

Personality Traits and Individual Attitude toward Same-Sex Marriage: Evidence from Taiwan*

Tsong-Jyi Lin,[†] Yi-Bin Chang,[‡] Dennis Lu-Chung Weng,[§] and Ching-Hsing Wang^{**}

Abstract

While same-sex marriage has been a particularly salient issue in recent years in Taiwan, few scholarly attention has been paid to examine the determinants of individual attitude toward same-sex marriage. This study attempts to understand how personality influences individual support for same-sex marriage in Taiwan. Using the original data collected in July 2017 in Taiwan, this study finds that people with higher levels of agreeableness are more likely to oppose same-sex marriage. Besides, conscientiousness and openness to experience have heterogeneous effects on individual attitude toward same-sex marriage for people of different ages. Specifically, a higher level of conscientiousness is positively associated with support for same-sex marriage among younger people, but is negatively correlated with support for same-sex marriage among older people. Similarly, a higher level of openness to experience would lead to increased support for same-sex marriage for younger people, but would result in decreased support for same-sex marriage for older people. Overall, our findings indicate that personality can provide some explanatory power for individual attitude toward homosexual rights.

Keywords: personality, Big Five, same-sex marriage, homosexual rights, heterogeneity.

* This paper is prepared for the 60th Annual Meeting of the American Association for Chinese Studies in Francis King Carey School of Law at the University of Maryland in Baltimore on October 5-7, 2018.

[†] Professor, Department of Public Administration, Tamkang University, email: tjlin@mail.tku.edu.tw.

[‡] Assistant Professor, Department of Public Administration, Tamkang University, email: cyb@mail.tku.edu.tw.

[§] Assistant Professor, Department of Political Science, Sam Houston State University, email: dennis.weng@shsu.edu.

^{**} Postdoctoral Fellow, Hobby School of Public Affairs, University of Houston, email: cwang3@central.uh.edu.

Introduction

On May 24, 2017, Taiwan's Constitutional Court ruled in favor of same-sex marriage that the statutory ban on same-sex marriage in Taiwan's Civil Code violated both the people's freedom of marriage as protected by Article 22 and the people's right to equality as guaranteed by Article 7 of the Constitution (Chen and Chang 2018). The Constitutional Court requested that the Legislative Yuan amend existing laws or create new laws to comply with its decision in two years, implying that Taiwan might become the first Asian country to legalize same-sex marriage. While the Constitutional Court ruled that same-sex couples have the right to marry under the Constitution in Taiwan, opponents of same-sex marriage have taken various actions to repeal the Constitutional Court's ruling. Specifically, in January 2018, the Alliance of Taiwan Religious Groups for the Protection of the Family, a long-time opponent of LGBT rights in Taiwan, filed an appeal with the Supreme Administrative Court in order to annul the Constitutional Court's decision on the legalization of same-sex marriage, but the appeal was quickly rejected by the Supreme Administrative Court. In February 2018, several groups opposed to marriage equality, led by Alliance of Taiwan Religious Groups for the Protection of the Family, filed a second appeal with the Taiwan High Administrative Court in an effort to overturn the Constitutional Court's decision to legalize same-sex marriage (DeAeth 2018). Likewise, in February 2018, a group opposed to same-sex marriage, the Alliance for Next Generation's Happiness, proposed a referendum to decide whether there should be a separate special law for same-sex couples (Yu and Yen 2018). By April 2018, the Alliance for Next Generation's Happiness had collected sufficient number of valid signatures required for a referendum initiative in the first stage and the Central Election

Commission (CEC) validated the signatures later that month.¹ At the end of August 2018, the Alliance for Next Generation's Happiness had collected valid signatures which are more than the requirement for 1.5 percent of the total number of eligible voters in the most recent presidential election, or about 280,000 signatures, in the second stage, and thus a national referendum will be held on its proposed questions on November 24, 2018 (Chang 2018).² On the other hand, to fight against the referendum proposal by the Alliance for Next Generation's Happiness, a group in favor of same-sex marriage has successfully submitted a referendum proposal to legalize same-sex marriage under the Civil Code in September 2018 (Teng 2018). Consequently, both pro- and anti-same-sex marriage referendums will take place in November 2018, but it is still difficult to say whether the referendum can address the long-existing controversy over same-sex marriage in Taiwan.

Although same-sex marriage has been a particularly salient social issue in recent years in Taiwan, few scholarly attention has been paid to examine the determinants of individual attitude toward same-sex marriage. To fill in the gap, this study attempts to understand individual attitude toward same-sex marriage in Taiwan from the perspective of personality. While past studies have indicated that the degree of personal contact with homosexual people, attitude toward traditional morality, religion, and demographic factors such as education, gender and age have significant influences on public opinion about homosexuality (Brewer 2003; Gibson and Tedin 1988; Harrison and Michelson 2015; Kerns and Fine 1994; Olson et al. 2006), the relationship between

¹ According to the Referendum Act of Taiwan, the required number of signatures for a referendum initiative in the first stage is 0.01 percent of the total number of eligible voters in the most recent presidential election, or about 1,879.

² The Alliance for Next Generation's Happiness proposes three referendum questions as follows: (1) "Do you agree with using means other than the marriage regulations in the Civil Code to protect the rights of two people of the same gender to build a permanent life together?", (2) "Do you agree that the marriage regulations in the Civil Code should define marriage as between a man and a woman?", and (3) "Do you agree that during the elementary and junior high school stage, the Ministry of Education and schools at all levels should not implement same-sex education as stipulated in the Gender Equity Education Act's implementation rules?"

personality and individual attitude toward same-sex marriage is scarcely studied. Personality represents the set of dispositional traits, thinking patterns and habitual behaviors within individuals and influences how an individual responds to external stimuli and interacts with other people in a society. Previous research has documented that personality as measured by the Big Five personality traits exerts considerable influence on individual political attitudes (Carney et al. 2008; Gerber et al. 2010; Gerber et al. 2012; Schoen 2007; Wang and Weng 2018; Weinschenk, 2014). Accordingly, it is reasonable to argue that personality should come into play when it comes to individual attitude toward same-sex marriage. This study represents one of the few efforts to examine the relationship between personality and individual attitude toward same-sex marriage (see Shackelford and Besser 2007 and Redlawsk and Tolbert 2012 for exceptions). The empirical findings of this study lend some support for the influence of personality on individual attitude toward same-sex marriage. Specifically, agreeableness exerts a significant negative effect on support for same-sex marriage, whereas the significant effects of conscientiousness and openness to experience on individual attitude toward same-sex marriage are diluted by the age factor. Overall, this study broadens our understanding of factors influencing individual attitude toward same-sex marriage, especially pointing out the significance of personality.

The remainder of this paper is organized as follows. Section 2 reviews the literature on personality and attitudes to outline a theoretical framework for the potential relationship between personality and individual attitude toward same-sex marriage and formulates hypotheses for empirical testing. Section 3 describes the data, operationalization of variables and statistical model for empirical analysis. Section 4 presents the empirical results for the impact of personality on individual attitude toward same-sex marriage. Section 5 summarizes the key findings of this study and discusses the implications and limitations of this study.

