Do Differentiated Blood Donor Marketing Campaigns Work?

An Experimental Study

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Despite the strong acceptance that segmenting potential blood donors can increase the recruitment success, little is known about the actual effectiveness of differentiated marketing. Therefore, this study empirically investigates whether differentiated marketing has an effect on the blood donation behavior of potential blood donors. The authors deployed an online experiment (N= 838) representative for the German potential blood donor population. By conducting multiple linear regression analyses two differentiated marketing campaigns are compared to a general one. Additionally, the effect of wrong targeting is analyzed. The results indicate that there are no significant differences between the differentiated and the undifferentiated marketing campaigns. However, the authors uncover a potential blood donor group which is in general more likely to become blood donors irrespective of the marketing campaign they received. Avenues for further research and practical recommendations are discussed.

Keywords *differentiated marketing; blood donation; target group; segments; recruitment; linear regression*

Since Smith (1956) published his study on market segmentation to customize marketing campaigns, the importance of segmentation and differentiated marketing is well accepted by marketing researchers. By understanding the heterogeneity of consumers or donors, for-profit as well as nonprofit organizations try to improve their recruitment strategies (Smith 1956; Cermak, File, and Prince 1994; Wymer 1997, 2003; Reutterer et al. 2006; Garver, Divine, and Spralls 2009; Tuma, Decker, and Scholz 2010; Sherley et al. 2014). Surprisingly, despite the high quantity of segmentation studies, not all nonprofit organizations, such as the German Red Cross Blood Donor Service, segment their blood donor base (***). In addition, actual implementations of targeted differentiated marketing campaigns are rarely analyzed (Reutterer et al. 2006). Hence, as segmentation for potential blood donors has been argued to be a highly promising approach (Garver et al. 2009; Zhou, Poon, and Yu 2012) - although with little empirical validation in the literature -, we aim to test whether effects of differentiated marketing in the blood donor market exist.

For example, Zhou, Poon and Yu (2012) examined social values, lifestyle and attitudes of Chinese blood donors. The authors identified three major blood donor segments, namely benefit-orientated donors, altruistic donors, and health salience donors, which showed differences in all identified five blood donation factors, that is, fear and worry, benefit concern, socially responsible, healthy lifestyle, and health concern. Based on these differences the authors recommend to use a specific type of advertising appeal and illustrate examples of slogans, which could be used by blood donation organizations to address the identified three segments (Zhou et al. 2012).

Segmentation studies recommend that through a better understanding of potential blood donor segments, blood donation organizations are able to increase their recruitment success, while at the same time they mention advantages of differentiated marketing campaigns, such as efficient resource-usage and communication with greater impact

(Polonsky and Sargeant 2007; Garver et al. 2009; Zhou et al. 2012). Managerial implications suggest to design and implement direct marketing campaigns personalized to the specific behavioral preferences of the identified segments (Peltier and Schribrowsky 1992). The great practical value of identifying distinct and more homogeneous sub-groups among potential blood donors becomes evident. Despite this, these insights turn out substantially more valuable when it is also examined whether these differentiation efforts and costs return more actual blood donations. In order to close the gap that remains regarding the actual benefits of differentiation, the need to test changes in blood donation behavior due to a differentiated versus an undifferentiated marketing strategy has been identified. Furthermore, differentiation studies and related recommendations often contain the assumption that strict boundaries between segments can be set. However, seldom a single and distinctive segmentation exists, (Cermak et al. 1994; Wedel and Kamakura 2002), due to the methodological steps of segmentation. However, this traditional approach, which at its basis combines various criteria to reach as homogeneous groups as possible, ignores the fact that it could be singled out rather than combined criteria which constitutes segments. Following this, these criteria need to be addressed in a differentiated marketing strategy to increase return. Therefore, the needs to test segmentation criteria independently from each other with respect to their relevance for a differentiated strategy, is identified as a second gab.

Given these two research gaps, our research question focusses on whether the recruitment of potential blood donors is more effective by using a differentiated in contrast to an undifferentiated marketing strategy. By answering this research question we aim at a three found contribution. First, in contrast to prior studies that only give recommendations to design marketing campaigns for derived segments (e.g., Burnett and Leigh 1986; Zhou et al. 2012; Shehu et al. 2015), we actually test how differentiated marketing campaigns affect the blood donation behavior of potential blood donors. Second, we elaborate which specific

characteristics of potential blood donors get addressed with targeted marketing campaigns. Thus, enables us to evaluate the particular criteria that are at the basis of segmentations and that account for desired positive outcomes of segmentation. Third, the effect of wrongly targeted marketing campaigns in contrast to a general one will be shown. By also testing the effect when a differentiated campaign reaches a not targeted segment, we are able to suggest whether differentiated marketing should be performed for blood donation organizations or whether undifferentiated marketing is a more efficient solution. Furthermore, a comparison of differentiated and undifferentiated marketing campaigns can lead to a deeper understanding of how to better manage multiple segments.

The paper is structured as follows: First, by building on the concept of differentiated marketing, the conceptual research framework is presented and the underlying research hypotheses are derived. In the second section, an overview of the experimental design and the developed marketing campaigns are provided. Applying linear dummy regression analysis with various interaction effects, we derive differences in the experimental groups. After presenting our results, we discuss the relevant findings. Finally, the study will be completed by displaying implications for theory and practice followed by limitations and suggestions for further research.

