Development of an Adaptive EC Website with Online Identified Cognitive Styles of Anonymous Customers

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Abstract

This study developed an adaptive EC website based on users' cognitive styles without asking users to complete any evaluation forms. In this system, a multi-layer feed forward neural network (MLFF) was designed to identify the cognitive styles of anonymous users by observing their browsing behavior. Then, the system presented the adaptive interfaces, designed by investigating the relationships between users' cognitive styles and browsing behavior, to users based on the identified cognitive styles. Experiments were conducted to evaluate the effectiveness of the system. The experimental results verified the potential benefits of MLFF in identifying anonymous users' cognitive styles during browsing of EC applications and provided evidence that an adaptive EC website which presents product data consistent with the users' cognitive styles can be beneficial to one-to-one Internet marketing not only for users whose cognitive styles are known before browsing but also for anonymous users whose cognitive styles are identified during browsing.

Keyword：adaptive web-based system, cognitive style, neural network, electronic commerce, browsing behavior