

**The interplay of proactive personality and internship quality in Chinese university graduates' job search success: The role of career adaptability**

Abstract

Based on the job characteristics model and career construction theory, this study examined the role of internship quality in the employment success of Chinese university students. A four-wave survey study was conducted in a sample of university graduates ( $N = 207$ ) and the results showed that after the effects of baseline career adaptability (Time 1) were controlled, internship quality (Time 2) and proactive personality (Time 2) positively were both associated with subsequent career adaptability (Time 3), which was further related to indicators of employment success (number of job offers, starting salary, and job search efficiency) at Time 4. In addition, internship quality was also found to be a significant moderator of the relationship between proactive personality and career adaptability as well as employment success, such that when internship quality was lower, the indirect effect of proactive personality on job search success through career adaptability was stronger. The corresponding moderated mediation model was also supported by the results. These findings carry implications for future studies on school-to-work transition and organizational recruitment practices.

Keywords: internship quality, career adaptability, proactive personality

## **The interplay of proactive personality and internship quality in Chinese university graduates' job search success: The role of career adaptability**

### **Introduction**

Internships are defined as "structured and career relevant work experiences obtained by students prior to graduation from an academic program" (Taylor, 1988, p. 393). It is widely accepted that internships and other workplace-based experiences can promote university students' job search success and thereby facilitate their school-to-work transitions (e.g., Maskooki, Rama, & Raghunandan, 1998; Perry, 1989; Raymond, McNabb, & Matthaei, 1993; Taylor, 1988). For example, the number of university graduates' internships was found to be a significant predictor for their job search efficiency in the future (Callanan & Benzing, 2004; Gault, Redington, & Schlager, 2000; Knouse, Tanner, & Harris, 1999; Taylor, 1988).

A number of previous studies have focused on the quantitative aspects of internships (e.g., the number of internships), but they have seldom examined the role of the qualitative aspects (e.g., job characteristics) of internships in individuals' job search success (Brooks, Cornelius, Greenfield, & Joseph, 1995; Gamboa, Paixão, & Jesus, 2013). Such research seems to be inconclusive, given that the qualitative aspects of internship experience, such as job characteristics, are important in facilitating interns' skill development and work attitudes (Brooks et al., 1995; D'Abate & Wenzel, 2009; Oehlert, Sumerall, Lopez, & Merkley, 2002). To address this research gap, the current study draws upon the job characteristics model (Hackman & Oldham, 1974) and career construction theory (Savickas, 2005) to examine how internship quality, rather than quantity, is associated with the job search outcomes of university graduates.

The job characteristics model (JCM, Hackman & Oldham, 1974) was adopted to capture the qualitative aspects of internships, such as skill variety, task identity, task significance, autonomy, and feedback. To demonstrate the unique role of internship quality in university graduates' job search outcomes (e.g., number of job offers, starting salary, and job search efficiency), we incorporated the quantitative aspects of internships (e.g., internship duration) as control variables. Moreover, since previous research has revealed that proactive personality, a dispositional tendency to take initiatives to change the environment (Bateman & Crant, 1993; Crant, 2000), served as an important predictor of job search success among university graduates (Brown, Cober, Kane, Levy, & Shalhoop, 2006), we included proactive personality in this study as an important individual predictor of university graduates' job search outcomes.

Career construction theory (Savickas, 2005, 2013) posits that, career adaptability, which refers to "the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (Savickas,

1997, p. 254), plays a central role in linking indicators of career adaptivity (e.g., proactive personality and big-five personality traits) to adaptive behaviors (e.g., career exploration) and adaptive outcomes (e.g., career success) (e.g., Li et al., 2015; Perera & Mcilveen, 2014; Teixeira, Bardagi, Lassance, Magalhães, & Duarte, 2012; Zacher, 2014). Recent study has extended this model by factoring in the important roles of contextual factors, such as external intervention (Koen, Klehe, & Vianen, 2012), parental behavior (Guan et al., 2015), and organizational support (Guan, Yang, Zhou, Tian, & Eves, 2016) in shaping individuals' career adaptability and subsequent career outcomes. Nevertheless, researchers have seldom considered career or work experience as a predictor of career adaptability, and, especially, few studies have examine the joint effect of personal trait (career adaptivity) and workplace-based experience (contextual factor) on career adaptability. This omission is unfortunate in that our understanding on the role of contextual factors in affecting the development of career adaptability is incomplete in isolation from workplace-based experiences that can offer individuals opportunities to experience various organizational environments (Greenhaus, Callanan, & Godshalk, 2000) and to acquire or develop career-related skills (Garavan & Murphy, 2001). Especially, research from the perspective of work experience could provide important insights to training or human intervention on site.