Relationship between Personality and Individual Attitude toward Same-Sex Marriage

Personality shapes individuals' thinking and behavioral patterns and plays an important role in individuals' interactions with other people and reactions to external stimuli. While personality could include a variety of dispositional dimensions, it has been widely accepted that individuals' personalities can be described by five basic dimensions named as the Big Five personality traits that can be summarized as follows: (1) extroversion is the tendency to be energetic and outgoing and seek stimulation and the company of others; (2) agreeableness is the tendency to be compassionate, cooperative, considerate and sympathetic; (3) conscientiousness is the tendency to show self-discipline, act dutifully, and aim for achievement; (4) emotional stability is the tendency to be calm, even-tempered, and less likely to feel tense or rattled; and (5) openness to experience is the tendency to be creative, imaginative, curious and open to new ideas (John and Srivastava 1999). Past studies have documented that genetics plays the major role in personality formation (Bouchard 1994, 2004; McGue et al. 1993) and moreover, personality traits are generally stable over the life span (Roberts and DelVecchio 2000), though personality traits might change gradually throughout life (Harris et al. 2016). As a result, it is widely assumed that personality traits are causally prior to any specific attitudes or behaviors (Ha et al. 2013) and are important determinants of a wide range of political attitudes and behavior.

Previous research has demonstrated the influence of personality traits on individual attitudes toward a variety of policy issues. For instance, Schoen (2007) investigates the effects of personality traits on attitudes toward foreign policy issues among the German public and finds that people with higher levels of agreeableness and openness to experience tend to support international cooperation and cast doubt on the use of military force, whereas those with higher levels of

conscientiousness display the reverse tendency. Gallego and Pardos-Prado (2014) examine the relationship between personality traits and attitudes toward immigrants in the Netherlands and reveal that people who score high on agreeableness and emotional stability are more likely to possess a positive attitude toward immigrants, but those who score high on conscientiousness are more likely to have a negative attitude. Similarly, Dinesen et al. (2016) conduct a survey experience in Denmark to probe the influence of personality on attitudes toward immigration. They find that people with higher levels of openness to experience are more willing to admit immigrants, whereas the effects of agreeableness and conscientiousness on attitudes toward immigration depend on individual perception of economic threat. Furthermore, Gerber et al. (2010) argue that the relationships between personality traits and political attitudes vary across issue domains and depend on contextual factors that shape interpretation of political stimuli. By using survey data on the United States, Gerber et al. (2010) demonstrate that conscientiousness renders people more conservative about economic and social policy, whereas openness to experience leads people to hold liberal economic and social policy attitudes. Nonetheless, the effects of the other three personality traits vary in direction or magnitude across policy issues. To sum up, there is a lot of evidence to confirm the importance of personality in shaping individual attitudes toward social and political issues and thus, it is reasonable to expect that personality ought to exert some influence on individual attitude toward same-sex marriage.

Then the question is how we theoretically connect personality with individual attitude toward same-sex marriage. While very few scholarly efforts have been made to analyze the relationship between personality and individual attitude toward same-sex marriage, the few existing studies can help us develop a theoretical framework to understand the mechanism of how the Big Five personality traits affect individual attitude toward same-sex marriage. First of all, by simply

focusing on the trait of openness to experience, Shackelford and Besser (2007) argue that people higher on openness to experience tend to be relatively more educated, younger, and more politically and religiously liberal and therefore, they should have more favorable attitudes toward homosexuality. Using data from the General Social Survey, Shackelford and Besser (2007) find that several correlates of openness to experience, such as educational level, age, ideology, degree of religious commitment, and geographic mobility, are significantly associated with attitudes toward homosexuality. Although Shackelford and Besser (2007) indicate a direction to assess the relationships between personality traits and attitudes toward homosexuality, their study fails to provide direct evidence for the relationship between personality and individual attitude toward same-sex marriage given their lack of direct measure of personality.

On the other hand, Redlawsk and Tolbert (2012) are able to operationalize personality using the Ten Item Personality Inventory (TIPI), a common measure of personality, and empirically examine the effects of the Big Five personality traits on support for homosexual policies. However, it is noted that Redlawsk and Tolbert (2012) also mainly focus on the trait of openness to experience and theorize how it and its interaction with contextual factors, namely living in a state with pro-homosexual policies and interpersonal contact with homosexual people, influence individual support for homosexual policies. Their main argument about openness to experience is similar to Shackelford and Besser (2007) that openness to experience should predispose an individual to be more tolerant of others, including those with different sexual orientation. As expected, Redlawsk and Tolbert (2012) find that people with higher levels of openness to experience are more likely to support homosexual rights, including adoption rights and civil unions. However, they also obtain empirical evidence that a higher level of conscientiousness is associated with decreased support for homosexual rights, whereas emotional stability increases but

extraversion lowers support for civil unions. Unfortunately, Redlawsk and Tolbert (2012) do not elaborate on how these three personality traits are theoretically linked with individual support for homosexual rights. In addition, using a national probability sample of New Zealand voters, Osborne and Sible (2015) also show that people who score higher on openness to experience are more likely to be in favor of homosexual rights, whereas those who score higher on conscientiousness are less likely to support homosexual rights. However, since the focus of their study is on the relationships between personality and a host of politically conservative issue positions, Osborne and Sible (2015) do not propose a theoretical foundation specifically for the relationship between personality and individual attitude toward homosexual rights.

By contrast, a recent study done by Horne et al. (2017) provides a clue about the mechanism linking personality traits with individual attitude toward homosexual rights. Specifically, Horne et al. (2017) argue that the Big Five personality traits have been consistently found to be associated with ideology, namely liberalism or conservatism, which is informative when it comes to individual attitude toward homosexual rights. Using a small sample of students in Russia, they find that conscientiousness and emotional stability predict hateful attitudes toward homosexual people. Although Horne et al. (2017) do not further explain the theoretical relationships between personality traits, ideology and individual attitude toward homosexual rights, according to their argument, we are able to infer that the relationships between personality traits and individual attitude toward homosexual rights can be built on the connections between personality traits and ideology. Past studies have documented that personality traits are reliably associated with political ideology (Carney et al. 2008; Gosling et al. 2003). That is, agreeableness, conscientiousness, and emotional stability are associated with conservatism, whereas openness to experience is correlated with liberalism. Nevertheless, there is no significant relationship between extraversion and

ideology (Gerber et al. 2010). Since ideology is a key determinant of individual attitude toward homosexual rights (Poteat and Mereish 2012), we expect that the Big Five personality traits that are associated with liberalism would be associated with support for same-sex marriage, whereas those related to conservatism would be associated with opposition to same-sex marriage. As a result, we formulate the following hypotheses for empirical testing:

Hypothesis 1 (extraversion hypothesis): Extraversion is not associated with individual attitude toward same-sex marriage.

Hypothesis 2 (agreeableness hypothesis): Agreeableness is negatively associated with individual attitude toward same-sex marriage.

Hypothesis 3 (conscientiousness hypothesis): Conscientiousness is negatively associated with individual attitude toward same-sex marriage.

Hypothesis 4 (emotional Stability hypothesis): Emotional stability is negatively associated with individual attitude toward same-sex marriage.

