Consumers’ Preferences for Online and Offline Sweepstakes and Contests
The Impact of Promotion Attributes on Consumers’ Entry Decisions

by Maik-Henrik Teichmann, Karen Gedenk, and Magdalena Knaf

Although contests and sweepstakes are widely used marketing instruments, little is known about the impact of their design on consumers’ entry decisions. Furthermore, no systematic comparison between online vs. offline contests and sweepstakes has been made to-date. Therefore we have conducted two surveys - one on offline and another on online sweepstakes and contests. Choice-based conjoint analysis was used in both data sets to investigate consumer preferences for attributes of sweepstakes and contests. Simultaneously, a concomitant variable finite mixture model was applied to segment consumers and to analyze the impact of consumer characteristics on segment membership. The findings indicate that sweepstakes and contests attract different consumers online versus offline. At the aggregate level the problem, which needs to be solved by a consumer in order to enter a contest, is of more consequence online than offline. Consumer heterogeneity in preferences for characteristics of sweepstakes and contests is larger online than offline. However, consumer characteristics can only explain a small part of that heterogeneity. We derive implications from our research for the design of sweepstakes and contests.

Keywords
Sweepstakes, contests, sales promotion, choice-based conjoint, finite mixture

1. Introduction

Contests and sweepstakes are widely used marketing instruments (Shimp 2000, p. 550). Consumers who participate in either have the opportunity of winning prizes. To enter a sweepstakes, consumers simply have to state their address, and winners are determined purely by chance. In a contest, consumers are required to solve a specific problem. While U.S. law distinguishes between these two types of promotions, the laws in many other countries, including Germany, do not. Typically, the distinction also lacks transparency in the minds of the consumers. We will therefore look at sweepstakes and contests together, as one type of sales promotion.

Sweepstakes and contests are most often used by manufacturers and retailers of consumer goods and by service providers. Typical goals are to draw consumers’ attention to their products, to enhance brand image, to increase sales and customer loyalty, and/or to generate addresses for direct marketing. In recent years, contests and sweepstakes have also become popular promotion instruments on the Internet. Internet-based contests and sweepstakes are used to increase website traffic, attract...
new customers, and/or increase the loyalty of existing customers (Reinhard 2000, p. 26; Shimp 2000, p. 555). While contests and sweepstakes can be used for different purposes, it is always important for companies to know how many and what kind of consumers their promotion attracts. These two aspects of consumer participation are directly related to the problem the consumer has to solve in order to enter the contest/sweepstakes, and to the prizes participants can win. Consequently, a key question for companies utilizing contests and sweepstakes is how the design of a contest or sweepstakes impacts the entry decision of consumers. The answer to this question may vary for online versus offline contests and sweepstakes. Internet portals listing contests and sweepstakes offered by various companies, for example, may attract a specific type of consumer. Also, the interactive and multimedia features of online sweepstakes and contests allow contestants to solve different types of problems. Thus, the importance of the contest problem on a consumer’s entry decision may vary online versus offline.

Few empirical studies have so far investigated consumers’ preferences for the various attributes of contests and sweepstakes. Brockhoff/Andreassen (1986), Stotmeister (1988), and Kalra/Shi (2002) have analyzed the attributes of offline contests and sweepstakes, while Gedenk/Teichmann (2001) surveyed online participants. These studies yield interesting preliminary results concerning the impact of attributes of contests and sweepstakes on consumers’ entry decisions. However, these are limited by various methodological and substantive restrictions. First, the studies do not compare online contests and sweepstakes with their offline counterparts. Second, the studies rarely consider heterogeneity in consumers’ preferences, while even less is known about the impact of consumer characteristics on preferential differences. Analyses at the aggregate level consequently fail to yield any insights into the issue of the types of consumers who are attracted by different kinds of contests and sweepstakes. Finally, previous studies use rather simple methods to elicit consumer preferences. Their results may not be particularly valid.

We have conducted two surveys as a means of alleviating the above deficit in research findings. Our first survey consisted of personal interviews on offline sweepstakes and contests. Our second survey was conducted online and dealt with sweepstakes and contests on the Internet. The core of both surveys consists of a choice-based conjoint analysis that measures consumer preferences for attributes of contests and sweepstakes. Our study provides the following contributions:

- We generate current insights into the impact of promotion attributes on consumers’ decisions to enter contests and sweepstakes, using state-of-the-art methods.
- We compare the preferences for contest and sweepstakes attributes of online versus offline entrants.
- We use a concomitant variable finite mixture model to simultaneously segment consumers in terms of their preferences and to analyze the impact of consumer characteristics on the probability of belonging to different segments. With this, we can examine how many and what type of consumers enter a contest or sweepstakes.

We derive from our results conclusions on design options for contests and sweepstakes, potentially useful to companies.

This paper proceeds as follows: First we describe the conceptual framework of our study (Section 2). In Section 3 we develop our model and discuss the variables used to describe attributes of sweepstakes, contests, and consumers. Section 4 describes the data that we obtained from our surveys. Next, we present the results – first at the aggregate level (Section 5) and then at the segment level (Section 6). The paper closes with Section 7, which summarizes our results and presents both the academic and practical implications of our work.