We argue that internships not only offer opportunities for students to apply what they have learnt in the classroom (Raymond et al., 1993), but also to cultivate a variety of career-related skills, such as time management, self-discipline, and communication (Dennis, 1996; Healy & Mourton, 1987; Taylor, 1988). As a result, these experiences provide students with a fundamental knowledge of how the working world operates, thus helping them to develop adaptive career abilities (e.g., career adaptability) and react to challenges in their school-to-work transitions (Gamboa et al., 2013; Greenhaus, Callanan, & Godshalk, 2000; Guan, Deng, Sun, Wang, Cai, & Ye, 2013; Knouse et al., 1999). Therefore, internship quality was proposed as the key predictor that affects job search outcomes among university graduates above and beyond the effects of career adaptivity, such as proactive personality. In addition to the main effects of internships, we also postulate that internship quality may interact with proactive personality to be associated with career adaptability and job search success. Internship experience can, as a type of external stimulus, cultivate in students' ability to adapt to unexpected changes and respond to disequilibrium, and thus may compensate for the lack of a dispositional flexibility to change. Thus, it is important to examine the potential interactive effects of internship experience and personal factors in shaping career adaptability and job search outcomes, in order to shed light on the person-environment dynamics in individuals' internships and job search processes.

To examine the ideas mentioned above, we conducted a survey study among university graduates in China. Most undergraduate students in China actively seek internship opportunities while they are

studying, especially in their last two years as students, in order to promote their employability during their job searches in their last year at university. There are a number of sources (e.g., the official websites of hiring organizations, recruitment agencies, recruitment websites, etc.) from which students can obtain information on internships. In addition, some universities also provide internship programs in which they help students secure internships with organizations in order to help the students better develop their professional skills. This context is ideal for examining the impact of internships on the job-search process. The current study has important practical implications for recommending or designing appropriate internship programs for students with different dispositional characteristics, in order to facilitate their school-to-work transition. To overcome the problems associated with cross-sectional or archival data (Brooks et al., 1995; Gamboa et al., 2013), we adopted a time-lagged four-wave design to test the above ideas.

### ***Hypotheses Development***

#### *Internship Quality, Proactive Personality, Career Adaptability, and Job-search Success*

Career construction theory (Savickas, 2005, 2013) contends that individuals need to develop self-regulation resources to achieve the goal of person-environment integration in various career transitions. The concept of career adaptability was proposed to represent the psychological resources that enable individuals to cope with the predictable and unpredictable challenges in their career development (Savickas, 1997, 2005, 2013). Career adaptability has four dimensions: 1) career concern (the awareness of future possibilities and preparedness for these possibilities), 2) career control (the ability to make assertive decisions), 3) career curiosity (the ability to explore new information and opportunities), and 4) career confidence (the efficacious beliefs that sustain individuals' efforts in achieving their goals). It has been acknowledged in the literature of career construction theory (Savickas, 1997, 2005, 2013) that as an important indicator of career adaptivity, proactive personality can help to develop one's career adaptability (e.g., Brown & Ryan-Krane, 2000; Cai et al., 2015; Kammeyer-mueller & Wanberg, 2003; Seibert, Kraimer, & Crant, 2006). Proactive personality reflects one's disposition to initiate change, identify opportunities and shape external environment (Bateman and Crant 1993; Crant, 2000). Thus, proactive individuals are not merely "passive recipients of environmental presses" (Buss, 1987, p. 1220), but are always inclined to take the initiative to overcome situational constraints (Bateman & Crant, 1993). Following this logic, students with proactive personality are more likely to engage in activities that could improve their adaptive abilities and skills (e.g., Brown & Krane, 2000; Cai et al., 2015; Guan et al., 2017; Kammeyer-Mueller & Wanberg, 2003; Seibert et al., 2006). Empirical evidence has demonstrated that proactive personality is positively associated with career-related exploration (Seibert et al., 2006), career

adaptability (Cai et al., 2015; Guan et al., 2017), and job search success (Brown et al., 2006), which is consistent with the argument mentioned above. Thus, we propose:

*Hypothesis 1:* Proactive personality is positively related to career adaptability.