Hypothesis 5 (openness to Experience hypothesis): Openness to experience is positively associated with individual attitude toward same-sex marriage.

Data, Measurement of Variables and Model Specification

To empirically investigate the relationships between the Big Five personality traits and individual support for same-sex marriage in Taiwan, we fielded a telephone survey between July 10 and July 17, 2017. The sample consists of 1,601 Taiwanese citizens aged 20 and above, and the margin of error for the entire sample is $\pm 2.45\%$. Due to missing values for the analyzed variables, the effective number of observations for empirical analysis is reduced to 1,188 in this study. In

addition, the data are weighted by gender, age, education, and residence area using the raking method to ensure no significant differences between the sample and population in terms of the above mentioned demographic characteristics. As a result, we apply the weights to estimate the effects of personality traits on individual support for same-sex marriage. The operationalization of variables would be described below.

The dependent variable is individual opinion on same-sex marriage. Specifically, our survey asks the respondents to indicate the extent to which they agree or disagree with the statement that homosexual people should have the legal right to marry on a four-point scale from “Strongly disagree” to “Strongly agree.” Since this study simply aims to understand whether people support or oppose same-sex marriage, we recode individual responses as 1 for support for same-sex marriage by combining “Strongly agree” and “Slightly agree” and 0 for opposition to same-sex marriage by combining “Strongly disagree” and “Slightly disagree.” In short, the dependent variable is dichotomized. As shown in Figure 1, our data set demonstrates that about half (50.1%) of Taiwanese people opposed the legalization of same-sex marriage, whereas more than one-third (35.8%) supported it in July 2017. Another poll conducted by the Taiwanese Public Opinion Foundation in November 2016 revealed that 46.3 percent of Taiwanese people supported the legalization of same-sex marriage, while 45.4 percent opposed it. However, two continuous surveys also conducted by the Taiwanese Public Opinion Foundation respectively in December 2016 and January 2017 indicated that more than half (56.0% and 56.9%, respectively) of Taiwanese people object to the legalization of same-sex marriage and only more than one-third (37.8% and 36.6%, respectively) are in favor of it. Therefore, it seems that overall the Taiwanese society had not been ready to accept same-sex marriage before the Constitutional Court ruled that same-sex couples have the right to marry under the Constitution on May 24, 2017. Our survey

further indicates that even after the Constitutional Court's ruling on same-sex marriage, the mainstream trend of opposition to same-sex marriage has still remained in Taiwan.

[Figure 1 about here]

To account for individual attitude toward same-sex marriage, this study mainly focuses on the Big Five personality traits as measured by the TIPI developed by Gosling, Rentfrow, and Swann (2003). The TIPI has been commonly used to examine the relationships between personality traits and individual political attitudes and behavior in the field of political science mainly due to its brevity in terms of the number of questions (e.g., Gerber et al. 2011; Gerber et al. 2012; Ha et al. 2013; Mondak and Halperin, 2008; Mondak et al. 2010; Wang 2016). Moreover, the TIPI has high construct validity and test-retest reliability and is highly correlated with the longer versions of personality measures (Gosling et al. 2003). In addition, the TIPI has been translated into numerous other languages and we utilize a careful Chinese-translated version of the TIPI to assess the respondents' personality traits. Specifically, every two items are used to measure each personality trait and the score for each personality trait is obtained by adding, after appropriate recoding, the two items for each particular personality dimension. A higher score indicates that an individual has a more prominent personality trait and each personality trait is coded to range between 2 and 14 in this study. Table 1 reports correlations among the Big Five personality traits, showing that personality traits are weakly correlated with each other and thus they should capture different dimensions of personality.

[Table 1 about here]

In addition to personality traits, this study also controls for some explanatory variables relevant to individual attitude toward same-sex marriage, such as partisanship, religion, and demographic characteristics. First of all, the DPP has been viewed as supportive of same-sex marriage. Not only

DPP legislators in general are more likely to support same-sex marriage legislation (Rich 2017), but also DPP President Tsai Ing-wen has openly declared her support for same-sex marriage. By contrast, the KMT is divided on the issue of same-sex marriage. Since the DPP and KMT are the major leaders of their camps, that is, the pan-green and pan-blue coalitions, this study expects people who identify with the pan-green coalition to be more likely to support same-sex marriage than independents, but has no specific expectation about supporters of the pan-blue coalition. Accordingly, we create two dummy variables respectively for the pan-green and pan-blue coalitions and treat the independents as the reference group. Second, a number of studies have identified the significance of religion in individual attitude toward same-sex marriage (e.g., Harrison and Michelson 2015; Olson et al. 2006; Sherkat et al. 2011). Therefore, we create several dummy variables for different types of religion, that is, *Buddhism*, *Taoism*, *Catholic and Christian*, *folk religion*, and *Others*, and treat those without religious belief as the reference group. Finally, in terms of demographic characteristics, past studies have found that people who are younger and female and have higher levels of education tend to be in favor of same-sex marriage (Armenia and Troia 2017; Sherkat et al. 2011). As a result, we control for such demographic factors as education, gender and age. Specifically, we create one dummy variable, *College and above degree*, to measure the respondents' educational level with 1 for those who are in the relevant categories and 0 otherwise. That is, those with educational level of senior high school and below degree are treated as the reference group. We also create one dummy variable for gender and code it as 1 if respondents are female and 0 otherwise. Lastly, we divide respondents into five age groups and create four dummy variables respectively for the respondents between the ages of 20 to 29, 30 to 39, 40 to 49 and 50 to 59. That is, the respondents aged 60 years or older are treated as the reference group. Table 2 reports the descriptive statistics of all variable used for empirical analysis.

[Table 2 about here]

Given the dichotomous nature of the dependent variable in this study, we would employ the binary logit model to estimate the effects of personality traits on individual attitude toward same-sex marriage. Particularly, we would estimate several models to clarify the relationships between personality traits and individual attitude toward same-sex marriage. In general, the statistical model can be presented in the following form:

$$\ln \Omega(X) = \ln \frac{\Pr(y = 1|x)}{\Pr(y = 0|x)} = \beta_0 + \beta_1(\text{Extraversion}) + \beta_2(\text{Agreeableness}) + \beta_3(\text{Conscientiousness}) \\ + \beta_4(\text{Emotional stability}) + \beta_5(\text{Openness to experience}) + C_i X_i$$

where $\ln \Omega(X)$ is the natural logarithm of the conditional odds of support for same-sex marriage relative to opposition to same-sex marriage; β_1 through β_5 are the coefficients for the Big Five personality traits; X_i is a vector of control variables, and C_i is a vector of regression estimates for control variables.

