PERSONALITY AND PATTERNS OF FACEBOOK USAGE

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OVERVIEW

- How is personality manifested through different features of a Facebook profile?

Feature	Details
Friends	Number of Facebook friends
Groups	Number of associations with groups
Likes	Number of Facebook "likes"
Photos	Number of photos uploaded by user
Statuses	Number of status updates by user
Tags	Number of times others "tagged" user in photos

HYPOTHESIS

- Openness and Neuroticism are positively correlated with the number of status updates, photos, groups and "likes" of an individual.
- Conscientiousness is negatively correlated with all aspects of Facebook use.
- Extraversion is positively correlated with all aspects of Facebook use.
- Agreeableness is positively correlated with the number of friends, groups, and "likes".

ALGORITHM - CORRELATION

- Sort users into deciles according yo their score on each Facebook feature.

- Cluster together users with similar Facebook features.

- Sort the *n* users from smallest to greatest (e.x., number of friends).

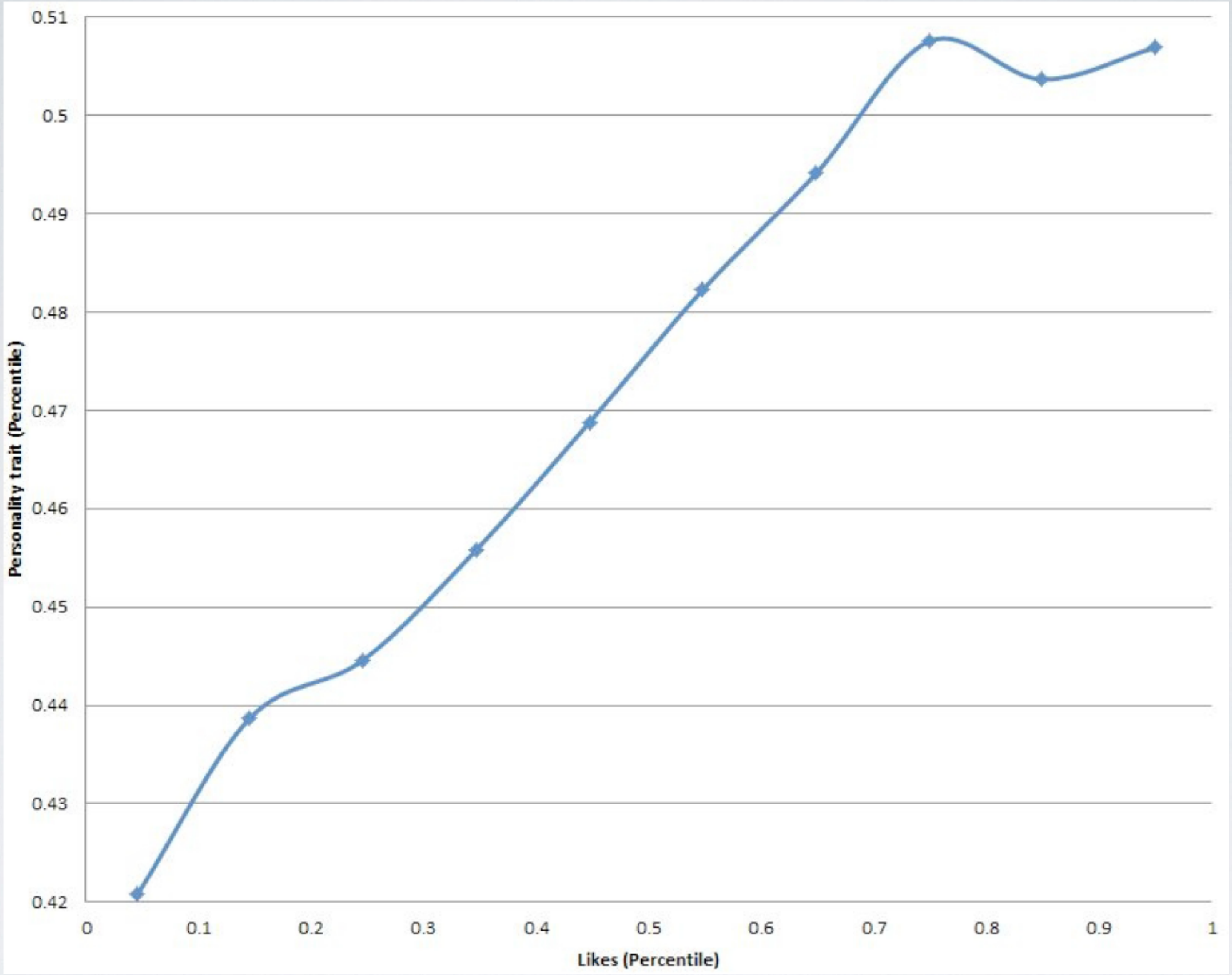
- Partition users into $k = 10$ equal and disjoint sets according to order.

ALGORITHM - PERSONALITY PREDICTION

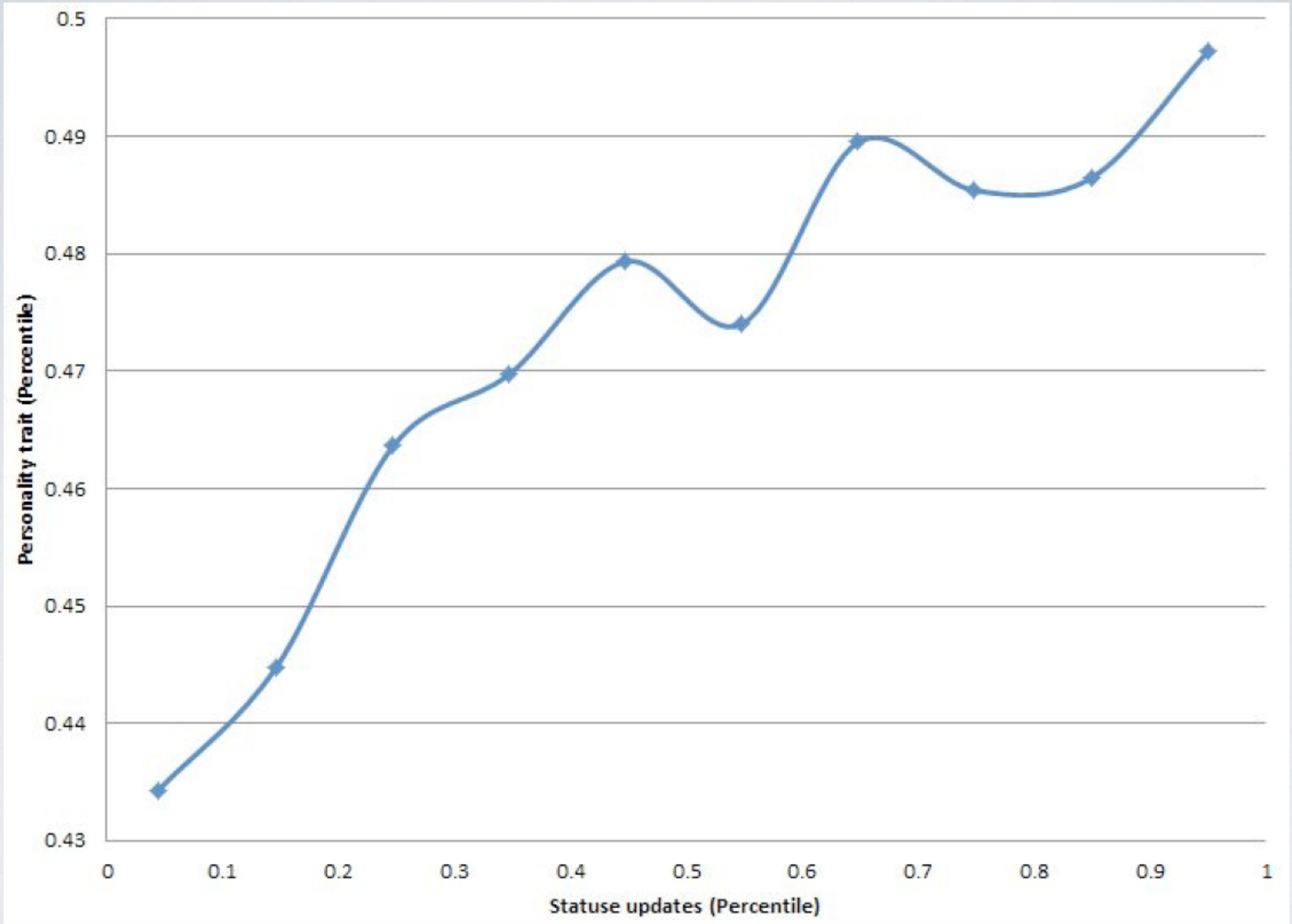
- Multivariate linear regression with 10-fold cross validation.
- Raw scores of both features and personality traits were transformed in percentiles.
- Attempted machine learning techniques such as tree based rule-sets, support vector machines, and decision stumps.

