

Running head: Predictors of Future Work Self and Career Adaptability

Self-esteem and Proactive Personality as Predictors of Future Work Self and Career

Adaptability: An Examination of Mediating and Moderating Processes

Keywords: self-esteem, proactive personality, career exploration, future work self, career
adaptability

Abstract

Basing on career construction theory and self-verification theory, current research examined the mediating and moderating models for the relations among self-esteem, proactive personality, career exploration, future work self and career adaptability. A two-wave survey study was conducted among Chinese university students ($N = 305$). The results showed that both self-esteem and proactive personality (measured at time 1) positively predicted future work self and career adaptability (measured at time 2), with these relationships mediated by career exploration (measured at time 1). In addition, the results further revealed that the positive effect of self-esteem on career exploration was stronger among students who had a higher level of proactive personality. In support of the hypothesized moderated mediation model, for individuals with a higher level of proactive personality, the indirect effects of self-esteem on future work self and career adaptability through career exploration were stronger. These findings carry implications for research on career construction theory and career counseling practices.

Key words: future work self, career adaptability, self-esteem, proactive personality

Self-esteem and Proactive Personality as Antecedents of Future Work Self and Career

Adaptability: An Examination of Mediating and Moderating Processes

As nowadays individuals' career patterns are becoming more and more boundaryless and non-linear, career construction theory (Savickas, 1997, 2005, 2013) emphasizes two types of self-regulatory resources that facilitate individuals to solve problems and to improve person-environment fit during their career development. Career adaptivity, which refers to one's willingness to engage in the process of achieving person-environment integration, is proposed as a motivational force that guides individuals' career construction actions (Savickas & Porfeli, 2012). Career adaptivity has been operationalized as future work self, which refers to one's hopes and aspirations in relation to work (Guan, Guo, Bond, Cai, Zhou, Xu et al., 2014; Strauss, Griffin, & Parker, 2012). It has been found that future work self significantly predicts individuals' proactive career behaviors, job search self-efficacy and job search success (Guan et al., 2014; Strauss et al., 2012). In addition to adaptivity, individuals also need adaptive abilities to manage tasks in their career transitions. These abilities were indicated by the concept of career adaptability (Savickas, 1997; Savickas & Porfeli, 2012). More and more research has demonstrated the positive effects of career adaptability on individuals' career-related outcomes (e.g. Guan, Deng, Sun, Wang, Cai, Ye et al., 2013; Pouyaud, Vignoli, Dosnon, & Lallemand, 2012; Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012).

Due to the importance of future work self and career adaptability in individuals' career development, researchers have started to work on both individual and contextual predictors of these two important self-regulatory resources. For example, it has been found

that both self-esteem (Rosenberg, 1965) and proactive personality (Bateman & Crant, 1993) served as significant predictors of individuals' career adaptability (Öncel, 2014; Tolentino, Garcia, Lu, Restubog, Bordia, & Plewa, 2014). However, not much work has been done on the underlying mechanisms of how individuals' personality affects future work self and career adaptability, as well as the additive or interactive effects of different personality variables on these outcome variables. Basing on a two-wave survey study, current study examined how self-esteem and proactive personality predict Chinese University students' future work self and career adaptability.

First, basing on career construction theory (Savickas, 1997, 2005; Savickas & Porfeli, 2012) and self-verification theory (Swann, 1983), we proposed a mediation model in which self-esteem predicts career exploration, which in turn predicts future work self and career adaptability. Second, we also examined the role of proactive personality in this process. We argued that proactive personality and self-esteem represent different aspects of the self-concept: self-esteem reflects a positive self-regard whereas proactive personality reflects a behavioral orientation. Therefore proactive personality may add additive explanatory effect on career exploration and outcome variables. Third, we proposed that although a higher level of self-esteem can lead to more career exploration activities through inducing positive outcome expectations, it is also possible that a high level of self-esteem may decrease the engagement in career exploration through inducing illusory overconfidence. We proposed that the action orientation depicted by proactive personality (Bateman & Crant, 1993) may buffer the negative effect of self-esteem by directing individuals' attention to behavioral engagement. In other words, individuals with higher self-esteem and higher proactive

personality will be more likely to engage in career exploration behaviors, which in turn will help individuals form more salient future work self and higher adaptability. As a result, a moderated mediation model was proposed (See Figure 1).

