

EXPLORING THE RELATIONSHIP BETWEEN PERSONALITY STRUCTURE AND SMARTPHONE USAGE

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Personality and smartphone usage

Background

A main aim of personality research is to predict and interpret behavior by relying on individual differences. In this regard, most studies on this topic relied on self-reported behaviors in order to assess personality. This approach evoked criticisms referring to the fact that personality psychology rarely deals with observable behavior (Baumeister, Vohs, & Funder, 2007). It seems that personality research is mostly concerned with assessments about how people think they behave rather than their actual behavior (Stachl et al., 2017).

A source of information that is important to individual differences in personality is provided by the use of apps (Stachl et al., 2017). Because of this, important individual differences relevant to personality research may be found through a device that is used daily by the majority of people.

Study aim

In this study, we aimed to investigate the relationship between personality dispositions and actual and observed behavior that is expressed in several smartphone apps categories by relying on a built-in function of the smartphone, namely the app usage from the battery information menu. Moreover, we aimed to investigate the association between personality traits and the number of installed apps per category.

Method

The research sample consisted of 341 participants that monitored their app usage relying on the function of app usage from the battery information menu for 30 days. Participants completed measures that are related to personality structure (Big Five, HEXACO, and the Dark Triad)

Results

	Total apps	Social media apps	Entertainment apps	Business apps	News-info apps	Music apps	E-shopping apps	Online payment apps	Cloud apps
Predictors	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)	Expβ (95% CI)
E	.95 (.94, .96)	.94 (.93, .96)	.88 (.86, .90)	1.00 (.95, 1.05)	1.00 (.97, 1.04)	.84 (.82, .86)	1.02 (.98, 1.07)	1.01 (.94, 1.07)	.95 (.90, 1.01)
A	1.00 (.98, 1.01)	1.01 (.99, 1.03)	.95 (.93, .98)	1.06 (1.00, 1.12)	.88 (.84, .91)	.92 (.90, .95)	1.01 (.96, 1.07)	1.11 (1.04, 1.19)	1.01 (.95, 1.08)
C	.97 (.95, .98)	.99 (.97, 1.00)	1.01 (.98, 1.04)	1.19 (1.13, 1.24)	1.20 (1.15, 1.24)	.97 (.95, .99)	1.09 (1.05, 1.14)	1.02 (.96, 1.09)	1.04 (.98, 1.10)
ES	1.03 (1.01, 1.04)	.99 (.98, 1.01)	1.00 (.97, 1.02)	.87 (.83, .91)	.90 (.88, .94)	.98 (.96, 1.01)	.98 (.93, 1.02)	.98 (.91, 1.04)	1.02 (.96, 1.08)
O	1.04 (1.02, 1.05)	1.01 (1.00, 1.03)	1.03 (1.00, 1.06)	.86 (.81, .90)	1.00 (.96, 1.04)	1.11 (1.08, 1.13)	.95 (.90, .99)	.92 (.87, .98)	1.04 (.98, 1.11)
H(x)	.98 (.97, .98)	.99 (.99, 1.00)	1.00 (.99, 1.01)	1.02 (1.00, 1.03)	.98 (.97, .99)	.98 (.98, .99)	.98 (.97, 1.00)	1.00 (.98, 1.92)	.97 (.96, .99)
E(x)	1.02 (1.01, 1.02)	1.06 (1.05, 1.06)	1.03 (1.02, 1.04)	.97 (.95, .98)	.97 (.96, .98)	1.05 (1.04, 1.06)	1.02 (1.01, 1.04)	1.00 (.98, 1.02)	1.03 (1.01, 1.05)
X(x)	.98 (.98, .99)	1.00 (1.00, 1.01)	1.02 (1.01, 1.03)	1.01 (1.00, 1.03)	1.01 (1.00, 1.02)	1.02 (1.01, 1.03)	1.00 (.99, 1.02)	1.01 (.99, 1.03)	1.02 (1.00, 1.04)
A(x)	1.01 (1.00, 1.01)	1.01 (1.00, 1.02)	1.01 (1.00, 1.02)	.99 (.97, 1.00)	1.01 (1.00, 1.02)	1.03 (1.03, 1.04)	1.01 (1.00, 1.03)	.97 (.95, 1.00)	1.04 (1.02, 1.06)
C(x)	1.00 (1.00, 1.01)	.99 (.99, 1.00)	.99 (.98, 1.00)	.99 (.98, 1.00)	.99 (.98, 1.00)	.98 (.98, .99)	1.00 (.99, 1.02)	1.01 (.99, 1.03)	1.02 (1.00, 1.04)
O(x)	1.00 (1.00, 1.01)	.99 (.99, 1.00)	1.00 (.99, 1.01)	1.02 (1.00, 1.03)	1.01 (1.00, 1.02)	1.01 (1.00, 1.01)	.99 (.98, 1.01)	1.00 (.99, 1.02)	1.02 (1.00, 1.04)
Machiavellianism	.99 (.98, .99)	1.00 (.99, 1.00)	.99 (.98, 1.00)	1.04 (1.02, 1.06)	.97 (.96, .98)	.98 (.97, .98)	1.05 (1.04, 1.07)	.99 (.97, 1.02)	1.00 (.98, 1.02)
Narcissism	1.03 (1.02, 1.03)	1.03 (1.02, 1.03)	1.02 (1.00, 1.03)	1.00 (.98, 1.02)	1.01 (1.00, 1.03)	1.00 (1.00, 1.01)	.1.01 (.99, 1.03)	.99 (.97, 1.02)	.98 (.96, 1.01)
Psychopathy	1.01 (1.00, 1.01)	.99 (.98, 1.00)	1.02 (1.01, 1.03)	.98 (.96, 1.00)	.99 (.98, 1.01)	1.03 (1.02, 1.04)	.97 (.95, .99)	.95 (.95, 1.01)	1.01 (.99, 1.04)

