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Under Blood Pressure – Differentiated versus Undifferentiated Marketing to Increase Blood Donations

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Abstract Despite strong evidence in current marketing theory and practice that a differentiated marketing approach increases recruitment success, blood services worldwide often use undifferentiated marketing strategies to address new blood donors. Relying on the assumption that differentiated marketing is highly promising; the authors developed an online experiment among 838 participants who had not donated blood during the past ten years. The experiment tested the effects of a differentiated in comparison to an undifferentiated marketing campaign on three marketing outcomes: (1) awareness, (2) intention, and (3) behavioral enactment. Surprisingly and in contrast with most marketing studies in the for-profit context, the results of the blood donation experiment suggest that differentiated marketing is not more effective than undifferentiated marketing. This finding has important implications for marketing strategies and actions of blood services.

Keywords *differentiated marketing, target groups, blood donor recruitment, blood donor management, experiment*

1 Introduction

Differentiated marketing, first introduced in the end of the 1960s by Kotler and Levy (1969), is a ubiquitous concept for researchers from all marketing fields. Until then, the common used marketing approach was an undifferentiated one, where all different stakeholder segments are addressed equally. Over time, researchers and managers recognized that an equal treatment for all stakeholders might not be the most effective strategy. Especially since differentiated marketing seems to result in efficient resource uses and more powerful communications (Rupp et al. 2014; Zhou et al. 2012), many for-profit organizations started to differentiate their stakeholders and reaped the benefits of this targeted approach (e.g., Aaker et al. 2000, Butt and de Run 2011; Reutterer et al 2006).

In nonprofit and especially in blood donor research differentiated marketing is still a recommendation, rather than an applied strategy. However, research focusing on differentiation stated that differentiated marketing might increase the recruitment success by creating appeals that precisely match the preferences of donor segments (Dibb and Simkin 2010; Kotler and Levy 1969; Manickam 2014). Furthermore, blood donor research strongly recommended using differentiated marketing to increase blood donations (e.g. Shehu et al. 2015; Zhou et al. 2012). For example, Zhou et al. (2012) examined the social values, lifestyles, and attitudes of Chinese blood donors and identified three major segments. The authors recommend to use specific types of advertising appeals and slogans to address the segments. Another study by Shehu et al. (2015) identified four segments of blood donors and recommend using targeting strategies to address them.

These studies recommend that managers implement different campaigns for segments (***; Veldhuizen et al. 2013), but do not analyze the effectiveness of differentiated marketing in a next step. Thus, sufficient studies of actual implementations of differentiated marketing to address blood donors are rare (Reutterer et al. 2006). As a consequence, only few blood services, including a number of German Red Cross Blood Services (GRC), segment their targets. Consequently, to date, the commonly used marketing approaches among blood services is still an undifferentiated one. Although, marketing campaigns, whether differentiated or not, attract attention from potential blood

donors, questions remain about whether such differentiation efforts actually provide essential value, in the form of increased blood donations.

Since empirical tests of the effectiveness of differentiated marketing in the blood donation context are lacking, this study aims at comparing a differentiated with an undifferentiated campaign to close the research gap that remains regarding the precise benefits of differentiation. It is necessary to test for changes in blood donation behavior due to differentiated, relative to undifferentiated, marketing. Thus, the objective of the study is to test whether differentiated marketing is more effective than undifferentiated marketing to promote blood donations. Furthermore, we follow the appeal of Peltier and Schribrowsky (1997) to develop sub-segment focused marketing campaigns instead of using an umbrella campaign to appeal everyone in the target audience. We address the various criteria of the underlying sub-segments in the differentiated marketing strategy. Research is required to test segmentation criteria independently, with respect to their relevance for a differentiated strategy. Accordingly, we are able to clarify the effects of differentiated marketing in the target group and in the non-target group. Thus, we can provide evidence for the positive (negative) effects of (wrong) targeting.

In the next section, we develop our conceptual framework and derive the underlying research hypothesis on a theoretical basis. Afterwards we move forward by providing an overview of the experimental design and the used differentiated and undifferentiated marketing campaigns to promote blood donations, followed by the results section. In the discussion section, we interpret several findings and give implications for theory and practice, as well as some limitations and inspirations for further research.

2 Conceptual Framework and Hypothesis

Blood services recognized that blood donor groups react differently to marketing campaigns. While some get addressed by overall campaigns, some do not contribute to the message contents (Kotler and Levy 1969). Especially for blood services, addressing the right blood donor with the right marketing approach could help to foster resource allocation (Rupp et al. 2014). Thus, blood services must

develop campaigns which effectively reach their blood donor bases. Only by identifying the preferences of different blood donor groups, blood services are able to address more donors and plan their blood donation events more precisely.

