

# INVESTIGATION OF THE RELATIONSHIP BETWEEN LOYALTY CARD OWNERSHIP, BRAND LOYALTY AND LEVEL OF CONSUMPTION

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## Abstract

This article is an extension of previously conducted research on profiling Czech loyalty program users according to sociodemographic factors and identifying them by industry. The aim of this research is to focus on loyalty programs in selected market sectors and to investigate the relationship between loyalty card ownership, brand loyalty and level of consumption and thus investigating loyalty program users beyond their sociodemographic factors. To do so, it was necessary to collect information by data mining, using primarily Market & Media & Lifestyle database to analyse a sample of over 15,000 respondents from the Czech Republic. Analysis of these relationships can serve businesses in their loyalty program evaluation. The findings suggest that in certain market sectors loyalty program members have a preference to shop at the program's brand and consume more than non-members, indicating that these programs can secure attractive consumers in their market sector and prove to be valuable to their operators.

**Key words:** loyalty programs, behavioural loyalty, consumer behaviour, data mining, MML-TGI

**JEL Code:** M30, M31

## Introduction

Loyalty programs are generally accepted as a tool that can enhance customer relationship management and customer retention. However, in certain cases, those programs are being terminated by companies due to their poor results. To investigate, which customers are better fitted to partake in loyalty programs, previous research was conducted to determine which sociodemographic factors in various industries indicate that a consumer is better fitted for those programs. Expanding on this research, it was determined that to deepen this knowledge, it is also necessary to understand the relationship between key variables of loyalty program

membership. Those are loyalty card ownership, brand loyalty and level of consumption. Thus the aim of this article is to focus on loyalty programs in selected market sectors and to investigate the relationship between loyalty card ownership, brand loyalty and level of consumption.

Liu (2007) describes the importance of successfully managed loyalty programs as they increase share of wallet, store visit frequency, consumer demand, switching costs and help generate overall long term purchases. On the contrary, Henderson et al. (2011) state, that although loyalty programs are growing in popularity, the financial results seldom meet expectations and their poor performance eventually results in their termination. While various researchers reach different conclusions on the performance of loyalty programs, Bijmolt et al. (2010) offer a middle ground. They claim that loyalty programs are a means to increase consumer purchase behaviour in the long run, however, the effect is not the same regarding different consumer segments and markets. This is evident in the Czech Republic as Formánek and Tahal (2017) claim that while the participation rate in food and beverages category of loyalty programs is 47.2 %, it is only 4.4 % in the master home appliances category.

Regarding loyalty programs popularity in the USA, there are over 3.3 billion memberships with a population of 324.8 million (United States Census Bureau, 2020), averaging 29 memberships per household. Xie and Chen (2013) explain, that such polygamous loyalty exists because loyalty programs are most frequently feeless. That encourages consumers to join programs without commitment. Thus out of all the loyalty program memberships, only 41 % are actively used. This figure decreased annually by 2-3 % between 2010 and 2017 (The Economist, 2017).

Despite the mixed findings regarding overall effectiveness of loyalty programs, certain researchers claim that these programs have a positive effect on brand loyalty. Gupta et al. (2018) state, that program loyalty starts at a transactional level and ultimately leads to brand loyalty on an emotional level, thus suggesting a possible positive relationship between loyalty card ownership and brand loyalty.

In regards to levels of consumption, Lal and Bell (2003) explain, that loyalty programs are usually more attractive to heavy users compared to light users, as they are able to benefit more due to their design. In terms of influencing these levels, Liu (2007) describes, that loyalty programs can increase consumption, but only to a certain limit. Breugelmans and Liu-Thompkins (2017) expand by saying that loyalty programs do not necessarily increase overall

consumption, instead they maximize the usage of one brand. This raises the question of relationship between loyalty card ownership, brand loyalty and level of consumption.