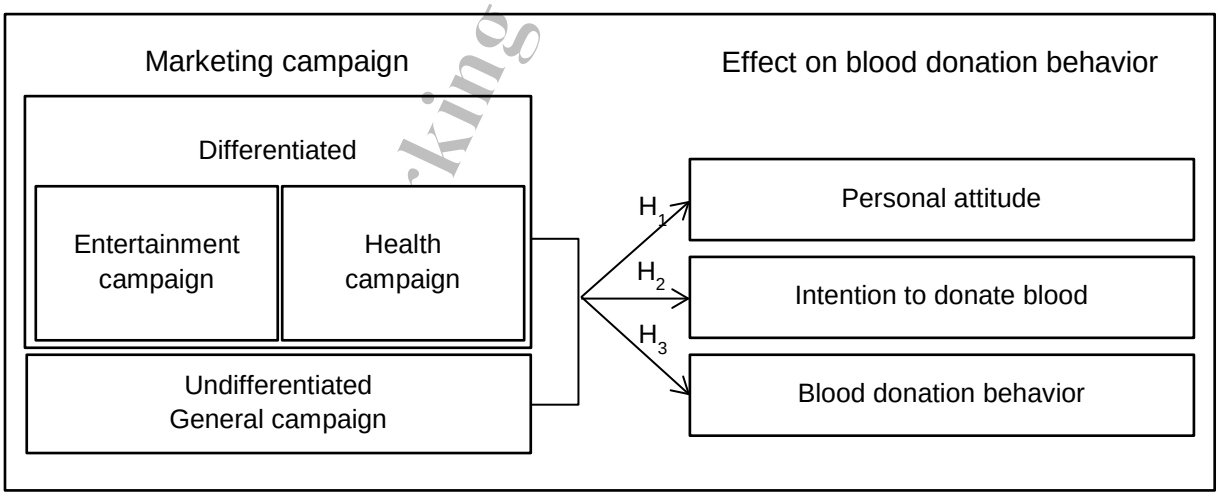
Conceptual Framework and Hypotheses

Differentiated marketing has been suggested as an effective tool to increase the recruitment success of blood donation organizations by creating services that match the needs of potential blood donor segments (Kotler and Levy 1986; Dibb and Simkin 2010). Even more, it is an option when not all market segments can be addressed, and when one wishes to spread the risk of wrong targeting (Kotler and Keller 2006). Also for the context of blood donations

marketing campaigns, either differentiated or undifferentiated, play a major role to increase the attention of potential blood donors. In this context, differentiation has been suggested as being promising (Lee and Kotler 2011), since differentiated marketing provides additional information and improves knowledge of the target groups (Manickam 2014). By addressing the behavioral preferences of potential blood donors more precisely it acts as motivator to blood donations.

Therefore, our conceptual research framework makes a distinction between differentiated marketing campaigns and an undifferentiated one (see Figure 1). Overall we test whether the blood donation behavior is more positively influenced by differentiated marketing campaigns, taking into account specific segmentation characteristics. We predict that the differentiated marketing campaigns as an initial impulse have a more direct positive effect on the blood donation behavior of potential blood donors, and therefore, stronger increase the recruitment success.

Figure 1 Conceptual Framework



Success, herein, is related to three resulting behavioral effects that are (1) the personal attitude towards blood donations, (2) the intention to donate blood in the future, and (3) the

blood donation behavior (e.g., Diamond and Kashyap 1997; Reid and Wood 2008; De Groot and Steg 2009). These three behavioral effects are related to each other and show subtle differences. However, to constitute a more holistic view on the overall effect on the blood donation behavior these differences are of importance.

The personal attitude is a first requirement for donating blood (***) and also acts as first indicator for success. Attitude is defined as a global and relatively enduring evaluation of donating blood. Therein, individuals value blood donations as positive or negative, which can be influenced by personal experiences or by available information (Bendapudi, Singh, and Bendapudi 1996; Holdershaw, Gendall, and Wright 2003; Griffin, Grace, and O'Cass 2014). Due to the informational and motivational character of differentiated marketing, recipients absorb the given facts of the marketing campaigns more simply (Manickam 2014). By addressing the behavioral preferences of different potential blood donor groups, the differentiated marketing campaigns are evaluated positively. Given that a positive attitude is positively related to the possibility to engage in a behavior (Bekkers and Wiepking 2011), the personal attitude towards donating blood is increased. As a consequence of the higher personal attitude, an effect on the blood donation behavior occurs (e.g., Gillespie and Hillyer 2002; Glynn et al. 2002). Therefore, we postulate that the personal attitude towards donating blood can be increased by differentiated marketing. This leads us to hypothesize the following:

Hypothesis 1: Differentiated marketing campaigns have a greater effect on the personal attitude towards donating blood in comparison to an undifferentiated one.

The intention, as a second indicator of success, represents the effect on the blood donation behavior in the future, as studies identified intention as the direct antecedent to later

behavior (e.g., Armitage and Conner 2001; Holdershaw, Gendall, and Wright 2011). Therein, the intention to donate blood illustrates the motivation of potential blood donors and influences their expectations to donate blood for the first time. Thus, the intention to donate blood builds an important determinant of success (Godin et al. 2005). Furthermore, this relation is generally supported by the theory of planned behavior and is well documented in the scientific literature (Ajzen 2002). Ajzen (1991) points out: "As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance" (Ajzen 1991: 181). Hence, the intention to donate blood is a primary motivator of behavior. Due to the motivational character of the differentiated marketing campaigns, which addresses the behavioral preferences of the target groups, the general intention to donate blood in the future of potential blood donors is increased. Building on this theoretical approach, we hypothesize the following:

Hypothesis 2: Differentiated marketing campaigns have a greater effect on the intention to donate blood in the future in comparison to an undifferentiated one.

The third indicator for success is represented by the blood donation behavior, by which potential blood donors express to visit a blood donation event (Diamond and Kashyap 1997). From a marketing perspective, marketing campaigns should highlight the importance of a resulting benefit for a potential blood donor according to engaging in a certain behavior (Griffin et al. 2014). The impart benefit of undifferentiated marketing campaigns if donating blood is formed through the feelings that are aroused by the blood donating act itself (Bendapudi et al. 1996). Differentiated marketing campaigns are designed in line with the benefits potential blood donors want to receive. Those campaigns deal with behavioral preferences of the potential blood donors (Lee and Kotler 2011). Consequently, the benefit of

a blood donation is obvious. Potential blood donors receive beside the impart benefit of the act itself a benefit relating on the addressed behavioral preferences. Therein, differentiated marketing leads to a higher recruitment success by affecting the behavior to donate blood. Following this argumentation, we hypothesize:

Hypothesis 3: Differentiated marketing campaigns have a greater effect on the behavior to donate blood in comparison to an undifferentiated one.