Differentiated marketing seems to be an effective tool since it can increase the recruitment success by creating appeals better matching the preferences of potential blood donor target groups (Dibb and Simkin 2010; Kotler and Levy 1969). For example, after identifying different segments Zhou et al. (2012: p. 548) stated: "[...] segmentation and targeting can provide a better way to highlight the specific benefits valued by different segment groups of blood donors and result in a better promotion of blood donation behavior in society." In undifferentiated marketing, the imparted benefit of donating blood refers mainly to the feelings aroused by the act itself (Bendapudi et al. 1996). Differentiated marketing instead signals the precise benefits that different potential blood donor groups want to receive, according to their behavioral preferences (Kotler and Levy 1969). These benefits should appear more obvious; they additionally occur to the imparted benefit of the act itself. Thus, the informational, motivational character of differentiated marketing helps recipients absorb the information in campaigns more readily (Manickam 2014), and should invoke positive evaluations. A positive evaluation relates positively to the likelihood of engaging in the related behavior (Bekkers and Wiepking 2011), so it should exert an effect on blood donations (e.g., Gillespie and Hillyer 2002).

Hereinafter, we define differentiated marketing as follows: *Differentiated marketing includes the development of different marketing campaigns for specific target groups, which enables the nonprofit organization to address these target groups related to their behavioral preferences.*

Anyhow, it remains unclear how differentiated marketing affects the (non-)target group of blood donors. Thus, we analyze the effect of differentiated marketing on three marketing outcomes (blood donation variables). Furthermore, it is questionable if differentiated marketing, especially under cost-benefit aspects, is worth its investment. In our conceptual framework (Figure 1), we distinguish between two promising types of differentiated campaigns—entertainment and health—and an undifferentiated one, and test if differentiated marketing is better addressing potential blood donors.

[Figure 1]

At first glance, differentiated marketing campaigns seemingly should have a more direct, positive effect on blood donation behaviors of potential donors, and therefore, increase the recruitment success. Using the right target variables may influence the effects of the used differentiated campaigns (Butt and de Run 2011). Whereby, the better the match between the used targeted variables and the preferences of the target group, the more likely occur the desired behavior; a blood donation (Aaker et al. 2000). While undifferentiated marketing does not use preferences to address blood donors, differentiated marketing does. Thus, we argue:

Hypothesis 1: By using differentiated marketing campaigns to promote blood donations the effect on the blood donation variables (marketing outcomes of blood services) increases in comparison to the undifferentiated marketing campaign.

3 Research Methodology

3.1 Research Design and Study Context

With a between-subjects experiment designed to recruit potential blood donors in Germany, we test whether differentiated marketing works in controlled conditions. The experimental structure was identical for all three campaigns. The focus was on potential donors, because prior research shows that blood donors develop their motivations during their donor career. External factors, such as additional values, mostly motivate potential donors, whereas active donors become intrinsically motivated during their career (e.g., Guiddi et al. 2015).

Part 1. We required participants to fulfill three main criteria. First, all participants were between 18 and 69 years old. Second, to identify new donors, participants indicated if they had donated blood in the past 10 years (yes/no). Only those participants who answered “no” were considered. Because many potential donors are not able to donate, we also asked if they were unable to donate blood (e.g., medication) (yes/no).

Participants who met this three criteria for potential donors, then ranked their actual willingness to donate blood on a seven-point scale (1 = “low,” 7 = “high”). This measurement was used as a predisposition of the participants regarding blood donations.

Part 2. Afterward, participants were balanced randomly assigned to one of three conditions and received a direct mailing, as further elaborated subsequently. Randomization also increases internal validity since it lowers the influence of e.g. selection-bias, history, or testing effects (Malhotra 2010). The experimental structure is shown in Figure 2.

[Figure 2]

As we know from prior research blood services can identify target groups of potential donors that best match their requirements (e.g., ***). The two differentiated campaigns developed for this study should appeal to two target groups that represent a substantial proportion of the potential donor base (Lemmens et al. 2005; Müller-Steinhardt et al. 2012) and are based on experiences and observation of the GRC. Evidence for the two target groups is given also by prior research (e.g., Zhou et al. 2012). In line with that, we specified important characteristics of the target groups (i.e., age, Internet behavior, and health awareness) (e.g., Shehu et al. 2015; Buente and Robbin 2008; Ory et al. 2003). Each participant saw one of the three experimental conditions (Figure 3).

[Figure 3]

Condition 1. The first condition offered an *entertainment campaign*. This campaign was designed for a technophile target group of young potential blood donors (e.g., Lemmens et al. 2005; Zhou et al. 2012). Their age ranges between 25 and 44 years and interested in online communication (e.g., Buente and Robbin 2008). This target group is a promising source of new donors. Young people with higher education level also indicate a greater likelihood of donating again during a one-year period (Schreiber et al. 2005). They often encounter donation events at their university or workplace, which should improve their awareness (Lemmens et al. 2005). Considering their affinity for new technology, we designed the campaign to be more modern, offering benefits such as an iPad and free Internet access to keep participants connected even as they donate. An eye-catching, colorful image in the

campaign underlined its entertainment factor, stimulating the visual imagery process (Babin and Bruns 1997), in combination with thematic aphorisms, such as “blood donation with entertainment factor.”

