

Online Game Player Personality and Real-life Need Fulfillment

Ching-I Teng

Chang Gung University, Taiwan

E-mail: chingit@mail.cgu.edu.tw

ABSTRACT

This study examines the relationship between personality and real-life need fulfillment of 114 online game adolescent players with an average age of 14.86 years, standard deviation 1.40 years. Of the sample, 73.7% were male, and 88.8% had a monthly income below US \$90. Analytical results indicate that openness is negatively correlated with fulfillment of needs for achievement and affiliation. Conscientiousness is positively correlated with fulfillment of needs for achievement, affiliation, autonomy and dominance. Extraversion is positively correlated with fulfillment of needs for affiliation and dominance.

Keywords: Online Game, Player, Personality, Big Five, Need Fulfillment, Adolescent, Need for Achievement, Need for Affiliation, Need for Autonomy, Need for Dominance.

INTRODUCTION

Online game play has become popular worldwide in recent years, particularly among adolescents (Griffiths, 1991, 1996, 1997; Griffiths & Hunt, 1995, 1998; Phillips, Rolls, Rouse & Griffiths, 1995; Wan & Chiou, 2006a, 2006b; Jansz & Tanis, 2007; Teng, Lo, & Wang, 2007). Knowledge about the relationship between online game player personality and real-life need fulfillment helps educators to identify adolescent online game players who are discontent in the real life, thus helping to prevent unfavorable behavior.

Recent studies have concentrated on issues relating to online game player psychology, such as motives to play online games (Yee, 2006; Jansz & Tanis, 2007), lifestyles (Whang & Chang, 2004), reasons for online game addiction (Wan & Chiou, 2006b), interpersonal relationships and social anxiety (Lo, Wang, & Fang, 2005), and how players know and choose online games (Teng, Lo, & Wang, 2007). However, no investigation appears to address issues concerning the relationship between personality

and real-life need fulfillment. Understanding this relationship helps educators to recognize adolescents who have unsatisfied real-life needs, being the first step in behavioral guidance to reduce excessive online game play.

Hence, this study examines the relationship between personality and real-life need fulfillment. The rest of this paper is organized as follows. The following sections review pertinent literature, develop hypotheses, describe the investigation and present analytical procedures and results. The final section presents conclusions, implications and future research opportunities.

The Big Five set of personality traits is the leading typology of personality, and is frequently employed and discussed in social psychology (McCrae & Costa, 1985; Lin, Chiu, & Hsieh, 2001; Thoresen, Bradley, Bliese & Thoresen, 2006; Bakker, Zee, Lewig&Dollard, 2006; Beauchamp & McKelvie, 2006; Dudley, Orvis, Lebiecki& Cortina, 2006; Teng, Huang, & Tsai, 2007; Teng, Hsu, Chien, & Chang, 2007; Teng, 2008). The Big Five personality traits are openness, conscientiousness, extraversion, agreeableness and neuroticism. Openness indicates an individual's tendency to be creative, imaginative, curious and intelligent (McCrae & John, 1992; Pervin, 1993). Conscientiousness is the tendency to be careful, responsible, efficient, organized, and systematic (McCrae & John, 1992; Pervin, 1993). Extraversion is the tendency to be energetic, ambitious, sociable, active and willing to engage in interpersonal activities (Pervin, 1993). Agreeableness is the tendency to be courteous, good-natured, friendly and likeable (McCrae & Costa, 1985). Neuroticism is the tendency to be anxious, angry and depressed (Barrick & Mount, 1991).

These traits are stable (Hampson & Goldberg, 2006), universally applicable (Yamagata et al., 2006), and influential in many aspects (Barrick & Mount, 1991), indicating their capabilities to help satisfy various individual needs. For instance, high-conscientiousness individuals are careful, efficient and self-disciplined (McCrae & John, 1992; Pervin, 1993), and perform well in a wide range of occupations (Barrick & Mount, 1991; Lin et al., 2001; Thoresen et al., 2004; Small & Diefendorff, 2006), fulfilling individual need for achievement. High-extraversion individuals are sociable, talkative, and affectionate (Pervin, 1993), helping satisfy their need for affiliation. Thus, the Big Five Personality traits can be reasonably expected to affect fulfillment of individual needs.

Distinct from individuals who do not play online games, online game players fulfill their needs for achievement, social interactions and immersion in online games (Yee, 2006). However, little knowledge is available about their fulfillment of real-life needs.

Therefore, hypotheses were built using the literature concerning personality and real-life performance and need fulfillment.