Empirical Results

To empirically examine the relationships between personality traits and individual attitudes toward same-sex marriage, we estimate three different models: the first model simply takes personality traits into consideration to explain individual attitude toward same-sex marriage; the second model controls for party identification, religion, and gender; and the third model controls for the previously mentioned variables as well as age. The purpose of estimating different models is to understand whether the relationships between personality traits and individual attitude toward same-sex marriage are influenced by the other variables. First of all, as shown in Model 1 in Table 3, higher levels of agreeableness and conscientiousness are significantly associated with decreased

support for same-sex marriage, whereas a higher level of openness to experience is significantly related to increased support for same-sex marriage. Besides, there is no relationship between extraversion and individual attitude toward same-sex marriage. The above results are in accordance with our expectations, though it is contrary to our expectation that emotional stability has nothing to do with individual attitude toward same-sex marriage. Therefore, the results from the simple personality model seem to suggest that in Taiwan, people with higher levels of agreeableness and conscientiousness are more likely to stand against same-sex marriage, but those with higher levels of openness to experience are more likely to stand on same-sex marriage. People high in agreeableness tend to seek maintain positive relationship with others and avoid conflict in social relationships (Mondak 2010). Accordingly, agreeable people would emphasize the importance of norm compliance and traditionalism. On the other hand, people high in conscientiousness value personal responsibility, tradition and social norms and thus they are inclined to possess attitudes encompassed by social conservatism, such as a pro-life perspective on abortion and support for moral traditionalism (Mondak 2010). Given that agreeableness and conscientiousness are closely correlated with conservative values, it is not surprising to find that people with prominent traits of agreeableness and conscientiousness would be not willing to endorse homosexual rights that contradict traditional gender beliefs. By contrast, as noted by previous research (Redlawsk and Tolbert 2012; Shackelford and Besser 2007), openness to experience would predispose individuals to form favorable attitudes toward homosexuality because people high in openness to experience tend to think highly of unconventional values, aesthetics sensitivity and the need for variety. Overall, the results provide preliminary empirical evidence to show that personality traits can come into play when it comes to individual attitude toward same-sex marriage.

[Table 3 about here]

Then the next step of our analysis is to examine whether the inclusion of the other explanatory variables would alter the above observed relationships between personality traits and individual attitude toward same-sex marriage. As demonstrated in Model 2 in Table 3, the significant effects of agreeableness, conscientiousness and openness to experience on individual attitude toward same-sex marriage remain even after controlling for such variables as partisanship, religion, education and gender. Specifically, on average, a one unit increase in agreeableness and conscientiousness would decrease support for same-sex marriage by 2.1% and 1.1%, respectively. By contrast, a one unit increase in openness to experience would lead to a 2.4% increase in support for same-sex marriage, on average. The results once again confirm the impact of personality on individual attitude toward same-sex marriage in Taiwan. However, when age is taken into consideration to account for individual attitude toward same-sex marriage, the role of personality is substantially weakened. As displayed in Model 3 in Table 3, the significant effect of agreeableness still holds and as shown in Figure 2, the predicted probability of support for same-sex marriage would decrease from 57.5% to 39.8% with the increase of agreeableness, holding all other variable constant. By contrast, the coefficients of conscientiousness and openness to experience become statistically insignificant. This is probably because the age factor absorbs the effects of conscientiousness and openness to experience on individual attitude toward same-sex marriage. As argued by Shackelford and Besser (2007), people high in openness to experience tend to be younger and moreover, most people become more conscientious as they get older. Consequently, the age factor might capture some components of conscientiousness and openness to experience within individuals to some extent. We perform the ANOVA to examine whether there are significant differences between different age groups in terms of conscientiousness and

openness to experience. As shown in Table 4, older people tend to be more conscientious, whereas younger people are inclined to be more open to new experience. The result suggests that conscientiousness and openness to experience might exert heterogeneous effects on individual attitude toward same-sex marriage for different age groups.

[Table 4 about here]

[Figure 2 about here]

Thus, we estimate another two models to examine whether the effects of conscientiousness and openness to experience on individual attitude toward same-sex marriage would vary by age. Specifically, we enter the interactions between conscientiousness and age groups and between openness to experience and age group into the model, respectively. We take a first look at the trait of conscientiousness (see Model 1 in Table 5) and find significant interaction effects for conscientiousness and age groups, indicating that conscientiousness has heterogeneous effects on individual attitude toward same-sex marriage for different age groups. To clearly demonstrate the heterogeneous effect of conscientiousness, we compute and plot the predicted probabilities of support for same-sex marriage for all five age groups. As displayed in Figure 3, a higher level of conscientiousness would increase the predicted probability of support for same-sex marriage for both the age groups 20 to 29 years and 30 to 39 years, whereas a higher level of conscientiousness would decrease the predicted probability of support for same-sex marriage for the other three older age groups. In particular, among people aged 60 years or older, the predicted probability of support for same-sex marriage would decrease from 41.7% to 18.1% with the increase of conscientiousness, holding all other variable constant. On the other hand, we also observe the heterogeneous effect of openness to experience on support for same-sex marriage for different age groups given significant interaction effects for openness to experience and age groups (see Model

2 in Table 5). Likewise, we calculate and plot the predicted probabilities of support for same-sex marriage for all five age groups as varied by openness to experience. As demonstrated in Figure 4, a higher level of openness to experience would increase the predicted probability of support for same-sex marriage for the age groups 20 to 29 years, 30 to 39 years and 40 to 49 years, but would decrease the predicted probability of support for same-sex marriage for the age group 60 years and above. Particularly, among people aged 20 to 29 years old, the predicted probability of support for same-sex marriage would increase from 36.6% to 83.6% with the increase of openness to experience, holding all other variable constant, which reveals the prominent influence of openness to experience on individual attitude toward same-sex marriage among the younger cohort. By contrast, openness to experience appears to have a trivial influence on support for same-sex marriage for people aged 50 to 59 years old. To sum up, the above analyses have clearly documented that conscientiousness and openness to experience exert heterogeneous effects on support for same-sex marriage for people of different ages.

[Table 5 about here]

[Figures 3 and 4 about here]

In addition to the impact of personality, this study also finds that partisanship, religion, education and gender have significant influence on individual attitude toward same-sex marriage in Taiwan. In particular, compared to independents, pan-green identifiers are more likely to support same-sex marriage, while there is no significant difference between pan-blue identifiers and independents. To some degree, this finding implies that there might exist a partisan divide in terms of homosexual rights in Taiwan. In line with past research (Harrison and Michelson 2015; Olson et al. 2006; Sherkat et al. 2011), religion also plays an important role in shaping individual attitude toward same-sex marriage in Taiwan. General speaking, people with religious beliefs are

more likely to oppose same-sex marriage than those without religious affiliation. Finally, people with a college degree or higher and females are more likely to be in favor of same-sex marriage than their counterparts.

Conclusion

There has been a controversy over homosexual rights around the world and it seems difficult to come to a consensus in terms of homosexual rights in the short term. Fortunately, Taiwanese people might be able to address the issue of same-sex marriage after the referendum held in November 2018. While a number of studies have identified the factors influencing public opinion on homosexual rights, very few scholarly attention has been paid to understand how personality shapes individual attitude toward same-sex marriage. By focusing on the case of Taiwan, this study shows that personality traits play a pivotal role in individual attitude toward same-sex marriage. Specifically, the trait of agreeableness consistently has a negative effect on support for same-sex marriage. That is, people with higher levels of agreeableness are more likely to oppose same-sex marriage. Besides, conscientiousness and openness to experience have differentiated effects on individual attitude toward same-sex marriage for people of different ages. That is, a higher level of conscientiousness is positively associated with support for same-sex marriage among younger people, but is negatively correlated with support for same-sex marriage among older people. Similarly, a higher level of openness to experience would lead to increased support for same-sex marriage for younger people, but would result in decreased support for same-sex marriage for older people. Overall, this study provides empirical evidence that personality as an endogenous factor (i.e., individual psychological factor) can provide some explanatory power for individual attitude toward homosexual rights.

