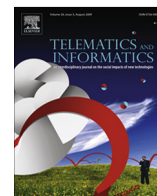


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## Internet applications use and personality



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### ABSTRACT

Many studies have looked at how personality influences a particular Internet application. This study used another approach and considered several applications in a single study. Using hierarchical multiple regression and with a sample of mostly young Internet users, this study provided a holistic picture of how personality traits affected usage level of 22 applications. Personality traits affect application usage level differently because of the underlying characteristics of applications. Generally, the more an Internet application possess characteristics of simplicity, basic applications needed for surfing the Internet, having been with us for a long time, popular, easy to use, low risk and general online leisure activities, the more likely its usage level will be less influenced by the personality of users. This study suggested that changes in the characteristics of applications over time cause personality's impact on usage level to change as well. Openness to experience has a limited impact. It reflects the rapid maturity of Internet applications.

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### 1. Introduction

Many Internet applications (functions), such as online search, e-tailing, e-entertainment, online social networking and game, have been integrated into many people's lives. These applications have changed individual behavior and the ways individuals interact with others. Commercial entities have introduced many Internet services (e.g. Google, e-Bay, Youtube and Facebook) to capture the attention of Internet users.

Past studies have looked at how user personality influences Internet application usage. Personality is "the enduring emotional, interpersonal, experiential, attitudinal and motivational style that explains individual's behavior in different situations" (Rose et al., 2010, pp. 105).

Earlier studies have often investigated how personality influences a single Internet application or service, such as nostalgic websites (Amichai-Hamburger et al., 2008a), Wikipedia (Amichai-Hamburger et al., 2008b), social networking websites (Amichai-Hamburger and Vinitzky, 2010), blogs (Guadagno et al., 2008) and computer games (Park and Henley, 2007).

Fewer studies (Amichai-Hamburger and Ben-Artzi, 2000; Hills and Argyle, 2003; Landers and Lounsbury, 2006; Swickert et al., 2002) have adopted another approach, i.e. to consider several Internet applications in a single study. While the former approach lacks the in-depth analysis of an Internet application or service, the latter approach has several advantages. It does a better job in reflecting the present complex ecosystem of Internet applications. Amichai-Hamburger and Ben-Artzi (2000) have already mentioned in 2000 that "the Internet can no longer be perceived as a general, undifferentiated medium, but as a rich and diverse complex of services" (pp. 448). This statement is even more valid today. Commercial entities often provide Internet applications as a package (bundle) and not in isolation. An example is Google, an Internet service, which comprises a bundle of Internet applications. Users often use Internet applications collectively. Some of the applications have also undergone major changes and broaden their user base. Given the rapid growth and transformation of Internet applications, there is

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a need for an updated study that considers an array of applications simultaneously. This approach also provides a more holistic view of how personality affects Internet application usage.

This study updated the list of common Internet applications and considered 23 applications in a single study. The purpose is to investigate the extent the use of these applications is related to personality differences of individuals after controlling for socio-demographic characteristics. This study used the Big Five Personality Traits taxonomy (Costa and McCrae, 1992; Landers and Lounsbury, 2006). It is a popular personality classification method, and a well-established and unifying framework for measuring personality (Butt and Phillips, 2008). The taxonomy comprises openness to experience, conscientiousness, extraversion, agreeableness and neuroticism traits. The factor of socio-demographic characteristics is considered and controlled because these characteristics are often the subjects of investigation and explain why different users use the same technology differently (Grace-Farfaglia et al., 2006).

## 2. Literature review

The Big Five Personality Traits refer to the five broad traits that psychologists believe provide a full picture of an individual's personality (John and Srivastava, 1999; Rose et al., 2010). Its overall factor structure, integrity, reliability and construct validity have been verified by studies in different settings (Costa and McCrae, 1992). These traits have also been widely applied to many aspects of life domain and are shown to influence behavior such as student career choice (Bacanli, 2006; Reed et al., 2004), expatriate job performance (Rose et al., 2010), adolescent psychological resilience (Fayombo, 2010), leadership (Judge et al., 2002) as well as organizational fit and performance (Lievens et al., 2001; Tett and Burnett, 2003).

