

# Investigation of the Influence of Personality Traits on Cialdini's Persuasive Strategies

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**Abstract.** For persuasive strategies to be effective, research has shown, there is need for personalization. However, little has been done in persuasive technology research to investigate the influence of personality on persuasive strategies. In this paper, using a sample of 216 Canadians, we model the influence of the Big Five personality traits on Cialdini's six persuasive principles. Our results reveal that individuals: 1) high in *Conscientiousness* are more susceptible to Commitment and Reciprocity, but less susceptible to Liking; 2) high in *Agreeableness* are more susceptible to Authority, Commitment and Liking; 3) low in *Openness* are more susceptible to Authority, Consensus and Liking; and 4) high in *Neuroticism* are more susceptible to Consensus. These findings provide designers with insight into how persuasive apps can be tailored to different personality traits based on the Big Five model.

**Keywords:** persuasive strategies, Cialdini's principles, personality, Big Five.

## 1 Introduction

Persuasive apps are becoming increasingly popular, with researchers and practitioners making more efforts to find effective ways to persuade people to act in beneficial ways. In the e-commerce domain, for example, vendors like Amazon and eBay are looking for better ways to persuade online shoppers to buy more of their products and services. In the health domain, e.g., physical activity, eating, smoking, etc., designers of interventions are looking for better ways to help people adopt a healthier lifestyle [1]. In recent years, research has shown that personalizing products and services can lead to higher persuasion and user satisfaction [2]. Further, as cited in [2], research in the field of psychology has shown that two apparently similar individuals, who share similar characteristics, such as gender, age, culture, etc., may behave differently in the same situation due to differences in personality [3]. However, in the persuasive technology domain, a field which is still growing, limited studies have investigated the relationships between personality traits and influence strategies [4] for the purpose of designing

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more effective behavior change apps. Alkış and Temizel [4], who have worked on this previously, focused on Turkish population only. This may not generalize to other countries or cultures. This makes it important for further research to be conducted. In this paper, we investigate the influence of personality traits on Cialdini's six principles of persuasion [5], focusing on the Canadian population. We conducted an online survey among 216 Canadian participants to determine the links between the Big Five personality traits [6] and Cialdini's persuasive strategies [5]. We chose Cialdini's principles because they are universally established persuasive strategies, which have found wide acceptance in persuasive technology research [7–9] and wide application in the fields of advertising and marketing [10] owing to their strong theoretical underpinning. On the other hand, we chose the Big Five due to its wide acceptance, application and empirical validity [2]. The Big Five is known as a comprehensive model, which is applicable across individuals and cultures [11]. Our results reveal that *Conscientiousness*, *Agreeableness* and *Openness* are the most consistent predictors of Cialdini's persuasive strategies. Our findings provides designers better insight in designing more effective persuasive apps for behavior change.

## 2 Background

This section provides an overview of Cialdini's persuasion principles and the Big Five.

### 2.1 Cialdini's Principles of Persuasion

The six principles of persuasion by Cialdini [10] have been widely used in the field of marketing and persuasive technology. A brief overview of them is given as follows.

- **Authority:** People are more likely to listen to and obey those who are in positions of authority than those who are not.
- **Commitment:** People are more likely to do something if they commit to doing it by agreeing verbally or in written form.
- **Consensus:** People look up to those around them to inform their decision when they are uncertain with respect to a certain course of action to take.
- **Liking:** People are more likely to agree with or do things when asked by the people they like.
- **Reciprocity:** People have a tendency to pay back favors done to them.
- **Scarcity:** The rarer a product is, the more people want it. This means people are more likely to desire or demand a product if they are told it is hard to get.

### 2.2 The Big Five Personality Traits

The Big Five personality traits have been shown by research to affect the level of susceptibility of individuals to Cialdini's principles of persuasion [4]. We provide a brief overview of the five personality traits in this subsection.