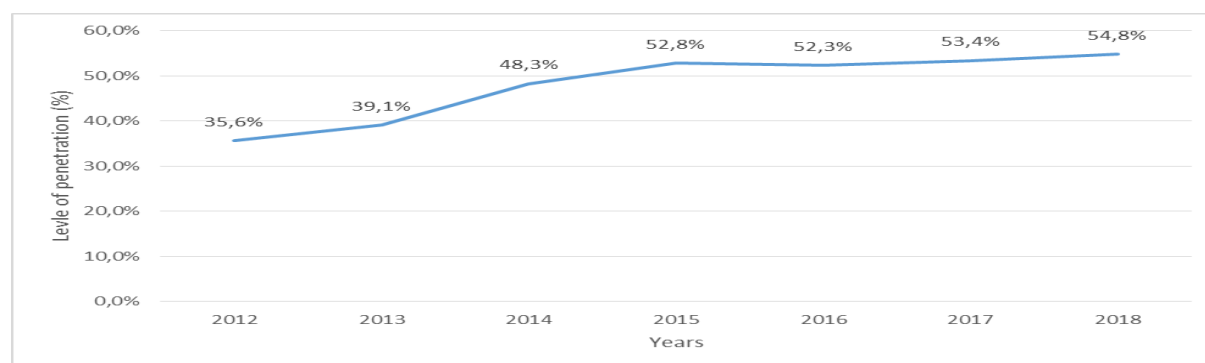
## 1 Methodology

The primary source of data was Market & Media & Lifestyle (MML-TGI) database that collects information in the Czech Republic from circa 15,000 consumers annually through a questionnaire. Via data mining it was possible to analyse a sample from 2018 containing 15,007 respondents from the Czech Republic. In the beginning of the analysis, the entire sample is used. However, with the narrowing scope of research focusing on gas station loyalty program members, it is constricted to a sample of only 7,642 respondents. The result of equality of means test showed a p-value  $< 0.05$ , implying statistical significance. To comprehensively display data, it was structured into tables that present mainly column percentages (c %), correlation (cor.), affinity indexes (Index) and sign schemes (+/-).

## 2 Results and discussion

The overall loyalty program penetration among the Czech population (12 to 79 year olds) was 54.8 % in 2018. According to Figure 1, it is a noticeable growth since 2012, when the overall penetration was 35.6 %. The development is even more significant considering the 2008 level of penetration was only 15.8 %. Despite the mentioned decline in active memberships in the USA, loyalty programs seem to be on the rise in the Czech Republic.

**Fig. 1: Loyalty program penetration in the Czech market**



Source: Retrieved from MML-TGI, 2012 – 2018

In regards to specific market sectors, Table 1 shows that the hypermarkets and supermarkets sector has the greatest loyalty program market penetration of 45.5 %, followed

by (disregarding the other category) drugstores and cosmetics sector with 31.8 %. Narrowing the scope to solely loyalty program members, the loyalty program penetration is again dominated by the hypermarkets and supermarkets sector with 82.7 % of all loyalty program members owning a hypermarket or a supermarket loyalty card. That sector is followed by the drugstores and cosmetics sector with 58 % of all loyalty program members having a loyalty card.

**Tab. 1: Loyalty programs' market penetration in the Czech Republic**

Market sectors	Penetration of loyalty programs in the population (%)	Penetration of loyalty programs among loyalty program users (%)
Gas stations	16	29,1
Hypermarkets and supermarkets	45,5	82,7
Drugstores and cosmetics	31,8	58
Clothing and shoes	22,7	41,4
Mobile operators	13,5	24,7
Other	33,1	59,7

Source: Retrieved from MML-TGI, 2018, N = 15 007

Although Table 1 shows a relatively low penetration level of 16 % for the market sector of gas stations, one should take into account that supermarkets logically have more customers than gas stations due to the inequality of demand between groceries and gas. Thus recalculating the penetration level of gas station loyalty programs makes them by outward appearance less frequented. However, after identifying that the sector is in fact not small, it was chosen for further analysis especially for its standardized data. It enables investigation of the relationship between the actual membership levels, behavioural loyalty and consumption levels of members and non-members. While Czech Republic has many brands of gas stations, only four major ones (Benzina, MOL, OMV and Shell) are being intentionally identified since they offer loyalty programs and have a large enough customer base to analyse.

