INTERRELATIONS OF ADVERTISING CHANNELS—
AN EMPIRICAL STUDY ON ONLINE PURCHASE BEHAVIOR

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ABSTRACT

The question how advertising works and how effective it is has been the topic of research for decades. Various models have been developed to explain the persuasion process from advertising input to consumer behavior. With the advent of the internet and its growing importance as a place to do business, advertising on the internet has become a topic in academic research. Internet advertisers have since moved from classic banner advertising to new advertising models (e.g. "on-demand" advertising such as search engine advertising and price comparison websites) that make better use of the internet's unique potential for interaction between consumer and advertiser, often blurring the line between advertising, promotion and sales as defined in the offline world. Research into how these new advertising channels interact, e.g., how banner advertising affects search advertising, is still missing. In our study, we address the questions: How do online advertising channels work and interact? How do clicked and unclicked ads affect sales, and each other? And in particular, what is the role of price comparison websites in online advertising?

Drawing on the established elaboration likelihood model we develop an advertising effects model in the presence of interrelations between advertising channels. We then apply this model using a comprehensive database obtained from the .com website of a leading online-platform for used and antiquarian books. We include four channels in our analysis: e-mails, affiliate advertising, search-engine advertising and advertisements on price comparison websites. The sample spans a period of 365 days, eliminating seasonal effects in the books market. It provides, on a day-by-day basis, indicators on advertising activity and sales. In total, the data contain more than 2.8 million purchases and 25 million website visits.

For data analysis we use structural equation modeling (SEM), as it allows for the assessment of structures in complex research models. We apply AMOS 16.0 as an implementation of a covariance-based SEM approach, enabling us to assess the overall model quality. As all our data are observed variables, our model is comprised only of the structural model with no associated measurement models to be tested. The model quality assessment indicates a very good fit of the model.

We find that there are significant interrelations among advertising channels, as advertising affects not only sales but other advertising channels. In particular, consumer-initiated ad exposures on search engines and price comparison websites are a likely effect of advertising. While Cho in his 1999 article predicts virtually no attitude change from unclicked ads, our findings clearly show an impact of ad impressions on sales and on further ad exposures. These results confirm the findings of previous studies. A second interesting finding is the weak negative effect of affiliate ad impressions on search ad clicks, together with their positive effect on search ad impressions. A possible explanation for this is that users who reacted to the banner exposure by using a search-engine rather than clicking the banner, thus causing a search ad impression, are apparently equally reluctant to click this self-initiated advertisement. Similarly, the strong effect of unclicked affiliate ad impressions on purchases can be explained by this wide-spread reluctance to click banners. With respect to our research question on the role of price comparison websites, we find that they are an important step in the decision-making process of online consumers. In addition to extant research showing that brands matter in price comparison shopping, we find that previous ad exposures also matter and increase clicks.

Our finding of significant advertising channel interrelation has wide-ranging implications for practitioners, as the common tracking approach using cookies or hyperlinks does not account for these effects. Typically, neither tracking of unclicked ad exposures nor of multiple (clicked) exposures is possible. Therefore, the total sales effect of advertising channels affecting other channels is systematically underestimated, as only the last channel in the navigation sequence will be measured by direct tracking. Further, we find that a large part of ad effects is caused by unclicked exposures, and thus cannot be measured with current tracking approaches. The limitations in direct tracking necessarily cause advertisers to question their current policies, and lead to suboptimal allocation of resources to advertising channels due to missing and misleading data. We therefore suggest that advertisers apply our methodology or a similar approach to identify the total effect of impressions and clicks in each advertising channel. Combining these total effects with the cost associated with generating the corresponding ad exposures allows practitioners to optimize their online advertising spending.

References Available on Request.