

INTERPRETATION OF LOGISTIC REGRESSION MODELS IN MARKETING JOURNALS

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ABSTRACT

According to Hosmer, Taber, and Lemeshow (1991), when our research question is asking for prediction of dichotomous results, many researchers have turned to logistic regression as the tool of choice. In fact, Akinci, Kaynak, Atilgan, and Aksoy (2007) analyzed the application of logistic regression models in marketing journals and found that marketing scholars are using this tool in a number of different research streams that included: consumer behavior, international marketing, branding, societal marketing, promotion, retailing, business markets, health services marketing, and research techniques.

A question then arises - why are scholars choosing to use logistic regression in favor of discriminant analysis and other similar methods? According to Hosmer et al. (1991), the reasons are rooted in the availability of statistical software that computes this method. Another reason for the increased use is that unlike discriminant analysis, the assumptions of logistic regression are robust, researchers do not have to examine all their data to make sure that the predictors are normally distributed, linearly related, or of equal variance within each group (Tabachnick and Fidell 2007; Long and Freese 2006; Hamilton 2007). Finally, another reason is the ease of interpretation of the estimated coefficients as “adjusted log odds ratios” (Hosmer et al. 1991)

The odds ratio is the change in odds of being in one of the categories of outcome when the value of a predictor increases by one unit (Tabachnick and Fidell 2007; Long and Freese 2006; Hamilton 2007). In addition, similar to linear regression, coefficients are interpreted in relation to all the other independent variables (Tabachnick and Fidell 2007; Long and Freese 2006; Hamilton 2007). With this ease of use, it seems inevitable that more and more scholars will choose to utilize this technique. While we give praise for the increase use, we must also ask ourselves – are marketing studies that utilized logistic regression analysis conducted pertinently and comprehensively? And are the results reported informatively which allows for comparison across studies (Peng, So, Stage, and St. John 2002)?

Before we attempt to understand the contemporary state of logistic model representation in marketing journals, we will first review the literature that clarifies the objectives, procedures and interpretation of results for logistic regression models. The goal of this paper is to present the readers with an overview of the recommended procedures used when researchers utilize logistic regression as well as to give a picture of the current practices used to develop and report logistic regression models. The present study used a cited reference approach to evaluate 15 years worth of articles in several marketing journals. The search for articles started with Akinci et al. (2007), all articles used in this study were found, then using the same journals, all articles that used logistic regression up till 2010, using the keyword of “logistic regression” in the appropriate databases, were found. An important finding to our analysis suggests that over the past fifteen years, there has been some inconsistency in the interpretation of logistic regression analysis results in marketing journals.

References Available on Request.

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