**Tab. 2: Gas stations loyalty programs' market penetration in the Czech Republic**

Gas station companies	In what company are you a member or have participated in a loyalty program?		
	% of all gas station loyalty program members	% of customers	% of the population
Benzina	30,5	8	4,9
MOL	23,6	6,5	3,8
OMV	18,8	5,1	3
Shell	45,8	12,4	7,3
Other	5,1	1,3	0,8

Source: Retrieved from MML-TGI, 2018, N = 15 007

Focusing solely on the gas stations market sector, Table 2 shows Shell’s loyalty program is dominant with 45.8 % of all gas station loyalty program users enrolled. Out of all of their customers, the loyalty card ownership rate is 12.4 % and 7.3 % of the Czech population takes part. Second strongest program is Benzina’s with 30.5 % of all gas station loyalty program users enrolled. The weakest one is OMV’s (disregarding the other category) with 18.8 %.

Nonetheless, as mentioned previously, loyalty can be polygamous and thus customers’ enrolment does not directly represent brand loyalty. Table 3 shows the relationship between gas station loyalty program membership and the actual gas station choice to purchase fuel. All four selected gas station brands display three plus signs for loyalty program members purchasing fuel at the corresponding gas station, indicating repeat patronage from members. The greatest rate is for Benzina, whose 79.6 % of loyalty program members shop at the corresponding gas stations. The weakest one is OMV with only 68.3 % of its members shopping at its gas stations, while 41.9 % of OMV members also shop at MOL and 49.5 % shop at Shell, which is also supported by a strong sign scheme (three plus signs for each). That indicates that OMV members are relatively disloyal. Polygamous loyalty is also suggested for Shell loyalty program members who also shop at MOL. Likewise MOL loyalty program members shop at Shell. Interestingly, the ratio of purchases of Benzina members at MOL gas stations (and vice versa) is below average (displayed with negative signs).

**Tab. 3: Relationship between loyalty program membership and choice of gas stations for fuel purchase**

At what gas station did you purchase fuel in the last 12 months?	At which company are you a member of a loyalty program or have taken part in?							
	Benzina		MOL		OMV		Shell	
	c %	+/-	c %	+/-	c %	+/-	c %	+/-
Benzina	79,6	+++	38,9	--	48,9	0	45,9	0
MOL	12,4	---	76,3	+++	41,9	+++	22,3	+++
OMV	27,2	0	29,6	0	68,3	+++	28,9	0
Shell	33,8	0	35,8	++	49,5	+++	77,1	+++

Source: Retrieved from MML-TGI, 2018, N = 7 642

It is understandable that the unexpected necessity to purchase fuel can force consumers to shop at the closest gas station and occasional price hikes or discounts can influence the purchase decision making. Thus it is reasonable to also analyse at which gas

stations, loyalty program members purchase fuel most frequently rather than in general. Table 4 shows a sign scheme that confirms the tendency of loyalty program members to purchase fuel mostly at their memberships' corresponding gas station and that they rather refuse to frequent competing brands. The greatest ratio of loyal loyalty program members is for Benzina, whose 60 % of members mostly frequent the corresponding gas stations. MOL has 49.4 %, almost half of its members, frequent mainly their gas stations. While OMV's members brand loyalty is relatively weak. Whereas 38.9 % of their members frequent the corresponding gas stations, 35.2 % of their members purchase fuel mainly at their main competitors. Similarly, while 41.9 % of Shells' members appear loyal, 29.7 % purchase fuel mainly at their main competitors. Interestingly though, 11.8 % of all fuel consumers frequent predominantly Shell, which makes it the second most frequented gas station brand after Benzina. Nonetheless, including other competing gas stations, majority of loyalty program members of both OMV and Shell mainly purchase fuel at other gas stations. A possible explanation might be, that these two companies offer premium fuel for higher prices than the rest of the competition and their customers might not always purchase it for daily driving.

