The type-of-internet-access digital divide and the well-being of ethnic minority and majority consumers: A multi-country investigation

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A B S T R A C T

Wireless technologies and smartphones revolutionize the way consumers use the internet. How do these technological advancements affect consumer well-being or life satisfaction? We hypothesize that mobile-as compared to regular only-internet use enhances consumers’ perceptions of personal economic situation, which in turn, enhances life satisfaction. Ethnic status (majority vs. minority) and national wealth (richer vs. poorer countries) set up boundary conditions for these effects. We test our hypotheses using multi-level modeling and a large scale multinational dataset covering responses of > 26,000 consumers from 21 countries. The results show that perceived personal economic situation mediates the relationship between type of internet access (regular vs. mobile) and life satisfaction; the positive effect of mobile internet use is weaker for ethnic minority than for majority consumers and stronger in poorer than in richer countries. We discuss the theoretical and practical implications for marketing and public policy.

1. Introduction

By virtue of the internet, consumers can benefit from various digital opportunities, such as a greater breadth and depth of information about brands and prices, and facilitated access to news, entertainment, education, healthcare or governmental services. However, the digital revolution does not empower everybody equally, which creates social inequalities—a phenomenon known as the digital divide (Brown, López, & Lopez, 2016; Hoffman, Novak, & Schlosser, 2001; Mossberger, Tolbert, & Hamilton, 2012). The differences between those who can fully benefit from digital opportunities and those who cannot create social inequalities because the “different patterns of media usage influence life chances to different degrees depending on the particular activities in which people engage online” (Zillien & Hargittai, 2009, p. 275).

When the term digital divide was coined in the 1990s by Lloyd Morrisett, the former president of the Markle Foundation, it simply referred to the inequality between people who had access to the internet and those who did not (Hoffman et al., 2001). The recent rapid penetration of the mobile internet led many to argue that the digital divide will soon be closed (e.g., Stump, Gong, & Li, 2008). For example, the New York Times titled “Mobile Internet Use Shrinks Digital Divide” (Wortham, 2009). Similarly, IBM suggested that “…the gap between information haves and have-nots will cease to exist due to the advent of mobile technology” (Gahran, 2012). However, the nature and scope of the digital divide has evolved over time and the wealth of people and national economies is increasingly decided by the quality with which the internet can be used. In particular, although smartphones objectively increase digital inclusion and thus narrow the “have-internet-access” digital divide, they cannot fully substitute the comfort and usability of large screen devices with keyboards and higher processing power. A recent World Bank (2016) report on “Digital Dividends” states that “access to the internet from big-screen devices (PCs), with always-on flat-rate access, provides a bigger boost to economic activities than access from small-screen devices (mobile phones)” (p. 208). Hence, smartphones are less appropriate than regular computers to engage in economic value-creating activities (e.g., selling online, applying for a job, or participating in an educational program). As shops, jobs, education, and even healthcare services increasingly move online, those who mainly rely on smartphones to access the internet are disadvantaged creating a new form of the digital divide, the “type-of-internet-access” digital divide that perpetuates segregation in the real
world (Brown et al., 2016; Mossberger et al., 2012; World Bank, 2016; Zickuhr & Smith, 2012).

An important but unaddressed research question, therefore, relates to how the type-of-internet-access available affects consumer well-being or life satisfaction. Consumer well-being is a central issue in marketing and consumer research because of the important influence of marketing on consumers’ quality of life (Bhardwaj, Park, & Kim, 2011; Burroughs & Rindfleisch, 2002; El Hedhli, Chebat, & Sirgy, 2013; Sirgy, 2001). Researchers in this field call for studies that provide additional insights into how material possessions and consumption behaviors affect life satisfaction (Sirgy, 2008; Sirgy, Wiedgy, Lee, & Grace, 2010), particularly for disadvantaged consumers and in developing countries (Martin & Hill, 2012; Stump et al., 2008). In response, we aim to clarify the psychological process through which type-of-internet-access available (regular vs. mobile) affects life satisfaction and unveil boundary conditions of this process set by ethnic status (ethnic minority vs. majority consumers) at the individual level and economic wealth (richer versus poorer countries) at the country level. For the purpose of the present study, the term “ethnic minority” refers to a group of people whose ethnic origin in terms of race or ethnic affiliation is different from that of the majority population in a specific country. We develop a theoretical framework and test it using a large scale database with responses of > 26,000 consumers from 21 countries, thereby offering comprehensive insights into how the type-of-internet-access digital divide affects well-being on a global scale.