DATA

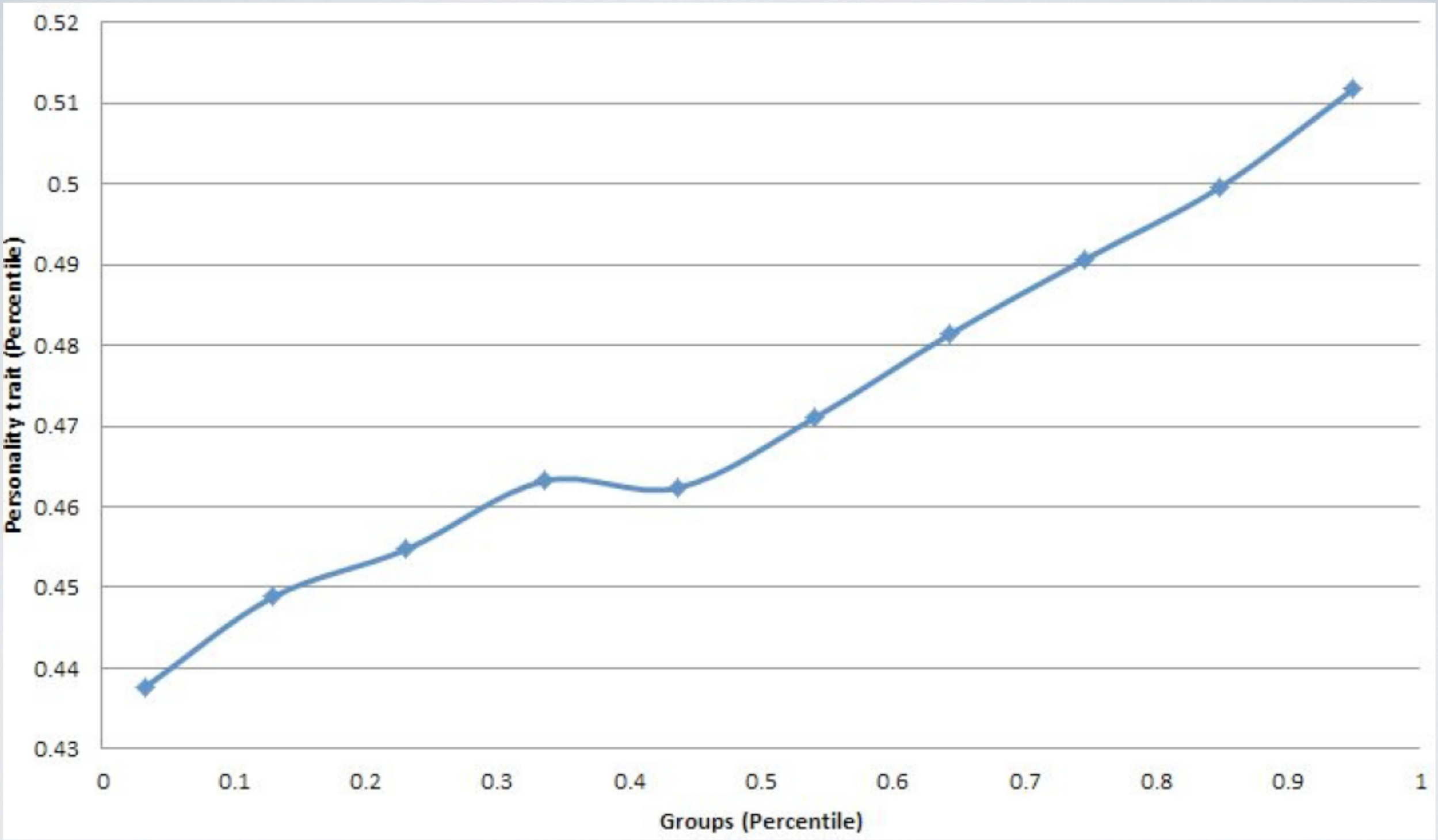
- 180,000 users obtained using myPersonality Facebook application.
- Restrictions of security settings and time constraints resulted in loss of data, however at least:
  - 15,000 data points per feature
  - Over 50,000 data points for most features
- Average age: 24.15
- 58% female.