- **Openness:** The tendency to be imaginative and creative. Those high in this trait tend to be curious, adventurous and open to new experiences [12].
- **Conscientiousness:** The tendency of a person to be self-disciplined, well-organized and goal-oriented. Those high in this trait tend to follow norms and rules and prioritize tasks [13].
- **Extraversion:** The tendency of a person to associate with others. Those high in this trait tend to be warm, assertive, and seek excitement and positive emotions [12].
- **Agreeableness:** The tendency of a person to be kind, altruistic and compliant. Those high in this trait tend to be very compassionate, modest and friendly to others in addition to being less competitive and outspoken [2].
- **Neuroticism:** The tendency of a person to be sad and nervous. Those high in this trait tend to be anxious, emotionally unstable, unconfident and insecure. The opposite of *Neuroticism* is known as *Emotional Stability* [2, 14].

### 3 Related Work

Limited research has shown the link between personality and Cialdini's persuasive strategies [4]. Halko and Kientz [13] conducted a study in the health domain in this area. Using correlation analysis, they found that: 1) the more conscientious a person is, the less likely s/he is to use social applications which employ Cooperation and Competition strategies; 2) the more agreeable a person is the more effective would Reinforcement strategy be; and 3) the more open a person is to experience, the more likely for him or her to welcome Extrinsic, Intrinsic and Negative Reinforcement strategies. With respect to personality and Cialdini's principles of persuasion, to the best of our knowledge, only two prior studies (Alkış and Temizel [4] and Sofia et al. [15]) have been conducted. Alkış and Temizel found that *Agreeableness*, *Conscientiousness* and *Openness* are the strongest predictors of Cialdini's six principles of persuasion. Sofia et al. [15] also found the same personality traits, including *Neuroticism*, as the strongest predictors of the six persuasive principles. However, both studies focused on collectivist cultures (Greece and Turkey) and used convenience samples. Our study differs from these prior studies in three ways. First, our focus is on an individualist culture (Canada), which is independent and concerned about personal goals and aspirations, as opposed to the collectivist culture which is group-dependent and concerned about collective goals and aspirations [16]. Second, our demographic is more heterogeneous, as we used Amazon Mechanical Turk (AMT), in addition to email and the University of Saskatchewan website, for the recruitment of participants, unlike the previous studies, which recruited students only from their respective universities. Third, we aim to investigate the generalizability of the prior findings by Alkış and Temizel [4]—whose study is more similar to ours—from one demographic to another. Specifically, we investigate whether the results based on the Turkish population can be replicated among the Canadian population as well as the differences that exist between both demographics.

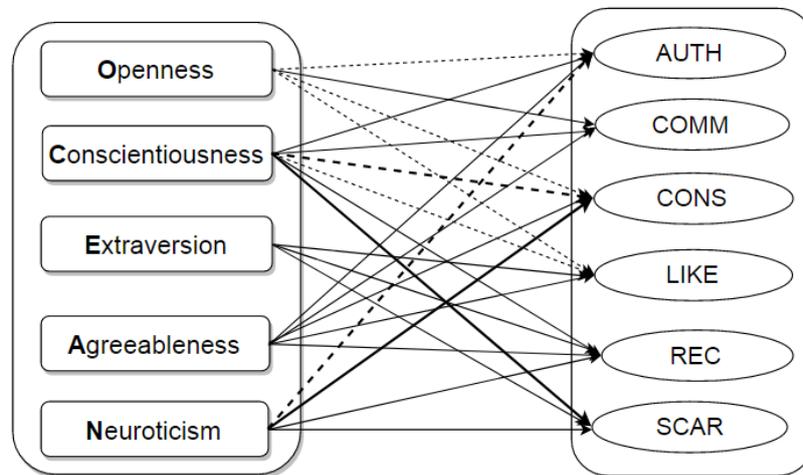
## 4 Method

In this section, we present our research question and hypotheses, the measurement instruments, and the demographics of the survey participants.

### 4.1 Research Question

The aim of our study is to answer the research question: “*How do the Big Five personality traits influence the persuasiveness of Cialdini's persuasive strategies among the Canadian population?*” Our hypotheses (see Fig. 1) are as follows:

- H1: *Agreeableness* and *Conscientiousness* positively influence *Authority*, while *Openness* and *Neuroticism* negatively influence *Authority*.
- H2: *Agreeableness*, *Conscientiousness* and *Openness* positively influence *Commitment*.
- H3: *Agreeableness* and *Neuroticism* positively influence *Consensus*, while *Conscientiousness* and *Openness* negatively influence *Consensus*.
- H4: *Agreeableness* and *Extraversion* positively influence *Liking*, while *Conscientiousness* and *Openness* negatively influence *Liking*.
- H5: *Agreeableness*, *Conscientiousness*, *Extraversion* and *Neuroticism* positively influence *Reciprocation*.
- H6: *Conscientiousness*, *Extraversion* and *Neuroticism* positively influence *Scarcity*.