2. Conceptual Framework

2.1. Overview

As mentioned above, we do not distinguish between contests and sweepstakes; instead, we look at both of them together. Our study does not include lotteries because payment is required to buy a lottery ticket, whereas consumers can participate in contests and sweepstakes without cost to themselves [1]. Thus, a contest where a coffee manufacturer offers the consumer the possibility of winning a trip by writing the company’s advertising slogan on a postcard and mailing it, would be part of our study, but a state lottery would not. Figure 1 presents an overview of the conceptual framework for this study.

Companies pursue different goals when using contests and sweepstakes. Manufacturers and retailers frequently offer them to consumers to increase awareness, sales and loyalty and/or to enhance brand image (Gedenk 2002, pp. 314–318). Manufacturers may also offer contests and sweepstakes to retailers, using them as trade promotions. In this case, the promotion may be an incentive for retailers to display the product or run some other retailer promotion for consumers. Finally, sweepstakes or contests can help generate addresses for direct marketing purposes (Schultz/Robinson/Petriso 1998, p. 129), and increase the willingness of customers to participate in market research studies (Gajraj/Faria/Dickinson 1990; Schmalen 1989). Regardless of the contest’s or sweepstakes’ goal, the first step is always to motivate consumers to enter the promotion, which gives rise to two particularly interesting aspects, i.e., how many consumers and which consumers enter a sweepstakes or contest?

In our study we consider the left-hand side of Figure 1, as highlighted by gray shading. While it would certainly be interesting to analyze effects on image, brand
awareness or sales, they would, however, be extremely difficult to capture. We leave this issue for further research. Our study focuses on analyzing the impact of attributes of sweepstakes/contests on consumers’ entry decisions in the following manner. First, we estimate a model at the aggregate level. Then, we take into account heterogeneity in consumers’ preferences by estimating a segment-level model. In addition, we analyze whether certain consumer characteristics can explain segment membership. We draw conclusions from our results on which consumers can be reached with different kinds of sweepstakes/contests.

### 2.2. Online vs. Offline Sweepstakes and Contests

Sweepstakes and contests have been applied in marketing for a long time in the offline world. For the past decade, they have also found increasing usage on the Internet. Online promotions evidence some special features (Gedenk 2002, pp. 125–126), the most relevant of which are multimedia options, interactivity, and listings in special directories or portals on the Internet.

Interactivity and multimedia options allow for different designs of sweepstakes and contests online, compared with their offline counterparts (Wilhelm 1996, p. 70). Interactivity refers to the feedback consumers receive from their action. Multimedia refers to the combinations of text, picture, video and audio messages which can be used. For example, a contest problem might involve moving a racecar around a racetrack using a PC keyboard, with the sound of a car race as background noise. Given the larger variety of design options, we anticipate that the problem that needs to be solved to enter a sweepstakes/contest will assume greater importance for the consumer online than offline.

Various lists of sweepstakes and contests on the Internet (e.g., www.gewinnspiele.com, www.sweepstakesonline.com) make it easy for consumers to locate the promotions. Typically, sweepstakes and contests can be sorted according to different criteria, e.g., prize and problem. Consumers can reach the preferred sweepstakes/contest directly via links to the webpage of the company offering the promotion. It is generally much easier to find one or more sweepstakes/contests online versus offline. We therefore anticipate that consumers, who enter sweepstakes/contests on the Internet, do so more frequently than offline entrants.

Given our expected differences between online vs. offline preferences for attributes of sweepstakes/contests, we collected data on promotions in both media and analyzed them separately. We used personal interviews to collect data on offline sweepstakes/contests, and an online survey for sweepstakes/contests on the Internet. We estimate separate conjoint models to identify consumer preferences for promotion attributes offline versus online.

### 3. Conjoint Model for Estimating Consumer Preferences

#### 3.1. Concomitant Variable Finite Mixture Model

We apply choice-based conjoint analysis (CBC) to determine the impact of the attributes of sweepstakes/contest on a consumer’s choice of promotion. Previous studies of consumer preferences regarding sweepstakes/contests either use traditional conjoint analysis (Brockhoff/Andersen 1986), or self-explicated approaches (Gedenk/Rudek/Teichmann 2001). By contrast, CBC promises a higher validity (Green/Srinivasan 1990, pp. 9–10). CBC specifically confronts respondents with very realistic choice tasks that are similar to real entry decisions. CBC can also be easily implemented in online surveys.

First, we analyze the choice-based preference data at the aggregate level. Next, we use a concomitant variable finite mixture model (Gupta/Chintagunta 1994; Kamakura/Wedel/Agrawal 1994; Wedel/Kamakura 2000, pp. 150–152) to identify segments of consumers with similar preferences and to examine the impact of consumer...
characteristics on the probability of belonging to a certain segment. Thus, we simultaneously determine the impact of attributes of sweepstakes/contests on consumers’ entry decisions, the structure of segments with different preferences for sweepstakes/contests, and the impact of consumer characteristics on segment membership.