Insert Figure 1 here

Self-esteem, Future Work Self and Career Adaptability

Self-esteem refers to one's positive evaluation about himself/herself as a person (Rosenberg, 1965; Harter, 1990). Individuals high in self-esteem tend to see themselves as capable, significant and worthy, whereas those low in self-esteem often doubt their abilities and are suspicious about their self-worth. According to self-verification theory (Swann, 1983), individuals have a strong need for coherence such that they will engage in the activities that are congruent with their self-view. Individuals with high self-esteem are found to have high self-perceived competence, self-image and success expectancy (Miner, 1992). Accordingly, a high level of self-esteem may motivate individuals to set challenging career goals and engage in activities to achieve these goals (e.g. Ellis & Taylor, 1983; Crook, Healy, & O'Shea, 1984), as a way to verify their positive self-regard. Since career exploration is a key step in one's career construction process (Savickas & Porfeli, 2012), we argue that individuals high in self-esteem are likely to get more involved in the career exploration activities, in order to achieve positive career goals (Patton, Bartrum, & Creed, 2004). Career exploration may in turn help individuals to develop relevant career-related identity and adaptability (Savickas, 2002; 2005).

As Stumpf, Colarelli, and Hartman (1983) indicated, career exploration consists of

both self and environmental exploration. Through self-exploration, individuals make thorough examinations about their internal attributes and thus form a clear self-image in relation to work (Flum & Blustein, 2000; Stumpf et al., 1983). Through environmental exploration, individuals focus on work and occupational characteristics and identify the opportunities that fit their preferences (Neimeyer, 1988; Werbel, 2000). Previous research has demonstrated that career exploration serves as an important mediator that links one's personal growth initiative and coping strategies with vocational identity (Robitschek & Cook, 1999). In this study, we propose that self-esteem will positively predict career exploration, which will further lead to a more salient image of one's future work self (Strauss et al., 2012). On the other hand, as Savickas (1997) indicated, career adaptability consists of four dimensions: career concern (the consideration and preparation for future career opportunities), career control (the ability to exert influence on one's career development), career curiosity (the strength of exploring the self and outer environment), and career confidence (the positive belief into one's problem-solving skills). Defined as the process to collect self-related and occupational information (Stumpf et al., 1983), career exploration is conceptually related to career curiosity. Moreover, through looking into oneself and the environment, one could better plan for the future in relation to work and take control over their careers, which is evidenced by the positive relationship between career exploration and career-related outcomes such as interview performances and outcomes (Stumpf, Austin, & Hartman, 1984) and reemployment quality (Zikic & Klehe, 2006). Besides, through gathering information and doing some trials, one could accumulate more cognitive and practical experiences related to his/her target occupations such that they would be more confidence in dealing with the

problems of those occupations. Recent research also revealed that career exploration mediates the effects of parental support and parental interference on Chinese undergraduates' career adaptability (Guan, Wang, Li, Liu, Jia, Jiang et al., 2014). Accordingly, we expect a positive relationship between career exploration and career adaptability.

Hypothesis 1: Self-esteem will be positively related to future work self and career adaptability, with these relationships mediated by career exploration.

The Role of Proactive Personality

During the career development process, individuals have to act as the active agents to interact with environment, deal with work transitions and traumas, and cope with anticipated and unexpected challenges (Savickas, 1997, 2005; Savickas & Porfeli, 2012). In line with such an emphasis on personal agency, the concept of proactive personality was proposed to reflect one's tendency to initiate actions to identify outer opportunities and shape their environments (Bateman and Crant, 1993; Crant, 2000). Previous research has revealed that proactive individuals spend more efforts in developing their careers and are more likely to achieve better career goals (e.g., Fuller & Marler, 2009; Kammeyer-Mueller & Wanberg, 2003; Seibert, Kraimer, & Crant, 2001). In this study, we propose that individuals with high proactive personality are characterized with high levels of action-orientation, which will sustain their efforts in career exploration and eventually increase their salience of future work self and career adaptability.

Hypothesis 2: After controlling for the effects of self-esteem, proactive personality will positively predict future work self and career adaptability, with these relationships mediated by career exploration.

