With or Without You? The Influence of Search Partners on Consumer Behavior in Paid Search

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Abstract. Paid search is widely considered an effective marketing tool and as such has attracted much scholarly attention. Yet, current research does not account for one major decision every marketer faces when crafting a campaign: whether to solely rely on the search engine (e.g., Google) or include websites of so-called search partners (e.g., T-Online.de). This paper investigates whether search partners can be beneficial for bricks-and-mortar retailers. Our results indicate that consumers are less likely to click on a paid ad when searching on partner websites, compared to paid ads on a search engine's website. However, after clicking on a paid ad, subsequent behavior remains unaffected regardless of whether the ad was shown on a partner's or on a search engine website. Due to the pay-per-click billing this combination allows marketers to increase campaign reach at no additional costs. We conclude that bricks-and-mortar retailers would benefit from advertising on search partner websites.

Keywords: paid search, search partners, field experiment, bricks-and-mortar, competition for attention

1   Introduction

It has become common practice for consumers to use search engines when looking for information on retailers, brands, and products. Over 80% of all consumers use search engines to find information across channels whether to find directions to a local bricks-and-mortar-store, to check store hours or product availability in a local store [1]. Hence retail experts and business consultants strongly recommend that both online retailers and bricks-and-mortar retailers invest in search engine marketing. A common way to invest in search engine marketing is to rely on paid search – the mechanism of placing online ads in response to consumer search queries on search engine result pages – to reach potential customers during their search phase [2].

Current research draws attention to three main factors said to influence consumer behavior and hence increase advertisers' immediate paid search success: First, the phrasing of *ad copies* [3]; second, the choice of appropriate search terms (i.e., *keywords*) for which advertisers want to be listed on a search engine result page (SERP) [4], and third, a paid ad's position on a SERP. Indeed, a SERP displays numerous paid ads by a variety of advertisers in a hierarchical order. Advertisers have to bid for

favorable *ad positions* as differently positioned ads are not equally well-suited for every advertiser [5].

However, when crafting a paid search campaign advertisers face a fourth decision that might directly impact paid search success. Many portals (e.g., t-online.de, web.de) offer search functionalities to their customers and integrate services of external search engines (typically Google or Bing) to provide their results. For example, when a consumer uses the search functionality of t-online.de all the results, including paid ads, will be provided by Google. Advertisers can either include or exclude these so-called *search partners* when crafting a paid search campaign. News articles written by practitioners suggest that the use of search partners might influence paid search success (e.g. [6], [7]) as consumers might use search features of regular websites quite differently. Yet, to our knowledge, current research has only investigated the influence of ad copies, keywords and ad positioning on immediate paid search success, rather than examined whether the use of search partners might also prove to be a key determinant for paid search success. However, from the perspective of an advertiser who has to choose whether to incorporate or exclude search partners when crafting a paid search campaign, it is important to know whether consumers show distinct behavior patterns and whether and how this impacts paid search success. We therefore seek to augment current research by addressing the following research question: *Does the incorporation of search partners into a paid search campaign affect consumer behavior?*

To answer this research question, we teamed up with a bricks-and-mortar business-to-consumer (b2c) furniture retailer operating in Germany. We conducted a field experiment aimed at quantifying the impact of search partners on subsequent consumer behavior. By developing an experimental research setting based on random assignment to conditions combined with a pre-treatment/post-treatment design, we are able to address common endogeneity concerns of paid search campaigns [8]. The experiment commenced in May 2017 and was executed over 20 days in which more than 325,000 consumers were exposed to our paid ads and more than 2,500 reached the website via those ads. Our results reveal that including search partners might be highly beneficial as it allows advertisers to greatly increase the reach of their marketing campaign at no additional costs. At least in our case, consumers who were exposed to a paid ad on a SERP of a search partner website were eight times less likely to click on it. Therefore, due to the pay-per-clicking billing in paid search, advertisers can eightfold the reach of their marketing campaigns. However, our analysis also reveals that consumer behavior does not seem to be any different once they have reached the advertised website: whether they reached it via the partner website or via Google has no impact on their behavior. In other words, consumer behavior seems only to be influenced on SERPs. Therefore, by including search partners in their campaigns, marketers make better use of their advertising budgets since they are able to reach more customers at the same cost without affecting the consumer behavior on their own website.