Job search is viewed as a critical step in students' transition from school to work, for which students need to devote much time, effort, and energy to overcome a series of challenges such as obtaining job information, assessing their own strengths and shortcomings, preparing the required documents, participating in job talks, and choosing the right job (Brown et al., 2006; Guan et al., 2013; Wanberg et al., 2010). Career adaptability has been found to provide important psychological resources for individuals to overcome the difficulties in such career transitions. For example, Zacher (2014) demonstrated that career adaptability positively is associated with career satisfaction and self-rated career performance above and beyond the effects of demographic characteristics, Big Five personality traits, and core self-evaluations.

It has been argued that career curiosity promotes students' motivation to explore the working world as well as their own characteristics in the job-search process, which in turn increases the possibility of person-job fit (Guan et al., 2013). Career confidence enables students to be self-efficient (Guan et al., 2013; Cai et al., 2014) in decision making and problem-solving during the job-search process. Career control can foster self-regulation and self-discipline among students, which are beneficial to setting a clear career goal and taking assertive actions in the process of a job-search (Guan et al., 2013). Students with a high level of career concern would be willing to devote large amounts of time and energy to career exploration (Porfeli & Savickas, 2012) in general and job searches in particular. In addition, previous research has found that career adaptability significantly predicted Chinese university students' job search self-efficacy and employment status at the time of graduation (Guan et al., 2013). Similarly, we propose that university students' internship quality is associated with career adaptability, which in turn is a predictor of job search success. In this study, we selected multiple objective indicators of job search success, such as number of job offers, starting salary, and job search efficiency (how fast students successfully found jobs) to test these ideas. To summarize this, high-quality internships can facilitate individuals' job search success by promoting individuals' career adaptability.

*Hypothesis 2:* Career adaptability is positively associated with number of job offers (H2a), starting salary (H2b), and job search efficiency (H2c).

Based on the positive link between proactive personality and career adaptability and the relationship between career adaptability and job-search success as discussed above, we conclude that proactive personality can be associated with job-search success by increasing career adaptability. Thus, we propose the following hypothesis:

*Hypothesis 3:* Career adaptability mediates the relationship between proactive personality and number of job offers (H3a), starting salary (H3b), and job search efficiency (H3c).

Savickas (2013) suggests that career adaptability has its basis in traits (e.g., proactive personality), but it can also be shaped during an individual's socialization process. Previous research has consistently found that environmental factors, such as parental behavior (Guan et al., 2015) and organizational support (Guan, Yang, Zhou, Tian, & Eves, 2016) were significant predictors of individuals' career adaptability. As a job-oriented learning experience, an internship can be viewed as a transitional training or human intervention that bridges the classroom and the professional world (Callanan & Benzing, 2004). Internships offer students opportunities to experience organizational environments (Greenhaus, Callanan, & Godshalk, 2000) and to acquire or develop career-related skills (Garavan & Murphy, 2001). Most previous studies operationalized internship experience with quantitative indicators such as the number of internships and the amount of time spent working, but overlooked the qualitative aspects (e.g., D'Abate et al., 2009; Brooks et al., 1995). To address this hitherto unstudied aspect of internships, we adopted the job characteristics model (JCM, Hackman & Oldham, 1974) to assess the qualitative aspects of internship and analyze how internship quality relates to university students' career adaptability and job search outcomes.