**Fig. 1.** Hypothesized relationships between personality traits and persuasive strategies

The above hypotheses are based mostly on the prior findings by Alkış and Temizel [4]. Those based on the findings of these authors are shown as regular lines in Fig. 1, while the new ones we formulated are shown as bold lines. The solid and dashed arrows rep-

resent positive and negative relationships respectively. The new relationships (bold arrows) are briefly discussed. In H3, based on the findings by Lane and Manner [17] and Moore and McElroy [18], we hypothesized that people high in *Neuroticism* and low in *Conscientiousness* will be more responsive to Consensus. Regarding *Neuroticism*, Lane and Manner [17] found that neurotic people are more likely to follow the crowd, e.g., getting addicted to texting and using the mobile phone, both of which have become the norm in the age of mobile communication. Regarding *Conscientiousness*, Moore and McElroy [18] found that highly conscientious people are less likely to post pictures on their Facebook wall: an activity which has become the norm in the age of social networks. Further, we hypothesized that people low in *Neuroticism* will be more susceptible to *Authority* (see H1) because Karim et al. [19] found that students, who are high in *Neuroticism*, are more likely to break university's laws against unethical behaviors, such as plagiarism (a defiance of authority). Finally, we hypothesized that people high in *Conscientiousness* will be more responsive to *Scarcity* (see H6) because Sofia et al. [15] found that *Conscientiousness* positively influences *Scarcity*.

## 4.2 Measurement Instruments

Prior validated scales were used to measure Cialdini's persuasion principles and the Big Five personality traits. The 27 validated items in Kaptein et al.'s [7] 32-item Susceptibility to Persuasive Strategies (STPS) scale were used; the other five items, which were not validated during the scale's development process, were dropped. They include Authority (4 items), Commitment (6 items), Consensus (4 items), Liking (3 items), Reciprocity (6 items) and Scarcity (4 items). The STPS is a 7-point Likert scale, ranging from *Completely Disagree* (1) to *Completely Agree* (7). It measures how susceptible people are to Cialdini's principles. Regarding personality, Gosling et al.'s Ten-Item Personality Inventory (TIPI) scale was used to measure the Big Five, with two items measuring each trait [6]. The TIPI uses a Likert scale, ranging from *Disagree Strongly* (1) to *Agree Strongly* (7). All of the 27 items in the STPS scale were randomly presented to participants at the beginning of the survey. Similarly, the TIPI scale items were randomly presented to participants after responding to the STPS questions.

## 4.3 Participants

The survey was approved by the University of Saskatchewan (UofS) Research Ethics Board. Participants were recruited by email, on the UofS website, Facebook and AMT. Those on AMT were paid \$0.8 each, while those on other platforms were given a chance to win a C\$50 gift card. About 310 subjects participated in the study. After cleaning, we were left with 216 participants, whose country of origin is Canada for analysis. We did this to have a monocultural population, which could be compared with the Turkish population. Table 1 shows the participants' demographics: 31.5% males and 65.3% females. 32.9% were between the age of 18 and 24, while the other 77.1% were above. About 35.2% were students at the time of the survey, while the other 64.8% were not.

**Table 1.** Participants' demographics

N = 216	
Gender	Male (68, 31.5%); Female (141, 65.3%); Unidentified (7, 3.2%)
Age	18-24 (71, 32.9%); 25-34 (89, 41.2%); >34 (56, 25.9%)
Education	High School (54, 25.0%); Bachelor Degree (86, 39.8%); Postgraduate Degree (24, 11.1%); Others (52, 24.1%)
Occupation	Non-students (140, 64.8%); Students (76, 35.2%)