2 Related Literature

Paid search is considered a highly dynamic market [9] which is well suited to aiding consumers' search process [10] and has generated numerous studies, especially in the fields of Information Systems and Marketing [11]. The current state of the literature suggests that advertisers can increase their immediate advertising success especially via three specific paid search elements: keywords, ad positioning, and ad copies. Immediate advertising success is commonly evaluated on the basis of consumer behavior on the SERP as well as on the advertised website.

Whenever a consumer enters a search term into a search engine, the term will be linked to contextually matching keywords and display ads of advertisers who bought those keywords. Current research suggests that keyword characteristics widely influence consumer behavior on the SERP (e.g., [12], [13]) as well as on the advertised website (e.g., [14], [15]). In scholarly research keywords are commonly grouped based upon their specificity. For example, Rutz and Bucklin [12] analyze spillover-effects from generic search terms (e.g., "furniture") to more specific branded terms (e.g., "furniture of retailer X"). All available studies agree that consumers show distinctive behavior patterns based upon the keyword they have entered. For example, if a user incorporates the company's brand name in their search it is obvious that they are already familiar with the brand and may have formed specific associations towards the brand and/or its products. However, even when keyword characteristics are a pivotal determinant of consumer behavior, various studies established that keywords interrelate to other paid search-specific factors such as the position [4] as well as the phrasing of the ad [16].

Whenever a consumer enters a keyword into a search engine a multitude of ads might be presented on a SERP. The number of ads shown depends on how many advertisers have bought keywords matching the search query. Google Search, for example, presents up to four ads in the most prominent slots directly below the search query. Current research suggests that consumer behavior on the SERP (e.g., [17], [18]) as well as on the advertised website (e.g., [19], [20]) is highly influenced by the visual placement of the ad on a SERP. Yet, position effects seem to be weaker for well-known firms [17] or when customers use more specific keywords [20], or conduct the search using a mobile device [18]. Furthermore, studies by Animesh et al. [21] and Chan and Park [22] have established that different types of consumers are likely to click on the ad depending on its position, and therefore, the ad position parameter lends itself to segmenting customers into groups.

With regard to ad copy design, researchers have either focused on individual phrasing elements within an ad copy (e.g., [23], [3]) or on the ad copy as a whole (e.g. [24], [25]). All studies conducted to date agree that the ad copy design influences consumer behavior at least on the SERP. Beyond these findings, in a field experiment in cooperation with a b2c retailer in the Netherlands, Haans et al. [25] investigate the influence of different description texts in an ad copy and present first empirical evidence that ad copy design might also influence consumers on the advertised website.

Conceptually speaking, according to the current body of knowledge, keyword characteristics, ad position as well as the ad copy might be pivotal determinants of

consumer behavior. Furthermore, these determinants interrelate and therefore need to be considered jointly in paid search analysis. We performed a systematic literature research in accordance with the suggested procedure proposed by Webster and Watson [26] including keyword, backward and forward searches to identify studies which analyze immediate paid search success factors in the light of search partners. Yet, our literature research reveals that current research solely focuses on major search engines and does not at all analyze the potential impact of search partners.[1] Therefore, we would like to augment current research by analyzing the impact of search partners on paid search success measures.