The job characteristics model (Hackman & Oldham, 1974) posits that employees' job performance and attitudes are affected by important job characteristics such as skill variety (i.e., the variety of skills that are involved in the performance of the job), task identity (i.e., the extent to which a job is done from beginning to end and has a noticeable outcome), task significance (i.e., the extent to which a job has an impact on other people in the organization or society), autonomy (i.e., the amount of freedom employees are given in choosing the order of their tasks and how they will complete them), and feedback (i.e., the amount of information employees are given about the effectiveness of their work outcomes). The job characteristics model has been used to analyze the characteristics of both long-term and short-term jobs (Rothman, 2007), and it offers an important theoretical perspective to analyze how job characteristics affect important work-related outcomes (Brooks et al., 1995; D'Abate et al., 2009; Rothman, 2007). Accordingly, in the current study, we define internship qualities as being characterized by a high level of skill variety, task identity, task significance, autonomy, and feedback and propose that internship quality can positively relate to university students' career adaptability.

Among the four dimensions of career adaptability, career curiosity refers to the ability and willingness to explore career opportunities (Savickas, 2005). We propose that a high-quality internship can offer students various types of information regarding the working world and facilitate career exploration. Specifically, internships with high skill variety expose individuals to multiple tasks, giving them access to a significant amount of information for career development. Task identity enables

individuals to better understand the relationships between different tasks and to develop a holistic view about work. Task significance can help individuals understand the importance of work, and job autonomy helps individuals understand how to make independent plans and to realize the importance of independence. Finally, feedback from colleagues gives individuals the guidance and perspective they need to explore the various career possibilities. Consistent with the above arguments, it has been found that a high-quality internship, assessed by measuring factors such as autonomy and feedback, is beneficial to individuals' career exploration (Brooks et al., 1995; Blustein, 1997; Gamboa et al., 2013).

In addition to its positive effects on career exploration, a high-quality internship can also help individuals develop a more concrete idea of their future careers and make relevant preparations, thereby promoting career concern (Knouse & Fontenot, 2008; Maertz, Stoeberl, & Marks, 2014). *Career concern* refers to the awareness of the need for future career development. Internships with a high level of skill variety, task identity, and task significance provide students with unique opportunities to experience the working world in a realistic manner, showing them the flaws alongside the merits. Thus, they are not disillusioned when they join the workforce. Moreover, feedback from superiors and colleagues at work gives students a better understanding of where their strengths lie and what weaknesses they need to overcome, fostering a clearer understanding of their own career orientations (Knouse & Fontenot, 2008).

*Career control* is the extent to which an individual feels the necessity to build a career. The accumulated cognitive and practical experiences from a high-quality internship can help a student grow in the belief that he/she has the ability to influence his/her own future career development. Brooks et al. (1995) found that perceived internship characteristics such as task variety and feedback were related to self-concept crystallization and the amount of occupational information imbibed. A high-quality internship can also promote career control in students by offering more opportunities to improve their decision-making effectiveness. This is because autonomy, task identity, and positive feedback during internships enhance students' ability to understand how to make good choices. By contrast, dissatisfaction resulting from an internship could urge students to feel responsible for taking control of their career development by practicing self-regulation actions such as being conscientious, proactive, organized, and deliberate in making career choices.

Moreover, a high-quality internship allows students to cultivate their career-related skills, such as communication skills (Maskooki et al., 1998; Perry, 1989), self-discipline (Molseed, Alsup, & Voyles, 2003; Dennis, 1996; Healy & Mourton, 1987; Taylor, 1988), time management (Gill & Lashine, 2003; Shoenfelt et al., 2013), and problem-solving skills (Molseed et al., 2003), which enhance their confidence in their abilities. In addition, skill variety, autonomy, task importance, task identity, task variety, and feedback promote self-efficacy (Brooks et al., 1995) by allowing students to comprehensively understand

the nature of the workforce and the principles under which it operates. Taken together, internship quality characterized by high skill variety, task identity, task significance, job autonomy, and feedback can positively relate to individuals' career adaptability. Gamboa et al. (2013) demonstrated that internship quality is related to career adapting behaviors (career exploration), providing evidence that supports this idea. Although the sample used by Gamboa et al. (2013) consisted of students from vocational education high schools, unlike our targeted sample (university students), it is expected that internship quality also plays an important role in developing university students' career adaptability by strengthening the school-to-work connection.