High-openness players are creative, imaginative, and intelligent (McCrae & John, 1992; Pervin, 1993), and thus easily make break-through achievements in real life, satisfying their need for achievement. High-openness individuals may creatively find ways to accomplish autonomy and intelligently influence the behavior of others, fulfilling their needs of autonomy and dominance.

H1: Openness is positively correlated with fulfillment of (a) need for achievement, (b) need for autonomy and (c) need for dominance.

High-conscientiousness players are careful, responsible, efficient, organized and systematic (McCrae & John, 1992; Pervin, 1993). They can carefully complete the tasks for which they are responsible, attaining high appraisals from others, and thus fulfilling their need for achievement. They are responsible and helpful members in groups, satisfying their need for affiliation. They can efficiently complete routine works and leave more time for performing their favorite activities, satisfying their need for autonomy. They can also lead teams in an orderly way, improving the willingness of others to follow them, and fulfilling their need for dominance.

H2: Conscientiousness is positively correlated with fulfillment of (a) need for achievement, (b) need for affiliation, (c) need for autonomy and (d) need for dominance.

High-extraversion players are energetic, ambitious, sociable, active, and willing to engage in interpersonal activities (Pervin, 1993). Thus, they can energetically and ambitiously perform tough tasks, fulfilling their need for achievement. They are sociable in groups and active in interpersonal activities, making them affiliated to specific groups and fulfilling their need for affiliation. Additionally, they actively control the schedules of themselves and others, fulfilling their need for autonomy and dominance.

H3: Extraversion is positively correlated with fulfillment of (a) need for achievement, (b) need for affiliation, (c) need for autonomy and (d) need for dominance.

High-agreeableness players are courteous, friendly and likeable (McCrae & Costa, 1985), and thus are likely to be the most liked members in groups, fulfilling their need for affiliation. High-neuroticism individuals easily become anxious and angry (Barrick &

Mount, 1991), and thus are less liked by others, preventing the fulfillment of their need for affiliation.

H4: Agreeableness is positively correlated with fulfillment of need for affiliation.

H5: Neuroticism is negatively correlated with fulfillment of need for affiliation.

METHOD

The sample of this study comprised 114 Taiwanese adolescent online game players, who were approached in schools. All subjects were between 12 and 18 years of age (mean=14.86, SD=1.40). Among the sample, 73.7% were male and 88.8% had a monthly income below US \$90, properly reflecting the profile of adolescent player population in Taiwan.

The items measuring the Big Five personality traits were derived from those employed by Saucier (1994). To maintain participants' patience in completing the questionnaire, not all items in Saucier (1994) were employed in this investigation. Needs for achievement, affiliation, autonomy and dominance were measured using four items of the form "In daily life, my need for achievement/ affiliation/ autonomy/ dominance was satisfied." Achievement, affiliation, autonomy and dominance were explained in advance to these items. Response options ranged from 1 (strongly disagree) to 7 (strongly agree). The questionnaire also contained items relating to gender, age, and monthly income. Response options ranged from 1 (strongly disagree) to 7 (strongly agree). Table 1 lists the results of confirmatory factor analysis. Correlations among five personality traits ranged from -0.17 and 0.46.

The Cronbach α values for the items measuring each construct ranged from .78 and .89, indicating acceptable internal consistency (Nunnally & Bernstein, 1994). The minimum lower bound of the 95% confidence interval for the Cronbach α values exceeded .71, showing confident internal consistency (Iacobucci & Duhachek, 2003). The items measuring each construct had a CR above .82 and an AVE above .61, further indicating adequate reliability (Bagozzi & Yi, 1988).

Table 1: Summary of Confirmatory Factor Analysis

	μ	SD	λ	t	α	$C.I. \text{ of } \alpha$	CR	AVE
Openness					.82	[.75, .88]	.87	.76
Creative	4.86	1.55	.93					
Imaginative	5.43	1.34	.81	7.23				
Conscientiousness					.89	[.85, .92]	.91	.78
Organized	4.68	1.48	.89					
Efficient	4.78	1.50	.79	10.95				
Systematic	4.91	1.43	.95	14.95				
Extraversion					.78	[.71, .85]	.82	.61
Talkative	5.08	1.56	.73					
Social	4.83	1.87	.92	7.67				
Bold	4.58	1.61	.68	5.83				
Agreeableness					.86	[.82, .91]	.88	.71
Sympathetic	5.20	1.55	.82					
Warm	4.96	1.43	.89	10.08				
Kind	4.92	1.46	.81	9.48				
Neuroticism					.79	[.72, .87]	.83	.71
Temperamental	3.62	1.82	.75					
Envious	3.47	1.66	.93	9.99				

Note. λ denotes the t -value for loading. Moreover, CR represents the composite reliability and AVE is the average variance extracted.