Research Methodology

Research Design and Study Context

An (between-subject-design) experiment to recruit potential blood donors in Germany was designed to test whether differentiated marketing works under controlled conditions. Participants, therein, received a direct mailing containing a marketing campaign, which was either designed for one out of two potential blood donor groups or for all potential blood donors, whereby the experimental structure was identical for all three marketing campaigns.

As we know from prior research, not all potential blood donors are alike, and blood donation organizations can identify those segments of potential blood donors which match its requirements best (e.g., ***). We chose two marketing campaigns which we expect to appeal to two target groups representing a great proportion of the potential blood donor base (Lemmens et al. 2005; Zou et al. 2008), and therefore, those two groups show a great potential to stabilize it (Gillespie and Hillyer 2002). In addition, they are quite heterogeneous, since they represent diverse age groups, which value other things and are guided by different behavioral preferences as further detailed below (Walker 2002; Martin and Robinson 2009; Zhou et al. 2012). In the three conditions, participants received a brief introduction to the study.

As our focus is on potential blood donors, participants had to fulfill three main criteria. First, participants had to be aged between 18 and 69 years which correspond to the permitted blood donor age range in Germany. Second, since the focus of our study is the recruitment of new blood donors, participants were asked about their blood donation status that is if they have donated blood during the last 10 years ("yes"/"no"). Thereby, we were able to identify those who are active blood donors and those who have never donated or stopped donating blood years ago. Since we also know, that many potential blood donors, who are willing to donate blood, are not able to do so, we asked as a third criterion whether they were not able to donate due to some reason (e.g., medication, health, etc.) ("yes"/"no").

Those participants, who fulfill all criteria as a potential blood donor, that is age, blood donation status (answer "no") as well as ability to donate blood (answer "no"), were asked to rank their actual willingness to donate blood with a scale from 1="low" to 7="high". Afterwards, due to balanced randomization, participants get one of the three experimental conditions, either one of the two differentiated marketing campaigns or the undifferentiated one (see Figure 2).

Figure 2. Three Experimental Conditions

Condition 1: Differentiated entertainment campaign	Condition 2: Differentiated health campaign	Condition 3: Undifferentiated general campaign

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Conditions are presented in German. Translation is available upon request.

The first condition invites potential blood donors to use an *entertainment campaign* during their next blood donation. This campaign was designed for the target group of younger potential blood donors, which have been identified by prior studies (e.g., Lemmens et al. 2005; Misje, Bosnes, and Heier 2008). They are aged between 25 and 44 years with a high interest in online communication (e.g., Buente and Robbin 2008; Martin and Robinson 2009). Furthermore, this segment has the potential to be a good source of potential new blood donors. Young people with a higher level of education show a higher likelihood to donate again during a period of one year, which is the first step to become active blood donors (Schreiber et al. 2005). They are able to donate for a long period of their lifetime and the majority is in a good health situation. Furthermore, these people are confronted with blood donation events at their university or work place, which induces a higher personal attitude towards blood donations (Lemmens et al. 2005). Since this target group is composed of Internet and new technology affine people, we designed the marketing campaign more modern, which includes an iPad and free Internet access to keep the participants connected to the entire world even during the blood donation process. Additionally, we included an eye-catching colorful image to underline the entertainment factor of the campaign by stimulating the visual imagery process (Babin and Burns 1997). Moreover, thematic aphorisms, such as "experience more together" and "blood donation with entertainment factor" are used.

The second condition, the *health campaign* was customized for the target group of older potential blood donors aged between 55 and 69 years (Moschis 2003). Studies, identifying this target group, show that this segment is more active and interested in promoting their own health whenever possible (Walker 2002). Moreover, older people have fewer complications (e.g., vasovagal reactions) while donating blood, and are consequently more likely to become regular and active blood donors (Trouern-Trend et al. 2002). Furthermore, higher blood donation frequencies can be observed in the older blood donation

groups (Ferguson and Bibby 2002; Godin et al. 2007; Müller-Steinhardt et al. 2012). Blood donations by this segment are more reliable and a nearly untapped resource for recruitment (Gillespie and Hillyer 2002). Another factor which is in line with this argumentation is the demographic change. It leads to a steady growth of older age groups, which includes the potential of an increase of people represented by this segment (Walker 2002; Word Health Organization (WHO) 2012). To address the needs of this segment, the campaign addresses health information, for a target group which shows good health awareness and wants to receive additional health information (e.g., Ory et al. 2003). In respect of these facts, the marketing campaign offers a large cholesterol health check which has been identified as a good incentive in prior studies (e.g., Glynn et al. 2003; Goette et al. 2009). To emphasize the health factor of the campaign, a picture of active people doing sports is integrated. Similarly to the entertainment campaign, thematic aphorisms, such as "together healthy into the future" and "blood donation with health factor" are utilized.

The third condition, which did not include a special offer, served as the undifferentiated marketing campaign (general campaign) and was not designed for a special target group. It has only an informative character and enumerates facts of blood donations, such as "All blood types (ABO) are required", "From each blood donation up to three different blood products occur", "Every year, about 43,000 blood donation events take place", and "These are organized by six German Red Cross Blood Donor Services". This serves to maintain the structure of the other two conditions. Additionally, since pictures in this context are used to stimulate the visual imagery process (Babin and Burns 1997), no picture is used to keep the general campaign as neutral as possible.

Manipulation Check

In order to increase the external validity, the used marketing campaigns were developed and discussed with three external specialists for blood donor marketing from the German Red Cross Blood Donor Service North-East. The text and the design of the marketing campaigns were adjusted following the extensive feedback to come as close to real marketing campaigns as possible. Therein, the two differentiated marketing campaigns are aiming at specific characteristics of the recipients (i.e., Internet using behavior or health awareness), whereby the undifferentiated one does not address a specific target group.