## 5 Results

### 5.1 Measurement Model

We began our analyses by assessing the indicator reliability, internal consistency reliability, convergent validity and discriminant validity of the constructs in our measurement models. A Partial Least Square Structural Equation Model (PLS-SEM) was built using SmartPLS [20] for each persuasive strategy, with the personality traits being the exogenous constructs. SmartPLS is a software tool for building path models. *Indicator Reliability*: Indicators with an outer loading greater than 0.5 were retained; otherwise, they were dropped. For Authority model, one item each was dropped from *Openness*, *Neuroticism* and *Authority*; for Commitment model, one item each was dropped from *Openness* and *Extraversion*; for Liking model, one item each was dropped from *Extraversion*, *Neuroticism* and *Liking*; for Reciprocity model, one item each was dropped from *Openness*, *Agreeableness* and *Extraversion*; and for Scarcity model, one item each was dropped from *Openness*, *Conscientiousness*, *Agreeableness* and *Scarcity*. *Internal Consistency Reliability*, for each construct, was evaluated using the composite reliability criterion, which was greater than 0.7. *Convergent Validity* was evaluated using the Average Variance Extracted, which was greater than 0.5 for each construct. *Discriminant Validity* was evaluated using the crossloading criterion. No indicator loaded higher on other constructs than the one it was meant to measure [20].

### 5.2 Data-driven Partial Least Square Structural Equation Model

For easy visualization of supported hypotheses and comparison of the significant relationships across the persuasive strategies (see Fig. 2), we tabulated the path coefficients from the PLS-SEM models (see Table 2). Overall 45% of our hypotheses (see the grayed cells) are supported, while 55% of them are not supported (as indicated by "NS"). The amount of variance of each strategy explained by its model (symbolized by  $R^2$ ) ranges from 3% (Scarcity) to 15% (Liking). We found *Conscientiousness*, *Agreeableness* and *Openness* are the most consistent predictors of Cialdini's persuasive strategies. For example, *Conscientiousness* is a predictor of three strategies: Commitment ( $\beta = 0.17$ ,  $p < 0.05$ ), Liking ( $\beta = -0.36$ ,  $p < 0.001$ ) and Reciprocity ( $\beta = 0.25$ ,  $p < 0.001$ ). These path coefficients (ranging from 0.17 to 0.36) are relatively higher than the others. This indicates *Conscientiousness* is the strongest predictor of Cialdini's persuasive

strategies among the Canadians, followed by *Agreeableness* (a predictor of Authority, Commitment and Liking) and *Openness* (a predictor of Authority, Consensus and Liking). Lastly, *Neuroticism* turns out to be the least predictor of the persuasive strategies, as it only predicts Consensus. It is noteworthy that none of the personality traits predicts Scarcity among the Canadians. Though *Conscientiousness* and *Neuroticism* have relatively high path coefficients (0.11 and 0.13 respectively), they are not significant.

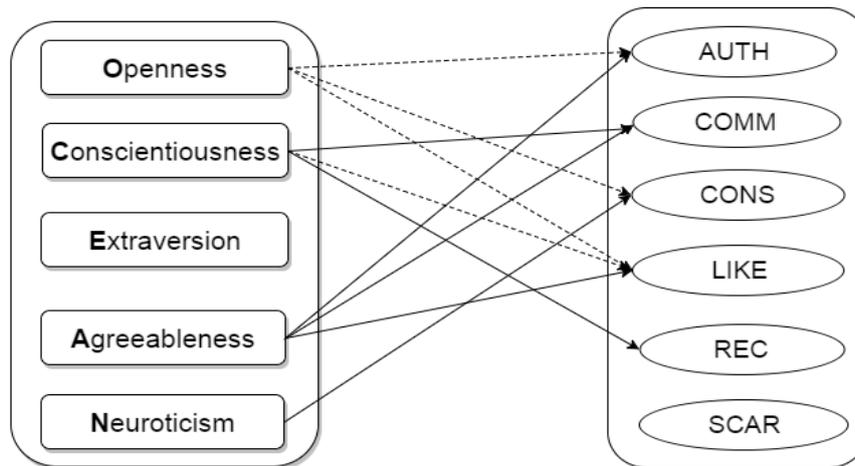


Fig. 2. Data-driven PLSEM model for the Canadians

Table 2. Path coefficients of relationships between personality traits and persuasive strategies

	Auth	Comm	Cons	Like	Rec	Scar
O	-0.14*	NS	-0.18**	-0.17*		NS
C	NS	0.17*	NS	-0.36***	0.25***	0.11
E				NS	NS	
A	0.25**	0.18*	NS	0.19*	NS	
N	NS		0.27***		NS	0.13
R2	0.10	0.10	0.14	0.15	0.09	0.03

Note: NS = non-significant, \* $p < 0.05$ , \*\* $p < 0.01$ , and \*\*\* $p < 0.001$ .