For choice-based conjoint analysis, consumers have to make several choices from sets of stimuli, i.e., choice sets. In our study, each choice set contains two sweepstakes/contests that are described by their attributes. We estimate a logit model based on the collected choice data. The probability of choosing one of the stimuli from a choice set is a function of the utilities of all stimuli in the set. In our finite mixture model the probability is first defined at the segment-level as follows:

$$P_{st} = \frac{e^{V_{st}}}{\sum_{j \in C_t} e^{V_{jt}}} \quad (i \in C_t; s \in S; t \in T) \quad (1)$$

$$P_{hs} = \text{Probability that a respondent belonging to segment } s \text{ chooses stimulus } i$$

$$V_{is} = \text{Utility ofstimulus } i \text{ for a respondent in segment } s$$

$$C_t = \text{Choice set } t$$

The overall probability of choosing a stimulus is given by the weighted average of the segment probabilities. The weights $$\alpha_{hs}$$ are a function of covariates in the form of consumer characteristics:

$$\alpha_{hs} = e^{\sum_{e \in E} m_{i,e} n_{i,e} K_{h,s}} \quad (h \in H; s \in S) \quad (3)$$

$$\alpha_{hs} = \text{Prior probability that respondent } h \text{ belongs to segment } s$$

$$K_{h,s} = \text{Value of consumer characteristic } l \text{ of respondent } h$$

$$m_{i,e} = \text{Parameter for the impact of consumer characteristic } l \text{ on the probability of belonging to segment } s$$

We estimate our model using Maximum Likelihood. The following likelihood function has to be maximized:

$$L = \prod_{h \in H} \sum_{s \in S} \alpha_{hs} \prod_{t \in T} \prod_{i \in C_t} P_{is}^{d_{ith}} \rightarrow \text{max!} \quad (4)$$

$$d_{ith} = 1, \text{ if respondent } h \text{ chooses stimulus } i \text{ from choice set } t; 0 \text{ otherwise}$$

Two constraints make sure that the prior probabilities of segment membership take values between 0 and 1, and sum to 1 across segments:

$$0 \leq \alpha_{hs} \leq 1 \quad (h \in H; s \in S) \quad (5)$$

$$\sum_{s \in S} \alpha_{hs} = 1 \quad (h \in H) \quad (6)$$

The weights $$\alpha_{hs}$$ represent the prior probabilities of segment membership. Based on the observed choice decisions, it is possible to compute posterior probabilities for each respondent (Kamakura/Russell 1989, p. 381):

$$\beta_{hs} = \frac{\alpha_{hs} \prod_{t \in T} \prod_{i \in C_t} P_{is}^{d_{ith}}}{\sum_{h \in H} \prod_{s \in S} \alpha_{hs} \prod_{t \in T} \prod_{i \in C_t} P_{is}^{d_{ith}}} \quad (h \in H; s \in S) \quad (7)$$

$$\beta_{hs} = \text{posterior probability that respondent } h \text{ belongs to segment } s$$

We use the CBC software from Sawtooth Inc. to estimate the aggregate model (number of segments = 1). Estimation of the concomitant variable finite mixture model (number of segments > 1) is done in GAUSS.

### 3.2. Attributes of Contests and Sweepstakes

When designing a sweepstakes or contest, a company has to make decisions about the promotion’s attributes. Figure 2 describes the different attributes.

There are various design options for the problem that consumers need to solve in order to enter a sweepstakes or contest (Stottmeister 1988, pp. 34–51). Participants may either be required to expend some effort and apply some skill (contest), or pure chance may determine the winner (sweepstakes). When the consumer has to solve a problem other than just supplying an address (contest), then he may or may not have to use creativity and/or interactivity (Gedenk/Rudek/Teichmann 2001). Thus, we distinguish between three types of problems: (a) the consumer only has to supply an address; (b) more effort is required to answer a quiz or solve a puzzle and (c) participants may have to show some kind of creativity and/or exercise some kind of interaction with the company on

<table>
<thead>
<tr>
<th>Problem</th>
<th>Prize</th>
<th>Timing</th>
<th>Company Reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Type</td>
<td>• Total value</td>
<td>• Duration</td>
<td></td>
</tr>
<tr>
<td>• Time required</td>
<td>• Allocation</td>
<td>• Frequency</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: Attributes of sweepstakes/contests
the Internet. The challenge might be, for example, to create a new advertising slogan or participate in an online game.

The time required for entering a sweepstakes or contest is not completely independent from the type of problem to be solved. That is, entering an address requires very little time. However, puzzles, creative tasks or interactive games can vary widely in terms of the time required to solve them.

The prize that entrants can win constitutes another key element of a sweepstakes/contest (Stotmeister 1988, pp. 16–33). We can distinguish between different types of prizes, i.e., cash prizes versus goods or services. In practice, goods and services, such as electronic goods or vacation trips, clearly predominate. Prizes can likewise vary in terms of their total value and in how total value is allocated across the range of prizes (e.g., one valuable prize, a few valuable prizes or many small prizes).

At this point, two aspects of timing need to be mentioned, which may have an impact on consumers’ entry decisions. The duration of the promotion can vary extensively, i.e., from a few days or weeks to several months or even a year. And the frequency can also vary: Some sweepstakes/contests are offered only once and others are available on a regular basis, e.g., every month. Finally, a consumer’s entry decision may depend on whether the consumer knows the company offering the sweepstakes/contest. A consumer may possibly be more willing to give his address to a firm which is well-known to him.

The relative importance of the aforementioned attributes of sweepstakes/contests has been studied empirically by Brockhoff/Andresen (1986) for offline promotions and by Gedenk/Rudek/Teichmann (2001) for online contests and sweepstakes. Brockhoff/Andresen (1986) investigate the company’s reputation, the type of problem, and the type and allocation of prizes. Their findings indicate that the type of problem is the most important attribute (contest vs. sweepstake), followed by the allocation of prizes. Types of prizes and the reputation of the company are less important. Similarly for online sweepstakes/contests, Gedenk/Rudek/Teichmann (2001) find that the type of problem and the attractiveness of prizes are of great significance, whereas the company’s reputation is less essential.