3   Hypothesis Development

Search partners receive all paid search entries from the search engine (e.g., Google). As can be seen in Figure 1 the search procedure is identical for search partners as well as for the original search engine. Whenever a consumer enters a keyword into the search box a multitude of different ad copies on different ad positions will be shown to him. However, search partners do have an incentive to enrich their SERPs to increase their own revenue. For example, they might provide their own offers to increase revenue or present informational content which guides the consumer to their own website. In other words, when comparing a SERP of a search engine (Figure 1/2 – Left Part) to a SERP of a search partner (Figure 1/2 – Right Part) consumers are likely to be exposed to an increased number of information and offers.
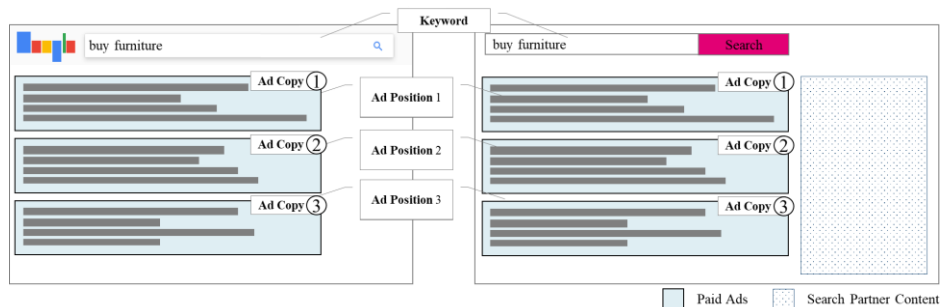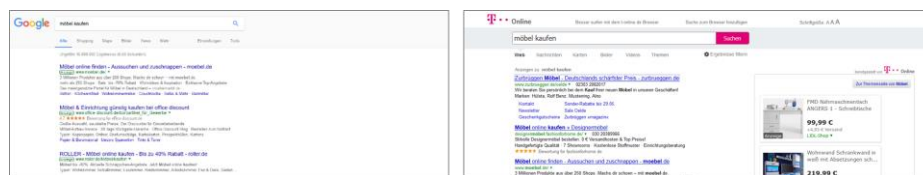

Figure 1. Conceptual View – SERPs

Figure 2. Screenshot –SERPs

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[1] The procedure as well as the results of our systematic literature review can be found in our online appendix: http://go.upb.de/PartnerNetworks

According to the competition for attention theory [27], every item on a SERP competes for the consumer's attention [28]. Therefore, providing additional content should lead to an increased competition for attention. Accordingly, consumers should in turn be more easily distracted and might chose different options. Hence, we formulate our first hypothesis:

H1: Consumers who are exposed to paid ads via search partners are less likely to click on a paid ad compared to consumers who are exposed to paid ads via a search engine.

However, even when the percentage of consumers who click on an ad might decrease we would expect to find that similar consumers are likely to be attracted by the paid ad since the ad serves as the sole content provider, which a consumer evaluates and on the basis of which she decides to click on an ad (e.g. [29], [30]). Therefore, we would expect consumers who reach the website via a search partner to behave similarly to those who reach the website via a search engine. Hence, we formulate our second hypothesis:

H2: Consumers who reach the website through paid ads via search partners behave similarly compared to consumers who reach the website via a search engine.

4   Research Setup

We teamed up with a well-known b2c bricks-and-mortar furniture retailer in Germany in order to estimate the impact of paid ads placed on search partner websites on consumer behavior. As suggested by Bandiera et al. [31] we take advantage of experimental methods and design a field experiment to address general endogeneity biases. Our field experiment consists of a pre-treatment/post-treatment design and is based on random assignment to conditions to enhance reliability [32].