Additionally, Table 4 shows a positive correlation coefficient of 0.4 for MOL and Shell as opposed to 0.2 for Benzina and OMV, hence confirming a relationship between loyalty card ownership and the gas station a consumer purchases fuel from most frequently.

**Tab. 4: Relationship between loyalty program membership and most frequented gas stations for fuel purchase**

At what gas station do you purchase fuel most frequently?	At which company are you a member of a loyalty program?											
	Benzina			MOL			OMV			Shell		
	c %	cor.	+/-	c %	cor.	+/-	c %	cor.	+/-	c %	cor.	+/-
Benzina	60	0,2	+++	12	-0	---	16	-0	---	17	-0	---
MOL	3,7	0	---	49	0,4	+++	9,5	0	0	4,5	0	---
OMV	7,6	0	--	6,4	0	---	39	0,2	+++	8,6	0	--
Shell	7	0	---	7,7	0	--	9,3	0	0	42	0,4	+++

Source: Retrieved from MML-TGI, 2018, N = 7 642

Regarding levels of consumption, available data in Table 5 shows the relationship between loyalty program membership and the amount of purchased gasoline per month. The tables' displayed indexes suggest, that the higher the volume of purchased gasoline, the higher is the tendency for a customer to be a gas station loyalty program member. For example, those who purchase 30.1 litres or more have an index of over 100. The highest one being 153.2 for

those who purchase 100.1 to 150 litres. On the contrary, the suggested relationship for not being a member and still purchasing fuel is for those that purchase 5.1 to 30 litres. These relationships are additionally supported by the positive sing scheme.

**Tab. 5: Relationship between loyalty program membership and amount of purchased gasoline per month**

How many litres of gasoline do you purchase per month?	Are you a member of gas station loyalty program or have you participated in one?								
	Yes				No				Total
	c %	Index	cor.	+/-	c %	Index	cor.	+/-	c %
0 litres	28	105	0	0	26	98,3	0	0	26,9
0,1 - 5 litres	2,3	98,3	0	0	2,4	101	0	0	2,4
5,1 - 15 litres	6,8	67	-0	---	11	112	0,1	++ +	10,1
15,1 - 30 litres	17	80,8	-0	---	23	107	0,1	++ +	21,3
30,1 - 50 litres	25	116	0	++ +	20	94,2	0	---	21,4
50,1 - 100 litres	12	105	0	0	11	98	0	0	11,2
100,1 - 150 litres	5,6	153	0,1	++ +	2,9	80,5	-0	---	3,6
more than 150 litres	3,3	110	0	0	2,9	96,3	0	0	3
Total	100	100	0	0	100	100	0	0	100

Source: Retrieved from MML-TGI, 2018, N = 7 642, p-value < 0.01

**Tab. 6: Relationship between loyalty program membership and amount of purchased diesel per month**

How many litres of diesel do you purchase per month?	Are you a member of gas station loyalty program or have you participated in one?								
	Yes				No				Total
	c %	Index	cor.	+/-	c %	Index	cor.	+/-	c %
0 litres	57	89	-0	---	67	104	0,1	++ +	64
0,1 - 5 litres	1,3	155	0	++	0,7	80	0	--	0,8
5,1 - 15 litres	3,6	105	0	0	3,3	98	0	0	3,4
15,1 - 30 litres	7,6	91,4	0	0	8,6	103	0	0	8,3
30,1 - 50 litres	10	98,9	0	0	10	100	0	0	10,2
50,1 - 100 litres	10	128	0	++ +	7	89,8	0	---	7,8
100,1 - 150 litres	4	187	0,1	++ +	1,4	67,9	-0	---	2,1
more than 150 litres	6,5	196	0,1	++ +	2,1	64,7	-0	---	3,3
Total	100	100	0	0	100	100	0	0	100