This research contributes to the social marketing and information management literatures in at least three important ways. First, we extend previous research on digital divides (Cruz-Jesus, Vicente, Bacao, & Oliveira, 2016; Hoffman et al., 2001; Stump et al., 2008) by focusing on type-of-internet-access as a new and unexplored form of digital divide. Second, prior research has been silent about if and how digital inequalities impact consumer well-being or life satisfaction. We demonstrate that perceived personal economic situation acts as a key psychological mechanism through which regular and mobile internet use affect life satisfaction. Third, numerous digital divide studies focus on digital inequalities between ethnic minority and majority consumers in the United States (Brown et al., 2016; Mossberger et al., 2012; Zickuhr & Smith, 2012), Surprisingly little is known about such a divide in other, particularly developing, countries (Stump et al., 2008). Drawing on theories of symbolic consumption (Kumar & Lim, 2008; Levy, 1959; Venkatesh & Davis, 2000) and the desirability of scarce possessions (Verhallen & Robben, 1994), we examine how ethnic status and national economic wealth shape type-of-internet-access effects on life satisfaction. Our results show that perceived personal economic situation mediates the effect of type-of-internet-access on life satisfaction; the positive effect of mobile-, as compared to regular only-, internet use is weaker for ethnic minority than for majority consumers and stronger in poorer than in richer countries. These findings not only advance our understanding of the factors that foster the type-of-internet-access digital divide and the psychological mechanisms that explain how digital divides affect life satisfaction, but also bring seemingly unrelated literatures together to form a new research avenue for future studies on consumers’ digital life and social marketing.

We also offer a methodological contribution. Previous digital divide studies have largely neglected the nested structure of multi-country/multi-ethnic data (for an exception see Mossberger et al., 2012). Typically, these studies determine digital divide effects based on measures of the antecedents that are aggregated across groups of study participants (e.g., ethnic minorities vs. majorities). However, such an approach obscures the fact that each person idiosyncratically perceives how internet use affects his or her life; all individual-level information is lost and the statistical analysis loses power (Judge, Scott, & Ihtes, 2006). We overcome this problem by employing a multi-level modeling technique in which we separate the individual-level effects from those that are caused by country-level characteristics.

The paper is structured as follows. We first review the study's contextual and conceptual background and then develop a theoretical framework that includes the effects of type-of-internet-access and ethnic status on perceived personal economic situation and life satisfaction at the individual level (level 1), and the effects of country cluster (richer vs. poorer) at the country level (level 2). We next report the multi-level modeling analysis and results. Finally, we discuss the theoretical and practical implications of the findings for marketing and public policy.

2. Contextual and conceptual background

2.1. Ethnic minorities and the type-of-internet-access digital divide

Particularly in the earlier times of the internet, ethnic minorities in the US (e.g., African Americans or Hispanics in the US) were less likely to own computers, less frequently used the internet and more often suffered from slow internet connections than those who belonged to the white majority population (Hoffman et al., 2001). More recent studies conducted in the US reveal significant differences in how differently ethnic minority and majority consumers access and use the internet. Ethnic minority consumers tend to use smartphone applications (e.g., e-mail, social networking, or listening to music) more frequently than majority consumers, and more likely use smartphones for purchasing online (Nielsen, 2012; Zickuhr & Smith, 2012). Brown et al. (2016) report that by the end of 2015, the share of US consumers who accessed the internet through a home broadband connection was 73% of non-Hispanic whites, but only 55% of African Americans, and only 46% of Hispanics; at the same time the share of consumers who used the mobile internet was 94% of African Americans and Hispanics, but only 85% of non-Hispanic whites. Brown et al. (2016) also note that home broadband subscription rates between 2010 and 2015 continued to rise among non-Hispanic whites but stagnated among African Americans and Hispanics. The common picture that emerges from these and other studies is that majority consumers, as compared to ethnic minority, more likely enjoy broadband internet access via regular computers, whereas ethnic minority consumers more likely use smartphones as their dominant or only mode of internet connection (Brown et al., 2016; Mossberger et al., 2012; Nielsen, 2012; Zickuhr & Smith, 2012).

Such type-of-internet-access differences are important because smartphones, as compared to regular computers, are less suitable for engaging in economic value creating online activities, such as brand- or price-comparisons, applying for a job, or following an educational program (Brown et al., 2016; Mossberger et al., 2012; World Bank, 2016). For example, Donner and Walton (2013) report that consumers prefer regular computers over smartphones for seeking information for school, work, health, jobs or financial decisions. Focusing on screen-size as an important usability differentiator, Dunaway, Sui, and Newby (2015) find that smartphone users, as compared to regular computer users, spend less time on reading and interacting with news content, suggesting a more shallow type of information processing when smartphones are used. Similarly, a longitudinal study by Tossell, Kortum, Shepard, Rahmati, and Zhong (2015) shows that students who used smartphones for learning and accessing academic resources during one year of study evaluated these devices as detrimental to completing their educational goals. Hence, the type-of-internet-access differences between majority and ethnic minority consumers may have far-reaching consequences for economic prosperity and development at both the macro and the individual levels.

2.2. Consumer well-being: antecedents and consequences

Subjective well-being or life satisfaction broadly refers to an individual’s cognitive and affective evaluations of life in the country where (s)he lives (Diener, 1994; Diener & Diener, 1995). Life satisfaction is at the heart of social marketing policy for its numerous objective benefits that directly or indirectly enhance prosperity and economic
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