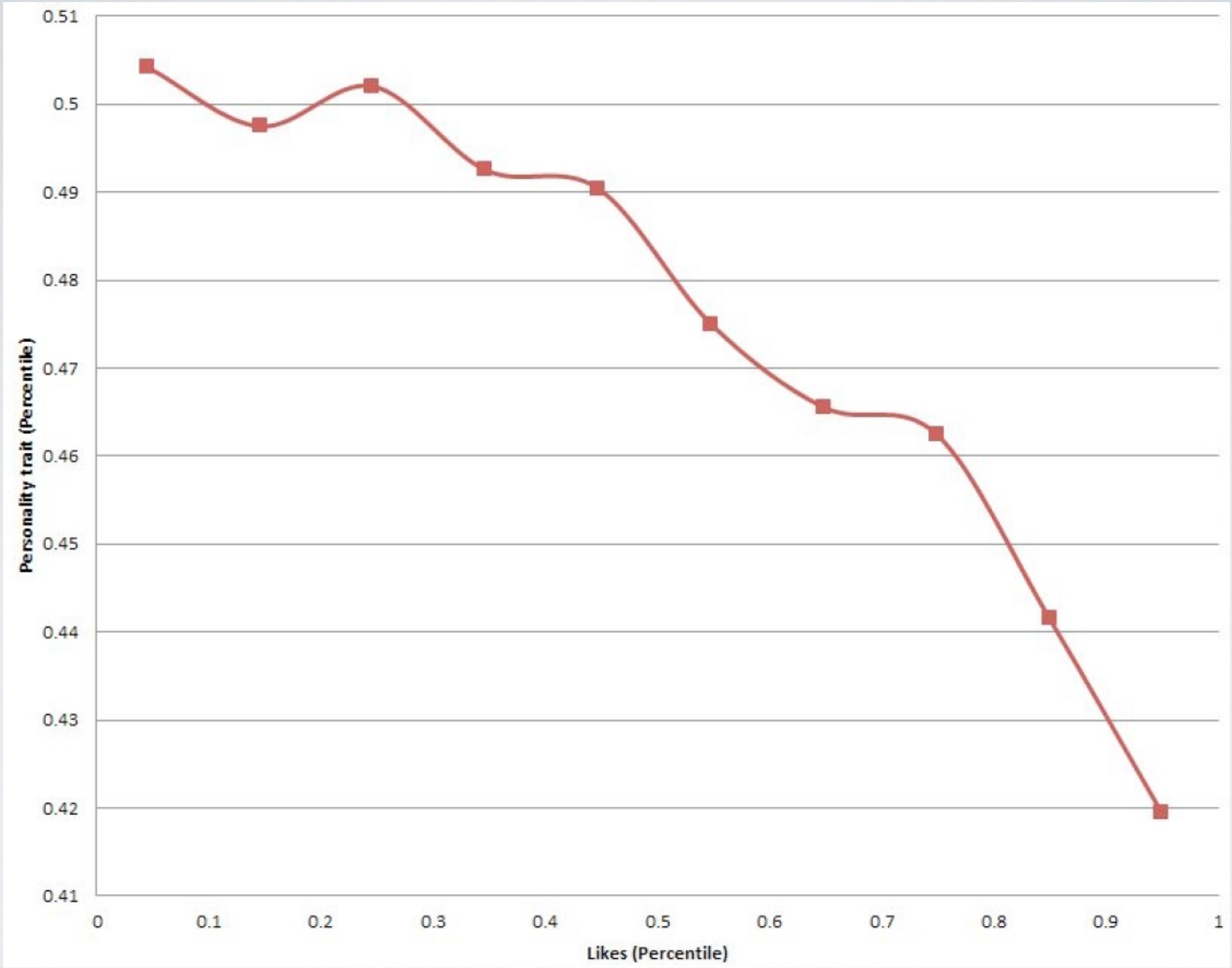
OPENNESS - LIKES



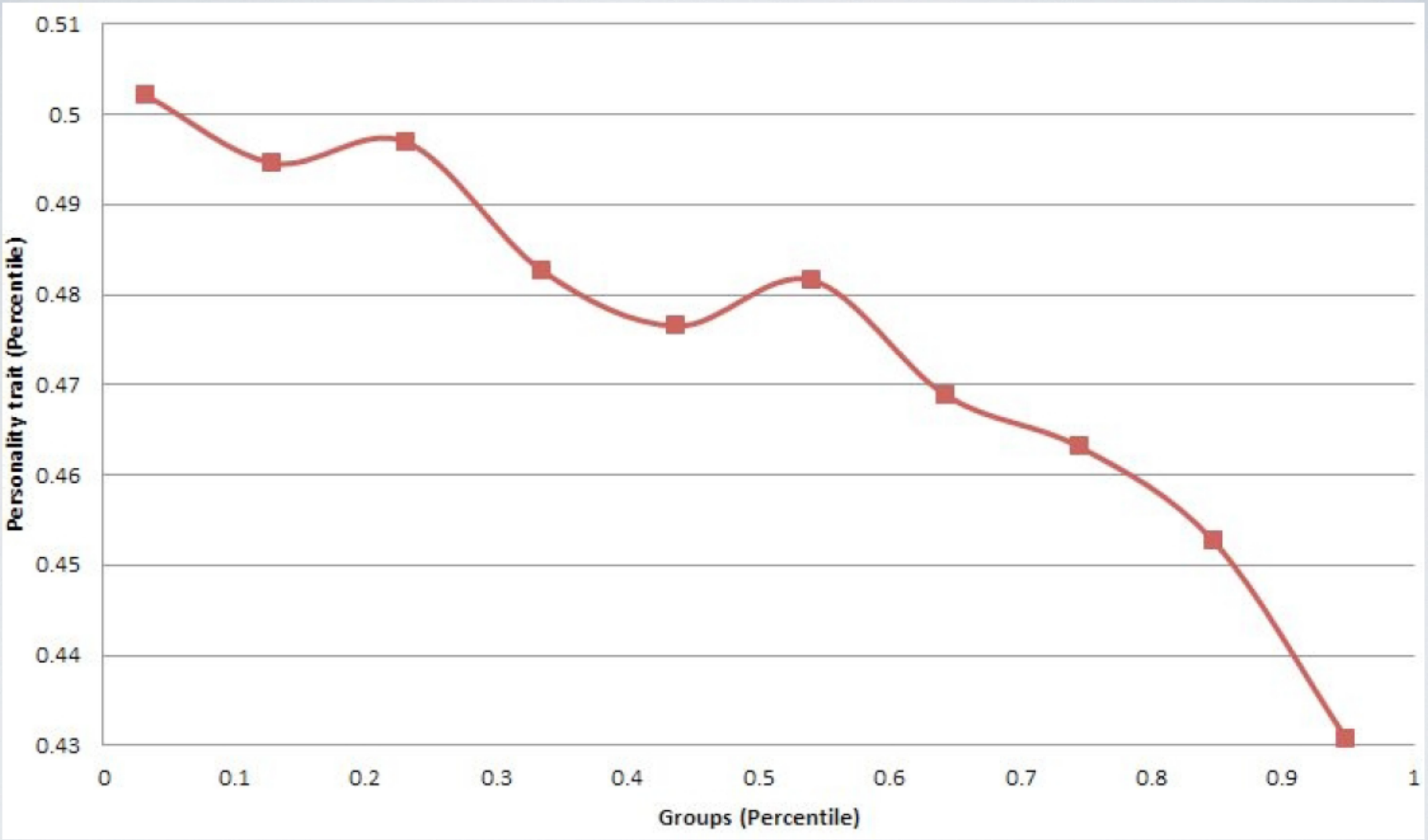
OPENNESS - STATUS UPDATES



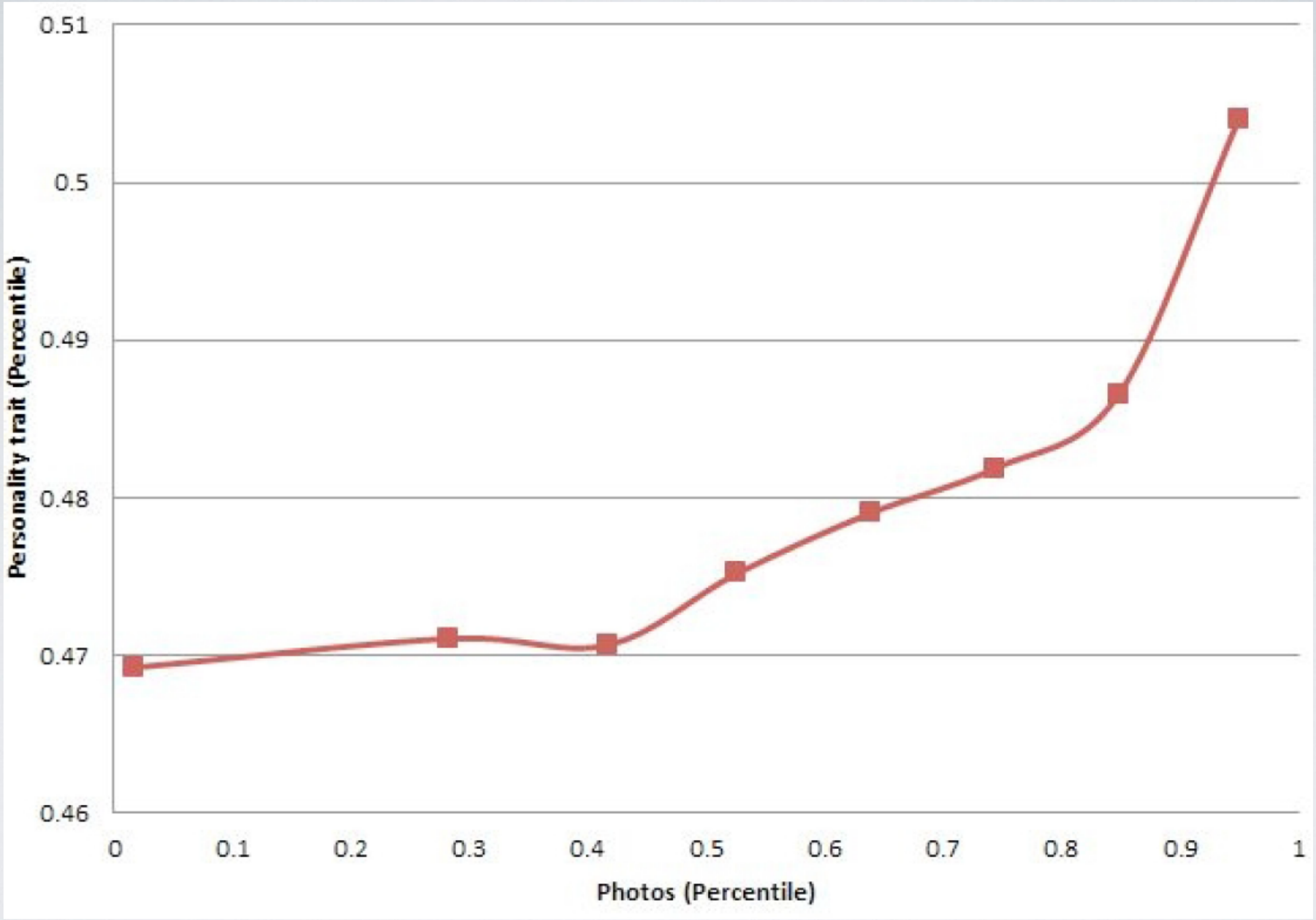
OPENNESS - GROUPS



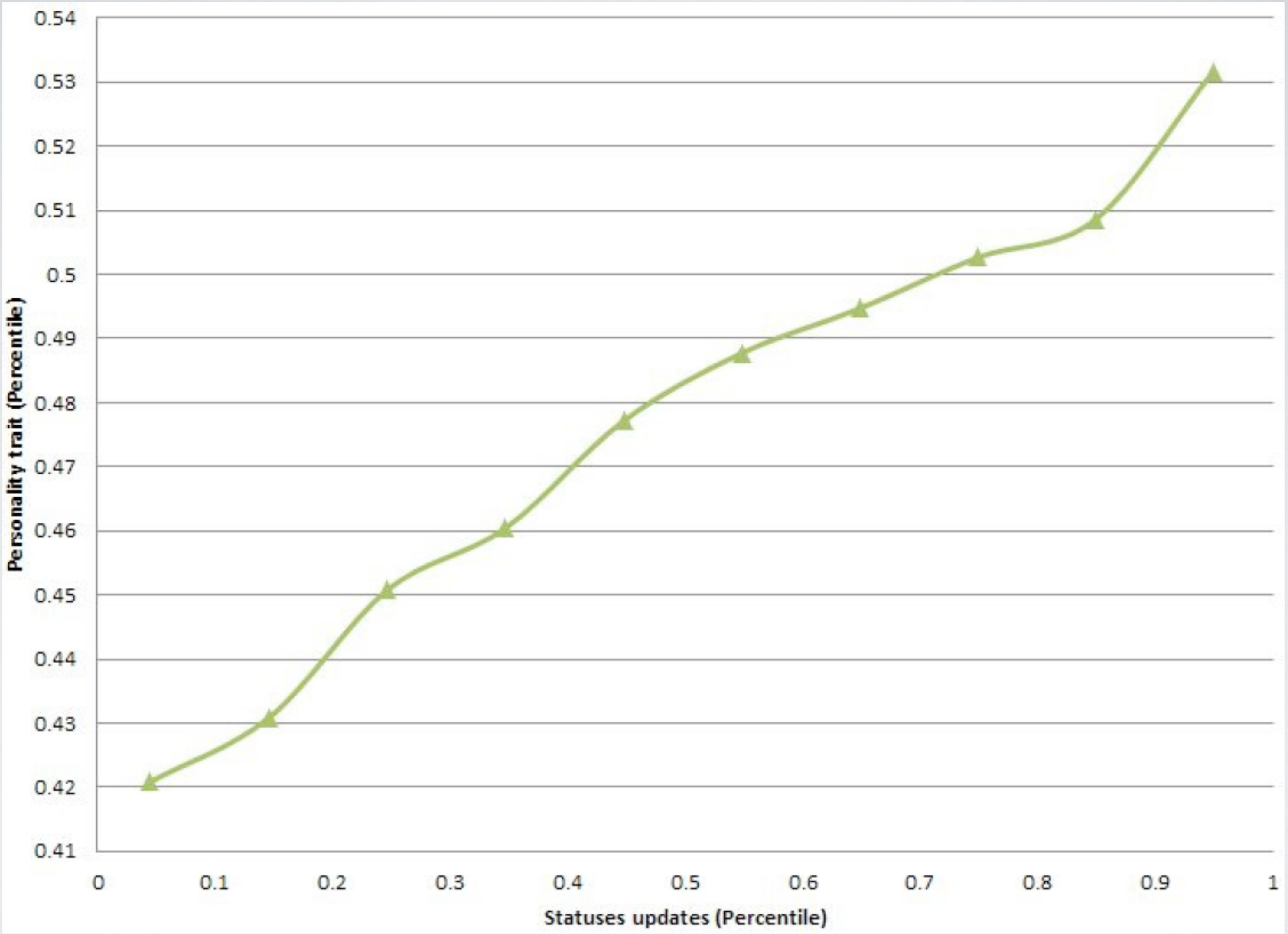
CONSCIENTIOUSNESS - LIKES



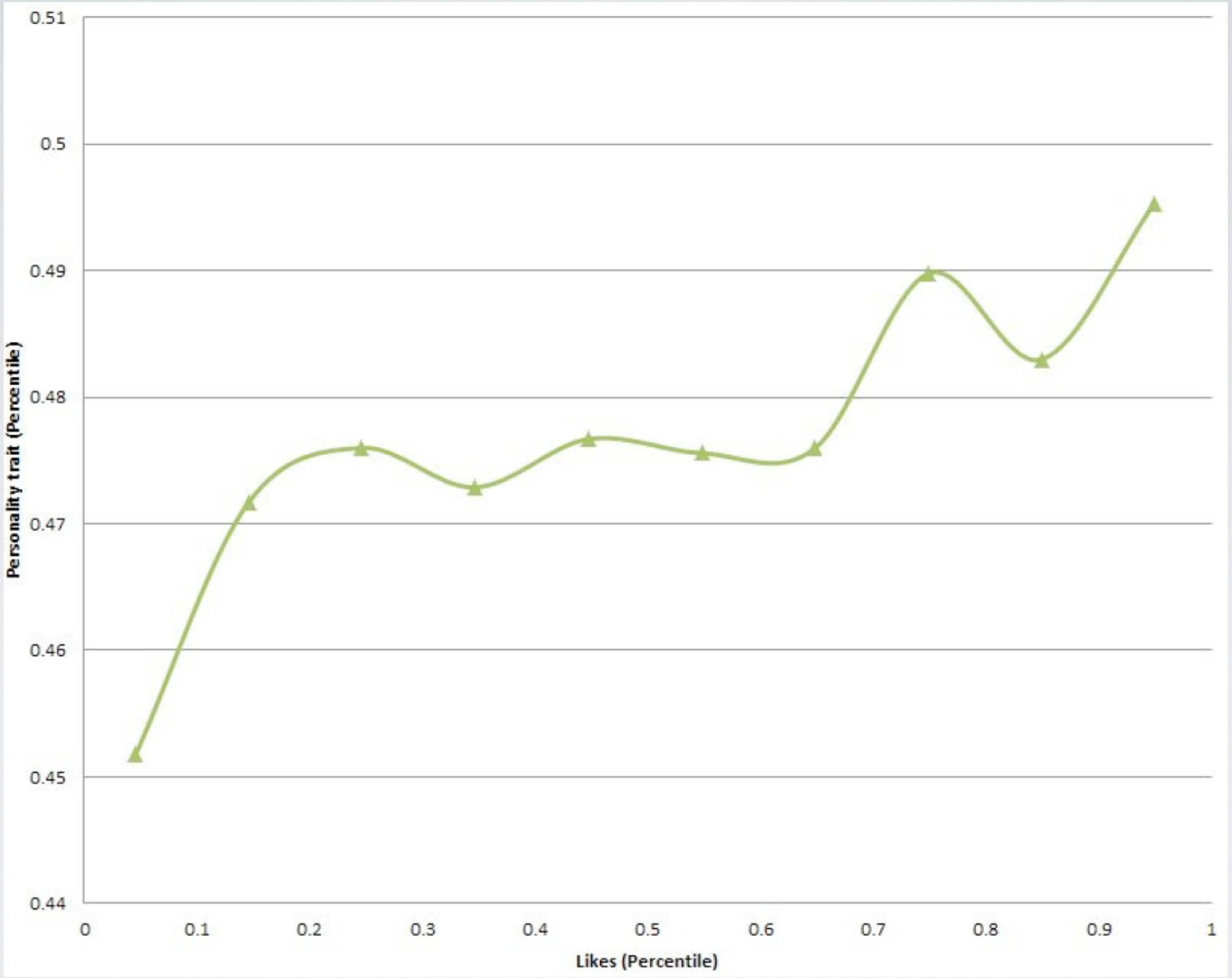
CONSCIENTIOUSNESS - GROUPS



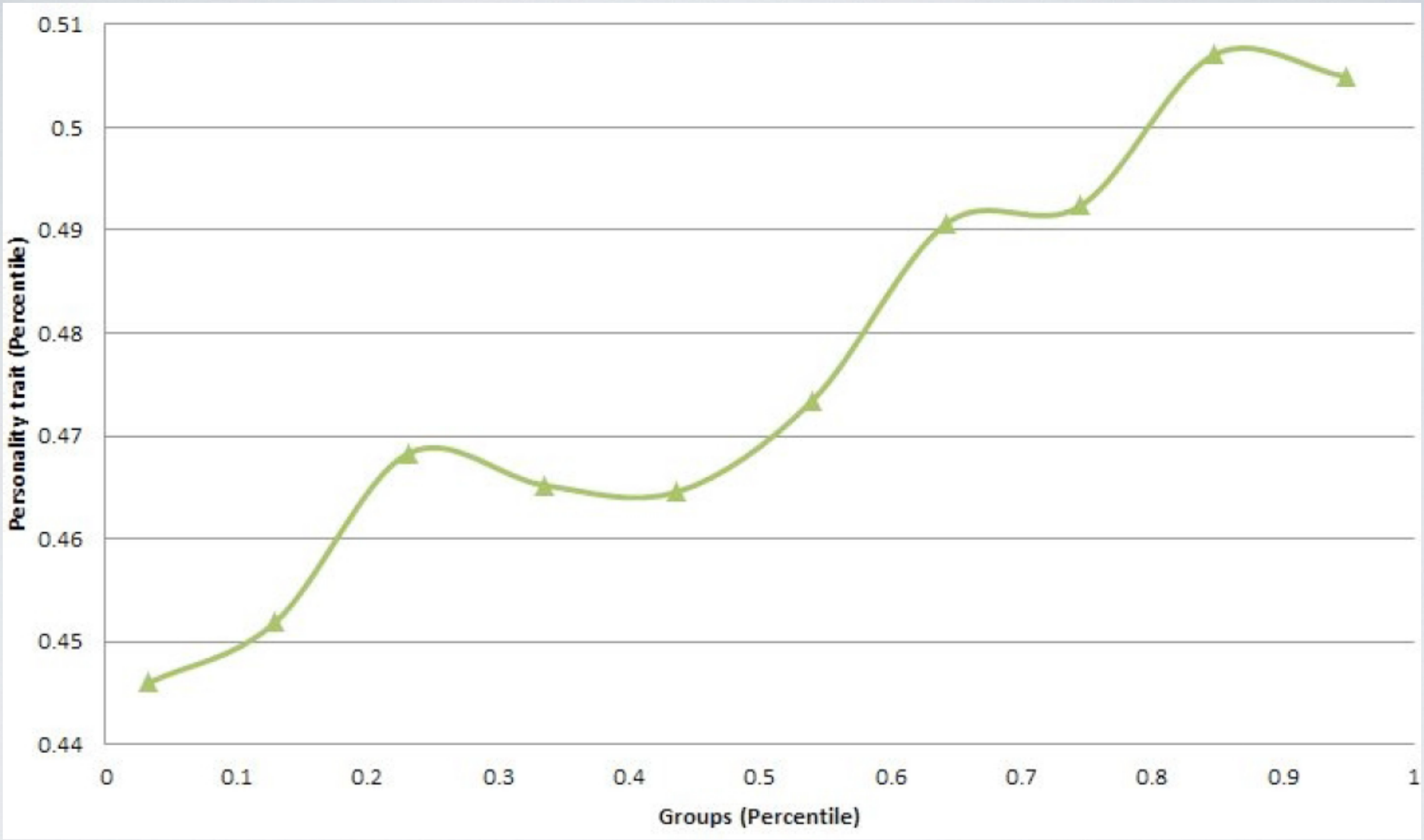