Personality is relatively stable over time, which suggests that once people form their personalities, personality would determine their attitudes toward homosexual rights that would last over time and be unchanged. However, it does not mean that people would impossibly change their attitudes toward homosexual rights. Prior research has demonstrated that interpersonal contact and external context can have an important impact on individual attitude toward homosexual rights (Barth et al. 2009; Herek and Glunt 1993). Individuals with different personality traits might respond to interpersonal contact and contextual factors differently, and thus personality traits might interact with contextual factors to change individual attitude toward homosexual rights. Unfortunately, due to data limitations, this study fails to examine whether there exist interaction effects between personality traits and contextual factors and calls for more efforts to understand the mechanism of how personality interacts with various contexts to shape individual attitude toward homosexual rights in future studies.

On the other hand, this study simply focuses on direct relationships between personality traits and individual attitude toward same-sex marriage. Nevertheless, as indicated by past studies (Gallego and Oberski. 2012; Mondak and Halperin 2008), personality traits might influence individual attitude toward same-sex marriage through specific attitudinal factors, such as the feeling about homosexual people. Since our data do not have appropriate variables that can serve as the mediators in the relationships between personality traits and individual attitude toward same-sex marriage, we are unable to identify the mediation mechanism. As a result, future studies are needed to develop a more complete theoretical framework and conduct empirical analysis in order to figure out what variables can mediate the effects of personality traits on individual attitude toward homosexual rights.

References

- Armenia, Amy and Bailey Troia. 2017. "Evolving Opinions: Evidence on Marriage Equality Attitudes from Panel Data." *Social Science Quarterly* 98(1): 185-195.
- Barth, Jay, L. Marvin Overby, and Scott H. Huffmon. 2009. "Community Context, Personal Contact, and Support for an Anti-Gay Rights Referendum." *Political Research Quarterly* 62(2): 355-365.
- Bouchard Jr., Thomas J. 1994. "Genes, Environment and Personality." *Science* 264(5166): 1700-1701.
- Bouchard Jr., Thomas J. 2004. "Genetic Influence on Human Psychological Traits." *Current Directions in Psychological Science* 13(4): 148-151.
- Brewer, Paul R. 2003. "The Shifting Foundations of Public Opinion about Gay Rights." *Journal of Politics* 65(4): 1208-1220.
- Carney, Dana R., John T. Jost, Samuel D. Gosling, and Jeff Potter. 2008. "The Secret Lives of Liberals and Conservatives: Personality Profiles, Interaction Styles, and the Things They Leave Behind." *Political Psychology* 29(6): 807-840.
- Chang, Eddy. 2018. "CEC's Passage of Anti-LGBT Referendum Proposals Causes Controversy." *Taipei Times* Retrieved September 17, 2018 (<http://www.taipeitimes.com/News/lang/archives/2018/04/26/2003691973>).
- Chen, Christie and S. C. Chang. 2018. "Constitutional Court Rules in Favor of Same-Sex Marriage (Update)." *Focus Taiwan News Channel* Retrieved September 17, 2018 (<http://focustaiwan.tw/news/asoc/201705240023.aspx>).

- DeAeth, Duncan. 2018. "Opponents of Gay Marriage in Taiwan Push Back against Constitutional Court Ruling." *Taiwan Times* Retrieved September 17, 2018 (<https://www.taiwannews.com.tw/en/news/3365034>).
- Dinesen, Peter Thisted, Robert Klemmensen, and Asbjørn Sonne Nørgaard. 2016. "Attitudes toward Immigration: The Role of Personal Predispositions." *Political Psychology* 37(1): 55-72.
- Gallego, Aina and Daniel Oberski. 2012. "Personality and Political Participation: The Mediation Hypothesis." *Political Behavior* 34(3): 425-451.
- Gallego, Aina and Sergi Pardos-Prado. 2014. "The Big Five Personality Traits and Attitudes towards Immigrants." *Journal of Ethnic and Migration Studies* 40(1): 79-99.
- Gerber, Alan S., Gregory A. Huber, David Doherty, Conor M. Dowling, Connor Raso, and Shang E. Ha. 2011. "Personality Traits and Participation in Political Processes." *Journal of Politics* 73(3): 692-706.
- Gerber, Alan S., Gregory A. Huber, David Doherty, and Conor M. Dowling. 2012. "Personality and the Strength and Direction of Partisan Identification." *Political Behavior* 34(4): 653-688.
- Gerber, Alan S., Gregory A. Huber, David Doherty, Conor M. Dowling, and Shang E. Ha. 2010. "Personality and Political Attitudes: Relationships across Issue Domains and Political Contexts." *American Political Science Review* 104(1): 111-133.
- Gibson, James L. and Kent L. Tedin. 1988. "The Etiology of Intolerance of Homosexual Politics." *Social Science Quarterly* 69(3): 587-604.
- Gosling, Samuel D., Peter J. Rentfrow, and William B. Swann Jr. 2003. "A Very Brief Measure of the Big-Five Personality Domains." *Journal of Research in Personality* 37(6): 504-528.

- Ha, Shang E., Seokho Kim, and Se Hee Jo. 2013. "Personality Traits and Political Participation: Evidence from South Korea." *Political Psychology* 34(4): 511-532.
- Harris, Mathew A., Caroline E. Brett, Wendy Johnson, and Ian J. Deary. 2016. "Personality Stability From Age 14 to Age 77 Years." *Psychology and Aging* 31(8): 862-874.
- Harrison, Brian F. and Melissa R. Michelson. 2015. "God and Marriage: The Impact of Religious Identity Priming on Attitudes Toward Same-Sex Marriage." *Social Science Quarterly* 96(5): 1411-1423.
- Herek, Gregory M. and Eric K. Glunt. 1993. "Interpersonal Contact and Heterosexuals' Attitudes toward Gay Men: Results from a National Survey." *The Journal of Sex Research* 30(3): 239-244.
- Horne, Sharon G., Meredith R. Maroney, Elizaveta A. Zagryazhskaya, and Julie Kovená. 2017. "Attitudes toward Gay and Lesbian Individuals in Russia: An Exploration of the Interpersonal Contact Hypothesis and Personality Factors." *Psychology in Russia: State of the Art* 10(2): 21-34.
- John, Oliver P., and Sanjay Srivastava. 1999. "The Big Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives." In *Handbook of Personality: Theory and Research*, eds. Lawrence A. Pervin and Oliver P. John. New York: Guilford Press, 102-138.
- Kerns, John G. and Mark A. Fine. 1994. "The Relation between Gender and Negative Attitudes toward Gay Men and Lesbians: Do Gender Role Attitudes Mediate This Relation?" *Sex Roles* 31(5-6): 297-307.
- McGue, Matt, Steven Bacon, and David T. Lykken. 1993. "Personality Stability and Change in Early Adulthood: A Behavioral Genetic Analysis." *Developmental Psychology* 29(1): 96-109.