Afterwards, a pre-study was conducted with respect to the similarities and differences of the three designed marketing campaigns (manipulation check). After viewing and reading all three marketing campaigns, participants had to judge the extent that all three campaigns were focusing on distinct segments ("Do you think that the three campaigns have been developed for different target groups?" ("yes"/"no") and "How different are the shown campaigns in your opinion?" (1="weak" to 7="strong")). Afterwards, participants had to assign each campaign to socio-demographic, psychographic, as well as behavioral criteria, e.g., "Which of the three campaigns have been designed for young blood donors?" ("Campaign 1"/"Campaign 2"/"Campaign 3"/"None of the three"). The results indicate that the three marketing campaigns are perceived to be for different target groups. The majority of the participants (87.8 percent) confirm that the marketing campaigns were developed for different target groups with a high differentiation degree (M=5.14; SD=1.216). Additionally, the entertainment campaign is associated with a younger target group (86.7 percent), which is innovative and interested in technology (80.0 percent). The health campaign is assigned to the older segment (74.4 percent), which shows an active and nutritionally lifestyle (89.9 percent). In addition, most participants (73.3 percent) verify that the general campaign was designed for

no special target group. Due to these results, we conclude that the differentiated marketing campaigns are sufficiently related to the targeted group.

Measurement

After viewing one of the three marketing campaigns, participants had to answer a short questionnaire (see Appendix I). First, the dependent variables were probed for. The personal attitude towards blood donations was measured with three items used in previous studies (Ferguson 1996; Lemmens et al. 2005): “I have never really thought of giving blood”; “I have given some thoughts of giving blood”; and “I have already intensively sought information on donating blood”.

Participants’ intention to donate blood in the future was measured with four items from previous studies (France et al. 2008; Godin et al. 2005; Reid and Wood 2008): “I intent to get information about the next possibility to donate blood in my area”; “I intent to give blood in the following week”; “I intent to give blood during the next six month”; and “I intend to give blood in the future”.

Two items were used to measure the participants’ behavior to donate blood in a given situation, following the study of Armitage and Conner (2001) (i.e., “Imagine there is a mobile blood donation event next month at a school close to your apartment. You remember receiving a marketing campaign with the topic some days ago. Now you are considering whether to go to donate blood at this date. Please indicate whether you would donate blood in this situation or not.”). Since we know that participants have no possibility to donate in our experimental situation, the theoretical scenario was chosen to prove an indication of behavioral action (Armitage and Conner 2001). Afterwards, participants have to rank again their actual willingness to donate blood on a scale from 1=”low” to 7=”high”.

To identify the needs of the potential blood donor segments, which are affected by the three campaigns, nine questions about behavioral preferences during a possible blood donation were included. Afterwards, participants have to evaluate the marketing campaign they were assigned to with three items (d'Astous and Jacob 2002), and answer how the campaign reflect their daily lifestyle (Rijsdijk, Hultink, and Diamantopoulos 2007). One question about the general opinion about marketing campaigns was additionally added. Furthermore, ten questions about participant's Internet using behavior (Buente and Robbin 2008; Kalmus, Realo, and Siibak 2011) and ten adjusted questions about their health awareness were adapted (Walker, Sechrist, and Pender 1986; Zhou et al. 2012), which describe the particularities of the derived segments. By combining these underlying segmentation criteria with the specific marketing campaign, various interaction effects can be analyzed. Thus enables us, on the one hand, to test the hypothesized effects of a differentiated strategy for particular segments, and on the other hand, to test the potential effect of wrong targeting (i.e., a differentiated campaign addressing to the wrong segment). Finally, we included socio-demographic questions.

Pretests: To the best of our knowledge no prior research in nonprofit marketing examined for which target groups of potential blood donors differentiated marketing works. Since it was not possible to learn from existing findings, we verify our actual experiment with two pretests (N=127 and 180 respectively). From these, some main learning points were obtained. The first learning point relates to the very low initial incidence rate of potential blood donors, which leads to a re-evaluation of the target groups. In addition, we learned that it is more efficient to test separate segmentation criteria rather than to reconstruct full segments of prior studies. Thus, testing with delineated segments leads to two main problems. On the one hand, only few respondents can be clearly attributed to the particular segments. On the other hand, segmenting individuals before confronting them with a marketing campaign

have a potentially too strong influence at the expectations about the conditions, which makes it difficult to assume real independence between the segmentation and the conditions.

Data Collection

The online experiment was conducted in March 2015 to test the described hypotheses. In order to generate a sufficient sample of participants that fulfill the high requirements of the study we decided to cooperate with an online panel provider.

Out of 1,924 participants 860 participants fulfilled the described criteria to take part in the experiment that are age, blood donor status, and ability to donate blood, which is equivalent to a response rate of 44.7 percent. To ensure a high sample quality, we eliminated 22 participants due to incomplete answers. The final sample included 838 potential blood donors, and is representative for the German potential blood donor base aged between 18 and 69 years (Socio-economic Panel (SOEP) 2011).

On average participants needed eight minutes to complete the online questionnaire. According to the requested characteristics the generated sample showed a good composition. The sample of 838 participants consisted of 410 (48.9 %) men and 428 (51.1 %) women. The age ranged from 18 to 69 years, with 108 (12.9 %) aged between 18 and 24, 117 (14.0 %) between 25 and 34 years, 178 (21.2 %) between 35 and 44 years, 195 (23.3 %) between 45 and 54 years, and 240 (28.6 %) between 55 and 69 years. Thus, the sample showed an average age of 44.29 years. Additionally, the sample distribution corresponded closely to the regional distribution of the potential blood donor population in Germany.

