-15. (in Japanese)
- Wakuta, R. (2020), "The Relationship between Profitability and Customer Retention Rates in Life Insurance Companies: Using Partial Least Squares Structural Equation Modeling," *Kyoto Management Review*, 36, 53-64.
- Wakuta, R. (2022), "Competitive Balance and Revenue in Professional Football Leagues: Comparative Study between the United Kingdom and Japan," *Japanese Journal of Sport Management*, 14(1) 25-35. (in Japanese)
- Wann, D., & Branscombe, N. (1993), "Sports Fans: Measuring Degree of Identification with Their Team," *International Journal of Sport Psychology*, 24, 1-17.

- Watanabe, N. M. (2012), "Japanese Professional Soccer Attendance and the Effects of Regions, Competitive Balance, and Rival Franchises," *International Journal of Sport Finance*, 7(4), 309-323.
- Wong, K. (2013), "Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques using SmartPLS," *Marketing Bulletin*, 24, Technical Note1, 1-32.
- Yoshida, M., Heere, B., & Gordon, B. (2015), "Predicting Behavioral Loyalty through Community: Why Other Fans Are More Important than Our Own Intentions, Our Satisfaction, and the Team Itself," *Journal of Sport Management*, 29(3), 318-333.
- Yoon, K., & Tran, T.V. (2011), "Revisiting the Relationship between Consumer Loyalty and Price Sensitivity: The Moderating Role of Deal-proneness," *Journal of Marketing Theory and Practice*, 19(3), 293-306.