CONSCIENTIOUSNESS - PHOTOS



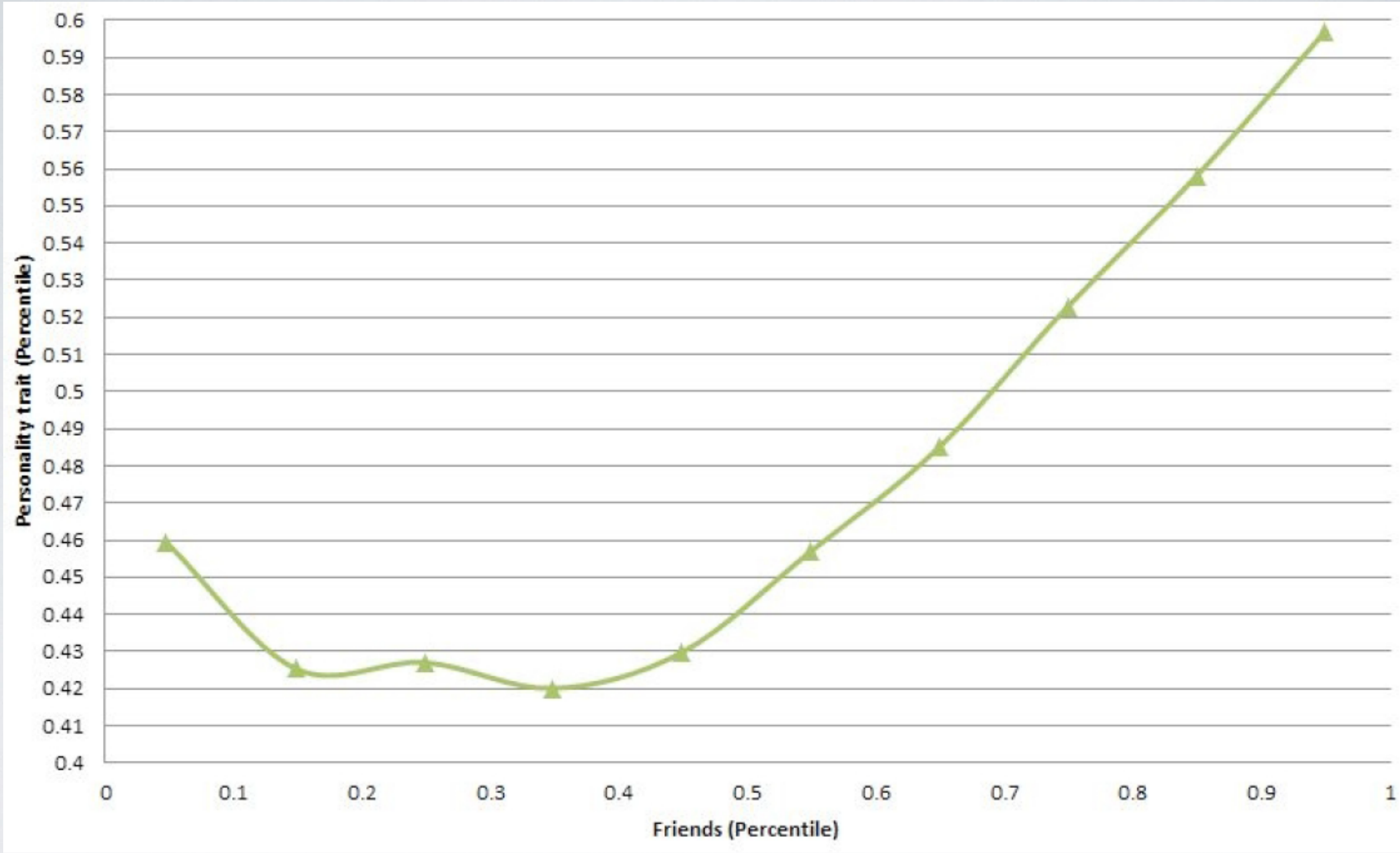
EXTRAVERSION - STATUS UPDATES



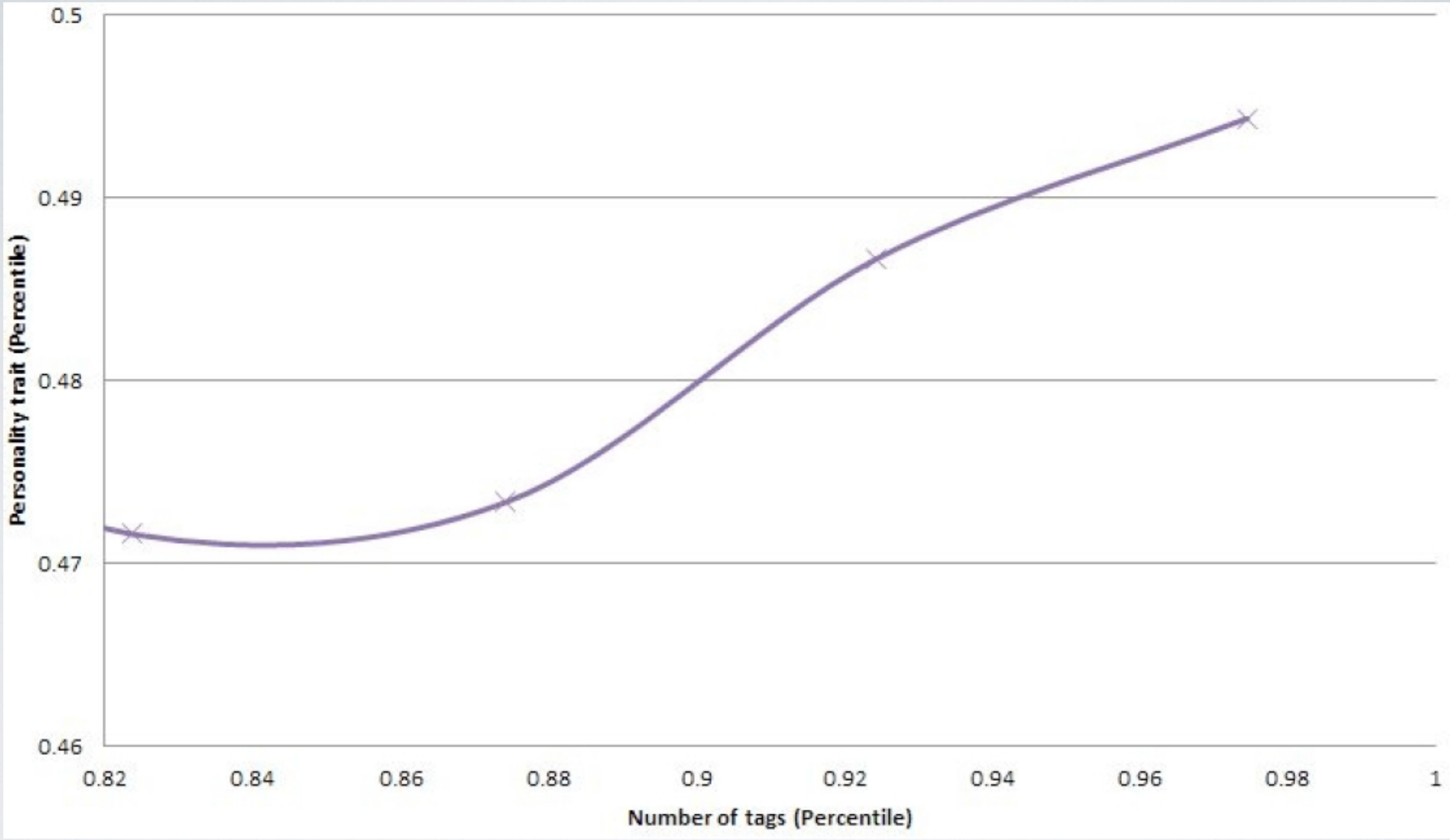
EXTRAVERSION - LIKES



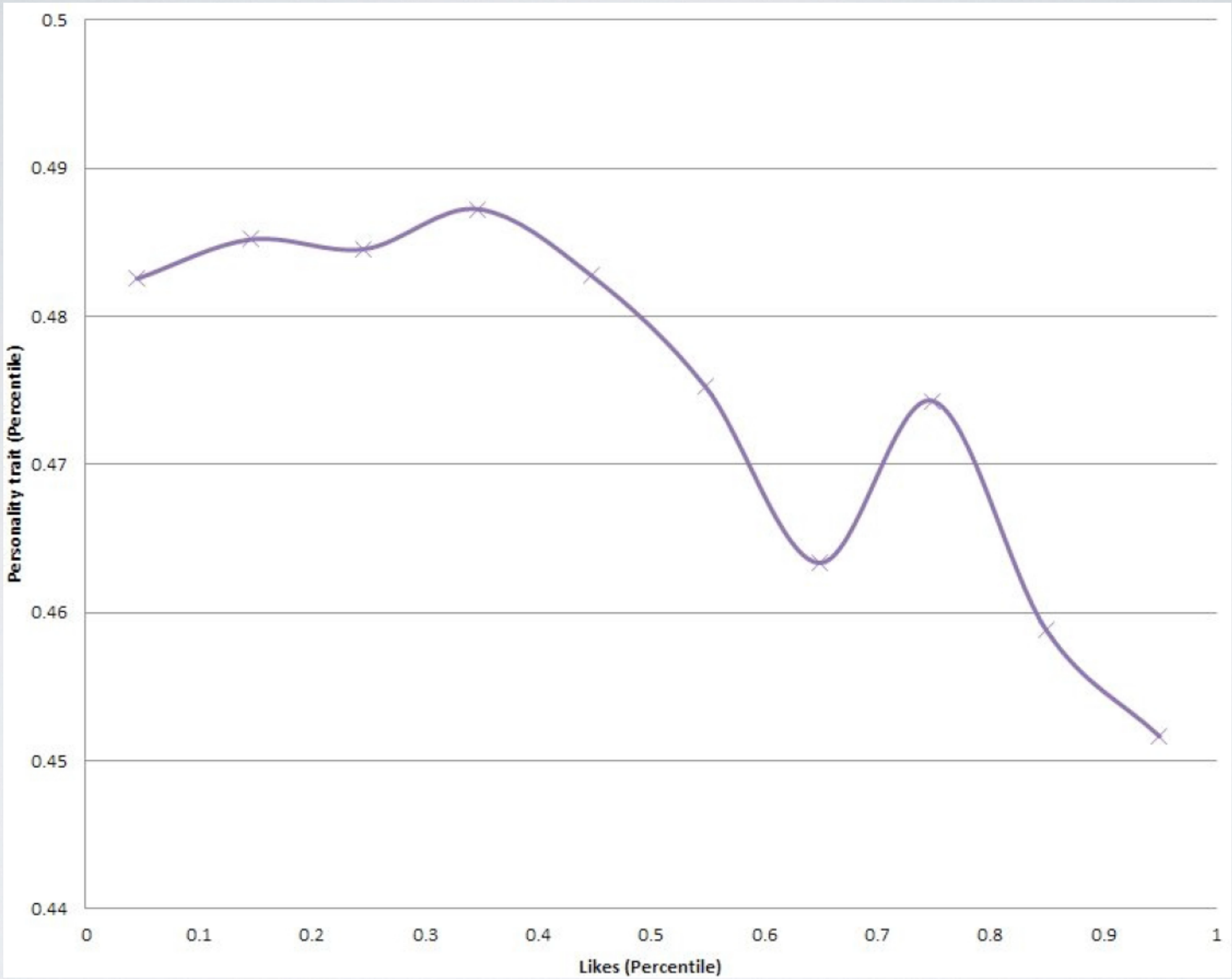
EXTRAVERSION - GROUPS



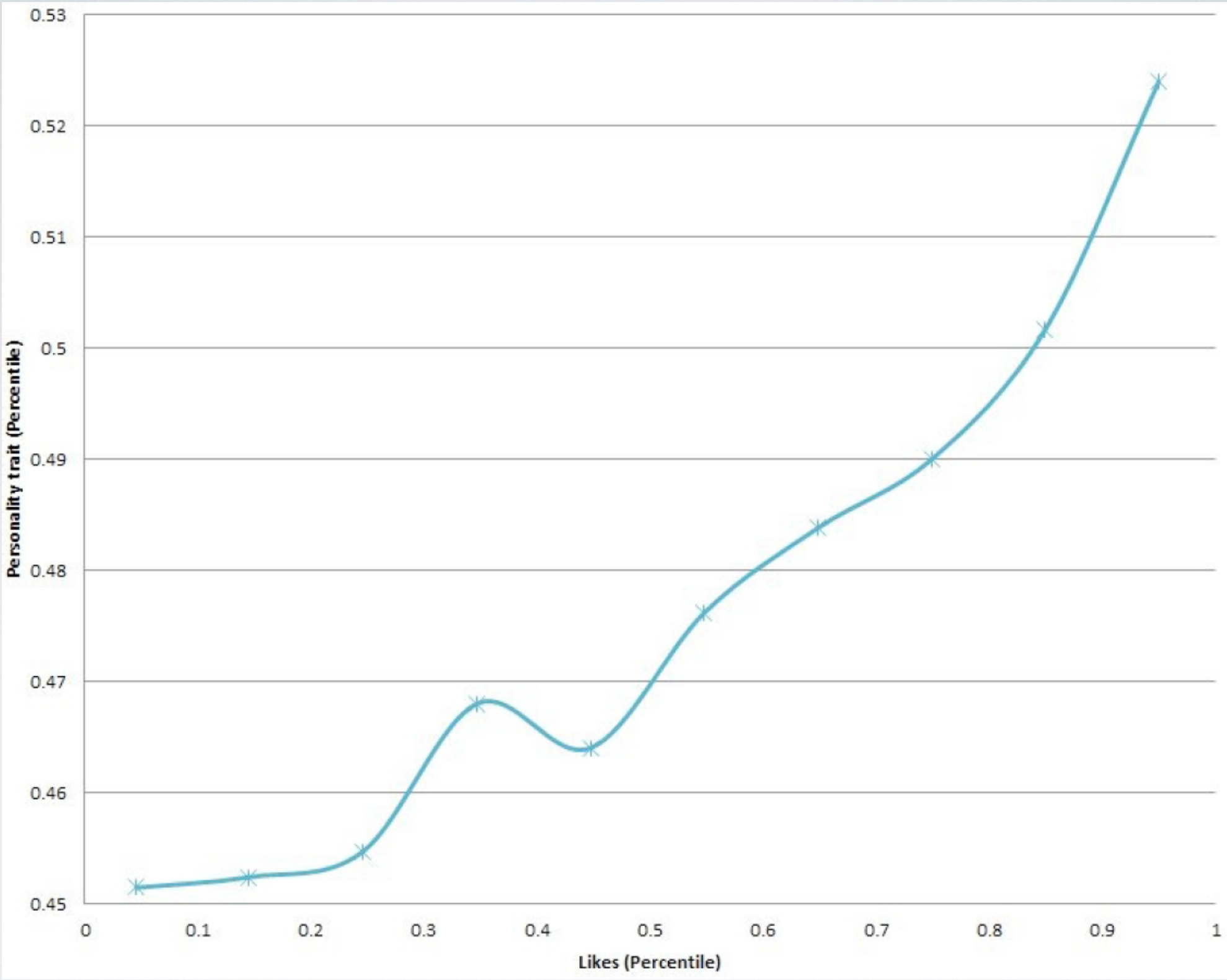
EXTRAVERSION - FRIENDS



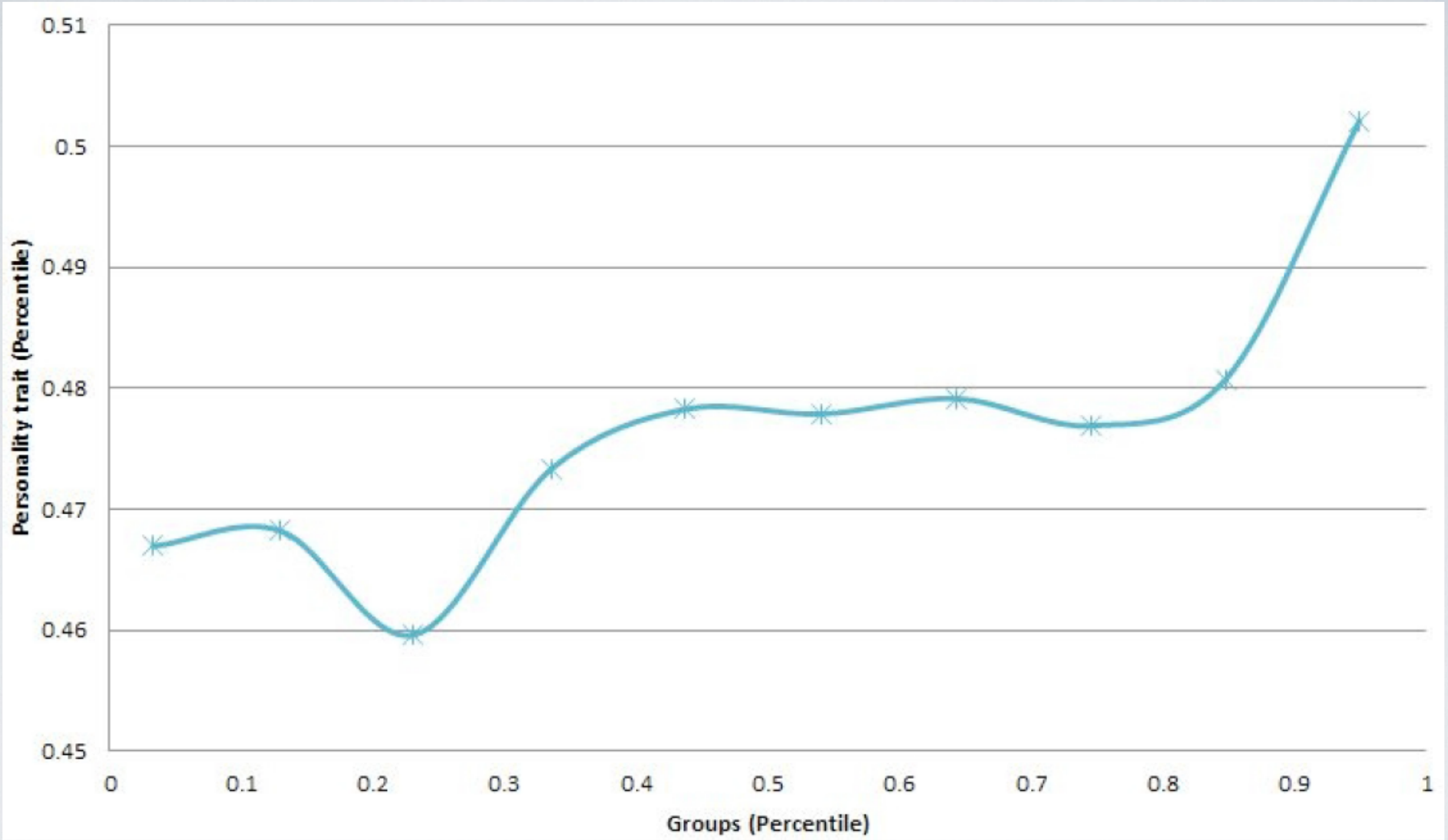
AGREEABLENESS - PHOTOS



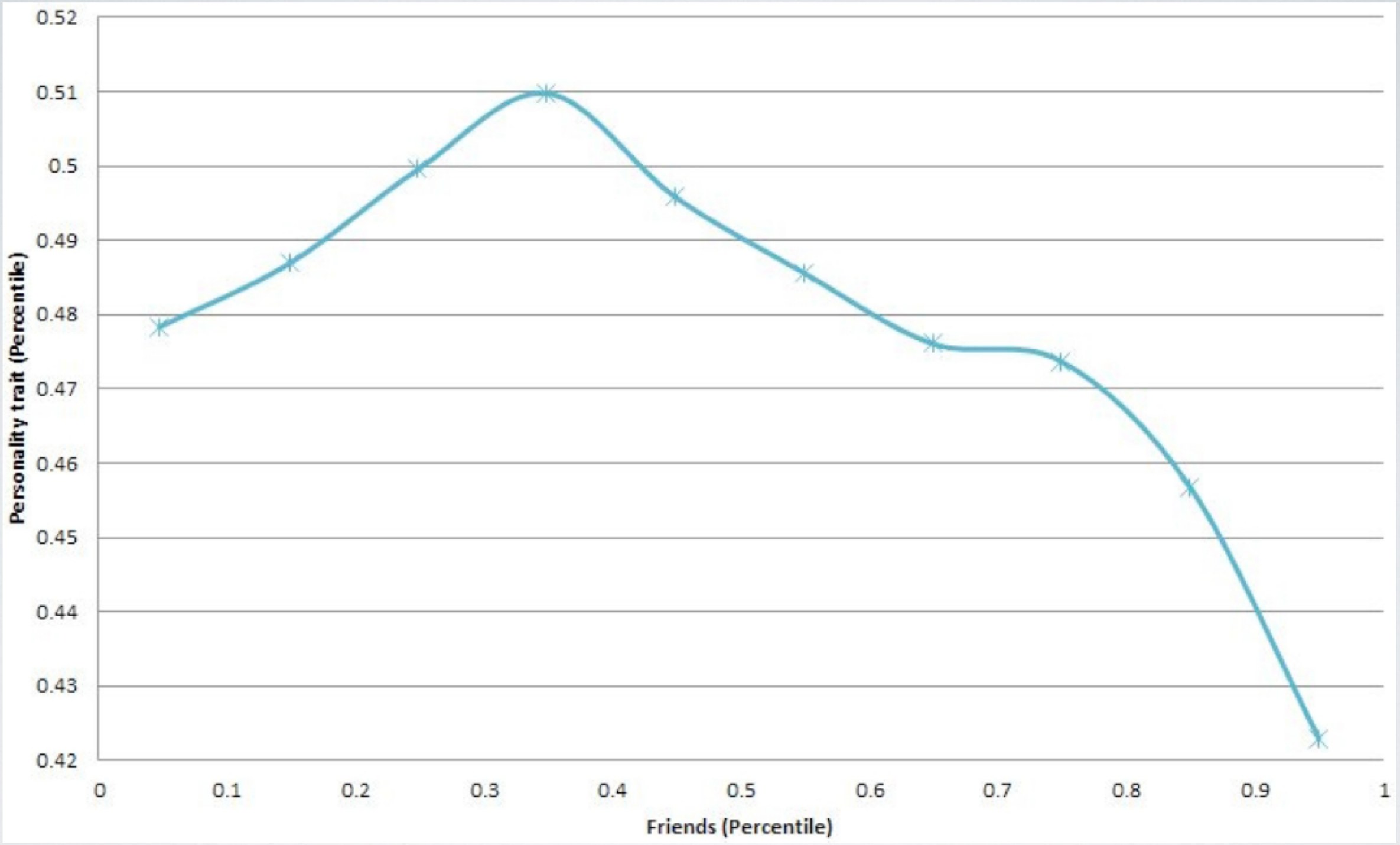