Source: Retrieved from MML-TGI, 2018, N = 7 642, p-value < 0.01

On the subject of consumption levels of diesel, Table 6 shows that there is also an indication that gas station loyalty program members are consuming more than non-members. The table displays that loyalty program members consuming between 0.1 to 15 litres and 50.1 to 150 litres and more have an index of over 100. The index peaks at 196.3 for members who purchase more than 150 litres of diesel. Meaning that the ratio of loyalty program members among those who purchase more than 150 litres of diesel per month is approximately double than non-members. Additionally, the sign scheme confirms that those who purchase over 50.1 litres of diesel per month have the tendency to be a gas station loyalty program member rather than not.

Moreover, both Table 5 and Table 6 suggest that there is a relationship between the level of consumption and whether a consumer is a member of a loyalty program or not.

## **Conclusion**

The aim of this article, was to investigate the relationship between loyalty card ownership, brand loyalty and level of consumption, particularly in the case of the gas station market sector. Via an analysis of loyalty card ownership and the choice of a gas stations one purchases fuel at, it is suggested that there is a relationship between the two factors. Loyalty program members tend to prefer to shop at the programs' corresponding gas stations. However, this loyalty is not exclusive. For example, almost half of OMV loyalty program members commonly shop at their two biggest competitors. On the other hand, the analysis also reveals that some gas station brands, such as Benzina and MOL, have a negative relationship between their member's tendency to shop at the competition. Indicating certain kind of brand loyalty by not frequenting the competing gas stations.

Although the analysis did suggest certain level of brand loyalty for loyalty program members, due to the specifics of purchasing fuel, similar analysis was conducted again. However, this time investigating the relationship between loyalty card ownership and the most frequent choice of a gas station one purchases fuel at. This analysis confirmed that loyalty program members prefer to shop at their memberships' corresponding gas stations and that they actually reject the competition. Indicating that although in some cases polygamous, gas stations' loyalty program members display behavioural loyalty while purchasing fuel.

The monthly sum of purchased gasoline or diesel, further revealed the relationship between loyalty card ownership and levels of consumption. In both cases of fuel, the larger the quantity purchase, the greater is the tendency for that consumer to be a gas station loyalty



program member. Similarly, the smaller the amount of fuel purchased, the more likely those consumers are not members. Both ways, the sign scheme indicated a relationship between the variables of loyalty card ownership and the level of consumption, suggesting that loyalty program members tend to purchase more fuel than non-members.

Regarding loyalty programs introduced and managed by gas station companies, there are two key relationships. First, between the loyalty program that a consumer is enrolled in and the gas station they tend to purchase fuel at. Second, between a consumer having a gas station loyalty card and the amount of fuel they purchase. This suggests that members of gas stations' loyalty programs prefer to purchase fuel at the programs' corresponding gas stations and that they consume more than non-members. It signifies that loyalty programs in the market sector of gas stations can secure attractive customers and thus prove to be valuable. Although active members of loyalty programs in the USA might be on the decline, companies and their managers should not shy away from offering such programs. Instead, at least in the gas station sector in the Czech Republic, they can use loyalty programs to lock in their heaviest users and to a certain extent prevent them from visiting competing brand.

It is important to keep in mind, that the analysis was conducted on the Czech population and primarily on members of gas station loyalty programs. Those programs have a penetration level of 16 % among the population. For that reason, future research could attempt to investigate if similar findings would be found in the case of the hypermarkets and supermarkets sector, since that sectors' loyalty programs are more homogeneous compared to gas stations' loyalty programs. Those findings could contribute to determining whether the mentioned relationship between card ownership, brand loyalty and consumptions levels is applicable to all loyalty programs or only to those of gas stations.

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