Condition 2. The second condition was a *health campaign*, customized for the target group of older potential blood donors (55–69 years; Moschis 2003). This group is active and interested in promoting their health (Walker 2002; Zhou et al. 2012). Moreover, older people suffer fewer complications while donating and are more likely to become frequent donors (Müller-Steinhardt et al. 2012). Thus, donations by this group tend to be more reliable; they offer a nearly untapped resource for recruitment (Gillespie and Hillyer 2002). Furthermore, demographic change has led to steady growth of older age groups, increasing the number of people represented in this target group (Walker 2002). To address its needs, this campaign cited health information (e.g., Ory et al. 2003). Specifically, the campaign offered a cholesterol health check, which prior studies cite as an effective incentive (e.g., Goette et al. 2009). To emphasize the health factor, the campaign also featured a picture of active people participating in sports and relevant thematic aphorisms, such as “blood donation with health factors.”
Condition 3. The third condition, which did not include a special offer, served as the undifferentiated campaign and was not designed for any particular group. The undifferentiated campaign builds the reference point against the differentiated campaigns (control condition). It had an informative character and enumerated facts about blood donations as it is common practice of the GRC. The structure was similar to that of the other two conditions. However, because pictures in this context generally serve to stimulate visual imagery processes (Babin and Bruns 1997), we did not include any, to keep the general campaign as neutral as possible.

3.2 Measurement

Part 3. After viewing one of the three campaigns, participants answered a short questionnaire (Appendix I), which first featured the dependent variables. Awareness was measured with three items from previous studies (Lemmens et al. 2005). We determined intentions with two adopted items (Armitage and Conner 2001; Godin et al. 2005) and measured behavioral enactment following

Armitage and Conner's (2001) approach: "Imagine there is a mobile blood donation event next month at a school close to your apartment. You remember receiving a marketing campaign 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." Participants had no opportunity to donate in our experimental situation, so this theoretical scenario provided indications of behavior (Armitage and Conner 2001). Afterwards, participants again ranked their willingness to donate blood on a scale from 1 ("low") to 7 ("high").

Part 4. To identify the needs of the target groups, we included questions about their behavioral preferences during a possible donation event. The participants also evaluated the campaign they saw (d'Astous and Jacob 2002) and indicated how well their daily lifestyle was reflected (Rijsdijk et al. 2007). One question asked about their general opinion of campaigns. To determine the particularities of the derived target groups, further questions asked for the participants' Internet usage behaviors (Buente and Robbin 2008; Kalmus et al. 2011) and health awareness (Walker et al.1986; Zhou et al. 2012). By combining these target group criteria with specific marketing campaigns, we can analyze various interaction effects and test the hypothesized effects of a differentiated marketing strategy for particular target groups, and the effects of wrong targeting (differentiated campaign addressing the wrong target group). *Part 5.* Finally, we included sociodemographic questions.

Pretests: To the best of our knowledge, no prior nonprofit research has examined whether differentiated marketing works better than undifferentiated marketing for different target groups. Therefore, we verified our experiment with two pretests (N = 127 and 180), which revealed several main insights. First, we found a very low initial incidence rate. Second, we determined that it would be more efficient to test separate target group criteria, rather than reconstruct full segments. Testing delineated segments creates two main problems: Few respondents can be attributed clearly to particular segments, and grouping individuals before confronting them with a campaign might lead to a strong influence on their expectations about the conditions, which makes it difficult to ensure independence between the grouping and the conditions. Therefore, we decided to focus only on the main characteristics of the two target groups, as described previously.

3.3 Manipulation Check

To increase the external validity, we developed the campaigns with three marketing specialists from the GRC. The campaigns were adjusted in response to their extensive feedback, to make them as similar to actual campaigns as possible. Thus, we guarantee a similar invitation setting as it is common for the GRC to address blood donors. In addition, we conducted a manipulation check, a necessary step because our experiment is valid only if the differentiated campaigns accurately address the target group by using an appeal according to their preferences. We followed prior research on differentiated marketing by testing for the overall perception of target group distinctiveness (e.g., Aaker et al. 2000; Butt and de Run 2011) and not for single elements. After receiving all three campaigns, participants indicated the extent to which they focused on distinct target groups (e.g., "How different are the shown campaigns in your opinion?" [1 = "weakly" to 7 = "strongly"]). Pretest participants then assigned each campaign according to sociodemographic, psychographic, and behavioral criteria, such as "Which of the three campaigns have been designed for young blood donors?" (1–3 or none). Most participants (87.8 percent) believed that the marketing campaigns had been developed for different targets, with a high degree of differentiation (M = 5.14; SD = 1.216). The entertainment campaign was specifically associated with a younger group (86.7 percent) that is innovative and interested in technology (80.0 percent). The health campaign matched with an older group (74.4 percent) that adopts an active, nutritional lifestyle (89.9 percent). In addition, 73.3 percent of respondents verified that the undifferentiated campaign was not designed for any special group. Therefore, the differentiated campaigns appeared sufficiently related to the desired targeted groups.

3.4 Data Collection

The online experiment in cooperation with an online panel provider was conducted in March 2015. Of 1,924 potential participants, 860 respondents fulfilled the described criteria, equivalent to a response rate of 44.7 percent. To ensure high sample quality, we eliminated 22 participants with incomplete answers. The final sample of 838 participants is representative of the German potential blood donor

base (see Table 1) (Socio-Economic Panel [SOEP] 2011). This increases external validity and enables us to generalize the results to the general potential blood donor base in Germany.

Participants were nearly evenly split by gender, with 410 (48.9 percent) men and 428 (51.1 percent) women. Ages ranged from 18 to 69 years (mean = 44.29). The sample distribution also corresponded closely with the regional distribution of the potential blood donor population in Germany.