- Mondak, Jeffery J. 2010. *Personality and the Foundations of Political Behavior*. New York, NY: Cambridge University Press.
- Mondak, Jeffery J., Matthew V. Hibbing, Damaris Canache, Mitchell A. Seligson and Mary R. Anderson. 2010. "Personality and Civic Engagement: An Integrative Framework for the Study of Trait Effects on Political Behavior." *American Political Science Review* 104(1): 85-110.
- Mondak, Jeffery J., and Karen D. Halperin. 2008. "A Framework for the Study of Personality and Political Behaviour." *British Journal of Political Science* 38(2): 335-362.
- Osborne, Danny and Chris G. Sibley. 2015. "Within the Limits of Civic Training: Education Moderates the Relationship between Openness and Political Attitudes." *Political Psychology* 36(3): 295-313.
- Olson, Laura R., Wendy Cadge, and James T. Harrison. 2006. "Religion and Public Opinion about Same-Sex Marriage." *Social Science Quarterly* 87(2): 340-360.
- Poteat, V. Paul and Ethan H. Mereish. 2012. "Ideology, Prejudice, and Attitudes toward Sexual Minority Social Policies and Organizations." *Political Psychology* 33(2): 211-224.
- Redlawsk, David and Caroline Tolbert. 2012. "Context and Attitudes towards Gay Rights." Paper presented at the State Politics and Policy Conference, Rice University, February 18.
- Rich, Timothy S. 2017. "Electoral Paths and Support for Same-Sex Marriage Legislation: Evidence from Taiwan's Mixed-Member System." *International Political Science Review* 38(5): 563-576.
- Roberts, Brent W. and Wendy F. DeVecchio. 2000. "The Rank-Order Consistency of Personality Traits from Childhood to Old Age: A Quantitative Review of Longitudinal Studies." *Psychological Bulletin* 126(1): 3-25.

- Schoen, Harald. 2007. "Personality Traits and Foreign Policy Attitudes in German Public Opinion." *Journal of Conflict Resolution* 51(3): 408-430.
- Shackelford, Todd K. and Avi Besser. 2007. "Predicting Attitudes toward Homosexuality: Insights from Personality Psychology." *Individual Differences Research* 5(2): 106-114.
- Sherkat, Darren, Melissa Power-Williams, Gregory Maddox, and Kylan Mattias de Vries. 2011. "Religion, Politics, and Support for Same-Sex Marriage in the United States, 1988–2008." *Social Science Research* 40(1): 167-180.
- Teng, Pei-ju. 2018. "With 9,000 Signatures Per Day, Taiwan Petition for Marriage Equality Passes Referendum Threshold." *Taiwan Times* Retrieved September 17, 2018 (<https://www.taiwannews.com.tw/en/news/3519385>).
- Yu, Hsiao-han and William Yen. 2018. "Group Proposes Referendum for Special Law for Same-Sex Couples." *Focus Taiwan News Channel* Retrieved September 17, 2018 (<http://focustaiwan.tw/news/asoc/201802090038.aspx>).
- Wang, Ching-Hsing. 2016. "Personality Traits, Political Attitudes and Vote Choice: Evidence from the United States." *Electoral Studies* 44: 26-34.
- Wang, Ching-Hsing and Dennis Lu-Chung Weng. 2018. "Personality Traits and Individual Feeling of National Pride in South Korea." *Asian Journal of Political Science* 26(2): 257-275.
- Weinschenk, Aaron C. 2014. "Personality Traits and the Sense of Civic Duty." *American Politics Research* 42(1): 90-113.

Table 1. Correlations among the Big Five Personality Traits

	Extraversion	Agreeableness	Conscientiousness	Emotional stability
Agreeableness	-0.10***			
Conscientiousness	0.07*	0.20***		
Emotional stability	0.03	0.23***	0.29***	
openness to experience	0.28***	-0.09**	0.24***	0.16***

Note: ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$.

Table 2. Descriptive Statistics of Variables

Variable	Mean	S.D.	Min.	Max.
Support for same-sex marriage	0.45	0.50	0	1
Extraversion	8.28	3.15	2	14
Agreeableness	10.33	2.21	2	14
Conscientiousness	10.59	2.58	2	14
Emotional stability	9.26	2.79	2	14
openness to experience	9.94	2.55	2	14
Party identification				
Pan-Blue	0.28	0.45	0	1
Pan-Green	0.26	0.44	0	1
Religion				
Buddhism	0.33	0.47	0	1
Taoism	0.22	0.41	0	1
Catholic and Christian	0.06	0.24	0	1
Folk religion	0.21	0.41	0	1
Others	0.01	0.09	0	1
College degree and above	0.36	0.48	0	1
Female	0.51	0.50	0	1
Age				
20-29 years old	0.19	0.39	0	1
30-39 years old	0.20	0.40	0	1
40-40 years old	0.21	0.41	0	1
50-59 years old	0.20	0.40	0	1
N	1188			

Table 3. Binary Logit Analysis of Support for Same-Sex Marriage

	Model 1		Model 2		Model 3	
	Coef. (S.E.)	O.R. (A.M.E.)	Coef. (S.E.)	O.R. (A.M.E.)	Coef. (S.E.)	O.R. (A.M.E.)
Extraversion	-0.015 (0.021)	0.985 (-0.004)	-0.010 (0.023)	0.990 (-0.002)	-0.019 (0.024)	0.981 (-0.003)
Agreeableness	-0.150 *** (0.030)	0.861 (-0.035)	-0.108 ** (0.033)	0.897 (-0.021)	-0.083 * (0.035)	0.920 (-0.014)
Conscientiousness	-0.071 ** (0.026)	0.931 (-0.016)	-0.058 * (0.028)	0.944 (-0.011)	0.014 (0.031)	1.014 (0.002)
Emotional stability	-0.014 (0.023)	0.986 (-0.003)	-0.009 (0.026)	0.991 (-0.002)	0.024 (0.028)	1.024 (0.004)
Openness to experience	0.173 *** (0.028)	1.189 (0.040)	0.124 *** (0.031)	1.132 (0.024)	0.052 (0.033)	1.053 (0.009)
Party identification						
Pan-Blue			-0.439 ** (0.165)	0.644 (-0.084)	-0.204 (0.177)	0.815 (-0.035)
Pan-Green			0.366 * (0.165)	1.442 (0.073)	0.628 *** (0.179)	1.873 (0.111)
Religion						
Buddhism			-0.908 *** (0.204)	0.403 (-0.183)	-0.602 ** (0.215)	0.548 (-0.109)
Taoism			-0.789 *** (0.217)	0.454 (-0.159)	-0.614 ** (0.229)	0.541 (-0.111)
Catholic and Christian			-1.394 *** (0.331)	0.248 (-0.274)	-1.093 ** (0.352)	0.335 (-0.193)
Folk religion			-0.628 ** (0.218)	0.534 (-0.127)	-0.456 * (0.229)	0.634 (-0.083)
Others			-2.251 * (0.988)	0.105 (-0.408)	-1.860 \$ (1.061)	0.156 (-0.309)
College degree and above			1.496 *** (0.143)	4.462 (0.288)	0.737 *** (0.167)	2.090 (0.127)
Female			0.440 ** (0.140)	1.553 (0.085)	0.428 ** (0.149)	1.534 (0.074)
Age						
20-29 years old					2.556 *** (0.297)	12.885 (0.522)
30-39 years old					1.884 *** (0.252)	6.578 (0.389)
40-40 years old					1.025 *** (0.233)	2.788 (0.198)
50-59 years old					0.456 \$ (0.240)	1.578 (0.080)
Constant	0.629 (0.441)	1.875	0.410 (0.503)	1.506	-1.341 * (0.564)	0.262

N	1188		1188		1188
Likelihood ratio test	86.16	***	280.08	***	387.98 ***
Pseudo R^2	0.05		0.17		0.24
-2×Log likelihood	1520.9		1326.98		1219.08

Note: 1. ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; \$: $p < 0.10$.

