



Folk Theories of Smartphones Implicate Well-Being and Consumer Decision Making

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Introduction

Smartphone Ownership [1]

- 77% of American adults
- 94% 18-29 year-olds
- People construct intuitive causal explanations, or "folk theories," to interpret, explain, and interact with complex systems [2], such as smartphones
- To our knowledge, no research has yet examined the folk theories people hold about smartphones
- We propose a **taxonomy of folk theories of smartphones** and explore the associations of each theory with:
 - Personality traits
 - Physical and mental health
 - Smartphone-related cognition and behavior
- We also explore how phone-related attitudes and affinities predict consumer behavior

Method

- 21 initial metaphors were generated following guidelines from [3], e.g.: "**Friend**: My smartphone is always there for me; I feel good when it's around and I give it a lot of my time and attention."
- A pilot survey (N=27) was used to test agreement with initial metaphors, yielding a final count of 23
- In the main study, participants (N = 288) recruited from Amazon Mechanical Turk rated their endorsement of each of the 23 metaphors + completed a battery of measures

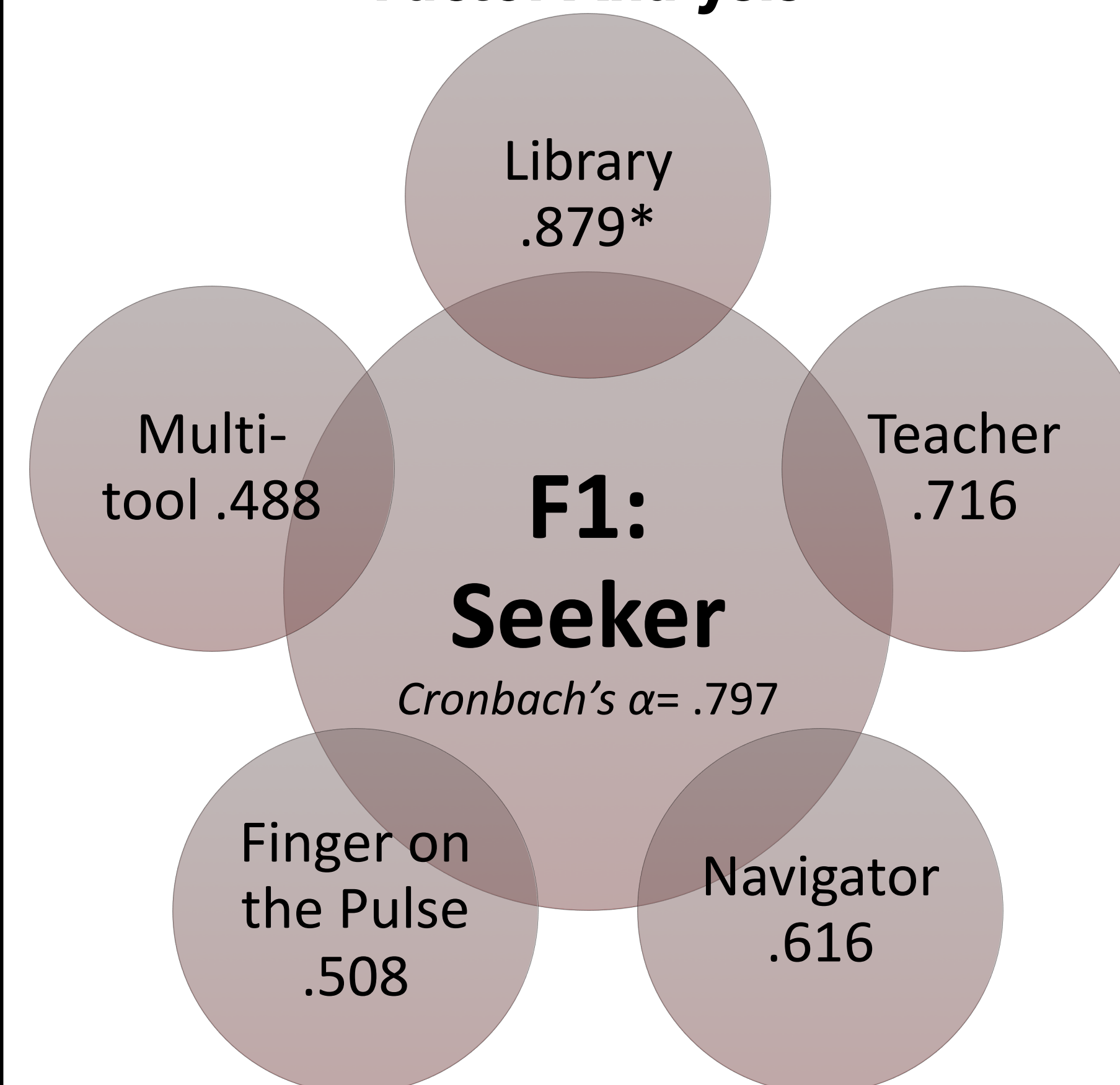
MEASURES

- PROMIS Global Health Questionnaire [4]
- Mobile Phone Affinity Scale (MPAS) [5]
- Ten Item Personality Inventory (TIPI) [6]
- Items on consumer behavior, meaning in life, well-being, smartphone-modified identification of other with the self (IOS) [7] and demographics