## 6 Discussion

We have shown that personality traits influence Cialdini's persuasive strategies. Overall, our results reveal that *Conscientiousness*, *Agreeableness* and *Openness* are the most consistent predictors of Cialdini's persuasive strategies, with *Conscientiousness* being the strongest. As shown in Table 2, 45% of our hypotheses (10 out of 22 relationships) were validated. Our first hypothesis (H1) is partially validated. We found that people

high in *Agreeableness* and low in *Openness* are more responsive to Authority. However, our hypothesis that *Conscientiousness* and *Neuroticism* positively and negatively, respectively, influence Authority are not supported. Our second hypothesis (H2) was also partially supported. We found that people high in *Agreeableness* and *Conscientiousness* are more responsive to Commitment. However, we could not find any relationship between *Openness* and Commitment among the Canadian population. Regarding our third hypothesis (H3), two of the four relationships were supported but one was not, indicating H3 is partially supported. Specifically, we found that Canadians low in *Openness* and high in *Neuroticism* are more susceptible to Consensus. However, we did not find any relationship between *Conscientiousness* and *Agreeableness*, on one hand, and Consensus, on the other hand. Further, three of the relationships in our fourth hypothesis were supported, but one was not supported. We found that Canadians low in *Openness* and *Conscientiousness* are more susceptible to Liking but we could not validate that *Extraversion* influences Liking. Regarding our fifth hypothesis, only one of the four relationships are validated: Canadians high in *Conscientiousness* are more responsive to Reciprocity. Finally, our sixth hypothesis was completely invalidated. We found no relationship between the personality traits *Conscientiousness*, *Extraversion* and *Neuroticism* and the persuasive strategy Scarcity. This indicates it is more difficult to predict Scarcity compared to other persuasive strategies among the Canadian population. This is similar to the findings by Alkış and Temizel [4], where Scarcity also turns out to be one of the least predictable in terms of the number of influencers (two in number) and its amount of variance explained by its predictors. We discuss in details the validated relationships in the next subsections.

### 6.1 Influence of Openness on Authority, Consensus and Liking

Our results reveal individuals low in *Openness* (LO) are more likely to be susceptible to Authority and Consensus. In contrast, individuals high in *Openness* (HO) are less likely to be susceptible to Authority because they are more independent-minded and daring [21]; thus, they are more likely to challenge or disobey authority. Also, they are less susceptible to Consensus because they are more creative, imaginative and *more of initiators than imitators* [22]. They tend to do novel things rather than copy others or follow the status quo. Palmer [23] classified the LO and HO individuals as *adaptors* and *innovators* respectively. According to Palmer [23], adaptors are concerned about “doing things better,” while innovators are concerned about “doing things differently.” For example, with regard to information seeking, as cited in Heinström [14], given their openness to new experiences, innovators tend to seek information more widely and enthusiastically by using multiple sources. On the other hand, adaptors, given their closeness, doubt their abilities and thus are more prone to conformity and vulnerable to social pressure and authority. Regarding Liking, LO individuals are more likely to be susceptible. As explained by Alkış and Temizel [4], closed individuals feel more comfortable with familiar situations and experiences. As a result, in unfamiliar situations, they are likely to seek the opinion of and trust those they like. In a nutshell, all three findings (*Openness* negatively influencing Authority, Consensus and Liking) replicate those of Alkış and Temizel [4], discussed in subsection 6.5.

## 6.2 Influence of Conscientiousness on Commitment, Reciprocity and Liking

Our results show that individuals who are high in *Conscientiousness* (HC) are more likely to be susceptible to Commitment and Reciprocity, but are less susceptible to Liking. Regarding Commitment and Reciprocity, HC individuals are more self-disciplined, dependable and responsible [24]. As such, they have higher inclination to keep their commitment and return favor [4]. For example, in organizations, *Conscientiousness* has been shown to be one of the most consistent predictors of job performance (which is highly correlated with organizational commitment) [24]. One possible explanation for *Conscientiousness* negatively influencing Liking is that, given that individuals high in *Conscientiousness* (HC) are more thoughtful, they are less likely to agree with or say “yes” to a person just because they like the person. Thus, they may have more “comprehensive” or “deeper” reasons for agreeing with or saying “yes” to a person than by the “superficial” appearance or the “mere” liking of a person.