In our study, we focus on some key attributes of sweepstakes and contests based on these empirical results and on exploratory interviews with consumers and marketing managers. We examine the attributes that are highlighted in bold print in Figure 2. They represent the type and time required with respect to the contest’s problem, as well as the total value and allocation of prizes.

3.3. Consumer Characteristics

Since consumer preferences are typically heterogeneous, we want to identify consumer segments which differ in their preferences for attributes of sweepstakes and contests. Furthermore, we want to examine whether consumer characteristics can explain their membership in these segments.

To identify possible relevant consumer characteristics, we rely primarily on two bodies of literature. First, we use the theoretical literature on the benefits of promotions for consumers. In particular, Chandon/Wansink/ Laurent (2000) suggest a framework of three utilitarian and three hedonic benefits of sales promotions. Monetary savings, for example, constitute a utilitarian benefit. From this finding we anticipate that the value of the prizes, which can be won in a sweepstakes or contest, will gain in importance, with an increase in the consumer’s price sensitivity. Also, since the entertainment value certain promotions can provide is a hedonic benefit, we expect that consumers with less time pressure will show a greater predilection for tackling more challenging problems.

Second, we build on the empirical literature which relates to deal proneness. Numerous studies in this field have examined the impact of consumer characteristics on consumers’ use of price promotions (e.g., Ailawadi/Neslin/Gedenk 2001; Lichtenstein/Burton/Netemeyer 1997). They have focused on various consumer characteristics, including demographics, psychographics and shopping behavior.

The aforementioned literature helps us identify a large number of potentially relevant consumer characteristics. We have only included some of them in our study because we did not want to overburden our respondents. Many constructs are measured on multi-item scales, and the conjoint analysis, which constitutes the heart of our study, already takes considerable time. Based on our exploratory interviews with consumers and managers, we have selected the consumer characteristics depicted in Figure 3.

The psychographics include the constructs innovativeness and time pressure. The term innovativeness describes consumers’ receptiveness toward new products. A hedonic benefit emerges when consumers learn about a new product by entering a sweepstakes/contest. The construct of time pressure captures whether consumers have enough time to enter in a contest that requires an extended effort. With respect to shopping behavior, we use the constructs of price sensitivity, brand loyalty, and propensity to shop online. All three consumer characteristics indicate whether entrants in a sweepstakes/contest are valuable customers. Our study finally includes the demographic variables of gender, age, income, and level of education. They can be relevant for identifying consumers and targeting promotions.
4. Data

4.1. Data Collection

Our analyses are based on two sets of data from Germany. One was collected online and included questions on online sweepstakes and contests. The other was based on personal interviews, and dealt with offline sweepstakes and contests. Both surveys used almost identical questionnaires. The main part of both questionnaires was made up of 11 choice tasks for the conjoint analysis. We also included questions on consumer behavior with respect to entering contests and sweepstakes and questions on the consumer characteristics presented in Section 3.3. In each of the 11 choice tasks, respondents were asked to choose one out of two sweepstakes/contests. These stimuli were described according to their attributes. Table 1 presents the attributes and attribute levels we utilized.

The random option in the Sawtooth CBC software was used to create the stimuli. The options of combining the level “submitting address only” under the attribute “type of problem”, and the level “10 minutes” under the attribute “time required for entering” were prohibited because they would be unrealistic. For the third type of problem, we used the attribute level “creative task” in the offline survey, and the level “interactive game” in the online survey.

The first data set stems from an online survey, which was conducted over a 5-week period from May to July, 2002. The goal of this survey was to question consumers, who participate in sweepstakes and contests on the Internet. The respondents were recruited through links to the survey which were placed on various websites and in several newsletters. As a participation incentive, respondents were given the chance of winning one of 30 CD-ROM’s or 20 T-shirts. Almost 84% of the participants were recruited through the newsletter and website of gewinnspiele.com, a portal listing sweepstakes and contests. The other respondents were recruited through the newsletter of feierabend.com, a portal for senior citizens, and the newsletter and website of the Marketing Department of the University of Frankfurt/Main.

Respondents filled in a total of 1,192 questionnaires. We excluded 110 of them from our analyses because the respondents had previously never taken part in a sweepstakes or contest on the Internet. The last CBC choice task was presented twice to check the reliability of answers from our impersonal interviews. 102 respondents gave inconsistent answers and were excluded from the analysis. A further 34 observations were excluded due to missing values for the variable gender. Our online data set ultimately includes 946 observations.

A second data set on offline contests and sweepstakes was collected via personal interviews. The survey was conducted over a 2-week period in November, 2002 in Frankfurt/Main and surrounding area. The respondents were selected through quota sampling, using quotas for gender and age based on the distribution of these variables in the population of the State of Hessen for the year 2000. From the original 221 respondents, 44 were excluded because they had never before taken part in sweepstakes. A further 8 observations were eliminated because the respondents only took part in sweepstakes on the Internet and thus did not qualify for the sample of offline entrants. Our offline data set ultimately includes 169 observations.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type of problem</th>
<th>Time required for entering</th>
<th>Total value of prizes</th>
<th>Allocation of prizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels</td>
<td>Submitting address only</td>
<td>Approx. 3 minutes</td>
<td>€ 10,000</td>
<td>Many small prizes</td>
</tr>
<tr>
<td></td>
<td>Puzzle</td>
<td>Approx. 10 minutes</td>
<td>€ 50,000</td>
<td>Few large prizes</td>
</tr>
<tr>
<td></td>
<td>Creative task (offline)/interactive game (online)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Attributes and attribute levels in the CBC design
4.2. Construct Validation

Some of the consumer characteristics that we use to explain segment membership are complex constructs. This applies for the psychographics and shopping behavior constructs. We consequently measured them with multi-item scales, as listed in Table 2.

