

How replicable are correlations between U.S. state-level Big Five personality and sociodemographic measures?



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Figure 1: Example of state-level personality: Neuroticism. Darker states have higher aggregated Neuroticism scores. Source: SAPA2015 sample.

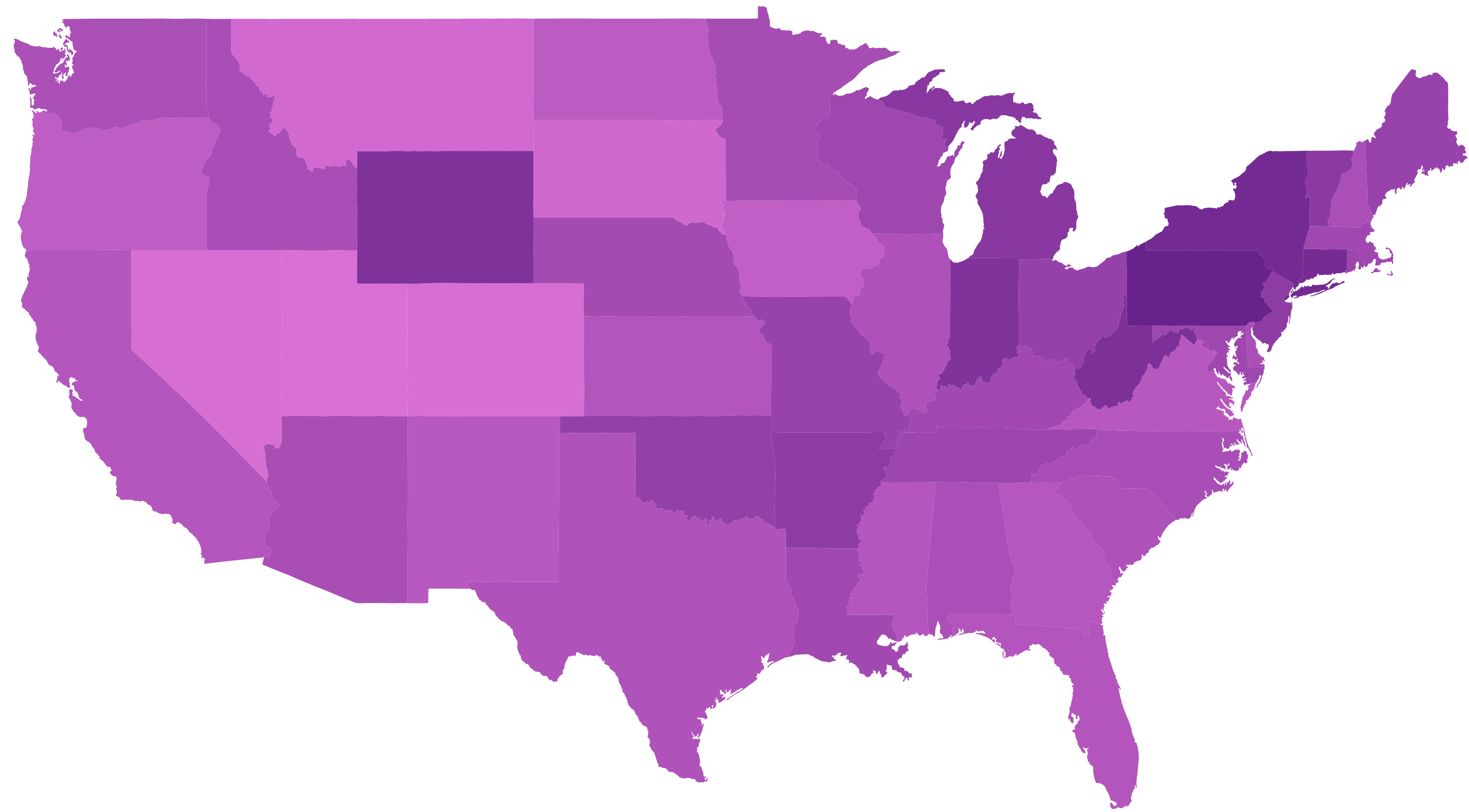


Table 1: Description of samples

Sample	Participants	Pers. Inventory	Research Project	Time Period
Sample 1	612,140	44-item BFI	Gosling-Potter	1999-2005
Sample 2	507,987	44-item BFI	Gosling-Potter	2005-2009
Sample 3	145,307	10-item TIPI	Rentfrow-Potter	2002-2009
Sample 4	312,568	20-item NEO	MyPersonality	2008-2010
Sample 5	18,182	10-item TIPI	CCAP	2007-2008
SAPA2010	81,538	100-item BFFM	SAPA	2006-2010
SAPA2015	134,858	100-item BFFM	SAPA	2010-2015

Summary of study

- ▶ Figure 1: Personality trait scores of individuals can be aggregated at any regional level, such as U.S. states.
- ▶ State-level scores from seven samples (Table 1) were correlated with 13 socio-demographic measures (e.g., crime rates and self-reported well-being) to determine the replicability of these types of correlations. Five samples were from a previous study (Rentfrow, Gosling, Jokela, & Stillwell, 2013).
- ▶ Figure 2: Across the seven samples, mean same-trait correlations of state scores were positive for all traits. This indicated that there was some agreement across samples in terms of which states scored high and low for each trait. The magnitude of a trait's average same-trait correlation differed across the Big Five.
- ▶ Figure 3: State-level scores for each trait in each sample were correlated with 13 sociodemographic measures. Traits that had larger same-trait correlations (seen in Figure 2) also had more replicable correlations with the 13 measures.
- ▶ Figure 4: To summarize the overall replicability of each trait with the socio-demographic measures, correlations from the five original samples were paired with correlations from the two new samples, resulting in 130 correlation pairs for each trait. A replication correlation was found (i.e., a correlation of correlation pairs). Based on this statistic, three of the Big Five (Neuroticism, Openness, and Conscientiousness) were found to produce replicable correlations with sociodemographic measures.