## 6.3 Influence of Agreeableness on Authority, Commitment and Liking

Agreeable people are known to be more compliant, straightforward and altruistic (i.e., sympathetic and willing to help others) [21]. Thus, as we found, they are more willing to listen to superiors (Authority), do as they promise (Commitment) and agree with or say “yes” to those they like (Liking). These were also found by Alkış and Temizel [4].

## 6.4 Influence of Neuroticism on Consensus

Individuals high in *Neuroticism* (HN) are more likely to be more susceptible to Consensus given their anxiety, as they may not want to do things wrong. Just like LO individuals, they may neither like to initiate new ventures nor embark on undertakings in unexplored territories characterized by uncertainties, so they seek social proof. This finding is similar to that of Lane and Manner [17], who investigated individuals' most used apps and found a link between the use of travel apps and neurotic people. They explained that neurotic people may use travel apps mostly “to overcome their fear of being lost or of not being prepared for changing weather conditions” (p. 259) [17].

## 6.5 Comparison of Relationships between Canadian and Turkish Populations

We compare our findings based on Canadian participants (Can) with those based on the Turkish participants (Tur) by Alkış and Temizel's [4] (see Table 3). The grayed out cells indicate the Turkish findings (relationships) we are able to replicate. As one can see, our results replicate to a large extent the prior findings by Alkış and Temizel [4]. In their study, just as in our study, they found that *Agreeableness*, *Conscientiousness* and *Openness* were the most consistent predictors of the persuasive strategies. In their study, at least, two of these traits are co-predictors of five persuasive strategies, excluding Scarcity. In our study, they are co-predictors of three persuasive strategies (Authority, Commitment and Liking). Further, just as in our study, *Neuroticism* was the least predictor of the persuasive strategies.

**Table 3.** Comparison between Canadian and Turkish models' significant path coefficients

	Auth		Comm		Cons		Like		Rec		Scar	
	Can	Tur	Can	Tur	Can	Tur	Can	Tur	Can	Tur	Can	Tur
O	-.14	-.2		.12	-.18	-.22	-.17	-.12				
C		.23	.17	.31			-.36	-.12	.25	.14		
E								.12		.14		.26
A	.25	.25	.18	.15		.10	.19	.29		.20		
N						.27				.11		.17

In total, we replicated nine of the eighteen significant relationships (i.e., 50%) found by Alkış and Temizel [4]. For Authority, irrespective of nationality, the results show that people who are low in *Openness* ( $\beta = -0.14$  for Can and  $-0.2$  for Tur) and high in *Agreeableness* ( $\beta = 0.25$  for both groups) are more susceptible to Authority. However, there is a difference between the two populations: *Conscientiousness* is only a predictor of Authority for the Turkish population. This indicates that, while those high in *Conscientiousness* in the Turkish population are more responsive to Authority, this may not be the case with the Canadian population. One possible explanation may be the inherent cultural differences. Turkey, for example, is a collectivist culture [16], in which those in position of authority are highly respected because of the wide power distance between the leaders and followers. So, the more conscientious a person, the more responsible s/he may be to authority [19]. Another possible explanation is that the Turkish group is more homogeneous than the Canadian group, as it comprises only students from the university, where conscientiousness and authority (e.g., professors, scholars, etc.) play a vital role in learning and academic success [25]. Thus, there is a higher chance of predictability of Authority by *Conscientiousness* among the Turkish student population. For Commitment, irrespective of nationality, the results show that people who are high in *Conscientiousness* ( $\beta = -0.17$  for Can and  $-0.31$  for Tur) and high in *Agreeableness* ( $\beta = -0.18$  for Can and  $-0.15$  for Tur) are more susceptible to Commitment. However, there is a difference between the two populations: *Openness* is only a predictor of Commitment for the Turkish population. This indicates while those high in *Openness* in the Turkish population are more responsive to Commitment, this may not apply to the Canadian population. For Consensus, irrespective of nationality, the results show that people who are low in *Openness* ( $\beta = -0.18$  for Can and  $-0.22$  for Tur) are more susceptible to Consensus. However, there is a difference between the two populations: while *Neuroticism* is only a predictor of Consensus among the Canadian population, *Agreeableness* is only a predictor of Consensus among the Turkish population. Putting it all together, individuals high in *Neuroticism* and low in *Openness* are more responsive to Consensus among the Canadian group, while individuals high in *Agreeableness* and low in *Openness* are more responsive to Consensus among the Turkish group.