[Table 1]

Furthermore, our sample consisted mainly of respondents with secondary school (21.3 percent) or secondary vocational education (51.4 percent). Many participants were employed full-time (47.2 percent) and were married or in a registered partnership (48.3 percent). The vast majority were born in Germany (95.7 percent).

3.5 Analytical Approach

To test our hypothesis, we derived three linear regressions with dummy variables and interaction effects (Table 2). Each of the three models compared the differentiated entertainment and health campaign with the undifferentiated one, represented by the intercept b_0 (i.e., reference category). To verify if differentiation works for the subgroups in the sample, we test if the combination of a specific campaign with the target group characteristics exerts a significantly stronger effect on dependent variables. Positive interaction effects for the appropriate combinations would support the respective hypothesis. By measuring the effects for mismatched combinations, we gain insight into the effects of wrong targeting.

The coefficients of the interaction terms b_{11}, b_{12}, b_{17}, and b_{18} are of central interest to support our hypothesis. These interaction effects measure the combination of the entertainment campaign with the target group characteristics (social media/Internet use behavior and frequent Internet use behavior); the health campaign with the target group characteristics (healthy lifestyle factor and sporty lifestyle factor), respectively. We expect these coefficients to be significant and positive, in comparison with the values for the undifferentiated campaign. If the coefficients of the interaction terms b_{13}, b_{14}, b_{15}, and b_{16} are significantly negative (positive), it would suggest a negative (positive) effect of wrong targeting. These interaction effects measure, respectively, the combination of the entertainment

campaign with the characteristics of the health-oriented target group (healthy lifestyle factor and sporty lifestyle factor), the health campaign with the characteristics of the technophile target group (social media/Internet use behavior and frequent Internet use behavior).

3.6 Results

The analysis started with descriptive statistics, including mean values and standard deviations (see Appendix I). The dependent variables show a mean value of 3.96 (SD = 1.664) for awareness, a mean value of 3.38 (SD = 1.824) for intention, and a mean value of 3.87 (SD = 1.781) for behavioral enactment. For further analyses, we tested the internal validity of the reflective factors. First, we used Cronbach's alpha for analyzing reliability. All reflective factors showed acceptable values, ranging from .65 to .97 (Hair et al. 2010). Furthermore, we compared the correlations of the items, which show all acceptable values. To form the scale composites, we calculated the average values.

We calculated three linear regressions to test for three marketing outcomes. The first linear regression tested the effect of the differentiated campaigns on awareness, the second on intention, and the third on behavioral enactment. The adjusted R-square values for the three models show that 23.9 percent, 52.5 percent, and 38.0 percent of the variance of the dependent variable is explained by the independent variables, taking into account the number of independent variables included in the regressions.

[Table 2]

Hypothesis testing: Differentiated versus Undifferentiated Marketing Campaign

None of the linear regressions revealed significant results related to the main interaction effects. The coefficients of the interaction terms b_{11}, b_{12}, b_{17}, and b_{18} indicated no significant effects of the differentiated marketing campaigns, neither of the entertainment nor of the health campaign, in comparison with the undifferentiated one. Furthermore, we found no confirmation that wrong targeting led to further effects. The coefficients of the interaction terms b_{13}, b_{14}, b_{15}, and b_{16} indicated no significant effect. Thus, the results do not support our hypothesis. The differentiated marketing

campaigns showed no significant effect on the dependent variables compared with an undifferentiated marketing campaign, nor any effects of wrong targeting.

Further results: Beyond these findings pertaining to our hypothesis, the three linear regressions reveal some noteworthy side effects. In the first model, the entertainment campaign had a slightly significant effect on awareness compared with the undifferentiated campaign ($b_1 = .081$, $p < .05$). The entertainment campaign increased the awareness of respondents in general, regardless of their target group affiliation. We also found several statistically significant factors. Respondents who wanted to receive information ($b_7 = .189$, $p < .05$) and to donate during leisure times ($b_8 = .171$, $p < .05$) showed more positive awareness.

In the second linear regression, we again found significant results for respondents who preferred to receive information ($b_7 = .318$, $p < .001$) and making donations during their leisure time ($b_8 = .336$, $p < .001$). Those respondents indicated a higher level of intention. Respondents who preferred easy access ($b_{10} = .157$, $p < .01$), revealed higher levels of intentions.

Similar results emerged from the third linear regression. Again, respondents who preferred more information ($b_7 = .306$, $p < .001$), leisure time ($b_8 = .207$, $p < .001$), and easy access ($b_{10} = .257$, $p < .01$) revealed significantly higher levels of behavioral enactment.

4 Discussion

4.1 General Discussion and Conclusion

Our research deviates from previous studies that recommend the use of differentiated marketing for different targets (e.g., Shehu et al. 2015). We sought to examine whether the recruitment of potential donors is more effective by using differentiated campaigns that reflect the particularities of the underlying target groups, rather than undifferentiated campaigns. By specifying these effects, our study makes three main contributions.