Table 1. Sample Characteristics (N=838)

				SOEP 2011
	Category	N	%	%
Gender	Male	410	48.9	50.0
	Female	428	51.1	50.0
Age	18-24	108	12.9	12.5
	25-34	117	14.0	14.3
	35-44	178	21.2	21.0
	45-54	195	23.3	24.4
	55-69	240	28.6	27.8
Federal state	Baden-Wurttemberg	101	12.1	12.0
	Bavaria	141	16.8	15.7
	Berlin	34	4.1	3.9
	Brandenburg	33	3.9	3.6
	Bremen	8	1.0	0.8
	Hamburg	16	1.9	1.6
	Hesse	58	6.9	7.1
	Mecklenburg-Vorpommern	12	1.4	2.0
	Lower Saxony	75	8.9	8.5
	North Rhine Westphalia	179	21.4	21.5
	Rhineland-Palatinate	48	5.7	5.2
	Saarland	9	1.1	1.2
	Saxony	55	6.6	6.7
	Saxony-Anhalt	27	3.2	3.6
	Schleswig-Holstein	17	2.0	2.5
	Thuringia	25	3.0	3.8
Education	Without school leaving qualification	9	1.1	
	Still in education	16	1.9	
	Completed school education	178	21.3	
	Completed vocational training	430	51.4	
	University degree	164	19.6	
	Additional qualification in executive training	14	1.7	
	Doctorate/PhD	10	1.2	
	Others	10	1.2	
	Prefer not to say	6	0.7	
Employment/Life situation	Full-time employed	395	47.2	
	Part-time employed	133	15.9	
	Marginally employed	13	1.6	
	Federal voluntary service	1	0.1	
	Inability to work	8	1.0	
	Unemployed	49	5.9	
	Pupil	15	1.8	
	Trainee/Apprentice	9	1.1	
	Student	36	4.3	
	Parental leave	9	1.1	
	House-wife/husband	53	6.3	
	Partial retirement	3	0.4	
	Retirement	91	10.9	
	Others	14	1.7	
	Prefer not to say	8	1.0	
Born in Germany	Yes	801	95.7	
	No	32	3.8	
	Prefer not to say	4	0.5	
Family status	Single	305	36.4	
	Married/registered partnership	404	48.3	
	Widowed/registered partner died	16	1.9	
	Divorced/registered partnership repealed	96	11.5	
	Prefer not to say	16	1.9	
Money Donations(past 10 years)	Yes	458	54.7	
	No	380	45.3	
Time Donations(past 10 years)	Yes	197	23.5	
	No	641	76.5	

Furthermore, our sample consisted mainly of respondents with secondary school (21.3 %) or secondary vocational education (51.4 %). Most participants were full-time employed (47.2 %). In addition, the main part (48.3 %) was married or in a registered partnership and have been born in Germany (95.7 %). Compared to the average donor rate in Germany we found slight differences with respect to money donations and voluntary activities. Compared to the money donor rate in Germany, the rate of participants who have donated money during the past 10 years (54.7 %) was higher (TNS Infratest 2011). However, the proportion of volunteers among the sample was with 23.5 percent well below the volunteer rate in Germany (Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ) 2010). Detailed information on the socio-demographics of the sample can be found in Table 1.

Results

To analyze the data, we start with descriptive statistics such as mean values and standard deviations. All descriptive statistics can be found in Appendix I. However, for further analysis, we test for internal consistency of the reflective factors. All measured factors show acceptable values for Cronbach's alpha, ranging from 0.65 to 0.97 (Hair et al. 2010). For the next analytical steps, composites of the scales are formed by calculating the average values.

To test our hypotheses (H_1, H_2, and H_3) that a differentiated marketing campaign has a positive effect on the blood donation behavior than an undifferentiated marketing campaign three linear regression models with dummy variables and interaction effects were conducted (see Table 2). Each of the three models compares the differentiated entertainment and health marketing campaign with the undifferentiated general one, represented by the intercept b_0 (i.e., the reference category). Nevertheless, in order to know whether differentiation works for segmented sub-groups of the sample, we have to verify whether the combination of a specific marketing campaign with the segment-specific individual characteristics results in a

significant higher effect on the blood donation behavior. In case such positive interaction effects for the appropriate combinations can be confirmed, the respective hypotheses have to be accepted. In contrast, by measuring significant effects for unforeseen combinations of the campaigns with segmentation criteria, insight in the (negative) side effects of wrong targeting (i.e., a targeted marketing campaign that reaches another segment) are gained.

The coefficients of the interaction terms b_{11}, b_{12}, b_{17}, and b_{18}, therefore, are of main importance. These interaction effects respectively measure the combination of the entertainment campaign with the social media Internet using behavior, the entertainment campaign with the frequently Internet using behavior, the health campaign with the healthy lifestyle factor, and the health campaign with the sporty lifestyle factor. On the basis of our theoretical reasoning, we expect those coefficients to be significant and positive in comparison to the undifferentiated general marketing campaign. Additionally, when the coefficients of the interaction terms b_{13}, b_{14}, b_{15}, and b_{16} would be significantly negative (positive), the results would suggest that there is a negative (positive) side effect of cross-campaigning (wrong targeting). These interaction effects respectively measure the combination of the entertainment campaign with the healthy lifestyle factor, the entertainment campaign with the sporty lifestyle factor, the health campaign with the social media Internet using behavior, and the health campaign with the frequently Internet using behavior.

The first linear regression was conducted to test H_1, the second to test H_2, and the third to test H_3. Therein, the effect of the differentiated marketing campaigns at the dependent variable (1) personal attitude towards blood donations, (2) intention to donate blood in the future, and (3) blood donation behavior are tested. The adjusted R square for the first model is 0.239, for the second model is 0.531, and for the third model is 0.457. These values indicate that (1) 23.9 percent, (2) 53.1 percent, and (3) 45.7 percent of the variance of the dependent variable is explained by the independent variables by taking into account the number of independent variables included into the regression model.

