

## Chapter 56

# Application of TOPSIS for Solving Optimal Brand Communication Effect on the Portal

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### ABSTRACT

*Based on the cognitive psychology of selective attention and priming effect, and visual display effect, this research aims to explore how banner advertisements in the portal sites affect brand communication after end user enter the web. This study uses online SSI Web questionnaire and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method. The prime age group selection considers the brand communication effect simultaneously from involvement, advertising attitude, purchase intention and attractiveness of advertisement content. Finally, TOPSIS are presented as an empirical example in brand communication effect on the web portal. The result indicates that the advertising through portal site has optimal brand communication effect on age between 20 to 29 years. The results can help business to make efficient decision. Managerial issues and future work of this paper are discussed.*

### INTRODUCTION

Over the past two decades, Internet advertising have become one of the most investigated topics in web portal research. Previous studies on the effects of Internet advertising have preferred

conducting single-layer tests for effects, using the hit-rate of end users as a measure for the effect of Internet advertising by observing the number of end users who click or browse the advertisement (Ritu et al., 2003). Although this test method can obtain the number of end users who click on an

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advertisement, it does not provide relationship between age group and the effects of Internet advertising. Thus, this research attempts to reveal that the advertising through portal site has optimal effect on age group.

In 2012, Internet advertising revenue in the United States totaled US\$36.6 billion, which was an increase of 15.2% from the same in the previous year (IAB, 2013). In Taiwan, enterprise usage of traditional media reduced significantly in 2012, while digital media showed continual growth. In particular, Internet marketing was still favored by advertisers, with a 3.3% growth and advertising output value of US\$1.978 billion. The estimate for 2013 was as high as US\$2.178 billion, showing a promising outlook for the business opportunities of digital advertising during the heyday of home economy (DMA, 2012). The portal combines the advantages of traditional media and computer media, producing a favorable Internet advertising attitude. Therefore, Internet advertising has more advantages than does advertising in the traditional medium. The homepage of the portal is segmented into numerous information blocks, including a wide variety of information and advertising displays. A complex page produces a higher degree of advertising clutter more easily, thus increasing the number of viewers who avoid advertising (Ha & McCann 2008). Attracting the attention of web surfers and enhancing the advertising effect of advertisements in a setting with numerous information and advertising displays is a topic that has been frequently studied previously.

The display method and dynamic effects of Internet advertisements affect the end users' attention and memory of Internet advertisements (Kuisma et al., 2010). Internet media has more interference than non-Internet media does, as audiences adjust their cognitive capacity automatically, reducing the amount of attention they pay to irrelevant advertisements, and oversee the displayed advertisements (Ha & McCann, 2008). The consistency of design and writing also affects

information processing fluency (Van Rompay et al., 2010). Most of these previous studies have focused on discussing the information processing of Internet advertisement displays. According to the attention-interest-desire-action model of the hierarchy of effect model, the first step of information processing is "perceptual attention." When an end user's cognitive resources are limited, selective attention is required to select information and carry out information processing. Selective attention refers to a end user's attention to specific sources of information while neglecting other information sources. Selective attention can be divided into pre-attention and focal attention (Proctor & Van Zandt, 1994; Ryu et al., 2007). More advertising clutter is on a single page of Internet media than in traditional media (Ha & McCann, 2008), advertisement designs for Internet media require considering pre-attention to reduce the noise on the advertisement page and promptly attract the end user to pay attention to the advertisement automatically, before guiding the end users to focal attention. Pre-attention in information processing is a bottom-up process. Pre-attention affects the information processing procedure and memory of banner advertisements (Pieters et al., 2007; Ryu et al., 2007). Advertisement designs for traditional media emphasize focal attention. Focal attention is more intentional, focused, and mission-related, and involves using top-down information processing (Pieters et al., 2007).

This study selected the Internet medium Yahoo! Kimo, the portal used by 96.6% of Internet users in Taiwan in 2012. The communication effectiveness of the internal brand page after the banner on the portal is clicked was investigated to determine whether entering a brand page from the portal advertisement is more communicatively effective than entering a brand page without a portal advertisement. Yet the age group for a decision maker in the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method has never been fully examined. Hence, this study

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