For most of the constructs we used scales that have already been validated (Ailawadi/Neslin/Gedenk 2001; Darden/Pereault 1976; Hawes/Lumpkin 1984). Only the construct of propensity for online-shopping was newly developed for this study. The items used in each scale are shown in Table 2. Consumers had to indicate the extent to which they agreed or didn’t agree with the statements on a 5-point scale ranging from “totally agree” (+2) to “totally disagree” (–2). Table 2 also shows the results of exploratory and confirmatory factor analyses. The results indicate a high validity for our constructs. In both samples, Cronbach’s alpha is convincing with values larger than 0.7 for all constructs (Peter 1979, p. 15). The values from the confirmatory factor analysis (CFI: Comparative Fit Index ≥ 0.9; RMSEA: Root Mean Square Error of Approximation ≤ 0.05) are also good (Bentler 1990; Browne/Cudeck 1992). Table 2 also shows the summed score for each construct, i.e., the non-weighted mean of the responses to all items belonging to a construct.

4.3. Description of the Samples

First we examine our two samples in terms of the demographic variables. We have an almost even split in both samples in terms of gender. The ratio of men to women is somewhat higher in the online sample (53.9 %) than in the offline sample (45.6 %) ($\chi^2$ test: $p \leq 0.05$). This finding corresponds to the results of the W3B-survey of German internet users, which indicates that there is still a higher propensity of men using the Internet in Germany than is the case for women (Fittkau/Maas 2002, p. 34). Age, level of education, and income are also significantly higher in the offline data set (Mann-Whitney test: $p \leq 0.01$). These values indicate that different consumers are reached by sweepstakes/contests on the Internet as opposed to their offline counterparts.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s alpha (α)</th>
<th>Summed score (SS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offline survey (n=169)</td>
<td>Online survey (n=946)</td>
<td></td>
</tr>
<tr>
<td>Brand loyalty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prefer one brand of most products I buy.</td>
<td>$\alpha = 0.861$</td>
<td>$\alpha = 0.850$</td>
</tr>
<tr>
<td>I am willing to make an effort to search for my favorite brand.</td>
<td>SS = -0.484</td>
<td>SS = 0.014</td>
</tr>
<tr>
<td>I usually care a lot about which particular brand I buy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I find myself checking the prices even for small items.</td>
<td>$\alpha = 0.754$</td>
<td>$\alpha = 0.706$</td>
</tr>
<tr>
<td>I compare prices of at least a few brands before I choose one.</td>
<td>SS = -0.063</td>
<td>SS = 1.176</td>
</tr>
<tr>
<td>It is important for me to get the best price for the products I buy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I always seem to be in a hurry.</td>
<td>$\alpha = 0.874$</td>
<td>$\alpha = 0.858$</td>
</tr>
<tr>
<td>I never seem to have enough time for the things I want to do.</td>
<td>SS = 0.416</td>
<td>SS = -0.131</td>
</tr>
<tr>
<td>Most days, I have no time to relax.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am often among the first people to try a new product.</td>
<td>$\alpha = 0.773$</td>
<td>$\alpha = 0.800$</td>
</tr>
<tr>
<td>I like to try new and different things.</td>
<td>SS = -0.213</td>
<td>SS = 0.273</td>
</tr>
<tr>
<td>When I see a product somewhat different from the usual, I check it out.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propensity for online-shopping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can buy products at a good price on the Internet.</td>
<td>$\alpha = 0.890$</td>
<td>$\alpha = 0.837$</td>
</tr>
<tr>
<td>The Internet offers not only information but also good shopping opportunities.</td>
<td>SS = 0.907</td>
<td>SS = 0.469</td>
</tr>
<tr>
<td>I often buy certain products on the Internet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Internet makes shopping easier.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confirmatory factor analysis:

- **CFI = 0.988**
- **RMSEA = 0.031**

Overall model fit:

- **CFI = 0.966**
- **RMSEA = 0.048**

Table 2: Constructs of shopping behavior and psychographics

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There are also major differences in the frequency of entering sweepstakes/contests, as shown in Table 3. As suspected in Section 2.2, frequency is much higher on the Internet. 96.1% of the online respondents entered at least one sweepstakes/contest during the previous month, in comparison to only 37.3% of the offline respondents. Offline entrants participated in sweepstakes/contests no more than 5 times during the previous month. By contrast, 45.5% of online participants entered more than 10 promotions, and 28.2% even entered more than 20 sweepstakes/contests.

The manner in which respondents were recruited for the online survey may partially explain the results above. A majority of respondents were informed of the online questionnaire through the newsletter of gewinnspiele.com, an online portal listing sweepstakes and contests. These respondents can be expected to have greater interest in sweepstakes and contests than participants in the offline survey. The results may also be driven by the fact that it is easier to find and enter sweepstakes and contests on the Internet than offline. This becomes apparent when examining how often online respondents, not recruited through gewinnspiele.com, entered a sweepstakes/contest during the previous month. Even though they participated less frequently than users of gewinnspiele.com, they did so significantly more often than offline respondents. 81% of online respondents not recruited through gewinnspiele.com entered a sweepstakes/contest at least once during the previous month, while 20% participated in more than 10 promotions.

