

## SUCCESS AND IMPACT FACTORS OF CARD-BASED LOYALTY SYSTEMS - AN EMPIRICAL ANALYSIS IN THE GERMAN RETAIL SECTOR

**Markus Ruch**

Albert-Ludwigs-Universität, Faculty Institute of Computer Science and Social Studies,  
Freiburg, Germany  
*ruch@iig.uni-freiburg.de*

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**Abstract:** *The retail sector in Germany has also been badly hit by intensifying international competition. Confronted with lowering margins and the movement of customers to the most favourable provider in each case, it became increasingly more difficult for companies to reach such goals as turnover and market share inputs. With the introduction of Card-based Loyalty Systems (CBLs), an instrument appears to have been found which increases customer retention through the evaluation of purchasing information and enables the companies to realize their goals even under difficult market conditions. The provision for this, however, is the permanent acceptance of the customer with regard to these systems.*

*This paper first gives an overview of the connections between CBLs and increased customer retention before their impact factors are empirically analyzed for consumer utility. If these factors flow into a cost-benefit analysis, it appears that privacy of the consumers is endangered in the long term and an added value and consequently the preconditional permanent acceptance of the customer is not necessarily given. The resulting question "Why do customers make use of CBLs anyway?" can be answered using the approach of hyperbolic utility-discounting.*

**Keywords:** *card-based loyalty systems, consumer profile, privacy, hyperbolic utility-discounting.*

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### 1. WHAT'S THE SITUATION IN GERMAN RETAIL?

Purchasing stores have converged even further with regard to the quality of their fixtures and services [9], whereby a differentiation over the range compared with the business rival now seems hardly possible [8]. Furthermore, an almost saturated demand is faced with an overproduction of bulk articles [15]. A branch-wide successive lowering of the prices should however have motivated consumers to buy, but led to companies being faced with ever-decreasing margins and consumers moving to the most favourable provider in each case [15]. Through increasing pressure of costs and the ever-decreasing consumer willingness to remain loyal to one company, it became increasingly more difficult for the retail sector to achieve business objectives such as turnover and market shares [5]. As a customer, who is voluntarily tied to one company, is characterized by an average degree of

purchasing frequency and sum as well as a high degree of tolerance with regard to moving to rival companies [9], it was necessary to lay the focus on increased customer retention in the retail sector. "Customer Relationship Management" systems (CRM) were to resolve this, whose task is the permanent and widespread upkeep of customer relations [8]. The basis of each CRM, however, is an adequately large base data from which the desires and preferences of the consumers can be derived. CBLS help the retail sector to collect precisely this information required about the purchasing behaviour of the consumers and utilize it for increased customer retention. However, the provision for this is the permanent acceptance of the consumer with regard to these sales rebate and information systems.

The aim of this paper is to present the success and impact factors of CBLS from the retail sector perspective and to examine what a permanent skimming of the resultant potential of these information systems can counteract. For this, the effect correlations between CBLS and increased customer retention are briefly addressed in the following section before the hypotheses examined are presented in section three. In section four, the design of the examination is briefly addressed and the results of the empirical analysis and possible explanation approaches presented. The paper concludes with a summary of the findings.

## 2. SUCCESS FACTORS OF CUSTOMER RETENTION

The principal task of CBLS is primarily to bind customers more strongly or once again to companies as well as the acquisition of new customers [4]. CBLS, as instrument of the discount policy, directly influence the price to be paid for a product through their own reimbursed aggregated discount [8] (incentive on the part of the customer) and offer the companies extensive information about their client base (incentive on the part of the company).

The leading German CBLS have the same procedure for this: Through the presentation of a personalized customer card, the consumer receives his discount claims – mainly in the form of virtual discount points – that are distributed on reaching a certain threshold. In return, the company receives personal-related purchasing data such as product information, price, rebate amount, location and date [14]. Through the rapid development in information and communication technology, "data-mining" procedures further allow consumer profiles to be generated from this plethora of data, from which desires and wishes can, in turn, be derived, in order to be better able to cater in the future, e.g. through an adjustment in the range.

