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Establishing the service selection and service development strategy for the mobile payment service platform using the hybrid MCDM approach

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Abstract

With the development of information technology and the widespread use of digital mobile devices, mobile services can provide increasingly diverse and convenient functions, leading to a growing dependence on mobile services. In the past, many banks introduced different card programs due to the rise of plastic currency, and the accumulation of cards gradually became a burden. Thus, a platform that can integrate all cards became significant. This demand has led to the emergence of e-wallets and mobile payments, attracting businesses from various fields to enter the mobile payment market and capture online customers. Therefore, how to differentiate and stand out among numerous mobile payment services has become an essential issue for merchants and the electronic industry. Mobile payment providers can generally divide into three categories: Social software providers (e.g., Line Pay). Smart mobile device manufacturers (e.g., Apple Pay). Mobile payment platforms launched by retail and commodity distribution service providers (e.g., PX Pay). This study uses expert interviews and a literature review to summarize five evaluation aspects: Functional and platform service (FS), Service performance and transaction security (PS), Vendor reputation and service selection (RS), Usage restrictions and risk control (RR), and Ues intention and social norms (IN). The DEMATEL (Decision-making Trial and Evaluation Laboratory, DEMATEL) approach determines the network relation structure between aspects. Principal Component Analysis (PCA) extracts the principal components within each aspect. Additionally, the Analytic Network Process (ANP) is used to evaluate the relationship between aspect/component weights, followed by using VIKOR to analyze the competitive status of the three online payment service platforms for mobile payments. Finally, this study proposes service development strategies and service improvement paths for the various mobile payment service platforms.

Keywords: Mobile payment, service platform, users' needs, DEMATEL, VIKOR