We further argue that, in addition to having additive effect, proactive personality may also strengthen the effects of self-esteem on outcome variables by buffering the potential negative effects engendered by a high level of self-esteem. Although the positive effects of self-esteem on outcome variables have been demonstrated in various domains, researchers also found its negative or mixing effects. For example, a meta-analysis about the relationship between self-esteem and job performance showed that nearly 10% of the studies reported a negative relationship (Judge & Bono, 2001). Such counter-intuitive findings could be explained by self-verification theory (Swann, 1983). As has been discussed above, due to the positive self-evaluations and high outcome expectancy resulted from a high level of self-esteem, individuals with high level of self-esteem are likely to set challenging career goals and engage in activities to achieve these goals, as a way to verify their positive self-regard. While, at the same time, a high level of self-esteem may also lead to the sense of complacency (Stajkovic, 2006), which may induce the overestimation of one's control over the tasks and the underestimation of the effort and time needed to achieve the goals. Consequently, there exist two competing mechanisms through which self-esteem affects career exploration. The first mechanism suggests that individuals with high self-esteem will engage more in career exploration to achieve desirable career outcomes so as to sustain a positive self-view. The second mechanism suggests that due to the illusory sense of control of career development process, individuals may put fewer efforts in career exploration behaviors. Therefore, from a self-verification perspective, a high level of self-esteem may both enhance and reduce individuals' efforts in career exploration, and so the influencing direction would be dependent on the individual or situational cues that amplify or undermine these

mechanisms.

As proactive personality reflects one's dispositional *behavioral tendency* and *action orientation* to effectively achieve personal goals (Batemen & Crant, 1993), individuals with high proactive personality are more likely to initiate *actual actions* to pursue the important goals. Therefore, we argue that when proactive personality is high, individuals with high self-esteem are likely to put more efforts in career exploration, to achieve their career goals. In contrast, when individuals have a high level of self-esteem but a low level of proactive personality, the combination of positive self-evaluations and low inclination of action may amplify the prohibitive effects of self-esteem. As a result, individuals may rely more on the illusory self-evaluations to sustain a positive self-regard and are less engaged in career exploration.

Hypothesis 3: Proactive personality will positively moderate the relationship between self-esteem and career exploration such that when proactive personality is higher, the relationship becomes stronger.

Since career exploration mediates the relationship between self-esteem and future work self and career adaptability, as we discussed above, the indirect effect of self-esteem on these outcomes may also be qualified by individuals' proactive personality.

Hypothesis 4: Proactive personality will positively moderate the indirect effect self-esteem has on future work self and career adaptability, such that when proactive personality is higher, the indirect effect becomes stronger.

Method

Procedure and Participants

Data were collected from a university in North China during the fall semester of 2013. Participants comprised of undergraduates enrolled in a management course ($N = 305$). Participants completed the survey for course credits. Participants signed consent forms before completing the questionnaires. The Chinese versions of self-esteem, proactive personality and career exploration scale were translated by a Chinese-English bilingual translator. A native English speaker with good Chinese proficiency was then asked to back-translate these items. After the two translators compared the back-translation with the original scales and refined the Chinese translation through discussion, the final Chinese versions were produced. At time 1, participants completed questionnaires on demographics, self-esteem, proactive personality and career exploration in a big classroom. After four weeks (time 2), they were asked to complete the questionnaires on future work self and career adaptability in the same classroom. Each participant received a debriefing report after completing all the questionnaires. Among the 305 participants, 136 were males (average age = 21.38, $SD = 1.28$) and 169 were females (average age = 21.00, $SD = 1.33$). 35.08% of participants majored in Natural Sciences, 15.74% majored in Social Science, 11.80% majored in Art and Humanity, and 37.38% were studying in interdisciplinary majors or others.

Instruments

Proactive Personality. Participants' proactive personality was measured by the scale developed by Bateman and Crant (1993). They were asked to rate on the 5-point Likert scale with 10 items from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item was: "No matter what the odds, if I believe in something I will make it happen". Cronbach's alpha was .87.

Self-esteem. We measured participants' self-esteem with the scale developed by Rosenberg (1965). This scale consists of 10 items. Participants were asked to rate on them from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item was: "On the whole, I am satisfied with myself". Cronbach's alpha was .90.

Career Exploration. Career exploration was assessed by the scale developed by Stumpf et al. (1983). Participants were instructed to rate on the 11 items from 1 (*strongly disagree*) to 5 (*strongly agree*) according to their actual exploration experiences. As the correlation between self-exploration and environment exploration was strong ($r = .63$), in light of previous studies (e.g. Noe & Wilk, 1993), we combined all the items into a global indicator of career exploration. Cronbach's alpha was .91.