Table 2. Results of the Linear Regression Models (Ordinary Least Squares)

Dependent Variable			Personal attitude			Intention			Blood donation behavior		
Parameter	Effect	VIF	Beta	T	Sig.	Beta	T	Sig.	Beta	T	Sig.
b0	General campaign (constant)		- .054	-1.238	n.s.	- .036	- .973	n.s.	- .016	- .361	n.s.
b1	Entertainment campaign	1.382	.081	2.288	*	.022	.798	n.s.	.011	.360	n.s.
b2	Health campaign	1.388	.006	.162	n.s.	.041	1.457	n.s.	.022	.744	n.s.
Influencing factors											
b3	Internet using behavior (social media)	5.185	- .046	- .677	n.s.	.023	.435	n.s.	.122	2.107	*
b4	Internet using behavior (frequent)	5.741	- .058	- .800	n.s.	.048	.841	n.s.	- .035	- .570	n.s.
b5	Health awareness (healthy lifestyle)	4.287	- .035	- .556	n.s.	.048	.983	n.s.	.047	.891	n.s.
b6	Health awareness (sporty lifestyle)	3.984	.112	1.858	n.s.	.018	.387	n.s.	- .049	- .967	n.s.
b7	Preference for information	6.301	.189	2.494	*	.258	4.346	***	.249	3.888	***
b8	Preference for leisure time	7.349	.171	2.095	*	.343	5.349	***	.297	4.307	***
b9	Preference for working time	4.981	.112	1.658	n.s.	.090	1.702	n.s.	.088	1.542	n.s.
b10	Preference for easy access	6.487	.053	.693	n.s.	.146	2.715	**	.189	2.909	**
Main Interaction effects[1]											
b11	Entertainment campaign × Internet (social media) using behavior	3.153	.094	1.761	n.s.	.016	.382	n.s.	- .057	-1.259	n.s.
b12	Entertainment campaign × Internet (frequent) using behavior	3.515	.046	.810	n.s.	.048	1.087	n.s.	.061	1.267	n.s.
b13	Entertainment campaign × Health awareness (healthy lifestyle)	2.725	.084	1.695	n.s.	.024	.603	n.s.	.004	.098	n.s.
b14	Entertainment campaign × Health awareness (sporty lifestyle)	2.646	- .067	-1.370	n.s.	- .002	- .046	n.s.	.050	1.200	n.s.
b15	Health campaign × Internet (social media) using behavior	3.441	.026	.473	n.s.	- .005	- .103	n.s.	- .020	- .431	n.s.
b16	Health campaign × Internet (frequent) using behavior	3.795	.059	1.008	n.s.	.030	.654	n.s.	.051	1.033	n.s.
b17	Health campaign × Health awareness (healthy lifestyle)	3.050	- .018	- .337	n.s.	- .061	-1.482	n.s.	- .033	- .742	n.s.
b18	Health campaign × Health awareness (sporty lifestyle)	2.851	- .016	- .307	n.s.	.067	1.664	n.s.	.053	1.221	n.s.
Additional Interaction effects											
b19	Entertainment campaign × Preference for information	3.851	.003	.042	n.s.	.070	1.516	n.s.	.051	1.021	n.s.
b20	Entertainment campaign × Preference for leisure time	4.877	.009	.131	n.s.	- .025	- .478	n.s.	- .024	- .428	n.s.
b21	Entertainment campaign × Preference for working time	3.388	- .033	- .588	n.s.	- .026	- .594	n.s.	- .053	-1.135	n.s.
b22	Entertainment campaign × Preference for easy access	4.067	- .023	- .375	n.s.	- .087	-1.812	n.s.	- .037	- .727	n.s.
b23	Health campaign × Preference for information	4.010	.095	1.570	n.s.	.010	.206	n.s.	.056	1.100	n.s.
b24	Health campaign × Preference for leisure time	5.059	.010	.150	n.s.	- .027	- .514	n.s.	.000	- .005	n.s.
b25	Health campaign × Preference for information	3.245	- .077	-1.416	n.s.	- .027	- .626	n.s.	- .039	- .841	n.s.
b26	Health campaign × Preference for easy access	4.248	.038	.607	n.s.	- .036	- .746	n.s.	- .104	-1.972	*
adjusted R^2				.239			.531			.457	
F-Value				11.116	***		37.435	***		28.063	***

Significance level: ***p< .001; **p< .01; *p< .05; n.s.=not significant
Standardized coefficients are reported

[1] Note: Beside target group particularities such as Internet using behaviors and health awareness factors, age was intended to characterize the target groups. By including age as an additional variable into the linear regression models each of the three adjusted R^2 declines. The quality of the regression models deteriorates and age contributes no additional information. Thus, we dropped age from further analysis.

All three linear regressions reveal no significant results relating to the main interaction effects. That is the coefficients of the interaction terms b_{11}, b_{12}, b_{17}, and b_{18} show no significant effects of the differentiated marketing campaigns in comparison to the undifferentiated one. Furthermore, no confirmation that wrong targeting leads to an additional positive or negative effect is found. The coefficients of the interaction terms b_{13}, b_{14}, b_{15}, and b_{16} indicate no significant effect of cross-campaigning. Based on these results, all three hypotheses (H_1, H_2, and H_3) are not supported. The differentiated marketing campaigns show no significant positive effect on the three measured dependent variables in comparison to the undifferentiated general marketing campaign and no effects of wrong targeting occur.

Further results: Besides hypothesis testing, the three linear regressions reveal noteworthy side effects. In the first model, the entertainment marketing campaign shows a slightly significant effect on the dependent variable personal attitude in comparison to the general one (b_1= 0.081, p< 0.05). This means that the entertainment campaign increases the personal attitude of respondents in general, regardless of their affiliation to the target group. Furthermore, we find additional statistical significant factors. Interestingly, respondents who want to receive information about blood donation events in their local newspaper (b_7= 0.189, p< 0.05) and those who would like to donate blood during their leisure time (b_8= 0.171, p< 0.05) show a higher personal attitude towards blood donations.