In May 2017, the field experiment was conducted over a time span of 20 days. In a 10-day *pre-treatment phase* the crafted ad copy was shown only on Google SERPs. In accordance with the current state of the literature (e.g., [12]) generic as well as specific keywords were used. To prevent the common endogeneity problem of shifting marketing budgets due to endogenous events, the paid search advertising budget was fixed on a daily basis and held constant throughout the experiment. After the pre-treatment phase we randomly assigned all keywords either to a control or a treatment group. In the 10-day post-*treatment phase* the fixed daily advertising budget was equally split between control group keywords and treatment group keywords. All keywords belonging to the control group were shown only on Google SERPs. Keywords assigned to the treatment group were shown on Google SERPs as well as on search partners' SERPs. Figure 3 depicts the overall research setup. To estimate the impact that the inclusion of search partners has on consumer behavior we analyzed their behavior on the SERP (see Figure 3, (1), (2)) as well as on the advertised website (see Figure 3, (3)).
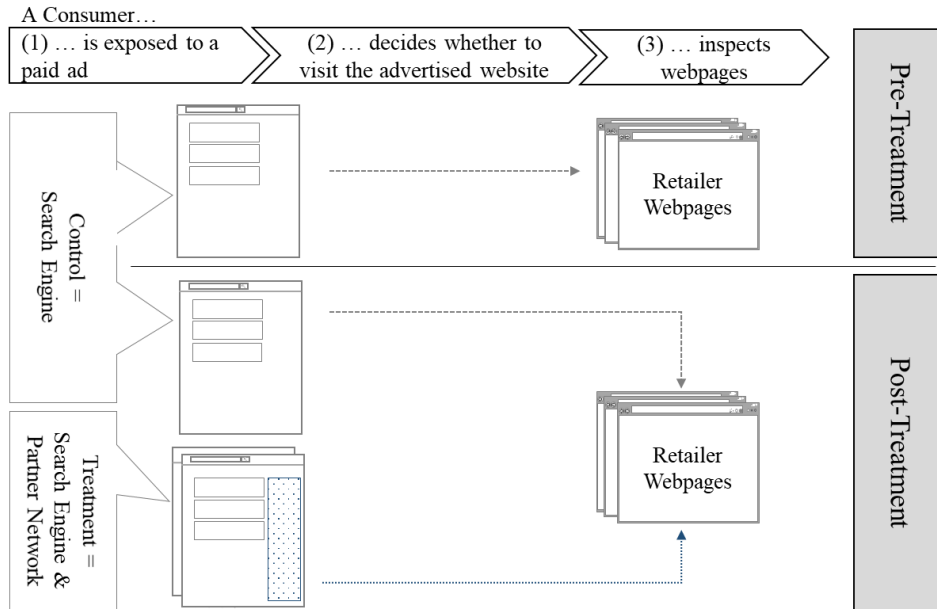
Figure 3. Research Setup

5 Empirical Model

Previous studies stressed the need to incorporate keyword characteristics, ad position and the ad copy when analyzing immediate paid search success measures. Accordingly, regression analysis is used to investigate the search partner's effect while simultaneously controlling for potential confounding factors. Table 1 lists all variables considered in our regression analysis.

Table 1. Main Variables

Variable	Description	Type
$TREAT_i$	Every keyword i is assigned to the control or treatment group.	Independent
KW_i	Every keyword i either belongs to keyword group (KW) generic or specific.	Control
POS_i	For every keyword i the ad position (POS) measures the ad position on which a paid ad appears on a SERP.	Control
CTR_i	For every keyword i the Click-Through-Rate (CTR) measures the percentage of consumers who click on a paid ad out of the total number of consumers who were exposed to it.	Dependent
DUR_i	For every keyword i the Duration (DUR) measures the average time in seconds consumers spend on the website.	Dependent
WV_i	For every keyword i Webpages Viewed (WV) measures the average number of webpages a consumer inspects.	Dependent

Note: Variables were obtained via Google Analytics & Google Adwords.