2. O.R. is odds ratio, whereas A.M.E. is average marginal effect in terms of probability change.

Table 4. ANOVA of Conscientiousness and Openness to Experience by Age

	Conscientiousness			
	Mean	(S.D.)	N	Test
20-29 years old	9.67	2.53	184	F -statistic = 16.29 $p < 0.001$
30-39 years old	10.06	2.97	137	
40-40 years old	11.15	2.25	233	
50-59 years old	11.12	2.27	295	
60 years and older	10.83	2.52	339	
	Openness to experience			
	Mean	(S.D.)	N	Test
20-29 years old	10.91	2.10	184	F -statistic = 23.22 $p < 0.001$
30-39 years old	10.38	2.23	137	
40-40 years old	10.05	2.27	233	
50-59 years old	9.57	2.76	295	
60 years and older	8.89	2.80	339	

Table 5. Binary Logit Analysis of Support for Same-Sex Marriage – Interaction Effects

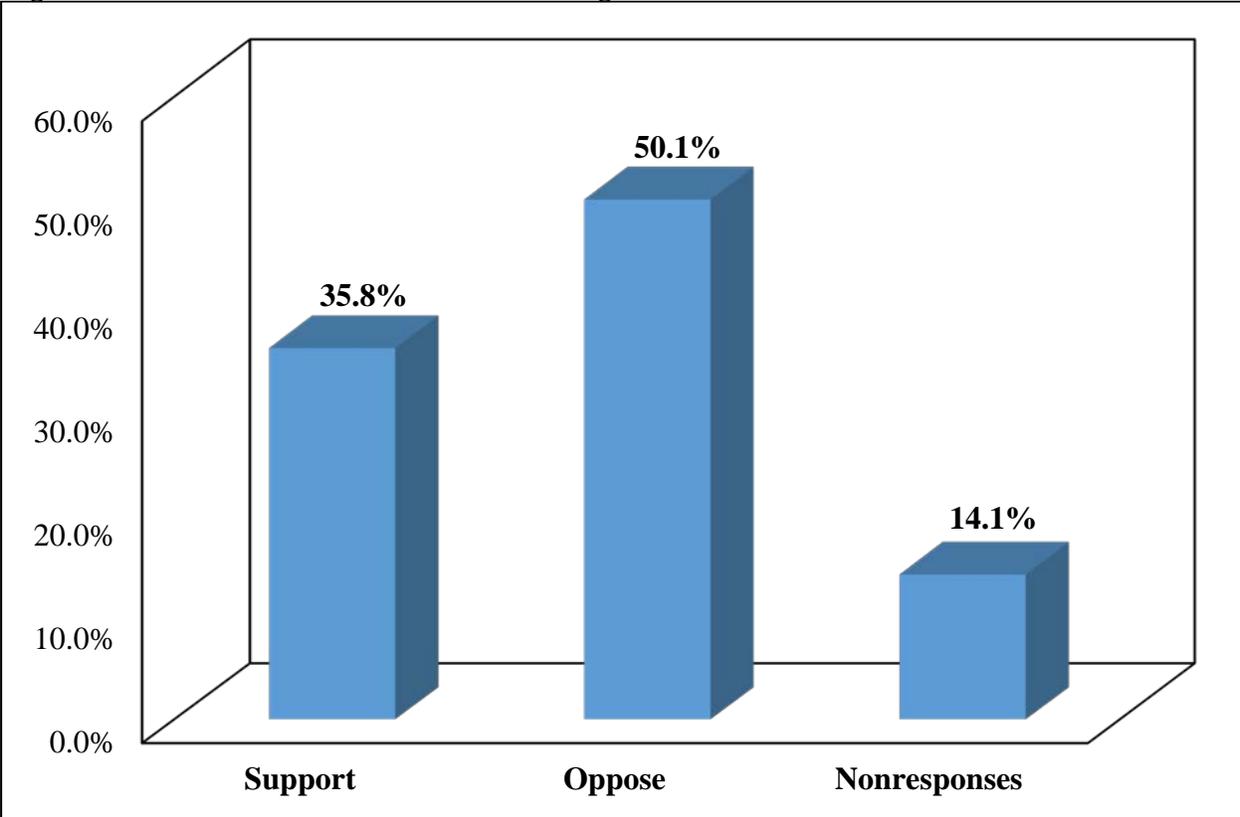
	Model 1		Model 2	
	Coef. (S.E.)	O.R. (A.M.E.)	Coef. (S.E.)	O.R. (A.M.E.)
Extraversion	-0.023 (0.024)	0.977 (-0.004)	-0.025 (0.024)	0.976 (-0.004)
Agreeableness	-0.082* (0.035)	0.921 (-0.014)	-0.088* (0.035)	0.916 (-0.015)
Conscientiousness	-0.108** (0.033)	0.898 (-0.019)	0.005 (0.030)	1.005 (0.001)
Emotional stability	0.020 (0.028)	1.020 (0.003)	0.018 (0.028)	1.018 (0.003)
Openness to experience	0.060\$ (0.033)	1.062 (0.010)	-0.035 (0.039)	0.966 (-0.006)
Conscientiousness×20-29 years old	0.239*** (0.029)	1.270 (0.041)		
Conscientiousness×30-39 years old	0.169*** (0.023)	1.184 (0.029)		
Conscientiousness×40-49 years old	0.089*** (0.021)	1.093 (0.015)		
Conscientiousness×50-59 years old	0.044* (0.022)	1.045 (0.008)		
Openness to experience×20-29 years old			0.233*** (0.029)	1.263 (0.041)
Openness to experience×30-39 years old			0.177*** (0.025)	1.193 (0.031)
Openness to experience×40-49 years old			0.097*** (0.024)	1.102 (0.017)
Openness to experience×50-59 years old			0.047\$ (0.025)	1.048 (0.008)
Party identification				
Pan-Blue	-0.220 (0.176)	0.802 (-0.038)	-0.234 (0.176)	0.791 (-0.040)
Pan-Green	0.599** (0.178)	1.820 (0.107)	0.599** (0.177)	1.821 (0.107)
Religion				
Buddhism	-0.633** (0.215)	0.531 (-0.115)	-0.635** (0.214)	0.530 (-0.116)
Taoism	-0.645** (0.228)	0.525 (-0.117)	-0.627** (0.228)	0.534 (-0.114)
Catholic and Christian	-1.087** (0.351)	0.337 (-0.193)	-1.158** (0.355)	0.314 (-0.205)
Folk religion	-0.501* (0.228)	0.606 (0.228)	-0.456* (0.228)	0.634 (0.228)