Results

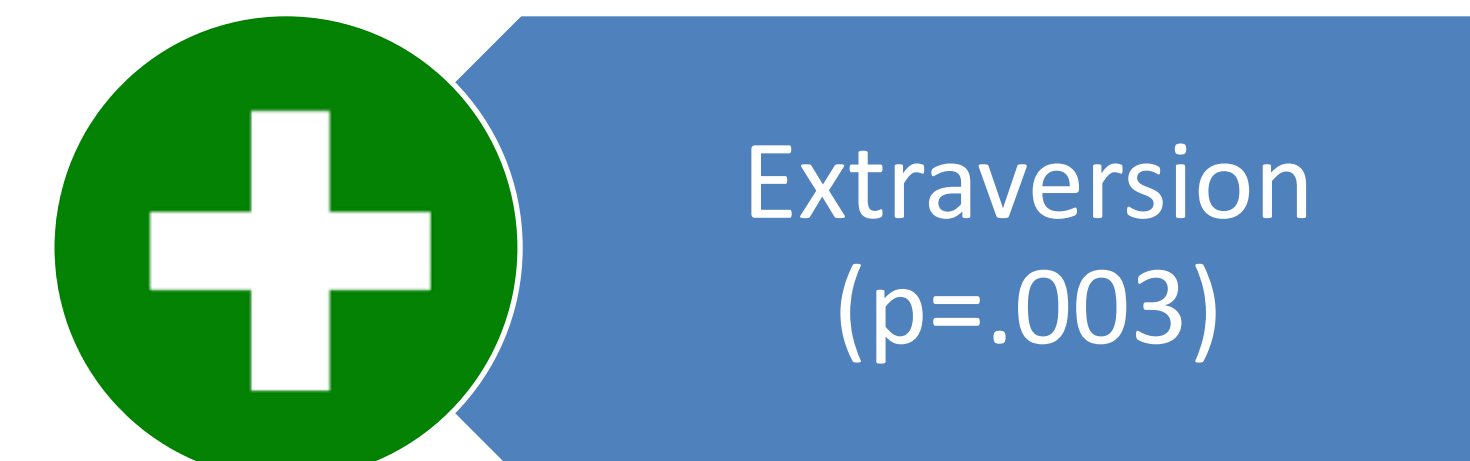
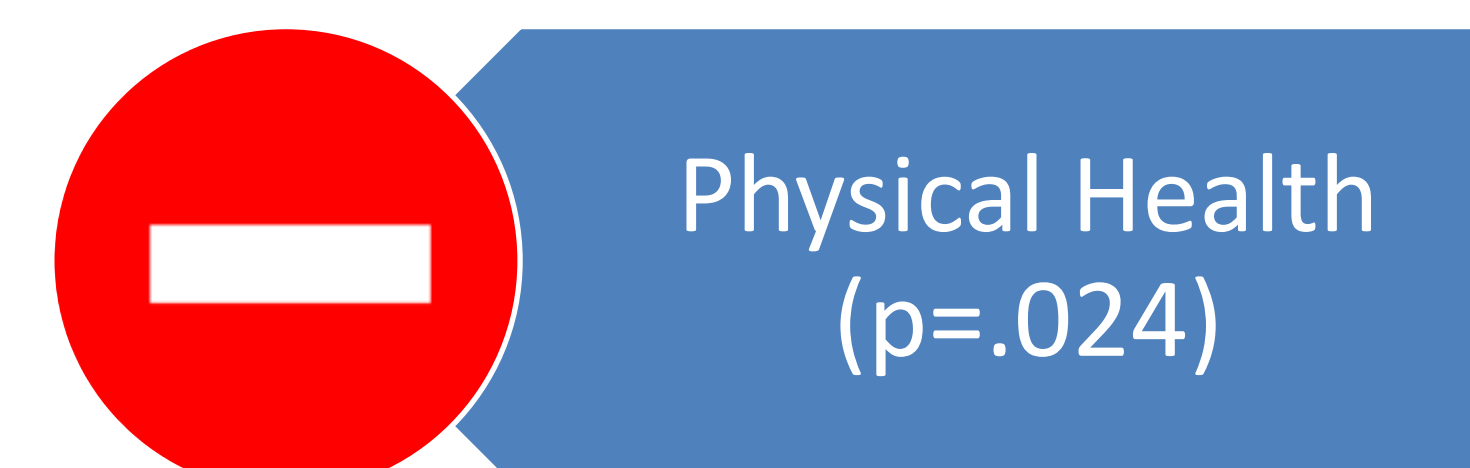
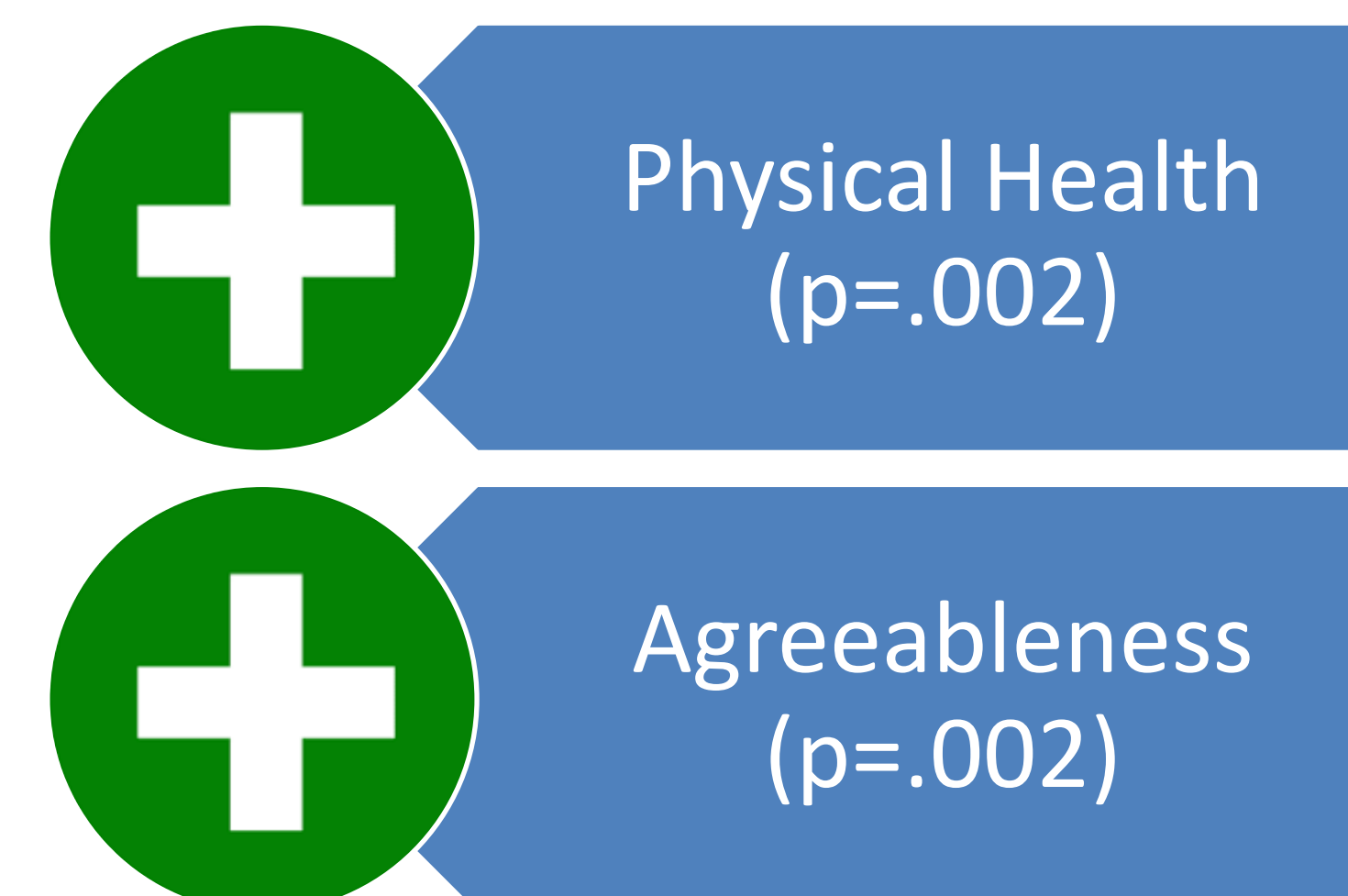
- Exploratory factor analysis** (N = 288) was used to elucidate the folk theories underlying the metaphors
- Maximum likelihood extraction, parallel analysis, and direct oblimin rotation yielded a three-factor solution
- Items that loaded greater than 0.3 on a single factor were retained, leaving a final total of 14 metaphors on 3 factors
- Factor scores were regressed onto outcome variables (controlling for age and gender)