Although we theorized the association internship quality with career adaptability by discussing the relationship between internship quality and each dimension of career adaptability in order to better elaborate on the influence of the former on the latter, we viewed career adaptability as a global construct when proposing our hypotheses, as previous studies did (e.g., Cai et al., 2014; Guan et al., 2013; Guan et al., 2015). This is because the four dimensions of career adaptability are highly correlated and, more importantly, career adaptability has been consistently demonstrated to be an integrative construct (Hou et al., 2012; Savickas, 1997, 2005). In order to examine the unique effect of internship quality on career adaptability, we also incorporated proactive personality as a control variable. We propose the following hypotheses:

*Hypothesis 4:* Internship quality is positively associated with career adaptability when the effects of proactive personality are controlled.

#### *The Moderation Role of Internship Quality on the Effects of Proactive Personality*

In addition to the main effects discussed above, we also propose that the positive effects of proactive personality may be especially important when internship quality is low than when it is high. That is, internship quality may interact with proactive personality to be associated with university graduates' career adaptability and job search success. Based on the above arguments, we posit that when internship quality is low, proactive individuals can still engage in proactive activities, such as job crafting (Leana, Appelbaum, & Shevchuk, 2009; Tims, Bakker, & Derks, 2012), to improve their abilities. In addition, proactive individuals are also more likely to engage in network-building behavior, thereby increasing the opportunities to improve their career abilities (Seibert et al., 2006) with less dependence on the external context. In contrast, students with low proactivity are less willing to make changes to their environments or search for alternative opportunities (Bateman & Crant, 1993). Therefore, they encounter more difficulties in developing career adaptability when the quality of internship is low. As a result, the relationship between proactive personality and career adaptability as well as job search outcomes should be stronger when internship quality is low.

However, when internship quality is high, it is characterized by high levels of feedback, autonomy, task importance, task identity, and skill variety. This positive environment provides important opportunities for individuals with low proactivity to improve their abilities and skills, thereby acting as a buffer against the negative effects of low proactivity. In other words, internship quality serves as a protective factor for students whose proactive personality is low. As a result, students can benefit from internship experiences and develop their abilities, regardless of whether they possess proactive personalities. Hence, the benefits of proactive personality will be less in such situations. Taken together, we propose the following hypotheses:

*Hypothesis 5: Internship quality moderates the relationship between proactive personality and career adaptability such that the relationship is stronger when internship quality is lower rather than when it is higher.*

*Hypothesis 6: Internship quality interacts with proactive personality to be associated with job search success via career adaptability such that the indirect effect of proactive personality on number of job offers (H5a), starting salary (H5b), and job search efficiency (H5c) via career adaptability is stronger when internship quality is lower rather than when it is higher.*

----- Insert Figure 1 about here-----

## **Methods**

### ***Participants and procedure***

We recruited respondents from several Chinese universities by sending advertisements to college students. The job search process usually takes place in their final year, and students are required to sign their work contracts with employers one or two months before their graduation to facilitate the processing of paperwork by the university. A total of 447 students expressed interest in participating and received emails containing the links to the online questionnaires. In order to reduce the common method bias and establish a temporal sequence for the variables, a four-wave design was employed to test the hypothesized model. We sent questionnaires to the respondents at four time points: one week before the start of the internship (Time 1), in the middle of the internship (Time 2), one week after the end of the internship (Time 3), and in the last month before they graduated (Time 4). In most cases, students had not yet started their job search at the beginning of the internship, so none of the participants would have had job offers at that time. Consequently, we were unable to measure job search success as a controlling variable at Time 1, though we controlled career adaptability that was likely to change before and after the internships.