First, in contrast with prior studies that only recommend designing differentiated marketing campaigns (e.g., Shehu et al. 2015; Zhou et al. 2012), we test how differentiated marketing affect donation behaviors of potential donors. Thus, we contribute to marketing theory by critically questioning the applicability of differentiated marketing in blood donor research. The differentiated

campaigns targeted different groups, because prior studies suggested that potential donors differ in their behavioral preferences (Martín-Santana and Beerli-Palacio 2008). The results show that the differentiated campaigns had no significant effect. That is, they did not increase marketing outcomes among the target groups, relative to the effects of an undifferentiated campaign. Nor do the results suggest if a particular target group can be addressed most effectively. Thus, the notion of appealing to potential donors according to their behavioral preferences requires caution.

However, reasons for this result might be that blood is evaluated as a commodity, which is always available because everyone has blood. Thus, it can be donated by everyone, who is able to. The used differentiated campaigns were not based on the need for blood donations to increase the awareness as usually used donation campaigns (Beerli-Palacio and Martín-Santana 2009). Instead they contained benefits for the target group when donating (Dibb and Simkin 2010). Since a blood donation is mostly compensated by a good feeling and not with a monetary reward, differentiation might not work in this context without the combination with commonly used aspects to increase awareness. Potential blood donors seem to need more than the offering of a not directly tangible value. Blood services should recall on commonly used approaches, which are based on attention, interest, and emotionalizing (e. g., Goodwin and Etgar 1980), to develop more effective differentiated campaigns.

Another aspect, which could explain the surprising results is that we did not select the most appropriate variables to develop and define the used differentiated campaigns. As has been said, differentiated marketing seems to be an effective tool since it creates appeals better matching the preferences of target groups, and therewith, provide value (Dibb and Simkin 2010; Kotler and Levy 1969). Therein, the match between the used targeted variables and the preferences of the target group were of main importance to result in the desired behavior (Aaker et al. 2000). Since our results do not provide evidence for a match between the target group and the differentiated campaigns, one might question, if we used the right targeting variables.

Second, we elaborate which characteristics of potential donors can be addressed with differentiated marketing. However, regardless of the differentiation approach, we verify the existence of a group, who are, in general, more likely to donate, regardless of the received campaign. This group seeks

information, prefers donating during leisure time, and favors easy access to the donation event. These findings are in line with previous studies that recommend addressing people who have never donated before with substantial information (Godin et al. 2005). This study suggests that this potential donor group is ready to donate. We suggest more effective communication of certain measures to build a relationship. By developing marketing strategies that fulfill needs and expectations of potential donors, thereby delivering value, the satisfaction and positioning of the organization will be improved (García et al. 2013). Marketing strategies should implement these dimensions to increase the chances of success.

Third, we reveal the effect of wrong targeting, relative to undifferentiated marketing. By considering these various outcomes, we determine whether differentiated marketing is worthwhile for blood services or if undifferentiated marketing is a more efficient solution. Our results indicate that wrong targeting in this context does not have negative consequences (e.g., Aaker et al. 2000). Thus, we contribute to nonprofit management by identifying opportunities to reduce costs by improving marketing performances.

Differentiated marketing for potential donors does not necessarily result in overall recruitment success; wrong targeting does not entail negative consequences. The best approach to recruit potential donors appears to be to determine which marketing strategy achieves the best response rate. A promising approach would be to create an especially motivating marketing strategy for the overall donor base, to reach all kinds of donors.

4.2 Management Implications

Our research does not support the prevailing managerial belief that differentiated marketing is beneficial for increasing recruitment success (e.g., Shehu et al. 2015; Zhou et al. 2012) nor to be more effective than undifferentiated marketing. Instead, we find that blood services should question the investment into differentiated marketing to recruit donors. The costs associated with deploying a differentiation strategy will not result in substantial increases in recruitment success. Relative to the average costs of developing differentiated campaigns, blood services cannot obtain increased value for their money by using segmentation. More differentiated marketing will not be successful enough

to be worth its investment. Blood services still need to invest in marketing efforts; it is just that they should invest in gaining a broader understanding of what a successful marketing strategy should look like.

Our results uncover a group of potential donors who are more likely to give blood, which in turn suggests some effective enhancements for the management of events. One possible approach is to implement an active solicitation strategy. Frequently, blood donors do not seek opportunities to donate; rather, they more typically react to requests of blood services. Therefore, initial quality of the request plays a major role, starting by establishing and promoting awareness of the concern (Bekkers and Wiepking 2011). Our findings indicate that this group wants information by newspaper. Blood services should increase the frequency of advertising in this traditional medium. By addressing this group more frequently, blood services can build relationships with them. Aditionally, the arrangement of even more frequent events, especially on weekends and in the evening, appears promising. A means for donors to make appointments is recommended, which enables blood services to guarantee easier access. Finally, confirming donors' decision to donate blood with recognition and appreciation after donating (Godin et al. 2005) by sending follow-ups or telephone calls seems useful. By implementing strategies that feature these approaches, blood services are more likely to reach at least some of this group of promising donors, leading to increasing recruitment success.

