Attribute Perceptions as Factors Explaining Mobile Internet Acceptance of Cellular Customers in Germany: An Empirical Study Comparing Actual and Potential Adopters with Distinct Categories of Access Appliances

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ABSTRACT

To date, the majority of mobile network operator (MNO) customers have not used mobile Internet (MI) offerings. Therefore, it is important to gain a better understanding of (1) how MNO customers perceive MI attributes, (2) how these perceptions are related to MI acceptance, and (3) the extent to which these judgments differ as a function of an individual's adoption status (actual compared to potential MI user) and the appliance category employed to access MI (handset compared to laptop). This study uses MI attributes deduced from diffusion of innovation (DOI) and information economic (IE) literature and data collected from a survey of 525 effective and 540 potential MI users in Germany. Results show that the perceived relative functional advantage and communicability of MI offers were positively correlated and their trialability was negatively correlated with MI acceptance. Perceived DOI-based attributes explained MI acceptance better for actual users. Appliance category for MI access had strong influence on DOI-based MI attribute assessments. MNO customers who use a laptop to obtain MI access perceived MI features more favorable than persons who use a handset. These findings provide insights for MNO and appliance vendors on measures that effectively promote the acceptance of MI.

Keywords: Adoption, Advanced Mobile Data Services, Attribute Perceptions, Diffusion of Innovation, Information Economic Concepts, Mobile Appliance Categories, Mobile Internet

1. BACKGROUND AND STUDY OBJECTIVE

Market researchers report that demand for Internet access and services through cellular communication networks via various portable appliances, i.e. mobile Internet (MI), has recently started to soar in many countries. Further strong MI subscriber growth is expected in the near future. However, statistics of the International Telecommunication Union (ITU) on “mobile broadband subscriptions per 100
inhabitants” (ITU, 2010, p. 105) for European or North American countries at the end of 2008 – which range from 48.8% in Italy to 3.5% in the Lithuania – imply that the vast majority of MNO customers has never used MI (yet). Compared to Japan and South Korea for which the MI penetration statistic of the ITU amounted to 75.5% and 70.7%, respectively, at the end of 2008 (ITU, 2010), MI acceptance in many Western developed nations is still way behind the Asian leaders. In addition, the use intensity of quite a few MI customers is shallow, and a considerable share of customers even completely ceases to use MI after its initial adoption (Lee et al., 2007; Kim, Lee, & Kim, 2008).

Nevertheless, MNO continue to set their hopes on MI as a market arena with high subscriber and revenue growth potentials. Taking into account these growth aspirations and the MI “utilization gaps” illustrated above, a thorough understanding of why MNO voice customers expand their demand to innovative MI offerings or refuse to do so, is evidently of pivotal interest for both MNO managers involved in their firms’ MI strategy development and scholars working in the fields of innovation, information technology (IT) management, or consumer psychological foundations of marketing. Thus, it should not come as a real surprise that a substantial number of recent scholarly studies have attempted to empirically identify factors significantly associated with criteria suspected to capture the degree of acceptance of MI in a narrow sense or of other more or less advanced mobile data services (MDS) or devices (see section 2.1.).

This work may be systematized depending on whether it did not or did deliberately compare MI attribute perceptions and acceptance determinants across mobile customer groups varied with respect to their adoption status. Non-comparative MI acceptance studies, i.e., “single sample investigations”, may be further divided subject to whether the work focused on potential users (pre-adoption research), actual users (post-adoption research), or a “mixed” sample including both potential and effective users. Pre-adoption research typically scrutinizes potential customers’ behavioral intentions to use MI in general or specific advanced/value-added MDS as dependent criteria. Current examples of this category of investigations are Chen (2008), Lu et al. (2008), Kim & Garrison (2009), & Mal-lat et al. (2009). Post-adoption analyses tackle with determinants of actual users’ intentions to continue with MI or other more or less advanced MDS in the future. Lee et al. (2007), Hong et al. (2008), Kim, Lee, & Kim (2008), & Kuo, Wu, & Deng (2009) rank among recent instances of this research approach. “Mixed” sample research mainly includes dependent criteria similar to those of pre-adoption studies but occasionally goes beyond them by adding participants’ self-assessment or unobtrusive objective measures of use frequencies of MI or other value-added MDS. Examples of the third kind of adoption investigations are Fogelgren-Pedersen (2005), Groeppel-Klein & Koenigstorfer (2007), Bina, Karaiskos, & Giaglis (2008), Verkasalo (2008), & Kuo & Yen (2009).

The second multi-sample strand of research on acceptance of MI/MDS deals with one of the following juxtapositions:

- Users compared to non-users (Hsu, Lu, & Hsu, 2007; Lee & Jun, 2007; Westlund & Bohlin, 2008; Kim, Choi, & Han, 2009).
- Users in relation to persons who expressed at least a moderate interest to adopt the new mobile service offering in the future (= potential users/adopters) or to averse individuals who explicitly stated little or no interest in using the service innovation under study in the future (Anckar, Carlsson, & Walden, 2003).
- Adopters who effectively continued to use MI or reported increases in their use intensity after the first-time adoption compared with users who actually completely stopped to use the focal service or reported negative utilization changes after their first-time recourse to the mobile offer (Kim, Lee, & Kim, 2008; Lee, Shin, & Lee, 2008).

The overwhelming majority of earlier work falls within one of the three subtypes of
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