Future Work Self. Participants' future work self were measured by the scale developed by Strauss et al. (2012). The Chinese version was adopted from the study of Guan et al. (2014). Participants were asked to imagine their future status in relation to work and rate the salience of the imagination on 4 items along a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The four items were: "This future is very easy for me to imagine", "The mental picture of this future is very clear", "I am very clear about who and what I want to become in my future work" and "I can easily imagine my future work self". Cronbach's alpha was .87.

Career Adaptability. The Chinese version of the *Career Adapt-Abilities Scale* (Hou, Leung, Li, Li, & Xu, 2012) was used to measure students' career adaptabilities. Participants were instructed to rate on the 24 items assessing career concern, career control, career curiosity, and career confidence from 1 (not strong) to 5 (strongest). Cronbach's alpha for the

global indicator career adaptability was .94.

Control Variables. To more accurately test the relationships among the variables above, we incorporated these variables as controlling variables in our model: age, gender (0 = male, 1 = female), grade (1 = 1st grade, 2 = 2nd grade, 3 = 3rd grad, 4 = 4th grade), and major (dummy variable, science as the reference group).

Results

Descriptive Statistics and Correlations

The descriptive statistics and inter-correlations among variables were showed in Table 1. Proactive personality correlated with self-esteem ($r(305) = .52, p < .01$), career exploration ($r(305) = .57, p < .01$), future work self ($r(305) = .33, p < .01$) and career adaptability ($r(305) = .32, p < .01$); self-esteem correlated with career exploration ($r(305) = .56, p < .01$), future work self ($r(305) = .28, p < .01$), career adaptability ($r(305) = .30, p < .01$), sex ($r(305) = .24, p < .01$) and and Major 1 (other majors) ($r(305) = .15, p < .01$); career exploration correlated with future work self ($r(305) = .37, p < .01$), career adaptability ($r(305) = .35, p < .01$) and grade ($r(305) = .16, p < .01$); future work self correlated with career adaptability ($r(305) = .55, p < .01$), grade ($r(305) = .12, p < .05$) and major 1 (other majors) ($r(305) = -.12, p < .05$). These results supported the positive effects of proactive personality and self-esteem on future work self and career adaptability.

 Insert Table 1 here

Examining The Mediation Models

To examine whether career exploration mediates the effect of proactive personality and self-esteem on future work self and career adaptability, we adopted the procedure proposed by Preacher and Hayes (2008). According to them, there are three criteria to justify a mediation effect: the independent variable should significantly predict the mediator variable; after controlling the effect of independent variable, mediator variable should be significantly related with dependent variable; and the indirect effect must be significant. Before analyses, all continuous variables were centered according to the advice of Aiken and West (1991).

As the first step, we examined the mediation model with self-esteem as predictor. As the results showed, after controlling for the demographics and proactive personality, self-esteem significantly predicted career exploration ($\beta = .36, p < .001$), and after controlling for the effect of self-esteem, career exploration also predicted both future work self ($\beta = .26, p < .01$) and career adaptability ($\beta = .14, p < .01$). The indirect effects on future work self (95% $CI = [.02, .17]$) and career adaptability (95% $CI = [.01, .09]$) were both significant. Finally, we found that the remaining direct effects of self-esteem on future work self (95% $CI = [-.08, .24]$) and career adaptability (95% $CI = [-.01, .18]$) were insignificant. Thus, career exploration fully mediated the effects of self-esteem on future work self and career adaptability.

Next, we examined whether proactive personality could had additive effects to this model. After controlling for the effects of demographics and self-esteem, proactive personality was significantly related to career exploration ($\beta = .41, p < .001$), and career exploration predicted future work self ($\beta = .26, p < .01$) and career adaptability ($\beta = .14, p < .01$). The bootstrapping results showed that the indirect effect on future work self (95% CI

= [.03, .23]) and career adaptability (95% *CI* = [.02, .12]) was significant. At the same time, the remaining direct effects on future work self (95% *CI* = [.05, .42]) and career adaptability (95% *CI* = [.01, .22]) were also significant. These results showed that the effects of proactive personality were partially mediated by career exploration.