4.3 Limitations and Further Research

To the best of our knowledge, this study is the first comparing differentiated with an undifferentiated campaign to evaluate the effectiveness of differentiated marketing to address target groups. Some limitations should be noted to delineate opportunities for further research. First, this study focused on two target groups, derived on observations of the GRC, which are supported on a theoretical basis. These potential donors were assigned to a target group according to three characteristics (i.e., age, Internet use behavior, and health awareness). Segmentation studies show that several other target groups and subgroups exist (Rupp et al. 2014). In addition, psychological characteristics (e.g., motives), could be used to describe targets more precisely (e.g., Beerli-Palacio and Martín-Santana 2015; Rupp et al. 2014). The motivational factor of differentiated marketing can still be a valuable

tool to activate motives of target groups (Manickam 2014). Further research should consider this factor when testing for differentiated marketing. Knowledge about how differentiated marketing activates motives is a valuable approach to develop more efficient strategies. We recommend a stepwise differentiated marketing approach to examine the effect, initiated by a broader segmentation and then moving to more finely differentiated campaigns. The effect of differentiated marketing then could be tested directly across the underlying target groups. The current study also used variants of an overall campaign structure to ensure same conditions for all recipients (see Figure 1). Further research might analyze different marketing tools for the different targets.

Second, the generalization of our results to other target groups requires some caution; we only measured the effects of differentiated marketing in the German blood donor market. Prior studies show that (non-)donors in different countries exhibit diverse behaviors, motives, and needs (Martín-Santana and Beerli-Palacio 2008). Further research could consider these to validate our results.

Third, we examined the effect of our differentiated campaigns on potential blood donors. Prior studies document the existence of diverse active segments (e.g., Shehu et al. 2015; Zhou et al. 2012), which express more diverse opinions about donations than non-donors (Godin et al. 2005). Additional research should analyze the effect of differentiated marketing designed for active donor targets, because blood services might cover their demand by increasing donation frequency among this base (Schreiber et al. 2003). Furthermore, a comparison between active donors and potential ones would provide hints which marketing approach works effectively for these groups.

Fourth, we only measured the effect of the campaigns on three marketing outcomes: awareness, intentions, and behavioral enactment. Further studies should examine whether potential donors actually undertake their first donation; or test the effects in a field experiment.

Fifth, we tested the research objective by using a quasi-experimental design in an online questionnaire as a first effort to test whether differentiated marketing is more effective to promote blood donations. Thus, the internal and external validity must be considered with caution. Although we used a randomized setting to increase the internal validity, other factors might have influences the results. As

a consequence, we are not able to preclude interaction effects between the treatments and the outcomes. Regarding the external validity, the generalizability of the results to other contexts must be questioned. We only tested two marketing campaigns in the German blood donation context. Thus, further research should consider the validity again by using other experimental settings.

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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 seven-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
Randomized assignment to one of three conditions				
Blood donation awareness (Lemmens et al. 2005)		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 donate blood (Armitage and Conner 2001; Godin et al. 2005)		0.884		
	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
Behavioral enactment (Armitage and Conner 2001)		0.729		
	I will surely donate blood in this situation.		3.36	1.858
	I will surely not donate blood in this situation.[1]		4.38	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				
	I would like to			
Information	get information about blood drive dates in my local newspaper.	0.953	3.59	1.970
	get information about a special blood donation event in my local newspaper.		3.64	1.958
Leisure time	donate blood on the weekends.	0.792	3.50	1.927
	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	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	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 (Rijsdijk et al. 2007)				
	The content of the marketing campaign			
	matches my way of living	0.969	3.64	1.709
	matches the way I do things.		3.66	1.715
	suits me well.		3.60	1.756
Evaluation of the marketing campaign (d'Astous and Jacob 2002)				
	This marketing campaign			
	pleases me.	0.929	4.41	1.746
	incites me to donate blood.		4.12	1.842
	gives a good image to the blood service.		4.58	1.745
Internet use behavior (Buente and Robbin 2008; Kalmus et al. 2011)				
	I regularly use the Internet			
Social media	to keep in touch with friends and acquaintances in social networks (e.g., Facebook, Twitter).	0.692	4.21	2.333
	to upload photos or pictures.		3.28	2.024
Frequent	to be entertained (e.g., listen to music, watch movies, play games).	0.867	4.12	2.061
	to express my opinion in forums on topics I consider important.		2.93	1.784
	to participate in forums, blogs, and surveys.		3.23	1.917
	to share music, movies, and programs.		2.59	1.744
	to upload videos (e.g., YouTube).		2.47	1.792
	to watch online TV or listen to the radio.		3.26	2.039
	to comment on articles in online newspapers or information portals.		2.96	1.960
	to participate in gaming environments (e.g., World of Warcraft, etc.).		2.33	1.854
Health awareness (Walker et al. 1986; Zhou, Poon, and Yu 2012)				
	I regularly …			
Healthy lifestyle	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
	check my blood pressure.		3.24	2.057
	seek health information.		3.19	1.859
	check my body weight.		4.27	2.080
	check my pulse.		2.76	1.901
Sporty lifestyle	go to the gym.	0.679	2.40	1.898
	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 reversed.