Within our experiment we only use one fixed ad copy and include all other paid search specific elements as controls. Accordingly, we can distinguish between effects that are caused by search partners ($TREAT_i$) and those that are driven by keyword heterogeneity (KW_i) and the visual placement of the ad (POS_i). Hence, we formulate the following OLS regression model to assess consumer behavior on the SERP (CTR_i), and on the advertised website (DUR_i, WV_i):

$$Y_i = \beta_0 + \beta_1 TREAT_i + \beta_2 KW_i + \beta_3 POS_i + \varepsilon_i \tag{1}$$

6   Empirical Analysis

Throughout the 20 day-long experimental period, a total of 327,710 consumers were exposed to the firm's paid ad, and 2,550 clicked on the ad and visited the firm's website. Table 2 presents the summary statistics of the average values of our focal variables in the pre- and post-treatment phase in respect to the assigned control or treatment group.

Table 2. Summary Statistics

	Impressions	Clicks	CTR	DUR	WV
Pre-Treatment	**54,119**	**1,170**	**2.2%**	**31.8**	**1.7**
Control	18,625	397	2.1%	29.3	1.7
Treatment	35,494	773	2.2%	34.2	1.7
Post-Treatment	**273,591**	**1,380**	**0.5%**	**41.8**	**2.0**
Control	25,789	672	2.6%	39.2	1.8
Treatment	247,802	708	0.3%	43.5	2.1
	327,710	2,550	0.8%	37.6	1.8

Tables 3 and 4 depict the estimates of the regression model (see Equation 1) for the pre- and post-treatment phase, respectively. As can be seen in Table 3 no systematic differences in respect to the variables of interest can be detected. For all dependent variables (Table 3, Model 1-3) the treatment group estimator (TREAT) remains insignificant and close to zero. Therefore, we conclude that our randomization seems to be well suited to draw conclusions on the impact of using search partners within the post-treatment phase.

Consumer behavior on the SERP is evaluated based on the likelihood to click on a paid ad. As can be seen in Table 4, Model (1) which using CTR_i as the dependent variable, the estimator measuring the impact of search partners (TREAT) indicates a highly significant negative relationship. In the post-treatment phase the paid ad which is only displayed on Google SERPs is clicked by 2.6% of all consumers who were exposed to it. Yet, when the paid ad is displayed both on Google SERPs and on search

partner websites (treatment group) the percentage of consumers who click on the paid ad decreases to a CTR of 0.3%. In other words, when introducing search partners, consumers become eight times less likely to click on a paid ad. Accordingly, we do not reject hypothesis H1 as consumers become less likely to click on a paid ad when the it is delivered via a search partner.

Consumer behavior on the advertised website is evaluated based on the time she spends as well as on how many webpages she inspects. Those metrics were chosen in accordance with past research findings which suggest that especially the time spent acts as a suited proxy to determine consumers' behavior (e.g., [33]) and interest in the offers of an advertiser (e.g., [34]). As can be seen in Table 4, Model (2) and (3) consumer behavior do not seem to be influenced by the advertised website as estimator results remain insignificant. At least in our case, the introduction of search partners does not significantly impact consumer behavior in terms how long they stay on a website and how many webpages they inspect within this time frame. Apparently, consumers seem to be equally interested independently of the introduction of search partners. Therefore, we accept hypothesis H2.

We performed several robustness checks to enhance the credibility of our findings.[2] To ensure that the common-trend assumption holds within our context we re-estimated all models excluding search partners. When doing so, all effects become insignificant. As a second robustness check we split up the post-treatment phase based on the search network (Google vs. search partners) were the ad was displayed (as opposed to the control-/ treatment-group split). In this case, the observed CTR effects further increase. All other dependent variables remain insignificant. Hence, we conclude that observed group differences can be considered robust and it is highly likely that the observed effects are caused by the introduction of search partners. We also log-transformed all dependent variables to account for a potentially skewed dataset. However, when using log-transformed dependent variables, all results remain qualitatively unchanged. Beyond these analyses, we also used the likelihood of being classified as a new visitor (a person who has not visited the advertiser's website for at least one year) as a proxy to determine whether consumers show distinct attributes. However, when comparing search partner visitors to regular search engine visitors, no systematic differences could be detected.