E = Big Five Extraversion; A = Big Five Agreeableness; C = Big Five Conscientiousness; ES = Big Five Emotional Stability; O = Big Five Openness; H(x) = HEXACO Honesty-Humility; E(x) = HEXACO Emotionality; X(x) = HEXACO Extraversion; A(x) = HEXACO Agreeableness; C(x) = HEXACO Conscientiousness; O(x) = HEXACO Openness

Results

	e-health apps	Office/editing apps	Graphics apps	Gaming apps	Education apps	Lifestyle apps	Travel apps	Utility apps	Dating apps
Predictors	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)	Exp β (95% CI)
E	.97 (.91, 1.03)	.97 (.92, 1.02)	1.02 (.96, 1.08)	.90 (.86, .94)	.98 (.93, 1.02)	.91 (.86, .96)	.99 (.93, 1.05)	.96 (.91, 1.02)	1.09 (1.03, 1.16)
A	1.01 (.94, 1.08)	1.02 (.97, 1.08)	1.01 (.94, 1.08)	1.03 (.99, 1.08)	1.04 (.99, 1.09)	.99 (.93, 1.05)	1.00 (.94, 1.07)	.98 (.92, 1.05)	.95 (.89, 1.02)
C	1.11 (1.04, 1.18)	.97 (.92, 1.02)	1.06 (1.01, 1.12)	.93 (.89, .97)	.95 (.91, 1.00)	1.04 (.99, 1.10)	1.03 (.97, 1.09)	.97 (.91, 1.02)	1.07 (1.01, 1.13)
ES	1.00 (.94, 1.07)	.96 (.91, 1.01)	.89 (.84, .94)	1.04 (1.00, 1.09)	.93 (.89, .98)	.96 (.91, 1.01)	1.00 (.94, 1.07)	1.03 (.97, 1.10)	.89 (.85, .95)
O	.97 (.91, 1.03)	.98 (.93, 1.03)	1.06 (1.00, 1.13)	1.06 (1.02, 1.11)	.97 (.93, 1.02)	1.05 (.99, 1.11)	1.08 (1.01, 1.15)	1.06 (1.00, 1.13)	.99 (.93, 1.06)
H(x)	1.00 (.98, 1.02)	.97 (.96, .99)	.98 (.96, 1.00)	.97 (.96, .98)	.99 (.97, 1.00)	1.01 (.99, 1.02)	.98 (.97, 1.00)	.99 (.98, 1.01)	1.00 (.99, 1.02)
E(x)	1.02 (.99, 1.04)	1.03 (1.01, 1.05)	1.03 (1.01, 1.05)	1.04 (1.03, 1.06)	.99 (.98, 1.01)	1.00 (.99, 1.02)	1.03 (1.01, 1.05)	1.06 (1.04, 1.08)	1.01 (.99, 1.04)
X(x)	1.01 (.99, 1.03)	1.00 (.99, 1.02)	1.02 (1.01, 1.04)	1.05 (1.04, 1.06)	.99 (.98, 1.01)	1.00 (.99, 1.02)	1.00 (.99, 1.02)	1.01 (.99, 1.02)	.99 (.97, 1.01)
A(x)	1.01 (.99, 1.04)	1.02 (1.01, 1.04)	1.03 (1.01, 1.05)	1.00 (.99, 1.02)	1.01 (.99, 1.02)	.99 (.97, 1.01)	1.02 (1.00, 1.04)	1.01 (.99, 1.03)	1.01 (.99, 1.03)
C(x)	.98 (.97, 1.00)	1.04 (1.02, 1.05)	.99 (.97, 1.01)	1.00 (.99, 1.02)	1.01 (.99, 1.02)	.98 (.96, 1.01)	1.02 (1.00, 1.04)	1.01 (1.00, 1.03)	.97 (.96, .99)
O(x)	1.01 (.99, 1.02)	1.01 (.99, 1.02)	1.02 (1.00, 1.03)	1.02 (1.00, 1.03)	1.04 (1.02, 1.05)	1.00 (.98, 1.01)	1.00 (.98, 1.02)	1.00 (.99, 1.02)	1.02 (1.00, 1.04)
Machiavellianism	.98 (.96, 1.00)	.98 (.97, 1.00)	1.01 (.99, 1.03)	.99 (.97, 1.00)	.99 (.98, 1.01)	1.01 (.98, 1.01)	1.01 (.99, 1.03)	.98 (.96, 1.00)	1.00 (.98, 1.02)
Narcissism	1.00 (.98, 1.03)	1.01 (.99, 1.03)	.99 (.97, 1.01)	.94 (.93, .96)	.99 (.97, 1.01)	1.01 (.98, 1.03)	.99 (.97, 1.02)	1.02 (.99, 1.04)	1.02 (.99, 1.05)
Psychopathy	1.01 (.98, 1.04)	1.01 (.99, 1.03)	1.00 (.98, 1.03)	1.06 (1.04, 1.07)	1.00 (.98, 1.02)	1.00 (.98, 1.03)	1.02 (.99, 1.04)	1.01 (.99, 1.04)	.99 (.97, 1.02)

Results

The findings of the study showed that personality dispositions predicted usage of smartphone apps in various categories such as entertainment apps, music apps, gaming apps, business apps, e-health apps, and dating apps. In conclusion, this study showed that actual behavior expressed in various app categories is associated with broad and important personality dimensions. The findings of this research can be useful in integrating actual behavior in psychological research.