To increase the response rate, we offered a gift worth RMB 20 to the respondents who completed all four waves of the survey. Since internship schedules were likely to vary among respondents, participants were asked to provide us with their internship schedules (including start and end dates) at the

beginning of this study. Based on this, we set up a program to send the links of the online survey to participants at four time points. Participants were also asked to notify us if their internship schedules were changed. At Time 1, respondents were instructed to indicate demographic variables and the baseline of career adaptability. Of the total number of participants who were sent to the online questionnaire, 351 (100 males and 251 females) provided valid responses and other 96 participants either did not fill out the questionnaire or provided invalid answers (e.g., rating all of the items with the same number). The participants' average age was 21.67 ( $SD = 1.03$ ). At Time 2, participants were asked to rate internship quality as well as proactive personality, and 244 of them completed the survey. At Time 3, we measured career adaptability and received responses from 218 students. At Time 4, we invited participants to rate their employment success, taking into consideration the number of job offers received, when the first job offer was received, and the starting salary offered. A total of 207 participants completed the final questionnaire, thus yielding a response rate of 46.3%. It is worth noting that although a number of participants at each data collection time point were dropped from this study, we did not view these cases as missing data to employ the missingness management techniques, as the dropped participants did not rate any items in the final questionnaire.

According to Dormann and Griffin (2015), the time intervals in a time-lag research are supposed to be determined by the process assumed, especially the stabilities of the variables investigated. The data collection schedule was thus theoretically driven by career construction theory as well as the Chinese education system. Our potential contribution to career construction theory is to test the effects of external stimuli or human intervention (internship experience) on the increase of career adaptability. Given this intent and the stability of career adaptability, we measured the students' career adaptability before and after their internships (Time 1 and Time 3) in order to control the baseline of adaptability and to find the pure influence of internships. We assessed internship quality at Time 2 (in the middle of the internship), since students would be incapable of accurately evaluating the quality of their internships without undergoing the internships for a certain period. Job search success was measured at Time 4 (one month before graduation) because, based on the current Chinese education system, most of the students had confirmed their acceptance of job offers in the last month before their graduation.

The average age of the participants was 21.67 ( $SD = 0.99$ ). The gender composition was 25.1% male and 74.9% female. The respondents majored in literature and history (5.3%), science (1.9%), engineering (12.6%), economics and management (64.7%), and other disciplines (15.5%). Although the proportion of female students in our sample was greater than the proportion of male students, it was consistent with the gender distribution among Chinese university students, especially those majoring in economics and management. According to the statistics provided by the Chinese Education Ministry in

2015, there was a larger percentage of female undergraduate students in regular higher education (52.42%) than male students. In addition, a recent investigation among Chinese universities indicated that female students accounted for 65.8% of students who majored in humanities and social science, while male students accounted for only 34% in a sample of 85 schools (Ma, You, Xiong, Dong, Wang, & Kou, 2016). Thus, in this sense, the gender composition of the investigated sample seems to be reasonable. At the same time, to avoid any potential undesirable effects, we controlled for the composition of gender when performing the data analysis. The organizations at which respondents interned included private enterprises (61.4%), institutions (6.3%), state-owned enterprises (9.7%), government agencies (2.4%), and foreign or joint enterprises (19.3%). Internship duration among the participants varied as well: 4.4% worked for 15 days or less, 9.3% worked for a period between 15 days and one month, 46.8% worked for between one and three months, 35.6% worked for between three months and half a year, 2.4% worked for between half a year and one year, and 1.5% worked for more than one year.

### *Measures*

**Internship Quality.** Internship quality was measured using an adapted version of the job characteristics scale, consisting of 13 items (Hackman & Oldham, 1974; Sims & Keller, 1976) to measure skill variety (3 items), task identity (2 items), task significance (3 items), autonomy (3 items), and feedback (2 items). Sample items included “How much variety in work does your internship offer?” (skill variety), “How often do you complete work that has been started by another employee?” (task identity), “To what extent do the results of your work influence your co-workers?” (task significance), “To what extent are you able to do your internship independently of others?” (autonomy), and “To what extent do you receive information from your superior on your job performance?” (feedback). The answers ranged from 1 = “strongly disagree” to 5 = “strongly agree.” The Cronbach’s alpha for this scale was .68.