Confirmatory factor analysis indicates that all indicator loadings exceeded .68, and had $t > 5.83$, suggesting convergent validity (Anderson & Gerbing, 1988). The maximal squared correlation for each pair of constructs (.21) was lower than the minimal AVE (.61), supporting discriminate validity (Fornell & Larcker, 1981). The measurement fit indices were also acceptable ($\chi^2/df=1.73$, $RMSEA=.08$, $NNFI=.92$, $CFI=.95$, $IFI=.95$, $SRMR=.07$, $GFI=.88$, $PGFI=.54$).

RESULTS

Multiple regression analysis was employed to test the hypotheses. Needs for achievement, affiliation, autonomy and dominance were adopted as dependent variables. Openness, conscientiousness, extraversion, agreeableness, and neuroticism were adopted as predictors. Gender, age and monthly income were adopted as control variables. Table 2 lists the testing results.

Table 2: Testing Sources of Need Fulfillment

	Need for Achievement	Need for Affiliation	Need for Autonomy	Need for Dominance
Openness	-.35*	-.24*	-.20	.01
Conscientiousness	.35*	.35*	.25*	.26*
Extraversion	.14	.31*	.18	.26*
Agreeableness	.09	.01	.11	-.13
Neuroticism	.14	-.06	-.03	.10
Gender	-.14	.18	-.07	-.08
Age	-.03	.09	.11	-.06
Monthly Income	.02	.14	.14	.14
	R ² = .19, F=2.65, p=.01	R ² = .25, F=3.86, p=.00	R ² = .19, F=2.62, p=.01	R ² = .21, F=2.93, p=.01

Note. Numbers in this table are standardized betas. * $p < .05$. Male was coded as 1 and female was coded as 2 for the variable Gender.

Surprisingly, openness was negatively correlated with fulfillment of needs for achievement ($\beta = -.35$, $p < .05$) and affiliation ($\beta = -.24$, $p < .05$), and insignificantly correlated with fulfillment of needs for autonomy ($\beta = -.20$, $p > .05$) and dominance ($\beta = .01$, $p > .05$), not supporting H1. Creativity and imagination are abilities that are often encouraged, praised and rewarded in online games. However, they are not appreciated in the adolescent education of Taiwan, and sometimes are even suppressed. This study found that openness was negatively correlated to fulfillment of needs for achievement and affiliation. Such negative correlation implies that some high-openness adolescents cannot satisfy their needs for achievement and affiliation in real life, and therefore play online games to satisfying their unmet needs for achievement and affiliation.

As expected, conscientiousness was positively correlated with fulfillment of needs for achievement ($\beta = .35$, $p < .05$), affiliation ($\beta = .35$, $p < .05$), autonomy ($\beta = .25$, $p < .05$) and dominance ($\beta = .26$, $p < .05$), supporting H2. This study found a strong and positive correlation between conscientiousness and fulfillment of needs for achievement, affiliation, autonomy and dominance. This finding suggests that players with high conscientiousness can satisfy their needs in the real world. They may play online games for the sense of achievement, or for relaxation, rather than to satisfy their real-life needs. Restated, analytical results demonstrate that certain individuals play online games not due to fulfill their unmet needs in their real life.

Extraversion was found correlated with fulfillment of needs for affiliation ($\beta=.31$, $p<.05$) and dominance ($\beta=.26$, $p<.05$), supporting H3b and H3d. This study identifies a positive correlation between extraversion and fulfillment of needs for affiliation and dominance. Such correlation indicates that highly extraverted players can satisfy their needs for affiliation and dominance both in real life and in online games, breaking the stereotype that all game players are introverted and have unsatisfied needs for affiliation.

However, extraversion was insignificantly correlated with fulfillment of needs for achievement ($\beta=.14$, $p>.05$) and autonomy ($\beta=.18$, $p>.05$), not supporting H3a and H3c. The reason may be that talkative adolescent students were free to talk in online games, but were not welcomed at Taiwanese classes. They were very likely to be suppressed and punished by teachers, explaining the insignificant results.

The fulfillment of need for affiliation was correlated neither to agreeableness ($\beta=.01$, $p>.05$) nor to neuroticism ($\beta=-.06$, $p>.05$), thus supporting neither H4 nor H5. Agreeableness and emotional stability may be appreciated by adult players in online games, but are not highly appreciated by other adolescents in the real-life. This finding limits the impact of agreeableness (Lin et al., 2001) and emotional stability (Teng, Hsu, Chien, & Chang, 2007), since these two personality traits may not matter to fulfillment of needs of online game players. The overall results of hypotheses testing are consistent with the finding of Teng (2008) that openness, conscientiousness and extraversion are three traits that are relevant to online game play.