These measures mainly aim at increased *customer satisfaction*, which, however, is only one success factor of customer retention. CBLS are also as successful in the retail sector as they can also positively influence the three further success factors for increased customer retention of *switching costs* (SC), *variety seeking* and the *attractiveness of their own company* compared with the business rival [6]. As there is a negative interdependency between the SC factors and attractiveness towards the rival, CBLS, along with artificially procured SC – aim for the distribution of the rebate from a certain threshold – primarily on the set-up of socio-psychological SC, as a customer does not want to change to another company here owing to positive emotional experiences. Variety seeking describes the consumer's requirement to find variety in his daily purchasing life. CBLS achieve this, for example, through customer magazines that regularly give information about lottery games or premium offers. Even if the guaranteed rebate amounts are quite low in the retail sector (0,5 - 2%), it still seems attractive to the customer to retain this discounting at all times and for the whole range. Together with the above-mentioned benefits, an added value should emerge for the customer that should lead him to voluntarily bind himself to one company.

If one considers the distribution of the two large CBLS in Germany, *Payback* and *HappyDigits*, with 27 and 22 billion customer cards respectively issued since 2001, one can speak of a successful introduction and high acceptance on the part of the customer. These loyalty systems in their present form therefore appear to be the means suitable for increased customer retention, which help companies to achieve their goals even under difficult market conditions. This raises the question, however, of whether this also applies in the long term, or what could stand in the way of a permanent acceptance on the part of the consumer.

### **3. INFLUENCE FACTORS: HYPOTHESES FOR THE SHORT- AND LONG-TERM TIME HORIZON**

For a more precise specification of this issue, two hypotheses are presented, in which the impact factors starting from CBLS are examined for consumer utility. The third hypothesis should shed light on whether the use of such a system automatically leads to an added value and therefore to a permanent acceptance on the part of the customer in the long term. These hypotheses are examined by means of empirical data which stem from a survey among users of the largest German CBLS *Payback*.

In order to be able to make an assertion about the temporal effects of CBLS on consumer use, the impact factors of this system are examined in the first hypotheses for their distortion in the course of time (short- vs. long-term effective).

*H1:* In the short term, the impact factors of CBLS *rebate, number of cooperation partners and convenient handling of the system* would have a positive effect and *possible increased price level* a negative effect on customer utility.

*H2:* In the long term, in addition to the *H1* factors, the impact factors of *individualization, trust in the CBLS and variety seeking* would have a positive effect and *increased information processing costs, exchange costs, price differentiation and possible loss of the private sphere* a negative effect on customer utility.

Whether consumers really also benefit in the long term from CBLS through an added value is to be clarified by a third hypothesis. For this, the previously identified impact factors are weighed against each other in a cost-benefit analysis.

*H3:* In the long term, consumers do actually benefit per se through the utilization of CBLS.

### **4. EXAMINATION DESIGN AND EMPIRICAL FINDINGS**

The manner of data collection is firstly addressed in the following to allow conclusions about their suitability and quality for the acceptance or rejection of the hypotheses set out.

#### *4.1. DESIGN OF THE EMPIRICAL INVESTIGATION*

The basis of the empirical investigation is data from a survey among users of the largest German CBLS *Payback*. 71 people were questioned in personal interviews by means of a questionnaire divided into 11 blocks and 25 individual questions. The survey was carried out in Freiburg, Germany between January and February 2005, whereby the sample was based on a purely random selection.

#### 4.2. DESCRIPTIVE FINDINGS OF THE EMPIRICAL INVESTIGATION

In the short term, the initial impact factor of *rebate* proved to be a positive utility factor for 70% of the respondents. When asked about the significance of the rebate for utilizing the card, 46% of the subjects indicated that this factor is relatively or very significant for them and there must therefore be further reasons for the utilization of a CBLS for the remaining users. As second factor, the *number of cooperation partners* (how many companies can rebate be obtained from with a customer card) is regarded by 31% of the people as positive, as utility neutral on the other hand by 59%. This can be explained by the fact that 84% of those questioned only regularly purchase at three companies of the cooperation association (Fig. 1).