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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	

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

Dependent Variable			Awareness			Intention			Behavioral enactment		
Parameter	Effect	VIF	Beta	T	Sig.	Beta	T	Sig.	Beta	T	Sig.
b0	General campaign (constant)		- .054	-1.238	n.s.	- .038	-.961	n.s.	- .013	- .294	n.s.
b1	Entertainment campaign	1.382	.081	2.288	*	.024	.863	n.s.	.020	.623	n.s.
b2	Health campaign	1.388	.006	.162	n.s.	.039	1.403	n.s.	.007	.827	n.s.
Influencing factors											
b3	Internet use behavior (social media)	5.185	- .046	- .677	n.s.	.009	.170	n.s.	.110	1.776	n.s.
b4	Internet use behavior (frequent)	5.741	- .058	- .800	n.s.	-.017	-.303	n.s.	-.077	-1.182	n.s.
b5	Health awareness (healthy lifestyle)	4.287	- .035	- .556	n.s.	.021	.432	n.s.	.020	.355	n.s.
b6	Health awareness (sporty lifestyle)	3.984	.112	1.858	n.s.	.034	.709	n.s.	-.073	-1.351	n.s.
b7	Preference for information	6.301	.189	2.494	*	.318	5.327	***	.306	4.475	***
b8	Preference for leisure time	7.349	.171	2.095	*	.336	5.209	***	.207	2.805	***
b9	Preference for working time	4.981	.112	1.658	n.s.	.091	1.713	n.s.	.031	.505	n.s.
b10	Preference for easy access	6.487	.053	.693	n.s.	.157	2.580	**	.257	3.703	**
Main Interaction effects[1]											
b11	Entertainment campaign × Internet (social media) use behavior	3.153	.094	1.761	n.s.	,042	1.003	n.s.	-.038	-.787	n.s.
b12	Entertainment campaign × Internet (frequent) use behavior	3.515	.046	.810	n.s.	,056	1.252	n.s.	.044	.854	n.s.
b13	Entertainment campaign × Health awareness (healthy lifestyle)	2.725	.084	1.695	n.s.	,012	.302	n.s.	.001	.022	n.s.
b14	Entertainment campaign × Health awareness (sporty lifestyle)	2.646	- .067	-1.370	n.s.	-,017	- .046	n.s.	.047	1.069	n.s.
b15	Health campaign × Internet (social media) use behavior	3.441	.026	.473	n.s.	.031	.707	n.s.	-.011	-.225	n.s.
b16	Health campaign × Internet (frequent) use behavior	3.795	.059	1.008	n.s.	.032	.680	n.s.	.034	.650	n.s.
b17	Health campaign × Health awareness (healthy lifestyle)	3.050	- .018	- .337	n.s.	- .064	-1.548	n.s.	-.045	-.957	n.s.
b18	Health campaign × Health awareness (sporty lifestyle)	2.851	- .016	- .307	n.s.	.046	1.135	n.s.	.050	1.092	n.s.
Additional Interaction effects											
b19	Entertainment campaign × Preference for information	3.851	.003	.042	n.s.	.032	,692	n.s.	.020	.380	n.s.
b20	Entertainment campaign × Preference for leisure time	4.877	.009	.131	n.s.	-.007	-,131	n.s.	.023	.387	n.s.
b21	Entertainment campaign × Preference for working time	3.388	- .033	- .588	n.s.	-.024	-,555	n.s.	-.030	-.600	n.s.
b22	Entertainment campaign × Preference for easy access	4.067	- .023	- .375	n.s.	-.087	-1,805	n.s.	-.095	-1.729	n.s.
b23	Health campaign × Preference for information	4.010	.095	1.570	n.s.	-.014	-.297	n.s.	.040	.730	n.s.
b24	Health campaign × Preference for leisure time	5.059	.010	.150	n.s.	-.003	- .056	n.s.	.018	.302	n.s.
b25	Health campaign × Preference for information	3.245	- .077	-1.416	n.s.	-.031	- .713	n.s.	-.038	-.765	n.s.
b26	Health campaign × Preference for easy access	4.248	.038	.607	n.s.	-.050	- 1.015	n.s.	-.110	-1.952	n.s.
adjusted R^2				.239			.525			.380	
F-Value				11.116	***		36.628	***		20.742	***

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 use 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.