**Career Adaptabilities.** Since this study was conducted in the Chinese context, we adopted the Chinese scale of career adaptability developed by Hou, Leung, Li, Li, and Xu (2012), which contains four subscales—career concern, career control, career curiosity, and career confidence—with six items for each dimension. Sample items included “Thinking about what my future will be like” (career concern), “Taking responsibility for my actions” (career control), “Investigating options before making a choice” (career curiosity), and “Working up to my ability” (career confidence). The answers ranged from 1 = “strongly disagree” to 5 = “strongly agree.” The Cronbach’s alpha coefficients at Time 1 and Time 3 were .94 and .95, respectively.

**Job Search Success.** The current study used three questions to evaluate employment success (Boswell, Zimmerman, & Swider, 2012). Specifically, we asked respondents to answer the following questions: “How much time did you spend searching for jobs before you received your first offer?” (Here,

the time when the first offer was received was taken as an indicator of job search efficiency. 1 = “less than one month”, 2 = “1-3 months”, 3 = “4-6 months”, 4 = “7-9 months” and 5 = “more than 10 months”); “How many offers did you get by the end of your job search?” (the number of offers received); and “How much was the monthly pre-tax salary for your job?” (starting salary).

**Proactive Personality.** Proactive personality was measured with the scale developed by Bateman and Crant (1993), which consists of 10 items. Respondents were asked to indicate the extent to which they agreed with statements regarding proactivity. A sample item is “I often find new ways to improve my life” (1 = “strongly disagree,” 5 = “strongly agree”). The reliability coefficient for this scale was .87.

**Control Variables.** Prior research has shown that demographic variables such as age, gender, major, and internship duration are related to the evaluation of internship experience (Cook, Parker, & Pettijohn, 2003). As our sample largely consisted of females and students who had majored in economics, to rule out the potential influence of these demographic factors and examine the unique contribution of internship quality as a predictor of career adaptability and employment success, we measured and controlled for the effects of age, gender, major, internship organization type, and internship duration. In addition, we controlled for training during the internship and the relevance between internship position and major in school, as these variables were found to be related to internship experience and employment (Callanan & Benzing, 2004; Feldman, Folks, & Turnley, 1999). We measured training during the internships and the relevance between internship position and major in school by asking students to indicate their answers to the following questions using the scale 1 = “strongly disagree” and 5 = “strongly agree”: “To what extent did the internship organization provide work-related training?” and “To what extent was the content of your internship related to your major?”

### ***Analytic Strategy***

In order to test sampling bias, we first ran a series of independent sample t-tests and chi-square tests to examine the differences between the demographics and main variables of the participants who provided complete data and those who dropped out of the study. Then, to test the discriminant validity of the latent variables in this study, we compared the fit of the model of this study with those of alternative ones by conducting a variety of CFAs.

Given that this study has multiple dependent variables (number of offers, starting salary, and offer time), we employed Structural Equation Modeling (an SEM-based approach) to test the hypothesized model as opposed to an OLS-regression procedure. As our sample size is relatively small, the hypothesized model is quite complex (Bentler & Chou, 1987; Jackson, 2003), and the results of the CFAs have demonstrated the suggested factor structure, we followed the approach of previous studies (e.g., Beatrice, Van der Heijden, Lange, Demerouti, & Heijde, 2009; Wilkins et al., 2014), focusing on the test

of the structural model instead of the measurement model. Thus, Structural Equation Modeling (SEM) using Mplus 7.0 with robust maximum likelihood (MLR) estimation (Muthén & Muthén, 2010) was adopted to examine the pathways of internship quality, proactive personality, career adaptability and employment success. In particular, we predicted that proactive personality can positively affect employment success (i.e., number of offers, salary and the first offer's time) via the increase of career adaptability and the indirect effect is stronger when internship quality is low. In addition, internship quality can predict career adaptability after controlling for the effect of proactive personality.

In order to test the superiority of the hypothesized model, we compared the hypothesized model with alternative models. First, given that proactive personality was related to internship quality as showed in Table 1, it is possible that proactive students would be more likely to find a high-quality internship. The literature of proactive personality has suggested that proactive individuals are inclined to be engaged in activities through which their ability can be improved (e.g., Brown & Krane, 2000; Kammeyer-Mueller & Wanberg, 2003; Seibert et al., 2006). Empirical evidence has revealed that proactive personality can significantly predict career-related exploration (Seibert et al., 2006). We thus added a path from proactive personality to internship quality to obtain a new model, implying that proactive personality will lead to an increase of internship quality (Model 2). Second, we switched the independent variable and the mediator to assess the effectiveness of an alternate order in the path (Model 3). This is because career adaptability has been proposed to provide psychological resources for career activities (Savickas, 1997, 2005, 2013). Thus, students with a higher level of career adaptability are likely to make their internship more efficient.