	(0.229)	(-0.09)	(0.228)	(-0.084)
Others	-1.934\$	0.145	-1.960\$	0.141
	(1.054)	(-0.321)	(1.063)	(-0.324)
College degree and above	0.793***	2.209	0.812***	2.252
	(0.165)	(0.137)	(0.164)	(0.141)
Female	0.411**	1.508	0.435**	1.544
	(0.149)	(0.071)	(0.149)	(0.076)
Constant	0.046	1.047	-0.182	0.834
	(0.521)		(0.526)	
<hr/>				
N	1188		1188	
Likelihood ratio test	385.30***		382.17***	
Pseudo R^2	0.24		0.24	
$-2 \times \text{Log likelihood}$	1221.76		1224.89	
<hr/>				

Note: 1. ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; \$: $p < 0.10$.

2. O.R. is odds ratio, whereas A.M.E. is average marginal effect in terms of probability change.

Figure 1. Attitude toward Same-Sex Marriage



N = 1,601

Note: Nonresponses include “Refused,” “Hard to say,” “No opinion,” and “Don’t know.”

Figure 2. The Effect of Agreeableness on Support for Same-Sex Marriage

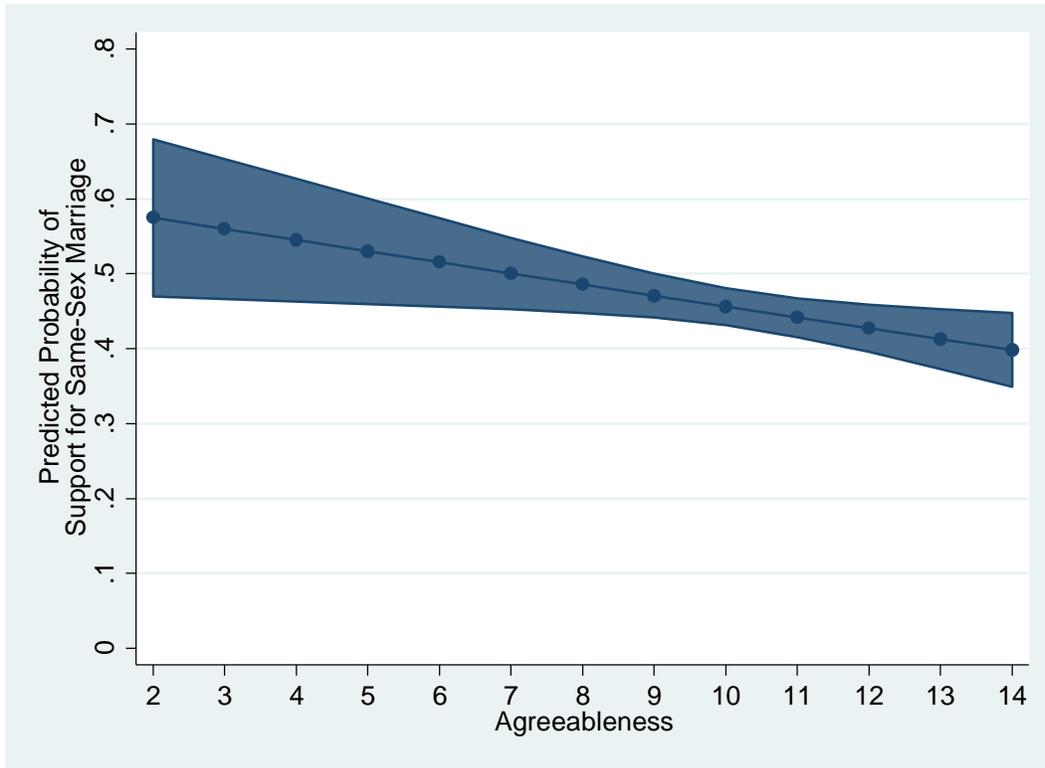


Figure 3. The Heterogeneous Effect of Conscientiousness on Support for Same-Sex Marriage by Age

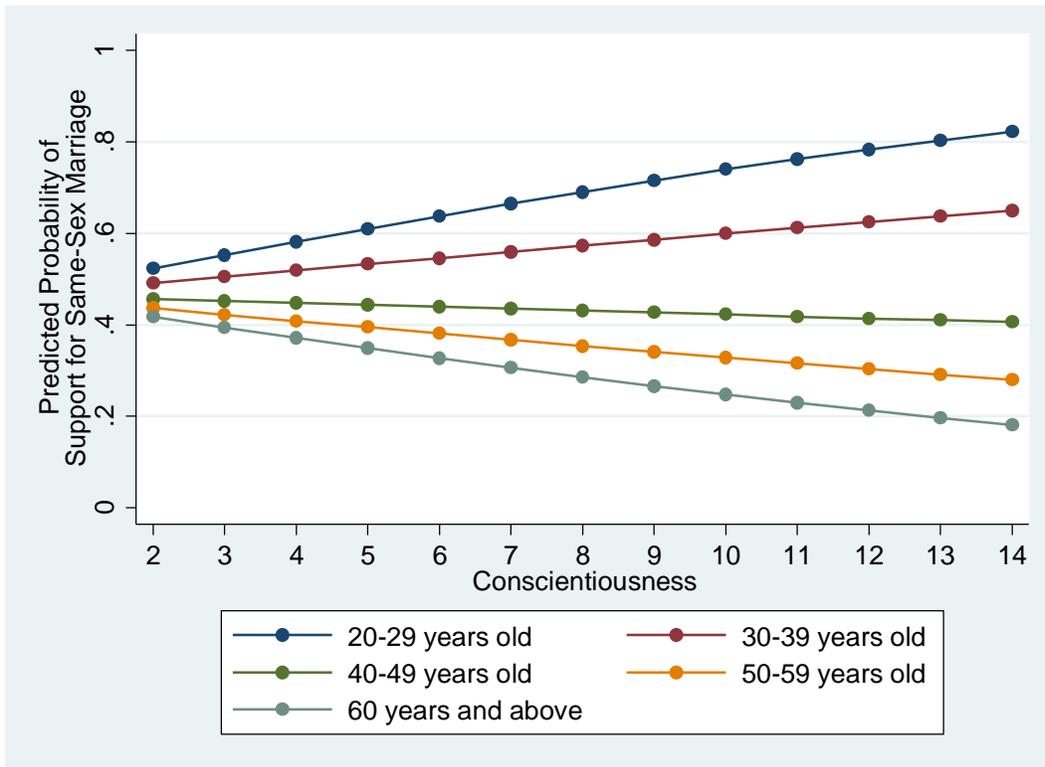


Figure 4. The Heterogeneous Effect of Openness to Experience on Support for Same-Sex Marriage by Age