Examining the Moderated Mediation Model

According to Preacher, Rucker and Hayes (2007), it takes two steps to test a moderated mediation model. First, we should examine the mediator variable model with mediation variable as dependent variable. Next, we should examine the dependent variable model with outcome variable as dependent variable. As the first step, we examined the interactive effect of proactive personality and self-esteem on career exploration. As the results showed, the interaction variable (proactive personality×self-esteem) was significantly related to career exploraiton, $B = .10$, $SE = .05$, $t = 2.18$, $p < .05$. To illustrate this result, we further conducted the simple slope test (Aiken & West, 1991). The results showed that when proactive personality was higher (one *SD* above the mean), the relationship between self-esteem and career exploration was stronger, $B = .44$, $SE = .06$, $t = 7.18$, $p < .001$, and when proactive personality was lower (one *SD* below the mean), the relationship became weaker, $B = .27$, $SE = .06$, $t = 4.32$, $p < .001$ (See figure 2).

 Insert Figure 2 here

We then examined the “dependent variable model” and calculated the indirect effect. The bootstrapping tests showed that when proactive personality was higher, the indirect effect of self-esteem on future work self was stronger, $B = .15$, $SE = .04$, 95% *CI* = [.07, .25], and

when proactive personality was lower, the indirect effect of proactive personality on future work self was weaker, $B = .09$, $SE = .03$, 95% $CI = [.05, .16]$.

Insert Table 2 here

Through bootstrapping tests, we also confirmed that when proactive personality was higher, the indirect effect of self-esteem has on career adaptability was stronger, $B = .08$, $SE = .03$, 95% $CI = [.03, .13]$, and when self-esteem was lower, the indirect effect of proactive personality has on future work self became insignificant, $B = .05$, $SE = .02$, 95% $CI = [.02, .09]$.

Insert Table 3 here

Discussion

In current study, basing on self-verification theory, we examined the additive and interactive effects of proactive personality and self-esteem on both career adaptivity (conceptualized as future work self) and career adaptability. The results showed that proactive personality and self-esteem both make unique contributions to predicting career exploration, which in turn predicts future work self and career adaptability. In addition, we found an interaction effect between proactive personality and self-esteem on career exploration such that when proactive personality is higher, the relationship between self-esteem and career exploration becomes stronger. The corresponding moderated mediation models were also supported to predict future work self and career adaptability. These findings

carry both practical and theoretical implications.

Theoretical implications

Our study showed that both self-esteem and proactive personality had unique contributions to predicting future work self and career adaptability. Although the positive effects of these two variables on career adaptability have been revealed in recent research (Öncel, 2014; Tolentino et al., 2014), not much work has been done to examine the antecedents of future work self, and how these two types of personality collectively predict these outcome variables. The current findings suggest that although self-esteem and proactive personality are related to each other, each variable captures a distinct aspect of individual attributes. Self-esteem is more related to the positivity of self-regard and proactive personality is more related to the behavioral orientation. Therefore both variables serve as important predictors for career-related outcomes. Future studies should extend this line of research by incorporating other important personal characteristics, such as the approach-avoidance personalities (Elliot & Thrash, 2002), as well as contextual factors, such as family attributes, educational environments and cultural background.

Current research also shows that career exploration serves as a key explanatory link between individual predictors (self-esteem and proactive personality) and outcome variables (future work self and career adaptability). These results suggest that to develop adaptive abilities, individuals need to continuously gain insights of their own characteristics and the complexity of working environments through various exploring experiences (Savickas, 2013). Future research should continue to examine other important antecedents of career exploration behaviors. At the same time, as career exploration only partially mediates the relationships

between proactive personality and outcomes, there should exist other important mediators in this process. It is possible that the positive effects of proactive personality could also be explained by the accumulated human capital or social capital gained through proactive behaviors. These questions should be examined in future research.

In addition, career construction theory also suggests there may exist dynamic and reciprocal relations between individuals' career competences (e.g., future work self, career adaptability) and career behaviors (e.g., career exploration), as career development consists of the continuous cycles of growth (orientation), exploration, engagement, management and disengagement. Career exploration helps individuals to develop a salient future work self and a high level of career adaptability; a salient future work self and a high level of career adaptability may in turn motivate and enable individuals to engage in more career exploration behaviors, as a way to cope with the continuous challenges in career development (Savickas & Porfeli, 2012; Savickas, 2013; Strauss et al., 2012). Future research should continue to examine the dynamic relations among these variables in individuals' career development.