Next, we look at the values of the constructs of shopping behavior and psychographics, as shown in Table 2. We find significant differences between the two samples for all constructs (Mann-Whitney test: p ≤ 0.01). Online respondents describe themselves as more price-sensitive, while at the same time displaying more brand loyalty. Remarkable is the fact that offline respondents claim to have a higher propensity for online shopping. Apparently, Internet sweepstakes or contests do not necessarily attract those consumers also willing to shop via the net. Finally, offline respondents score lower on innovativeness and higher on time pressure. Overall the results show that sweepstakes and contests attract different consumers online versus offline. These consumers may also differ in their preferences for the design of sweepstakes and contests. Note that some of the differences between the samples may be due to differences in the manner of selecting respondents. However, our goal is not to analyze two data sets that are representative for the population of all consumers. Instead, we want to analyze the preferences of active users of sweepstakes and contests. In this spirit, our samples merely indicate that different consumers are reached with online promotions versus their offline counterparts.

5. Aggregate Results

We first present the results of the choice-based conjoint analyses at the aggregate level. This allows us to easily compare preferences for online versus offline sweepstakes and contests. Table 4 contains attribute importance weights, and Figure 4 shows part-worths. The part-worths are normalized to make them comparable across samples (Hair et al. 1998, p. 421), i.e., the lowest part-worth of each attribute is set to 0, and the sum of the highest part-worths across all attributes equals 1. We have coded the attribute levels as dummy variables, using the last level of each attribute as the reference category. Figure 4 therefore shows whether the utility of an attribute level is significantly different from the utility of the last level of this attribute.

Table 4 shows that the attributes related to the problem (type and time required) are more important in both samples than the attributes related to the prizes (total value and allocation). Obviously these results are conditional on the attribute ranges used to measure importance weights (Gedenk/Sattler 2005; von Nitzsch/Weber 1993). For example, we would have found higher importance for the value of prizes, if we had used € 5,000 and € 100,000 as prize levels, instead of € 10,000 and € 50,000.

When comparing the two samples, we find that the time required to enter a sweepstakes/contest and the total value of the prizes have similar importance weights online and offline. It is not surprising that consumers prefer lower time requirements and more valuable prizes. However, preferences differ between samples in terms of the type of problem and allocation of prizes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Offline sample</th>
<th>Online sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of problem</td>
<td>0.25</td>
<td>0.40</td>
</tr>
<tr>
<td>Time required</td>
<td>0.34</td>
<td>0.33</td>
</tr>
<tr>
<td>Total value of prizes</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td>Allocation of prizes</td>
<td>0.20</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Table 4: Attribute importance weights at the aggregate level
The importance of the type of contest problem relative to other attributes is much larger online than offline. We had expected this (Section 2.2) due to the Internet’s interactive and multimedia features. However, we now find that interactive games are the least preferred type of contest problem. Apparently, the type of problem is so important because many consumers explicitly reject interactivity. One reason for this may be that they want to avoid the effort for downloading a required plug-in (Gedenk/Rudek/Teichmann 2001).

Allocation of prizes is far more important offline than online. On average, the respondents in our offline sample prefer a few big prizes, while online respondents show a slight preference for many small prizes. The latter group seems to attach greater importance to a high chance of winning a prize, even if it is only a small one.

6. Segment-Level Results

The aggregate analysis provides first insights into the preference structure of consumers and allows us to compare the results of online vs. offline entrants. The comparison assumes, however, that preferences are homogeneous among consumers. We now investigate the extent to which preferences for sweepstakes and contests are heterogeneous within each sample. For this purpose, we use the concomitant variable finite mixture model described in Section 3.1. We identify segments with different preferences for the attributes of sweepstakes/contests. We concurrently analyze how respondents within various segments differ in terms of the consumer characteristics described in Section 3.3. Note that we had to exclude the variables age and income from the analysis due to a large number of missing values (18.1 % and 15.0 % of the sample). As a result, our analysis uses 7 consumer characteristics as concomitant variables.

We use the Consistent Akaike Information Criterion (CAIC) (DeSarbo/Ramaswamy/Cohen 1995; Wedel/DeSarbo 2002, p. 22) to determine the number of segments s in our finite mixture model. This measure of model fit is computed based on the log-likelihood value, the number of parameters in the model q [2] and the number of observations Z (= number of respondents * 11 choices). We choose the number of segments with the best model fit, i.e., with the lowest CAIC value.

\[
\text{CAIC} = -2 \cdot \text{LL} + q \cdot (\ln (Z) + 1)
\]

We find 3 segments in the offline data set and 6 segments in the online data set [3]. These are good segment solutions in terms of average maximum segment membership probability (AMP), entropy and reliability (see Table 5).