Figure 2: Same-trait correlations (i.e., rank order stability) of aggregated state-level personality, across seven samples. Color-coded for size and sign of correlation. Upper triangle shows correlations with the decimal removed.

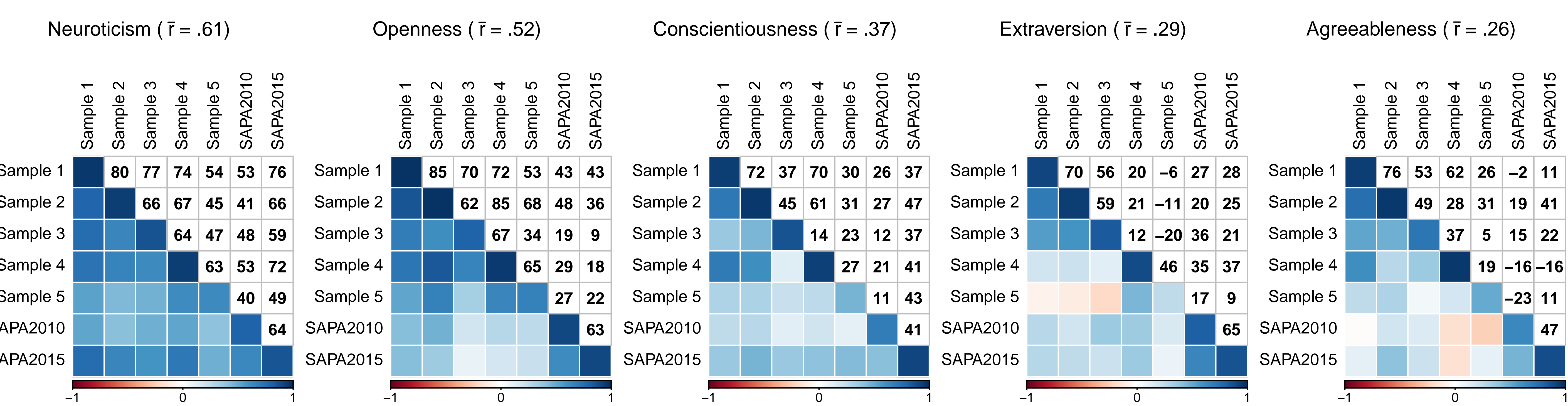


Figure 3: Partial correlations of each state-level Big Five trait with 13 sociodemographic measures, across seven samples (controlling for the other four traits). Color-coded for size and sign of correlation. A row with a consistent color indicates replicable results across samples. Faint coloring indicates a small correlation ($r < |.28|$) that would not be “statistically significant” by conventional standards ($p < .05$).

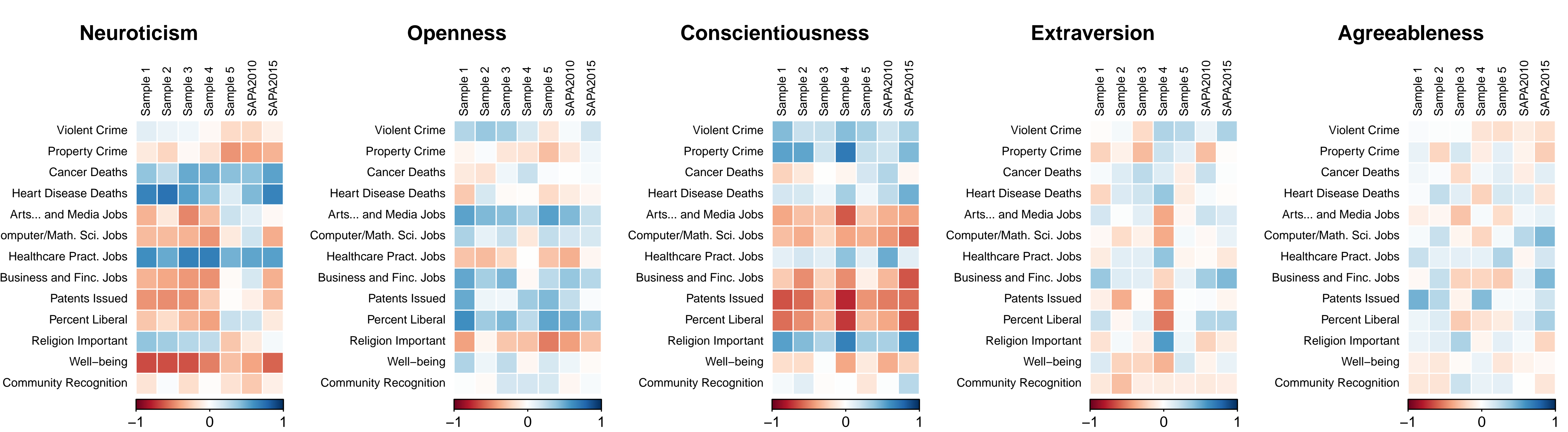


Figure 4: Replication correlations between state-level personality and 13 sociodemographic measures. Correlations of Samples 1-5 on X-axis. Correlations of SAPA2010 and SAPA2015 samples on Y-axis. The replication correlation (i.e., the correlation of correlation pairs) is listed for each trait. A simple linear regression line has been added to each trait for visual summarization.

