5 Study II: Effectiveness of Search Engine Advertising

As the first two chapters indicate, paid search advertising is an important, if not the single-most important, form of online advertising. However, the literature review from Chapter 3 shows that little is known about search engine advertising (SEA), particularly about keywords and matching options. This leaves the previously introduced questions unanswered, which are addressed in this section:

1. What criteria can be used to select keywords and evaluate their performance in a systematic way?
2. How do matching options influence the effect of these criteria on keyword performance?

Answering the first question is crucial for successful paid search campaign management because keywords represent the link between user queries and advertiser messages. For example, if an advertiser selects a keyword that is too generic to resolve a user’s informational need correctly, the likelihood that the presented ad will be relevant for the user decreases. This eventually results in a lower response to the ad (Gupta et al., 2009). The second question is of equal importance. As Chapter 2.2 emphasizes, generic matching options (broad and phrase) are an important and commonly used tool for advertisers to increase the reach of their paid search campaigns. However, because matching options drastically alter the matching logic of the underlying ad retrieval system (see also Section 3.2.3.2), they can have a considerable impact on perceived relevance and thus the keyword performance. So far, however, it is not clear when (i.e., for which keywords) broad and phrase match are advantageous and should be preferred over exact match.

The goal of this chapter is to provide answers to these two questions by studying the relationship among keyword characteristics, matching options, and keyword-specific CTRs. Because all the independent variables in the following model relate to the information a keyword carries, they are summarized under the concept of “information content”. In doing so, the analysis differentiates between intrinsic information content, defined by characteristics that relate to the keyword text itself, and extrinsic information content, determined through the advertiser’s decision on the matching option.

The remainder of this chapter is organized as follows: Section 5.1 presents the underlying conceptual framework of the study. Section 5.2 analyzes the influence of a keyword’s intrinsic information content on its performance, and Section 5.3 adds keyword matching options to

12 The matching option (or matchtype) is a parameter that must be specified by the advertiser for each keyword in a campaign. It controls how exactly a user query must match a keyword to trigger the impression of the ad text (see also Chapter 2.2 for an example how matching options work).
the analysis (extrinsic information content). Section 5.4 presents a discussion of the findings and sheds light on implications before concluding the chapter.

### 5.1 Framework for Studying Effectiveness of Search Engine Advertising

To explain and model the influence of keyword features on performance in paid search campaigns, insights from prior work on advertising effectiveness theory and concepts from IR research constitute the foundation of the research in this chapter (Figure 26).

![Theoretical Framework for the Effectiveness of SEA](image)

**Figure 26: Theoretical Framework for the Effectiveness of SEA**


Cho and Cheon (2004) investigate the advertising effectiveness for online marketing campaigns in the context of banner advertising. Building on the work of Vakratsas and Ambler (1999) and Speck and Elliott (1997), they find that the more a user’s information need and an advertiser’s information offer are aligned, the lower is the perceived goal impediment and the higher is the likelihood that the user will respond positively to the advertising message. In short, an ad can become useful when it matches the user’s informational needs.

This principle can be applied to paid search, employing concepts from information retrieval. In the classic IR model, described in more detail in Section 3.2.3, users translate their information need into verbal queries and submit them to a system that selects relevant documents.