The average maximum segment membership probability is 89.6 % for the 3 segment solution in the offline sample. This measure of internal validity indicates the posterior probability of a respondent belonging to his assigned segment. A respondent is assigned to the segment for which his posterior probability of membership is highest (Abramson et al. 2000, p. 414). The entropy criterion is based on the posterior probabilities of segment membership, the number of segments and the
Table 5: Segment solutions

<table>
<thead>
<tr>
<th>Data set</th>
<th>N</th>
<th>Z</th>
<th>s</th>
<th>q</th>
<th>LL</th>
<th>CAIC</th>
<th>AMP</th>
<th>Entropy</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offline</td>
<td>169</td>
<td>1,859</td>
<td>3</td>
<td>31</td>
<td>-1,041.6</td>
<td>2,347.5</td>
<td>0.896</td>
<td>0.838</td>
<td>0.764</td>
</tr>
<tr>
<td>Online</td>
<td>948</td>
<td>10,428</td>
<td>6</td>
<td>70</td>
<td>-5,101.8</td>
<td>10,921.1</td>
<td>0.946</td>
<td>0.868</td>
<td>0.862</td>
</tr>
</tbody>
</table>

The first noticeable finding, when interpreting the segment solutions, is that preferences for sweepstakes and contests are more heterogeneous online than offline. We identify 6 segments in the online sample but only 3 among offline entrants. Notice, that the methodological approach could have partially caused this difference. The number of segments identified by the minimum of CAIC increases with sample size, i.e., more segments may be found in the online sample because it contains more observations. To test for this effect, we re-estimate our online model with 169 randomly chosen respondents. This estimation results in 5 segments. Consequently, sample size has an impact on our results. However, after controlling for this effect, we still find that preference heterogeneity is higher for online sweepstakes than for offline promotions. One reason for this might be that online sweepstakes/contests are still relatively new in the field of promotional instruments and that consumers have not yet formed clear preferences for them. Online sweepstakes/contests also offer more design possibilities, and this fact might result in more differentiated preferences. Finally, Internet users differ largely in terms of when, where and why they use the Internet, which may also cause more heterogeneous preferences for sweepstakes and contests.

Table 6 shows attribute importance at the segment level for both samples. Large values (≥ 0.3) are highlighted in bold print. Figure 5 shows the normalized part-worths for the offline sample. It contains three segments which are approximately equal in size. The contest problem is more important than the prizes in two of the segments. Respondents in segment 1 (“Active Consumers”) do not like sweepstakes in which they simply have to submit their address. Instead, they prefer to solve puzzles or to work on creative tasks. For consumers in segment 3 (“Time-Constrained Consumers”), however, it is very important that they can enter sweepstakes or contests with little investment of time. This segment prefers to simply state their address over the more time-consuming solving of contest problems. Finally, prizes are more important than the contest problem for consumers in segment 2. The total value of prizes plays a key role for this segment. And it is of even greater importance that the contest offers a main prize of high value. We call this segment “Big Prize-Oriented Consumers”.

Figure 6 shows the normalized part-worths for the segments in the online sample. As in the offline sample, we find a large segment of “Time-Constrained” consumers, consisting of more than a quarter of the respondents. The “Active” segment is much smaller online with just over...
10% of the sample. Segment 2 ("Interactivity Rejecters") constitutes a third segment that attaches major importance to the type of contest problem. This segment confirms what we have already seen in the aggregate analysis, i.e., that some consumers strongly dislike interactive games. It is the second largest segment, containing 27% of the sample. Companies offering contests should therefore be aware that interactive games will deter a considerable number of Internet users.

As with the offline sample, roughly a third of the respondents consider prizes to be more important than the problem they need to solve to enter a sweepstakes/contest. Our study shows, however, that these consumers are split into three segments. The largest one is segment 3 ("Value-Oriented Consumers") comprising 20% of the sample. These respondents exhibit much interest in a high total value of the prizes but not in their allocation.

By contrast, allocation of prizes is very important for the two smaller segments (9% and 6% respectively). "Prize Distributors" prefer many small prizes and "Active Prize-Oriented Consumers" prefer few big prizes. There are apparently some extreme opinions on the importance of the value of a potential prize versus the probability of winning a prize at all.

Figure 5: Part-worths for the offline segments (n = 169)
Figure 6: Part-worths of the online segments (n = 948)
### Impact of Consumer Characteristics on Segment Membership

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Offline</th>
<th>Online</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Segment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dataset</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Active</td>
<td>Big Prize-Oriented</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>-2.593</td>
<td>-1.613</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td></td>
<td>-0.216</td>
<td>-0.181</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td>0.027</td>
<td>-0.186</td>
</tr>
<tr>
<td>Time pressure</td>
<td></td>
<td>-0.151</td>
<td>0.262</td>
</tr>
<tr>
<td>Innovativeness</td>
<td></td>
<td>0.166</td>
<td>0.069</td>
</tr>
<tr>
<td>Online Shopping</td>
<td></td>
<td>-0.446</td>
<td>-0.021</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>-0.746</td>
<td>-0.658</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>1.113***</td>
<td>0.632**</td>
</tr>
</tbody>
</table>

* p < 0.1 ** p < 0.05 *** p < 0.01

Table 7: Impact of consumer characteristics on segment membership

The only significant variable in the offline sample is education. “Big Prize-Oriented Consumers” have a significantly higher level of education than the “Actives”. And the level of education is particularly high among “Time-Constrained Consumers”. It is possible that this group wants to spend little time on entering sweepstakes/contests because they have demanding jobs. In the online sample gender has a significant impact (p < 0.01) on the probability of belonging to segment 2 (“Interactivity Rejecters”). The percentage of women is higher in this segment than in the segment for the “Big Prize-Oriented” consumers. There is also a higher percentage of women among the “Actives”, although this difference is only weakly significant (p < 0.1). In segment 5 (“Price Distributors”), we find that brand loyalty and propensity for online shopping have a weakly significant impact. This segment contains consumers with relatively low brand loyalty and a high propensity to shop on the Internet. On the one hand, this segment is attractive for Internet companies because of the positive attitude toward online shopping. On the other hand, firms should take into account that the loyalty of these consumers is rather low and that the segment is very small.