DISCUSSION AND CONCLUSION

This study examines the link between personality and real-life need fulfillment of 114 online game adolescent players. Openness was negatively correlated with fulfillment of needs for achievement and affiliation. Conscientiousness was positively correlated with fulfillment of needs for achievement, affiliation, autonomy and dominance. Extraversion was positively correlated with fulfillment of needs for achievement and affiliation.

Results of this study demonstrate that the personality of online game players is correlated with fulfillment of real-life needs. Openness, conscientiousness and extraversion are the three traits that are relevant to fulfillment of real-life needs. This main point has several theoretical and practical implications as follows.

Analytical results are consistent with those of other recent studies on online games (Griffiths, Davies, & Chappell, 2003, 2004; Lo et al., 2005; Yee, 2006; Jansz & Tanis, 2007; Teng et al., 2007; Teng, 2008) in terms of player psychology. In a broader sense, this study extends the three-motivation (achievement, social, and immersion) theory of Yee (2006) by linking motivation (or fulfillment) to personality traits. This study also obtains similar findings to Griffiths et al. (2003, 2004) in terms of characteristics of online game players. However, Griffiths et al. (2003, 2004) did not examine real-life need fulfillment and personality traits.

This study follows Lo et al. (2005) in discussing issues regarding online game players in real life. Results on affiliation need fulfillment in this study can be viewed as an outcome variable of interpersonal relationships and social anxiety, as discussed in Lo et al. (2005). Restated, future works that extend the present study should consider the findings of Lo et al. (2005).

This study finds that openness is negatively correlated to fulfillment of real-life needs, while conscientiousness and extraversion are positively correlated with real-life need fulfillment. Thus, educators are recommended to pay special attention to online game players with high openness, low conscientiousness and low extraversion, because these players are likely to have unmet real-life needs. Providing ways for them to meet their real-life needs may encourage them to integrate socially, and help them reduce their online game playing.

This study focuses on the characteristics of online game players. Therefore, no control group of non-players was formed, and the findings of this study do not necessarily apply to non-players. While many recent online game studies have explored the differences between players and non-players of online games, and non-players are popular (Lo et al., 2005; Teng et al., 2007, Teng, 2008), future works can study the difference between players and non-players in terms of the correlations observed herein.

This study investigated adolescent players to avoid confounding effects from factors such as occupation, nature of professional training/education and marital status. Therefore, care should be taken when applying its findings to adult players. Future works can extend this study by recruiting adult players, and generate the counterpart findings for those found in this study.

This study assumed that game players have the same personality in real life as in online games. If the real-life personality of players may differ from that in online games, then future studies can replicate and extend this study by examining online personality and real-life personality, and further derive interesting insights.

ACKNOWLEDGEMENT

The author would like to thank National Science Council, Taiwan for financial support (NSC96-2416-H-182-002-MY3)

REFERENCE

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.
- Bakker, A. B., Zee, K. I. V. D., Lewig, K. A., & Dollard, M. F. (2006). The relationship between the Big Five personality factors and burnout: A study among volunteer counselors. *The Journal of Social Psychology, 146*(1), 31-50.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1-26.
- Beauchamp, K., & McKelvie, S. J. (2006). Personality traits and university program. *Psychological Reports, 99*(1), 277-291.
- Dudley, N. M., Orvis, K. A., Lebiecki, J. E., & Cortina, J. M. (2006). A meta-analytic investigation of conscientiousness in the prediction of job performance: Examining the intercorrelations and the incremental validity of narrow traits. *Journal of Applied Psychology, 91*(1), 40-57.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.
- Griffiths, M. D. (1991). Amusement machine playing in childhood and adolescence: A comparative analysis of video games and fruit machines. *Journal of Adolescence, 14*, 53-73.