These results are supported by the second linear regression. Again, we find significant results for respondents who show behavioral preferences for the information about blood donation events (b_7= 0.258, p< 0.001) and blood donations during their leisure time (b_8= 0.343, p< 0.001). Those respondents reveal a higher intention to donate blood in the future. Additionally, respondents who would like to have an easy access to blood donations (b_{10}= 0.146, p< 0.01), such as the ability to arrange

appointments for blood donations or a good connection to the public transport, show also a higher intention to donate blood in the future.

These results are also detected in the third linear regression. Once again, respondents who show a preference for information (b_7= 0.249, p< 0.001), for leisure time (b_8= 0.297, p< 0.001), and an easy access (b_{10}= 0.189, p< 0.01) show a significant higher blood donation behavior. Beside these results, we find that respondents, who use the Internet to be connected with friends (social media Internet using behavior) show a slightly significant higher blood donation behavior (b_3= 0.122, p< 0.05) than other respondents. Moreover, results expose a negative effect on the blood donation behavior regarding respondents, who received the health marketing campaign and who have a behavioral preference for an easy access to blood donations (b_{26}= -0.104, p< 0.05) in comparison to the general marketing campaign. This indicates that the health campaign can have a negative influence on some potential blood donor.

Discussion

General Discussion and Conclusion

Our research deviates from previous studies that recommend to use differentiated marketing campaigns for different segments (e.g., Zhou et al. 2012; Shehu et al. 2015). The key objective of our study was to make one step further and examine whether the recruitment of potential blood donors is more effective by using differentiated marketing campaigns based at the particularities of the underlying target groups in contrast to an undifferentiated one. Thus, our study contributes in at least three ways.

First, we measured the effect of two differentiated and one general marketing campaign on blood donation behavior. The differentiated marketing campaigns were developed for different target groups, since prior studies suggested that potential blood

donors differ in their behavioral preferences (Martín-Santana and Beerli-Palacio 2008). The results of our study show that the differentiated marketing campaigns have no significant effect, neither a positive nor a negative one. This implies that the differentiated marketing campaigns do not increase the recruitment success inside their underlying target group in contrast to an undifferentiated general one. Furthermore, the results do not give an indication of which target group could be addressed best. Thus, the perspective to address potential blood donors with their behavioral preferences, which are quite difficult to observe, must be scrutinized.

Second, within our study we elaborate the characteristics of potential blood donors receiving one of the three marketing campaigns. We verify the existence of a group of potential blood donors, which is in general more likely to donate blood for the first time regardless of the marketing campaign they received. This group of potential blood donors seeks information about blood donation events, prefers donating blood during their leisure time, and favors an easy access to the blood donation event. Our findings are in line with results from previous studies which recommend addressing people who have never donated blood with information about blood donations (Godin et al., 2005). Thus, any blood donation marketing strategy, which is to be successful, should be more frequently implemented.

Third, we want to show the effects of differentiated marketing by examining differences in the target and non-target groups of potential blood donors in comparison to undifferentiated marketing. Our results indicate that "wrong" targeting in this context does not have any negative consequences, as mentioned in prior studies (e.g., Aaker, Brumbaugh, and Grier 2000).

Following this argumentation, differentiated marketing for potential blood donors does not necessarily results in an overall recruitment success and wrong targeting do not entail negative consequences. This indicates that the correct approach

to recruit potential blood donors is to consider which alternative marketing strategy can achieve the best response rate. A promising approach is to create an even more motivational general marketing strategy for the general potential blood donor base, to reach all kinds of potential blood donors.

Management Implications

Our research does not supports the view of the prevailing managerial beliefs that differentiated marketing is a beneficial approach to increase the recruitment success (e.g., Wymer 1997, 2003; Hollingworth and Wildman 2004; Zhou et al. 2012; Shehu et al. 2015). In contrast, the findings of our study suggest that blood donation organizations should not invest in differentiated marketing campaigns to recruit new blood donors. As no significant effects were found, we show that the cost for deploying a differentiation strategy will not result in substantial increases of the recruitment success (which were thus not find based on this study). Compared to the average costs of the development of differentiated marketing campaigns, blood donation organizations will not get the increased value for money they intended to get by using segmentation approaches. Even more differentiated marketing, therefore, will not be successful enough to worth its investment. However, it remains unchanged that blood donation organizations need to invest money and time into their marketing efforts. Blood donation organizations should use their resources and invest into a broader understanding of how a successful general marketing strategy should look like.

Despite this, as mentioned above, our results uncover a group of potential blood donors, which is in general more likely to give blood. Furthermore, this group reveals a set of further enhancements in the management procedure of blood donation events. Since this specific group want to be informed by newspaper, blood donation organizations should increase their frequency of advertisement in this traditional media.

Additionally, the arrangement of even more frequent blood donation events, especially at weekends and during the evenings is promising. The possibility of making appointments for a blood donation is also recommended. This enables blood donation organizations to guarantee an easy access to the blood donation events.

In conclusion, our results help blood donation organization to develop a strategy which includes these special points. By implementing this strategy, blood donation organizations will at least reach members of this group, which leads to an increasing recruitment success of potential blood donors.

Limitations and Future Research

To the best of our knowledge this is the first study about blood donor recruitment which addresses target groups of potential blood donors by using differentiated marketing campaigns. However, some limitations should be noted which provide opportunities for further research. First of all, this study only focused on two of various target groups in the blood donor market, which have been derived on a theoretical basis. As we have learned from segmentation studies, several other potential blood donor segments and sub-segments exist (Wedel and Kamakura 2002). Therefore, further studies could use a step-wise approach to examine the effect of differentiated marketing. By starting with a segmentation approach, followed by more elaborated marketing campaigns. Therein, the effect of differentiated marketing can be directly tested in the underlying segments. Moreover, our study used for both target groups variants of an overall campaign structure (see Figure 1). We chose this marketing tool to create the same condition for all recipients, and fit the experimental design. Future research could analyze much more different marketing tools for distinct target groups.