Factor Analysis



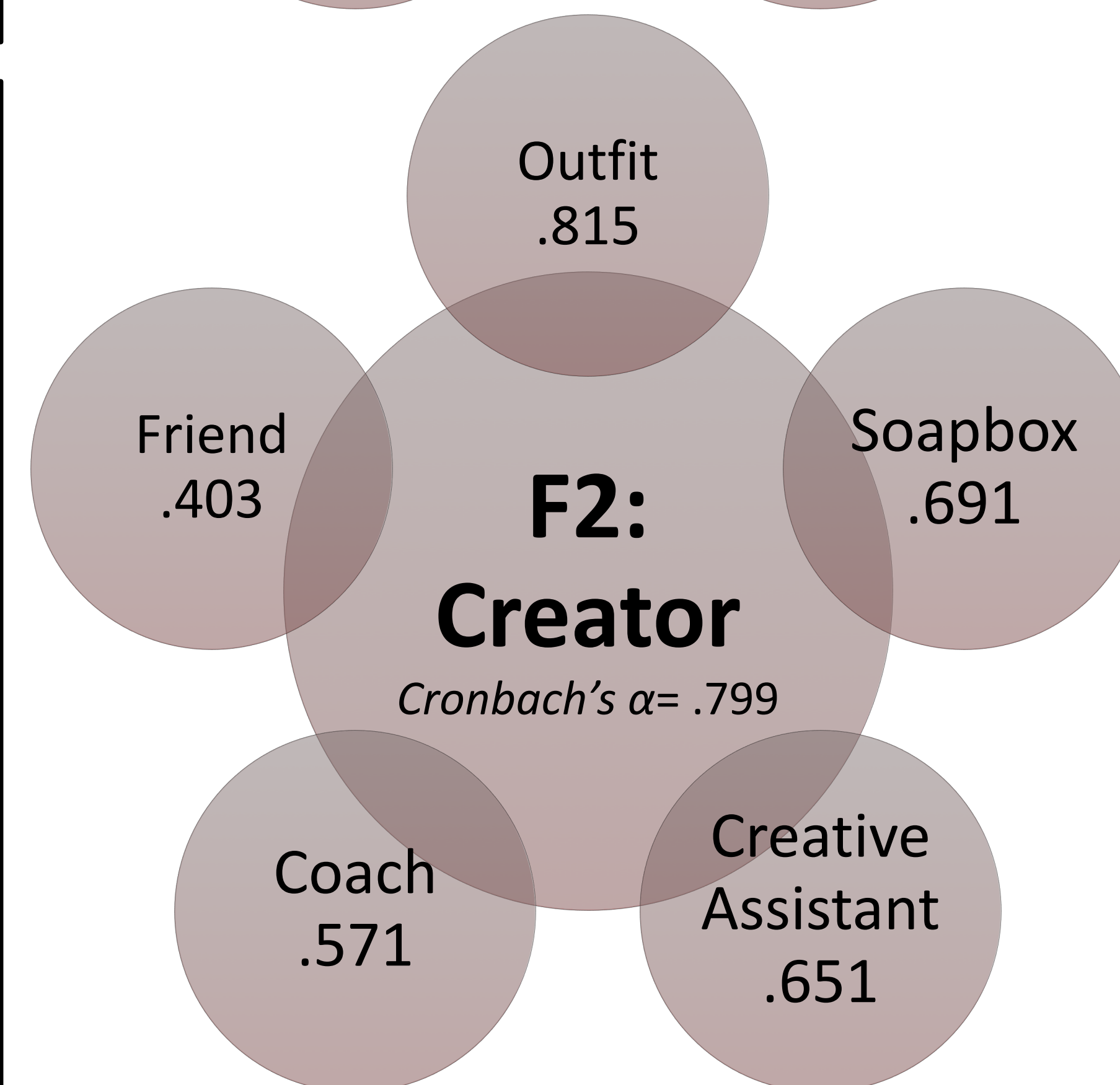
Regression Outcomes

"plus sign" = positively correlated
"minus sign" = negatively correlated



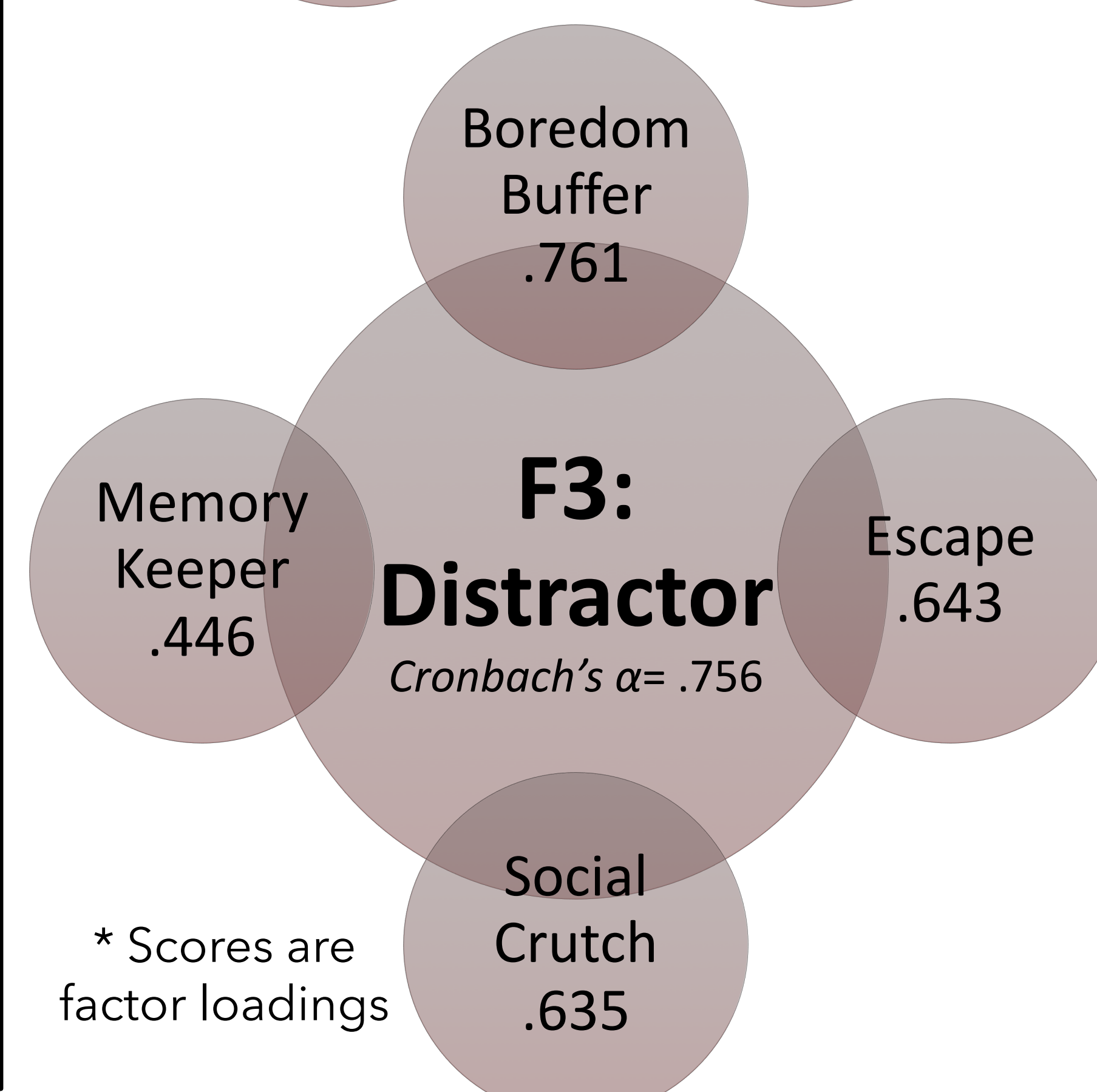
F2: Creator

Cronbach's alpha = .799



F3: Distractor

Cronbach's alpha = .756



* Scores are factor loadings

Discussion

Folk Theory 1: Phone as Seeker

- Theme: active information gathering
- Associated with better physical health and higher Agreeableness
- LEAST related to feeling a close relationship to the phone, anxious attachment, and addiction

Folk Theory 2: Phone as Creator

- Theme outward projection and creativity
- Associated with extraversion and poorer physical health
- Endorsers most closely identified with their phones (IOS); reported LESS time between phone-upgrades and shorter time owning a phone

Folk Theory 3: Phone as Distractor