Current research also revealed a novel interaction between self-esteem and proactive personality in predicting outcome variables. Though a high level of self-evaluation has potential prohibitive effect on career exploration, a high level of proactive personality compensates this effect by motivating individuals to engage in activities that promote their adaptive abilities. Although researchers have called for more work on boundary conditions that qualify the relationships between self-esteem and outcomes (e.g. Ferris, Lian, Brown, Pang, & Keeping, 2010), not much has been done on the moderation role of proactive personality. Future research may incorporate other personal and situational factors to examine

the dynamic processes through which these factors interplay with each other in predicting outcomes (Chan, 2006; Liang & Gong, 2013).

Practical implications

As our results revealed, individuals with a high level of proactive personality and self-esteem are more likely to develop salient future work self and high career adaptability through engaging in more career exploration activities. Given the great importance of future work self and career adaptability in individuals' career transitions (e.g., Guan et al., 2014), educators and counselors could use these two personalities to diagnose the problems individuals have during their career development process. The significant interaction between these two personalities further suggests that individuals should be both positive and proactive in achieving their career goals. In addition, educators and counselors should identify effective ways to improve individuals' career exploration skills, in order to promote their adaptive abilities.

Limitations and Future Directions

Despite the theoretical and practical implications, there exists some limitations in current study. First, we collected our data among students from a university in China, whether these findings could be generalized to other student samples, as well as students in other countries still remain to be examined in future research. Second, the design of this study could not examine the dynamic relations among these variables and future research should address the question through a more rigorous design.

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Table 1. Descriptive Statistics, Reliability Coefficients, and Inter-Correlations among Variables

	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1.Proactive personality	4.95	.81	.87										
2.Self-esteem	5.29	.98	.52**	.90									
3.Self-exploration	4.60	1.06	.45**	.46**	.89								
4.Environmental exploration	5.04	.96	.61**	.57**	.63**	.89							
5.Career exploration	4.80	.92	.57**	.56**	.93**	.87**	.91						
6.Future work self	4.26	1.14	.33**	.28**	.30**	.38**	.37**	.87					
7.Career concern	3.33	.80	.24**	.24**	.25**	.29**	.30**	.63**	.87				
8.Career control	3.89	.75	.22**	.23**	.21**	.23**	.24**	.32**	.55**	.88			
9.Career curiosity	3.45	.76	.30**	.22**	.26**	.30**	.31**	.45**	.59**	.63**	.85		
10.Career confidence	3.68	.72	.33**	.33**	.31**	.32**	.35**	.45**	.62**	.72**	.74**	.88	
11.Career adaptability	3.59	.65	.32**	.30**	.30**	.33**	.35**	.55**	.82**	.85**	.86**	.90**	.95
12.Sex ^a	NA	NA	.05	.24**	.02	.03	.03	.07	.03	.01	-.13*	.01	-.02
13.Age	21.18	1.32	-.07	-.06	.04	-.05	.00	-.00	-.03	-.07	-.01	-.01	-.03
14.Grade	2.67	.74	.03	.07	.16**	.13*	.16**	.12*	.00	-.04	.01	.03	.00
15.Major 1 (other majors)	NA	NA	.00	.15**	-.07	-.04	-.06	-.12*	-.12*	.01	-.06	.07	-.03
16.Major 2 (arts and humanities)	NA	NA	.03	-.02	.09	.07	.09	.02	.08	.06	.08	.00	.07
17.Major 3 (social sciences)	NA	NA	-.03	-.04	-.03	-.03	-.04	.05	.01	-.06	-.09	-.08	-.06

Note. ^a male = 0, female = 1. * $p < .05$. ** $p < .01$. Reliability coefficients are shown in bold along the diagonal of the table.

Table 1(cont.). Descriptive Statistics, Reliability Coefficients, and Inter-Correlations among Variables

	12	13	14	15	16	17
12.Sex ^a	NA					
13.Age	-.13 [*]	NA				
14.Grade	-.07	.70 ^{**}	NA			
15.Major 1 (other majors)	.23 ^{**}	-.02	-.07	NA		
16.Major 2 (arts and humanities)	-.08	-.07	-.10	-.28 ^{**}	NA	
17.Major 3 (social sciences)	-.03	-.06	.03	-.33 ^{**}	-.16 ^{**}	NA

Note. ^a male = 0, female = 1. * $p < .05$. ** $p < .01$. Reliability coefficients are shown in bold along the diagonal of the table.