- Griffiths, M. D. (1996). Computer game playing in children and adolescents: A review of the literature. In T. Gill (Eds.), *Electronic children: How children are responding to the information revolution* (pp. 41-58). London: National Children's Bureau.
- Griffiths, M. D. (1997). Computer game playing in early adolescence. *Youth and Society*, 29, 223-237.
- Griffiths, M. D., Davies, M. N. O., & Chappell, D. (2003). Breaking the stereotype: The case of online gaming. *CyberPsychology & Behavior*, 6(1), 81-91.
- Griffiths, M. D., Davies, M. N. O., & Chappell, D. (2004). Demographic factors and playing variables in online computer gaming. *CyberPsychology & Behavior*, 7(4), 479-487.
- Griffiths, M. D., & Hunt, N. (1995). Computer game playing in adolescence: Prevalence and demographic indicators. *Journal of Community and Applied Social Psychology*, 5, 189-193.
- Griffiths, M. D., & Hunt, N. (1998). Computer game "addiction" in adolescence? *A brief report. Psychological Reports*, 82, 475-480.
- Hampson, S. E., & Goldberg, L. R. (2006). A first large cohort study of personality trait stability over the 40 years between elementary school and midlife. *Journal of Personality & Social Psychology*, 91(4), 763-779.
- Iacobucci, D., & Duhachek, A. (2003). Advancing alpha: Measuring reliability with confidence. *Journal of Consumer Psychology*, 13(4), 478-487.
- Jansz, J., & Tanis, M. (2007). Appeal of playing online first person shooter games. *CyberPsychology & Behavior*, 10(1), 133-136.
- Lin, N.P., Chiu, H.C., & Hsieh, Y.C. (2001). Investigating the relationship between service providers' personality and customers' perceptions of service quality across gender. *Total Quality Management*, 12(1), 57-67.
- Lo, S.K., Wang, C.C., & Fang, W. (2005). Physical interpersonal relationships and social anxiety among online game players. *CyberPsychology & Behavior*, 8(1), 15-20.
- McCrae, R. R., & Costa, P. T. Jr. (1985). Updating Norman's "adequate taxonomy": Intelligence and personality dimensions in natural language and in questionnaires. *Journal of Personality & Social Psychology*, 49, 710-721.
- McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality*, 60, 175-215.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

- Pervin, L. A. (1993). *Personality: Theory and research* (6th ed.). New York: John Wiley.
- Phillips, C. A., Rolls, S., Rouse, A., & Griffiths, M. D. (1995). Home video game playing in schoolchildren: A study of incidence and pattern of play. *Journal of Adolescence*, *18*, 687-691.
- Saucier, G. (1994). Mini-Marker: a brief version of Goldberg's unipolar Big-Five marker. *Journal of Personality Assessment*, *63*(3), 506-516.
- Small, E. E., & Diefendorff, J. M. (2006). The impact of contextual self-ratings and observer ratings of personality on the personality-performance relationship. *Journal of Applied Social Psychology*, *36*(2), 297-320.
- Teng, C.I. (2008). Personality differences between online game players and non-players in a student sample. *CyberPsychology & Behavior*, *11*(2), 232-234.
- Teng, C.I., Hsu, K.H., Chien, R.C., & Chang, H.Y. (2007). The influence of personality on care quality of hospital nurses. *Journal of Nursing Care Quality*, *22*(4), 358-364.
- Teng, C.I., Huang, K.W., & Tsai, I.L. (2007). Effects of personality on service quality in business transactions. *The Service Industries Journal*, *27*(7), 849-863.
- Teng, C.I., Lo, S.K., & Wang, P.C. (2007). How to know and choose online games—Differences between current and potential players. *CyberPsychology & Behavior*, *10*(6), 837-840.
- Thoresen, C. J., Bradley, J. C., Bliese, P. D., & Thoresen, J. D. (2004). The Big Five personality traits and individual job performance growth trajectories in maintenance and transitional job stages. *Journal of Applied Psychology*, *89*(5), 835-853.
- Wan, C.S., & Chiou, W.B. (2006a). Psychological motives and online games addiction: A test of flow theory and humanistic needs theory for Taiwanese adolescents. *CyberPsychology & Behavior*, *9*(3), 317-324.
- Wan, C.S., & Chiou, W.B. (2006b). Why are adolescents addicted to online gaming? An interview study in Taiwan. *CyberPsychology & Behavior*, *9*(6), 762-766.
- Whang, L. S.M., & Chang, G. (2004). Lifestyles of virtual world residents: Living in the on-line game "Lineage". *CyberPsychology & Behavior*, *7*(5), 592-600.
- Yamagata, S., Suzuki, A., Ando, J., Ono, Y., Kijima, N., Yoshimura, K., et al. (2006). Is the genetic structure of human personality universal? A cross-cultural twin study from North America, Europe, and Asia. *Journal of Personality & Social Psychology*, *90*(6), 987-998.
- Yee, N. (2006). Motivations for play in online games. *CyberPsychology & Behavior*, *9*(6), 772-775.