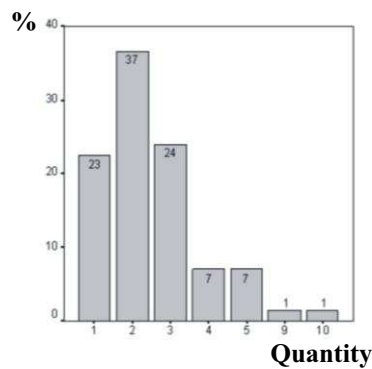


Figure 1. Regularly purchase at cooperation partners

The *convenient handling of the system* is regarded as relatively or very positive by 66% of the respondents, whereas for 30% this has no impact on the utility. A possible *increased price level* must be named as the primary negative impact factor, created for instance through costs for the implementation of a CBLS, which are transferred to the consumers. Once the consumers have committed themselves, this can be used by companies to involve customers in the system costs. 75% of the respondents indicated that they consider it relatively or very probable that the guaranteed rebate was previously added to the prices, therefore there would be no actual rebate (Fig. 2). Only 25% of the consumers considered this thesis relatively or very unlikely. It is necessary to put on record here that 30% of the respondents assume that no rebate is guaranteed at all through CBLS. On the premise of rationally dealing individuals, these consumers thus use the system in order to regain the “normal” price level by disclosing their purchasing data.

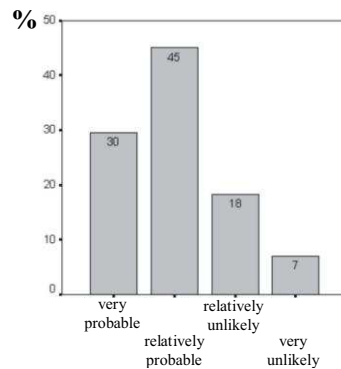


Figure 2. Expectation for a higher price level

If these findings are taken as basis for the evaluation of *H1*, it can be said that this hypothesis must not be dismissed and therefore accepted.

If the long-term effects of a CBLS on consumer utility are considered, the *individualization* of the purchasing assortment or of the products must be named as primary impact factor, as this has a direct positive effect on customer satisfaction and therefore on customer retention [13]. However, the survey results show that only 31% of the respondents consider it relatively or very probable that a more individual product offer was already implemented on account of their purchasing data collected (Fig. 3).

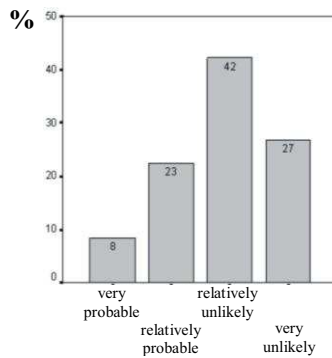


Figure 3. Expectation for an individualization

Even if individualization had taken place, only 37% of the subjects would use their customer cards more frequently, whereas for 54% this would be utility neutral. The second positive impact factor is the *trust* of a consumer in a CBLS, as this is the basis of one of those exchange relations where there is no absolute result certainty. Furthermore, trust is a generally desirable state that increases personal welfare [11] and helps to lower transaction costs by minimizing risks or reducing existing uncertainty [7]. The impact factor of trust was queried in combined form. 81% of the respondents frequently or always use their card when they shop in companies of the cooperation association, indicating a high acceptance of the system by the consumers. This is despite the fact that 83% of the respondents consider an exchange of purchasing data within the cooperation association at least relatively unlikely. With the question of how such an exchange of data affects the utilization of the rebate system, 25% evaluated this as negative, whereas for 65% this would have a utility neutral effect (Fig. 4).

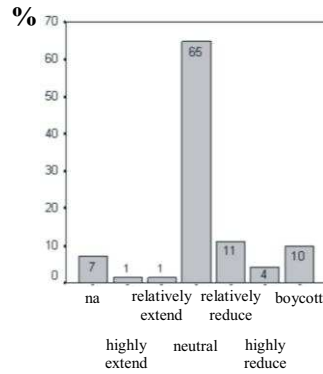


Figure 4. Consequences of a data exchange for the use of CBLs

A further, only long-term arising utility factor is *variety seeking*, i.e. the need for variety in daily shopping, which can also be satisfied by CBLs. In the survey, this factor was queried by way of the premium diversity of such a system. It could be confirmed that it was a question of a positive utility factor, since 95% of the subjects at least do not regard the premium diversity as negative and almost every second consumer (47%) regarded this as relatively or very positive for card utility.

*Increased information processing costs* were named as primary negative factor, yet only becoming effective during the course of time. Almost all CBLs in Germany send their consumers unrequested information (e.g. advertising). If this information is basically of interest to the customer, this definitely leads to an added value. On the other hand, if the consumer only partially benefits from this information, further costs can be incurred for him through the necessary filtering of the relevant information. The empirical data shows, however, that there are three preference groups (Fig. 5).