Figure 1. Conceptual Framework

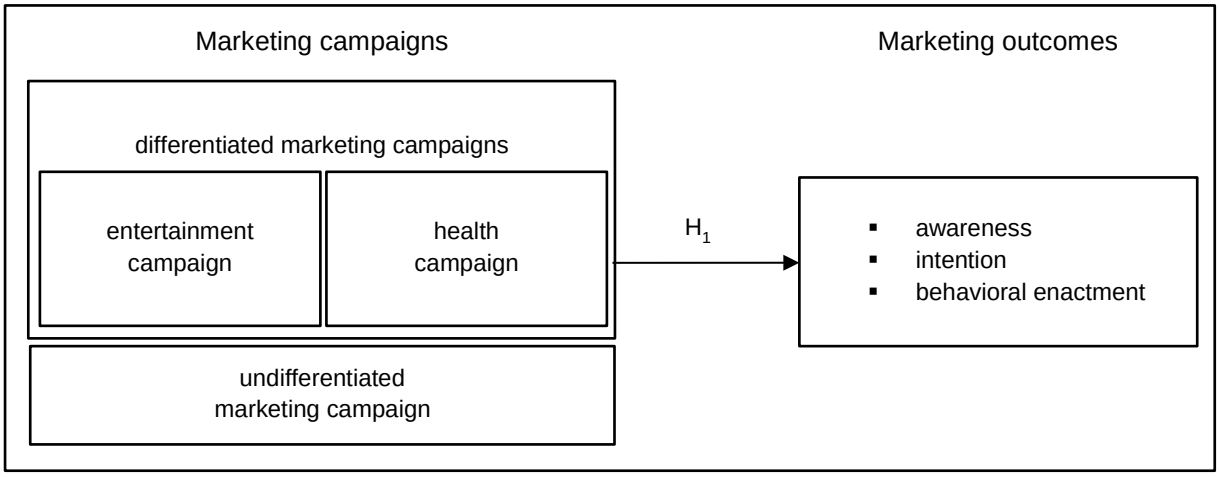
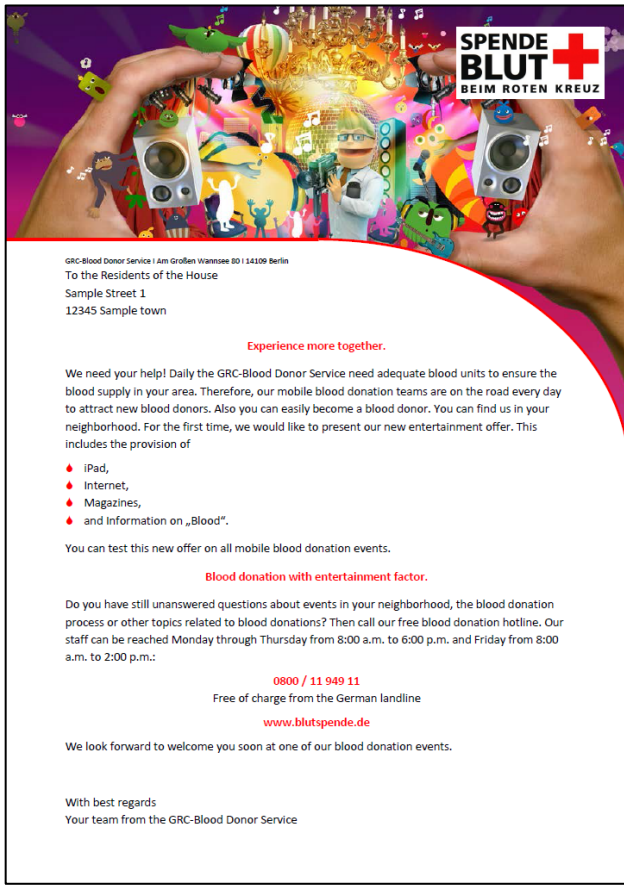


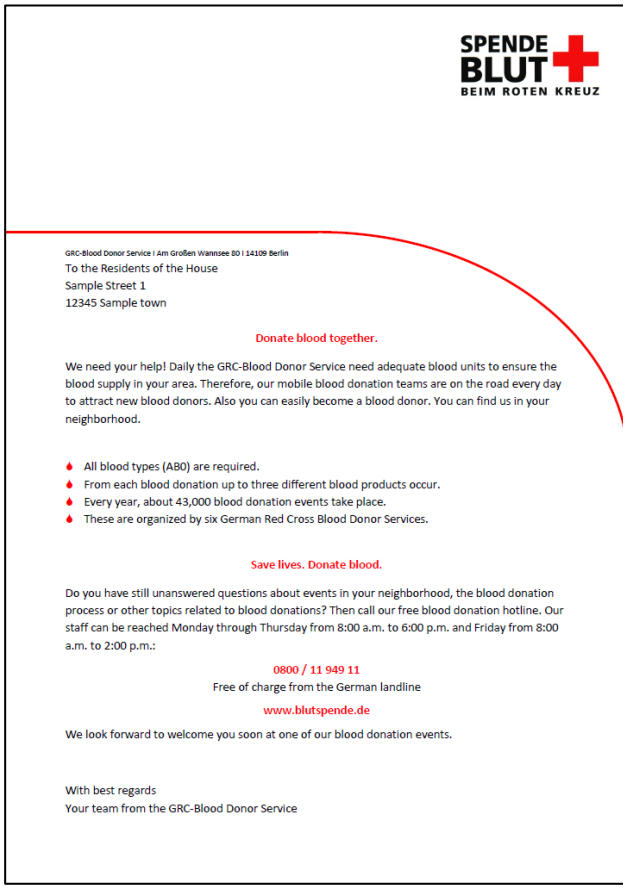
Figure 2. Experimental Structure

Questionnaire	
Part 1:	1. Filter questions 2. Willingness to donate blood (before)
Part 2:	3. Randomized Assignment to one of the three marketing campaigns
Part 3:	4. Blood donation awareness 5. Intention to donate blood 6. Behavioral enactment 7. Willingness to donate blood (after)
Part 4:	8. Behavioral preferences during a blood donation 9. Comparability of the marketing campaigns 10. Evaluation of the marketing campaigns 11. Internet use behavior 12. Health awareness
Part 5:	13. Sociodemographic questions

Figure 3. Three Experimental Conditions

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





Note: During the experiment participants received the campaigns originally in German.