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[2] Results for robustness checks are provided as part of our online appendix: http://go.upb.de/PartnerNetworks

Table 3. Regression Results – Pre-Treatment

	CTR	DUR	WV
	Dependent variable:		
	CTR	DUR	WV
	(1)	(2)	(3)
TREAT	**-0.00**	**9.54**	**0.06**
	(0.01)	**(8.61)**	**(0.19)**
POS	-0.01	18.10***	0.08
	(0.00)	(6.24)	(0.14)
KW	0.01	-13.55	-0.19
	(0.06)	(42.51)	(0.94)
Constant	0.04	-7.24	1.63
	(0.06)	(48.76)	(1.08)
Observations	713	179	179
Adjusted R^2	-0.00	0.04	-0.01

Note: *p<0.1; **p<0.05; ***p<0.01

Table 4. Regression Results – Post-Treatment

	CTR	DUR	WV
	Dependent variable:		
	CTR	DUR	WV
	(1)	(2)	(3)
TREAT	**-0.02***	**-3.37**	**0.29**
	(0.01)	**(9.35)**	**(0.20)**
POS	-0.00	1.59	-0.14
	(0.00)	(4.22)	(0.09)
KW	0.02	0.77	-0.51
	(0.02)	(26.79)	(0.59)
Constant	0.03	37.44	2.77***
	(0.02)	(30.11)	(0.66)
Observations	1,457	343	343
Adjusted R^2	0.01	-0.01	0.00

Note: *p<0.1; **p<0.05; ***p<0.01

7   Conclusion

The purpose of this field experiment was to investigate the question whether advertisers should include search partners. Our study provides evidence that advertiser might benefit in several major ways when relying on these search partners. First, including search partners allows advertisers to increase their marketing reach significantly. In our case, 0.3% of all consumers click on a paid ad when exposed to it via search partners compared to 2.6% when the same ad is shown via Google. Due to the fact that only every click is billed, by introducing search partners, advertisers can increase by eightfold the reach of their campaigns. In our field experiment, introducing search partners increases the number of consumers who are exposed to paid ads to 247,802 compared to 25,789 when only Google is used. Second, our analysis indicates that consumer behavior on the advertised website does not seem to differ. At least in our case, consumers tend to inspect a comparable number of webpages and spend a comparable amount of time inspecting the offers. Hence, advertisers can increase the reach of their marketing campaigns when introducing the partner network at no additional costs as consumer behavior does not differ on the subsequent website.

With our study, we provide first empirical evidence that search partner websites might only affect consumer behavior on the SERP and does not seem to impact behavior on the advertised website. Results indicate that differences in consumer behavior on a SERP might be rooted in an increased competition for attention on search partner websites. However, on the website of the advertiser the paid search specific elements, namely keywords, ad copy design and the ad position, determine consumer behavior. Yet, as an anonymous field experiment is used our contribution should be viewed as mainly empirical [35] as further research is needed to determine consumers' true intentions.

Our results carry several practical implications. First, our study illustrates the need for advertisers to actively decide whether they should include search partners as this directly impacts the advertising reach of the campaign. Second, as we observe no behavioral differences on the advertised website, bricks-and-mortar retailers at least should consider including search partners to increase advertising efficiency. Due to the pay per-click bidding mechanism in combination with a lower percentage of users who click on a paid ad on search partner websites the total number of consumers who will be exposed to the firms' ads increases at no costs when introducing search partners. Third, in line with Sudhir [36], our results further emphasize the importance of using experiments to measure the effectiveness of marketing campaigns and to derive guidance for managerial decisions based on causal claims. Accordingly, marketers should systematically test the impact of variations – such as whether they should include search partners – on consumer behavior to allocate marketing budgets more efficiently.

Yet, our study has several limitations. Obtained results might be limited to our specific research context (furniture retail) and could only apply to bricks-and-mortar retailers who rely on their website to foster local store sales. A potential avenue for future research would be to extend our study to other firm types as it is already known that paid search impact highly depends on the focal firm and branch [37].

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