Table 2. Moderated Mediation Effects for Future Work Self

Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>
Mediator variable model with career exploration as dependent variable				
Constant	.73	.80	.92	<i>Ns</i>
Age	-.05	.04	-1.28	<i>Ns</i>
Grade	.22	.08	2.89	<.01
Sex	-.10	.08	-1.23	<i>Ns</i>
Major 1 (other majors)	-.15	.09	-1.59	<i>Ns</i>
Major 2 (arts and humanities)	.16	.13	1.21	<i>Ns</i>
Major 3 (social sciences)	-.10	.12	-.86	<i>Ns</i>
Proactive personality	.40	.06	7.06	<.001
Self-esteem	.36	.05	7.32	<.001
Proactive personality × Self-esteem	.10	.05	2.18	<.05
Dependent variable model with future work self as dependent variable				
Constant	4.91	1.24	3.95	<.001
Age	-.05	.07	-.82	<i>Ns</i>
Grade	.15	.12	1.29	<i>Ns</i>
Sex	.14	.13	1.04	<i>Ns</i>
Major 1 (other majors)	-.32	.15	-2.19	<.05
Major 2 (arts and humanities)	-.10	.21	-.48	<i>Ns</i>
Major 3 (social sciences)	.02	.19	.10	<i>Ns</i>
Self-esteem	.14	.08	1.73	<i>Ns</i>
Career exploration	.34	.08	4.16	<.001
Conditional indirect effect as a function of proactive personality				
<i>Value of proactive personality</i>	<i>Effect</i>	<i>Boot se</i>	<i>Boot LLCI</i>	<i>Boot ULCI</i>
-1 SD (-.98)	.09	.03	.05	.16
+1 SD (.98)	.15	.04	.07	.25

N = 305. Bootstrap sample size = 1000. Results were reported after controlling for age, grade, sex, and major.

Table 3. Moderated Mediation Effect for Career Adaptability

Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>
Mediator variable model with career exploration as dependent variable				
Constant	.73	.80	.92	<i>Ns</i>
Age	-.05	.04	-1.28	<i>Ns</i>
Grade	.22	.08	2.89	<.01
Sex	-.10	.08	-1.23	<i>Ns</i>
Major 1 (other majors)	-.15	.09	-1.59	<i>Ns</i>
Major 2 (arts and humanities)	.16	.13	1.21	<i>Ns</i>
Major 3 (social sciences)	-.10	.12	-.86	<i>Ns</i>
Proactive personality	.40	.06	7.06	<.001
Self-esteem	.36	.05	7.32	<.001
Proactive personality × Self-esteem	.10	.05	2.18	<.05
Dependent variable model with career adaptability as dependent variable				
Constant	3.82	.71	5.38	<.001
Age	.00	.04	.09	<i>Ns</i>
Grade	-.06	.07	-.81	<i>Ns</i>
Sex	-.08	.07	-1.09	<i>Ns</i>
Major 1 (other majors)	-.07	.09	-.79	<i>Ns</i>
Major 2 (arts and humanities)	.02	.12	.20	<i>Ns</i>
Major 3 (social sciences)	-.11	.11	-1.04	<i>Ns</i>
Self-esteem	.12	.05	2.60	<.01
Career exploration	.18	.05	3.75	<.001
Conditional indirect effect as a function of proactive personality				
<i>Value of proactive personality</i>	<i>Effect</i>	<i>Boot se</i>	<i>Boot LLCI</i>	<i>Boot ULCI</i>
-1 SD (-.98)	.05	.02	.02	.09
+1 SD (.98)	.08	.03	.03	.13

N = 305. Bootstrap sample size = 1000. Results were reported after controlling for age, grade, sex, and major.