Finally, the issue of whether segments differ in the frequency of entering sweepstakes/contests is relevant for the attractiveness of segments. We examine this issue using the Kruskal-Wallis test and only find significant differences in the online sample. These are primarily caused by a slightly lower entry frequency among the “Actives”. Consumers in this segment enter less frequently because they prefer contests that require much time and effort. Nevertheless, they still enter an average of 6–10 sweepstakes/contests per month.

In conclusion, we find that there are segments of consumers with different preferences for the design of sweepstakes and contests. There are 3 segments in the offline sample and 6 segments in the online sample because online consumers are considerably more heterogeneous in their preferences. Both samples show a relatively large number of parameters to the model (e.g., 8 * 5 = 40 parameters for the 6 segment solution in the online sample). Thus the explanatory power of consumer characteristics with regard to segment membership is statistically significant yet very small.
7. Summary and Discussion

The goal of our study was to analyze the impact of the attributes of sweepstakes and contests on the probability of consumers’ participation. We have collected choice-based conjoint data in two surveys, online and offline. We have analyzed this data, first at the aggregate level and then at the segment level. Our analyses yield the following results:

- Online entrants to sweepstakes and contests differ from offline entrants in terms of demographics, psychographics, and shopping behavior.
- At the aggregate level, the problem that consumers need to solve to enter a sweepstakes/contest is more important than the prizes that consumers can win. This effect exists both online and offline, conditional on the attribute ranges used in our study.
- The allocation of the prizes is more important offline than online. On average, participants prefer a few large prizes over a number of small ones.
- The analysis of segments shows that preference heterogeneity is smaller offline, where we identify 3 segments of nearly equal proportion. By contrast, we identify 6 segments of very different proportions in the online sample.
- Both samples contain segments of “Time-Constrained Consumers” consisting of approximately one third of all respondents per sample. Consumers in this segment prefer to enter sweepstakes fast by simply submitting their address.
- The type of problem to be solved is particularly important for approximately another third of the consumers in both samples. The offline sample contains a segment that prefers an active role in terms of puzzles or creative tasks. The online sample contains a segment with similar preferences; however, this segment is much smaller. The online sample also contains a large segment, constituting 27% of the sample, which strongly dislikes interactivity.
- Prizes are a key factor for the last third of respondents. In the online sample, this group contains 3 segments that differ substantially in their preferences for the allocation of prizes.
- The impact of consumer characteristics on segment membership is very small. We find that many women dislike the interactive features of online sweepstakes/contests. There are many consumers in the offline sample with a relatively low level of education in the segment of “Active Consumers”. They prefer sweepstakes requiring minimal effort.

Our results have implications for companies wanting to utilize sweepstakes or contests. First, online sweepstakes and contests reach a different type of consumer than classical offline promotions. This reinforces the practice of many companies to run sweepstakes and contests simultaneously offline and online.

Second, the contest problem which consumers need to solve is significantly related to their decision to enter sweepstakes and contests. This fact gains particular importance for online promotions. Companies can reach more consumers online if they abstain from using interactive features. Many consumers, women in particular, do not find interactive games attractive at all.

Third, a company can attract many consumers online with sweepstakes, requiring contestants to submit only their address. However, the ultimate value of these consumer contacts to the company remains questionable. Consumers who enter sweepstakes and contests which they find listed on Internet portals are potentially not interested in the companies and their products. The group of consumers willing to expend more effort is relatively small, but they enter fewer sweepstakes and contests, and thus may have a higher involvement with the company and its brands.

Fourth, the total value of prizes is of importance to many consumers online and offline. Moreover, companies can gain more leverage by the way in which they allocate prizes. Many consumers are indifferent in this respect or prefer a few big prizes. However, some Internet users prefer many small prizes in order to increase their chances of winning. Companies should therefore consider presenting a large number of small prizes in addition to a main prize of value. This constitutes little additional financial investment, yet will increase the number of consumers participating in the promotion.

Finally, we found little evidence of consumer characteristics which can explain segment membership. It is therefore difficult for companies to target certain groups of consumers, e.g., people with a high propensity to shop online. Within this context, it is advisable for companies to offer various types of sweepstakes and contests to reach potential customers with different preferences.

An interesting topic for future research might be to analyze additional attributes of sweepstakes and contests. A second avenue for further studies would be to analyze the impact of other consumer characteristics on preferences for sweepstakes and contests. Identifying such determinants could make an important contribution to promotion targeting. Finally, the effects of sweepstakes and contests on sales and brand image are an interesting topic. Our study yields insights into the entry behavior of consumers. Basing further research on these results, it would be of interest to companies to discover the kinds of consequences arising from participation in their sweepstakes and contests by consumers from different segments.

Notes

[1] Note that under US law contests may require a purchase, while this is prohibited under German law.
[2] The number of estimated parameters $q$ is given by: number of parameters in the utility function * number of segments + (number of concomitant variables + 1) * (number of segments – 1).
[3] The commonly used Bayesian Information Criterion (BIC)
identifies the same number of segments in both data sets. This indicates a robust solution.

[4] Multicollinearity is not a problem. All values of the Variance Inflation Factor (VIF) are close to 1.

References