AGREEABLENESS - LIKES



NEUROTICISM - LIKES



NEUROTICISM - GROUPS



NEUROTICISM - FRIENDS

RESULTS

Personality Trait	Profile Feature	Pearson Correlation
Openness	Likes	0.102
	Statuses	0.062
	Groups	0.077
Conscientiousness	Likes	-0.088
	Groups	-0.0697
	Photos	0.033
Extraversion	Statuses	0.117
	Likes	0.034
	Groups	0.069
	Friends	0.177
Agreeableness	Likes	-0.036
Neuroticism	Likes	0.075
	Friends	-0.059

RESULTS

Trait	R^2	RMSE
Openness	0.11	0.29
Conscientiousness	0.17	0.28
Extraversion	0.33	0.27
Agreeableness	0.01	0.29
Neuroticism	0.26	0.28

ASSUMPTIONS

- The people filling out the myPersonality application are not a misrepresentation of the general public (though results seem to indicate similar distribution to Facebook stats).

SYNTHESIS

- Test results on unanalyzed data.
- Test results on groups of friends.
- As suggested, what was liked and what was the status update and how does that change these results?

RELATED PAPERS

- Ross et al. hypothesized many relationships between personality and Facebook features. Small sample size (n = 97).
- Amichai-Hamburger and Vinitzky differ from last in that they used actual Facebook profile instead of self-reports. Still small (n = 237) and very homogeneous.
- Golbeck et al. attempted to predict personality traits from Facebook profiles using machine learning algorithms. Small sample size (n = 167), huge number of features (m = 74).
- Gosling et al. used self-reported information of Facebook usage as well as actual Facebook profiles. Small sample size (n = 157).