- Theme: social avoidance, attention absorption
- Most strongly associated with addiction, anxious attachment, and continuous use
- Reported deriving greater meaning in life from their phones than the other theories

Consumer Decision-Making

- When the IOS was included in regressions, closer identification with phone predicted MORE spending on phone accessories and upgrading more often
- IOS also strongly associated with MPAS empowerment, addiction, anxious attachment, continuous use

Selected References

- [1] Anderson, M., & Jiang, J., "Teens, Social Media & Technology 2018." Pew Research Center: Internet, Science & Tech, 19 Sept. 2018, www.pewinternet.org/2018/05/31/teens-social-media-technology-2018/.
- [2] Gelman, S. A., & Legare, C. H. (2011). Concepts and folk theories. *Annual Review of Anthropology*, 40, 379-398.
- [3] French, M., & Hancock, J.T. (2017). What's the folk theory: Reasoning about cyber-social systems. *Presentation at the 67th Annual Conference of the International Communication Association, San Diego*.
- [4] Hays RD, Bjorner JB, Revicki DA, Spritzer KL, Cella D. (2009). Development of physical and mental health summary scores from the patient-reported outcomes measurement information system (PROMIS) global items. *Qual Life Res*;18(7):873-880.
- [5] Bock BC, Lantini R, Thind H, Walaska K, Rosen RK, Fava JL, et al. (2016) The mobile phone affinity scale: enhancement and refinement. *JMIR Mhealth Uhealth*;4(4):e134.
- [6] Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the big five personality domains. *Journal of Research in Personality*, 37, 504-528.
- [7] Aron, A., Aron E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63, 596-612.

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