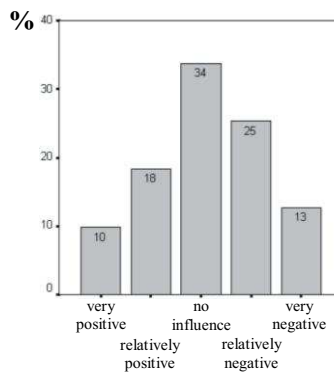


Figure 5. Consequences of unrequested information

28% of the respondents regard this additional offer of information as relatively or very positive. Compared to this, there are 38% who regard this as relatively or very much a burden. 34%, on the other hand, do not mind if they receive further advertising.

It is further necessary to name an unwanted bond due to existing *switching costs*. Opportunity costs to the level of the collected, not yet paid out rebate are incurred if a consumer changes to another CBLs. The survey results show, however, that 80% of the

respondents do not fear any disadvantages with an immediate change and this factor is of relative low significance. Only 15% of the consumers expressed concern in this regard.

A possible *price discrimination* presents a further negative impact factor, which enables companies to draw conclusions about payment readiness through the disclosed customer preferences. Moreover, companies are in a position to charge their customers various prices for the same product and thus skim part of the consumer surplus. 32% of the respondents indicated that they consider a practiced price discrimination for relatively or very probable, whereas 66% consider this very improbable (Fig. 6). If a price discrimination were to be made with security, this would negatively affect 70% of the respondents in the utilization of their customer card.

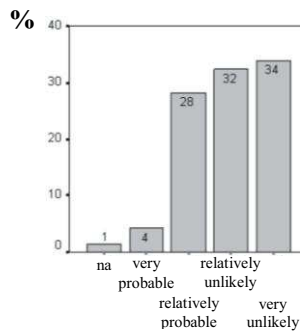


Figure 6. Expectation for price discrimination

A possible *loss of the private sphere* must be named as the final negative impact factor. The damage can result here from a misuse of personal-related data, as there are basically conflicting interests regarding data collection between companies and consumers: Companies plead for an abundance of data [12], the consumers, on the other hand, generally prefer data economy [10]. On the part of the consumer, however, there is a “trade-off” between the realizable utility from the personal-related data released (e.g. individualization) and the possible damage involved (e.g. price discrimination, data misuse) [6]. The problem arises here of digital customer profiles being able to be duplicated and distributed virtually free of charge [10], which leads to an absolute loss of control with regard to storage location and duration. Today, anonymous profiles (“online” identity) can be linked with the true identity of a consumer (“offline” identity) through “data-mining” procedures without much effort [1]. A profile with a “name” would thus emerge that would outdo the anonymous profile in its monetary value too [2], producing an economic interest in the tradable “customer profile” product. For the examination of this impact factor, it was enquired on the one hand as to what effects a permanent storage of personal-related data (up to ten years [14]) has on the utilization of CBLS. 46% of the respondents evaluated this as relatively or very negative, whereas for 49% this would be utility neutral. On the other hand, three scenarios were analyzed which allow conclusions about the privacy inclination of consumers. Scenario 1 starts out from a *data exchange between the partner companies*, which does not actually take place [14]. 83% consider this relatively or very probable. This also fits the behaviour indicated, if there was definitely an exchange of data between companies of the cooperation association: 65% of the respondents would continue to use the system in an unmodified form, whereas 15% would relatively or strongly limit their use. Only 10% of the consumers would not use the system any longer at all. In scenario 2, a *transmission of anonymous purchaser data to third companies* was presented. 76% of the respondents do after all consider this relatively or very probable, whereby 25% of the

consumers consider this relatively or very unlikely. If it were so, only 51% would continue to use the rebate system as before, 25% would relatively or strongly limit their use and 13% would no longer use the system. In scenario 3, a *transmission of data incl. name and address* was assumed. 57% of the respondents consider such an exchange of data relatively or very probable. 42%, on the other hand, consider this relatively or very improbable. If this scenario were to be realized, the number of consumers with unchanged utilization would be 21% and a significant tendency to reject can be detected: Card utilization would be relatively or strongly limited by 25%. 42% of the respondents would even boycott the CBLS.