Figure 1: The Proposed Moderated Mediation Model

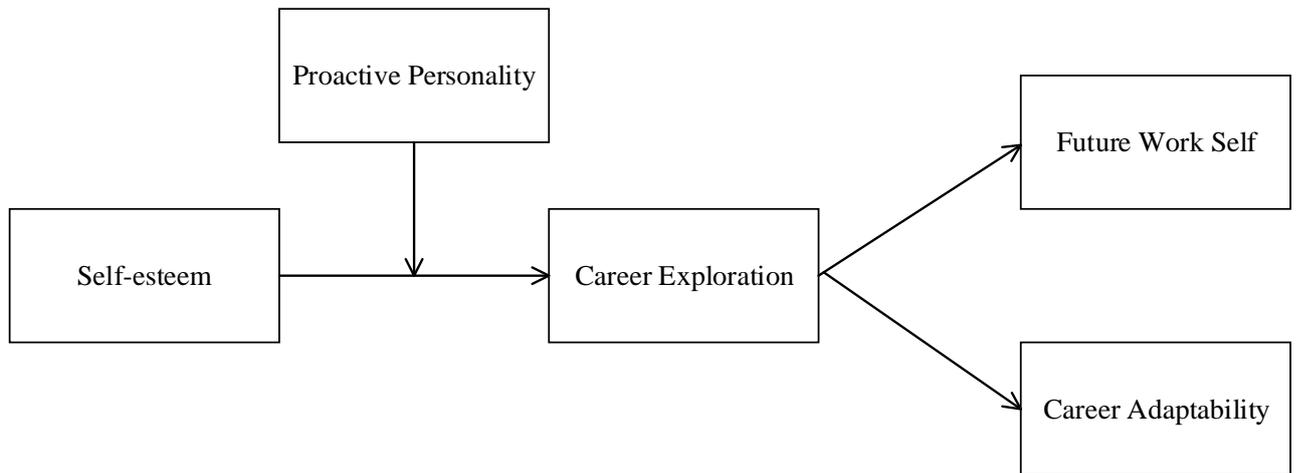
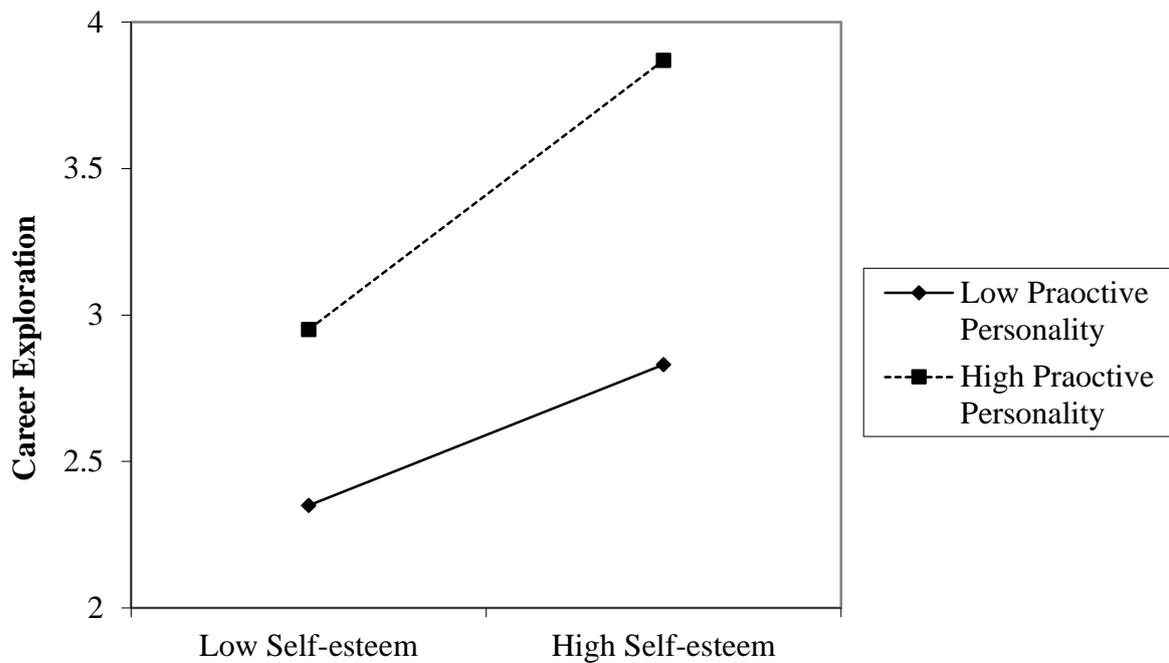


Figure 2: Interactive Effect between Self-esteem and Proactive Personality on Career Exploration



Note. Low proactive personality and low self-esteem are defined as at least one standard deviation below the mean; high proactive personality and high self-esteem are defined as at least one standard deviation above the mean. Higher numbers indicate more career exploration.