Further, for Liking, irrespective of nationality, the results show that people who are low in *Openness* ( $\beta = -0.17$  for Can and  $-0.12$  for Tur), low in *Conscientiousness* ( $\beta = -0.36$  for Can and  $-0.12$  for Tur) and high in *Agreeableness* ( $\beta = 0.19$  for Can and  $0.29$  for Tur) are more susceptible to Liking. While the influence of *Conscientiousness* on Liking is stronger among the Canadian group, the influence of *Agreeableness* on Liking

is stronger among the Turkish group. However, there is a difference between the two populations: *Extraversion* is only a predictor of Liking for the Turkish population ( $\beta = 0.12$ ), with those high in this trait being more responsive to Liking. For Reciprocity, irrespective of nationality, the results show that people who are high in *Conscientiousness* ( $\beta = 0.25$  for Can and 0.14 for Tur) are more susceptible to Reciprocity. However, *Extraversion* and *Agreeableness* only influence Reciprocity among the Turkish group, with people high in these traits being more susceptible to Reciprocity. Finally, for Scarcity, *Extraversion* and *Neuroticism* only influence Reciprocity among the Turkish group, with people high in these traits being more susceptible to Scarcity. To wrap up, one possible explanation why more personality traits are involved in predicting the persuasive strategies (e.g., Reciprocity) in the Turkish study than the Canadian study is that the demographic of the former (all students) is more homogeneous than the mixed demographic of the latter (see Table 1).

## 6.6 Implications and Contribution

Though prior research has shown that Commitment is the strongest Cialdini's persuasive strategy, followed by Reciprocity and Liking [9], it reveals that personality has a role to play as well in terms of which of the persuasive strategies may be more effective for certain individuals. For example, in the e-commerce domain, McElroy et al. [26] submit that "*firms that can understand their customers' personality and buying behavior will have a competitive advantage in the marketplace*" (p. 818) [26]. Thus, it becomes important for research findings on this subject to be presented to provide designers of persuasive apps a broader body of knowledge to draw from when making decisions about persuasive strategies to apply to their users, who are characteristically different. In this regard, our contributions are as follows: By using a different culture, we have shown and replicated the findings of Alkış and Temizel [4] that *Conscientiousness*, *Agreeableness* and *Openness* are the strongest and most consistent predictors of Cialdini's principles of persuasion, which designers can leverage in tailoring persuasive strategies for users in persuasive apps. We have also shown that some relationships between persuasive strategies and the Big Five may not generalize to all cultures. They may vary depending on the studied population.

## 6.7 Limitation

The first limitation of our study is the use of self-report and the shorter version of the Big Five scale to measure personality. However, we believe, to a large extent, our result reflects that of the longer version, as research has shown short scales can be as reliable as long scales [27]. A second limitation is the comparison of our findings to those of a prior study [4], e.g., the usage of different measurement instruments in both studies and the time difference between the conduction of both studies, which may have impacted our results. However, our study, with respect to the similarities in both studies, provides insight into how personality traits influence persuasive strategies irrespective of culture.

## 7 Conclusion and Future Work

We have presented the effects of the Big Five personality traits [6] on Cialdini's six persuasion strategies [5] among the Canadian population ( $n = 216$ ). We showed that people: 1) high in *Conscientiousness* are more susceptible to Commitment and Reciprocity, but less susceptible to Liking; 2) high in *Agreeableness* are more susceptible to Authority, Commitment and Liking; 3) low in *Openness* are more susceptible to Authority, Consensus and Liking; and 4) high in *Neuroticism* are more susceptible to Consensus. These findings will help designers create more effective persuasive apps by considering personality. In future work, we intend to extend our study to other individualist and collectivist cultures in order to broaden the generalizability of our findings.

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