If the results for a long-term examination are taken as a basis for the evaluation of *H2*, it can be illustrated that all impact factors could be confirmed in their impact on consumer utility, only the *increased information processing costs* show no significant tendency and the hypothesis must therefore be rejected.

Based on a cost-benefit analysis, the previously identified impact factors were jointly analyzed to obtain a net utility effect on the part of the consumer and thus examine the existence of an added value and therewith a permanent acceptance (*H3*). The impact factors were combined for this according to their positive or negative utility effect and discounted according to their temporal effectiveness, so as to allow a net evaluation of the rebate system:<sup>1</sup>

$$U_{i\ VRS}^{net} = U_{i\ VRS}^k + U_{i\ VRS}^l - S_{i\ VRS}^k - S_{i\ VRS}^l$$

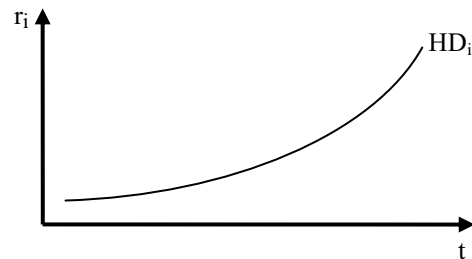
If the sum of the individual utility from the short and long term exceeds the sum of respective individual damages, a CBLS can be confirmed a positive net utility effect for an individual *i*. The evaluation of the non-monetary factors and corresponding offsetting with monetary factors is to be regarded as problematic, whereby at this point, no basic assertion can be made for all consumers. At the individual level, such an evaluation does seem possible however. Far bigger difficulties arise from a possible *loss of the private sphere*: As it involves possible damage here, which is definitely not foreseeable [3], the consumer must decide under uncertainty, i.e. without knowing the probabilities of occurrence [7]. Neither the exact degree of damage nor the probability to be expected can be estimated due to lacking experience values, whereby the long-term damage  $S_{i\ VRS}^l$  cannot be numeralized either and the entire amount of loss remains open. Consequently, no value can be ascribed at individual level to the net utility from a CBLS and the consumer cannot assess whether he will actually benefit from a CBLS. As a result, the *H3* hypothesis must also be rejected.

Further examinations have shown that this controversial consumer behaviour – utilization of CBLS despite the clear preference for the protection of their own private sphere – can be very clearly illustrated by the model of hyperbolic discounting (Fig. 7) [3].

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<sup>1</sup> *i* = individual *i*, *U* = utility, *S* = costs, *k* = short term, *l* = long term





**Figure 7.** Hyperbolic discounting function

Many economic models take a linear gradient of the interest rate as a basis for the deduction of monetary and non-monetary factors. If the human decision structure is more precisely considered however, it is noticed that this is influenced by incomplete information, bounded rationality and psychological distortions. This can be illustrated by the example of a smoker who knows about the consequences of smoking, but the cigarette generates a subjectively higher utility for him today than the future consequences of illness. Projected to CBLS, this means that the consumer today attaches a higher utility, e.g. discounting, than to the future damages through a possible loss of the private sphere.

## 5. CONCLUSION

Card-based Loyalty Systems (CBLS) are currently very suitable for the retail sector to achieve business objectives such as turnover and market shares in spite of difficult market conditions. This result can be attributed to the four success factors of increased customer retention, which are positively influenced by CBLS. In order that companies can permanently benefit from CBLS, the long-term acceptance of the customer with regard to these systems must however be secured by an added value for the customer. In order to verify this, the impact factors of these systems were empirically analyzed for consumer utility. As this involves monetary and non-monetary factors, a utility analysis can only take place on an individual level. However, the effects of a possible loss of private sphere override this result, as it is not possible for the consumer here to estimate the degree of damage as well as the probability and therefore a possible added value. The fact that CBLS are frequently used in spite of the clear preference for the protection of privacy can be illustrated by the hyperbolic utility-discounting approach. For this, incomplete information, bounded rationality and psychological distortions lead to the current utilization (e.g. rebate) being overvalued by consumers compared with the future damage (e.g. loss of the private sphere). If companies permanently want to benefit from CBLS, the consumers must be assured that their personal-related data and therefore their privacy is safeguarded in the long term.

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