A description of the five personality traits is as follow (Costa and McCrae, 1992; McCrae and John, 1992; Sanders, 2008):

- openness to experience trait refers to individuals' receptivity to learning, novelty and change. Individuals who are high in openness to experience tend to be intelligent, curious and like to try new ideas;
- conscientiousness trait refers to individuals who are rule-following, responsible, dependable, detail-oriented, achievement-oriented, like to plan ahead, thorough and persistent;
- extraversion trait is related to heightened level of sociability. Individuals who are high in extraversion are energetic, bold, warm-hearted, outgoing and enjoy the company of others;
- agreeableness trait is most concerned with inter-personal relationships. Individuals who are high in this trait tend to be friendly, courteous, considerate, accommodating, tend to avoid conflict, co-operative, helpful, forgiving and show propensity to trust; and
- neuroticism trait is often known as the anxiety factor. It deals with adjustment and emotional resilience when under stress. Individuals who are high in neuroticism are likely to have higher anxiety level, feel insecure, discontented, sensitive to ridicule, shy and easily embarrassed. They also pay more attention to negative events (Heller et al., 2002).

Past studies have shown that the Big Five Traits Personality taxonomy is also applicable to individuals from non-Western countries (Rolland, 2002). Terracciano et al. (2005) found that the Big Five Personality structure is rather similar across the cultures. A cross-cultural study of 56 nations found that the five-dimensional structure of Big Five Personality Traits is robust across major regions of the world (Schmitt et al., 2007). The Big Five Personality Traits have been used to study the behavior of students and community in Pakistan (Ahmad, 2010), a comparative study between Chinese and German students on career decisiveness with Chinese students from a university in South-East China (Gunkel and Schlaegel, 2010), and meeting planners in Malaysia (Ariffin et al., 2008). The Big Five personality structure has also been applied to the Taiwanese population such as Taiwanese online game players (Jeng and Teng, 2008) and in an investigation on the relationship between personality of service providers and service quality performance (Lin et al., 2001). Even though the Big Five Personality Traits are observed in Western and Eastern cultures, they may differ in importance and social desirability (Schultz and Schultz, 2009). Schmitt et al. (2007) found that people from South America and East Asia are significantly different in openness from those inhabiting in other world regions. Japanese individuals exhibit higher neuroticism, and lower conscientiousness and extraversion than the Americans (Matsumoto, 2006).

Personality also has an impact on how people place themselves along the "computing technology continuum of perspective" (Johnson et al., 2006). Agreeableness is positively associated with acceptance and perceived usefulness of technology (Devaraj et al., 2008; Falaleeva and Johnson, 2002). Big Five traits have been applied to individual Internet application or service. Individuals who are high in neuroticism tend to use Internet to avoid loneliness (Butt and Phillips, 2008). Conscientiousness is negatively related to Internet addiction (Yang and Liu, 2006). Fantasy computer role-playing game players choose characters that reflect their personalities (Park and Henley, 2007). Extraversion and openness to experience are related to the usage of social media (Correa et al., 2010; Zywicki and Danowski, 2008). Correa et al. (2010) showed that extraversion, emotional stability and openness to new experiences accounted for 3.2% of social media use variance while demographic variables and life satisfaction explained 12.5% of the variance. Individuals who are high in openness to experience and neuroticism are likely to be bloggers (Guadagno et al., 2008). However, Ross et al. (2009) found that extraversion and openness to experience are not as influential as earlier literature would suggest for Facebook usage. In a study on online impulsive buying, Huang and Yang (2010) found that conscientiousness is related to convenience. Neuroticism and conscientiousness can significantly predict provision of online product review (Picazo-Vela et al., 2010).

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