In addition, the interpretation and generalization of our results to other blood donor target groups should be made with caution since we only measured the effects of

the differentiated marketing campaigns in the German blood donor market. Prior studies have already shown that blood donors and non-donors in different countries have diverse behaviors, motives, and needs (Grassineau et al. 2007; de Kort and Wagenmans 2011). Future research could consider this when cross-validating these results.

Furthermore, although we also examined the effect of our derived differentiated marketing campaigns at the blood donation behavior of active blood donors, which does not reveal other results, further research should have a closer look at the particularities of this group. Prior studies already document the existence of diverse active blood donor segments (Zhou et al. 2012). In addition, active blood donors show more diverse opinions about blood donations than non-donors (Godin et al. 2005; Godin et al. 2007), and therefore, need other stimuli. Thus, further research should analyze the effect of differentiated marketing campaigns, which are designed especially for target groups of active blood donors, since blood donation organizations are able to cover the blood donation demand by increasing the frequency of blood donations insight the active blood donor base (Schreiber et al. 2003).

Moreover, in our experimental study we only measured the effect of the conceptualized marketing campaigns on the personal attitude towards blood donations, the intention to donate blood in the future and the blood donation behavior. Further studies could examine whether the addressed potential blood donors conduct their first blood donation after the study, either by doing a follow-up survey or testing the effects of differentiated marketing in a field experiment under real conditions.

Appendix I. Measurement

	Online questionnaire			
	I have donated blood in the past ten years. (*yes*/no) I am not allowed to donate blood for some reason (e.g., medication, health, etc.). (*yes*/no) *After plausibility checks: Exclusion of 22 data files*	N= 860 **N= 838**		
	Start of the questionnaire: General opinion on the blood donations (Measured on a 7-Point Likert-scale from 1= I completely disagree to 7= I complete agree.)	α	M	SD
	Willingness to donate blood (before)			
	My actual willingness to donate blood is… (1= low to 7= high)		3.65	1.864
	Personal attitude towards blood donations	**0.759**		
	I have never really thought of giving blood.[1]		4.46	2.158
	I have given some thoughts to give blood.		4.42	2.015
	I have already intensively sought information on donating blood.		3.01	1.897
	Intention to give blood in the future	**0.893**		
	I intend to get information about the next possibility to donate blood in my area.		3.32	1.798
	I intend to give blood in the following week.		2.15	1.417
	I intend to give blood during the next six months.		3.03	1.826
	I intend to give blood in the future.		3.72	2.022
	Blood donation behavior			
	I will surely donate blood in this situation.		3.36	1.858
	I will surely not donate blood in this situation.		3.62	2.148
	Willingness to donate blood (after)			
	My actual willingness to donate blood is… (1= low to 7= high)		3.71	1.860
	Behavioral preferences during a blood donation			
Information	I would like to get information about blood drive dates in my local newspaper.	**0.953**	3.59	1.970
	I would like to get information about a special blood donation event in my local newspaper.		3.64	1.958
Leisure time	I would like to donate blood at the weekends.	**0.792**	3.50	1.927
	I would like to donate blood in the evening.		3.26	1.855
	Most likely I would donate blood in my leisure time.		2.80	1.923
Working time	I would like to donate blood during working hours directly at my workspace.	**0.788**	3.92	1.971
	It would be important to me to integrate a blood donation into my every day working life.		3.27	2.032
Easy Access	I would like to set an appointment for my blood donation.	**0.651**	3.59	1.970
	A good accessibility of the blood drive by public transportation would be very important for donating blood.		3.56	2.106
	Compatibility of the marketing campaign	**0.969**		
	The content of the marketing campaign matches my way of living.		3.64	1.709
	The content of the marketing campaign matches the way I do things.		3.66	1.715
	The content of the marketing campaign suits me well.		3.60	1.756
	Evaluation of the marketing campaign	**0.929**		
	This marketing campaign pleases me.		4.41	1.746
	This marketing campaign incites me to donate blood.		4.12	1.842
	This marketing campaign gives a good image to the blood donation organization.		4.58	1.745
	Internet using behavior			
Social media	I regularly use the Internet to keep in touch with friends and acquaintances in social networks (e.g., Facebook, Twitter).	**0.692**	4.21	2.333
	I regularly use the Internet to upload photos or pictures.		3.28	2.024
Frequent	I regularly use the Internet to get entertained (e.g., listen to music, watch movies, play games).	**0.867**	4.12	2.061
	I regularly use the Internet to express my opinion in forums on topics I consider important.		2.93	1.784
	I regularly use the Internet to participate in forums, blogs, and surveys.		3.23	1.917
	I regularly use the Internet to share music, movies, and programs.		2.59	1.744
	I regularly use the Internet to upload videos (e.g., YouTube).		2.47	1.792
	I regularly use the Internet to watch online TV or listen to the radio.		3.26	2.039
	I regularly use the Internet to comment on articles in online newspapers or information portals.		2.96	1.960
	I regularly use the Internet to participate in gaming environments (e.g., World of Warcraft, etc.).		2.33	1.854

	Health awareness			
Healthy lifestyle	I regularly check my cholesterol level.	**0.876**	2.65	1.965
	I am getting regularly checked by the doctor.		3.75	2.140
	I enjoy reading articles about health and lifestyle.		3.59	1.859
	I regularly check my blood pressure.		3.24	2.057
	I regularly seek health information.		3.19	1.859
	I regularly check my body weight.		4.27	2.080
	I regularly check my pulse.		2.76	1.901
Sporty lifestyle	I regularly go to the gym.	**0.679**	2.40	1.898
	I regularly practice sport.		3.60	2.227
	I pay attention to a healthy and balanced diet.		4.34	1.742

M = Mean; SD = Standard deviation; α = Cronbach's alpha.

[1] Note: Due to the negative formulation, the scale of the item was inverted.

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