## Results

### *Preliminary Analyses*

A series of independent sample t-tests and chi-square tests were performed to examine the differences between the demographics of the participants who provided complete data and those who dropped out of the study. The results showed that there are no differences in age ( $t = 0.11, ns.$ ), gender proportion ( $\chi^2(1) = 2.81, ns.$ ), internship organization type ( $\chi^2(2) = 0.28, ns.$ ) and internship tenure ( $t = -1.09, ns.$ ). Additionally, an insignificant difference between participants with data on career adaptability at Time 3 and those responded at only Time 1 ( $t = -0.68, ns.$ ) was demonstrated by the results of independent sample t-tests as well. However, there might be some other variables on which these two groups differ. Therefore, we also examined the differences on key variables between completers and non-completers at each wave (Time 2, Time 3 and Time 4). The results indicated that there are no differences in career adaptability ( $t = .25, ns.$ ) at Time 2, no differences in career adaptability ( $t = .15, ns.$ ), internship quality ( $t = -.27, ns.$ ) and proactive personality ( $t = .82, ns.$ ) at Time 3, and no differences in

internship quality ( $t = .41, ns.$ ) and proactive personality ( $t = 1.60, ns.$ ) and career adaptability 2 ( $t = -.97, ns.$ ) at Time 4.

In order to test the discriminant validity of the latent variables in this study, we compared the fit of the model of this study with those of alternative ones by conducting a variety of CFAs. The analyses calculated the  $\chi^2$  and the root mean square error of approximation (RMSEA) to assess the fit between the theoretical model and the data. Furthermore, we also examined the comparative fit index (CFI) and the normed fit index (NFI) (Marsh, Balla, & Hau, 1996). Generally,  $RMSEA < .08$  and other indices  $> .90$  indicates a reasonable fit (Hoyle, 1995). The results demonstrated that the three-factor model (internship, proactive personality, career adaptability) ( $\chi^2(df) = 2525.67 (1031), RMSEA = 0.088, CFI = 0.92, NNFI = 0.92$ ) fitted the data better than the two-factor model (internship quality + proactive personality, career adaptability) ( $\chi^2(df) = 2830.21(1033), RMSEA = 0.099, CFI = 0.90, NNFI = 0.90, \Delta\chi^2(\Delta df) = 304.54(2), p < .001$ ) and the single-factor model ( $\chi^2(df) = 3419.87(1034), RMSEA = 0.129, CFI = 0.87, NNFI = 0.86, \Delta\chi^2(\Delta df) = 894.20(3), p < .001$ ).

### ***Descriptive statistics***

The descriptive statistics and correlations among variables were shown in Table 1. The results indicated that internship quality was positively correlated with proactive personality ( $r = .46, p < .01$ ), number of offers ( $r = .35, p < .01$ ), salary ( $r = .21, p < .01$ ), and Time 3 career adaptability ( $r = .36, p < .01$ ), but negatively with offer time ( $r = -.24, p < .01$ ). Career adaptability related positively to proactive personality ( $r = .49, p < .01$ ), number of offers ( $r = .29, p < .01$ ), and salary ( $r = .29, p < .01$ ), but negatively to offer time ( $r = -.25, p < .01$ ). Proactive personality was associated positively with number of offers ( $r = .28, p < .01$ ) and salary ( $r = .26, p < .01$ ), but negatively with offer time ( $r = -.26, p < .01$ ).

-----Insert Table 1 about here-----

### ***Internship quality, career adaptability, and employment success***

Although the above t-tests and chi-square tests have indicated that the differences between the participants who provided complete data and those who dropped out of the study were not significantly different, MCAR is difficult to hold in the longitudinal studies (Graham, 2009). Especially, the approach of listwise deletion has serious defects (Enders, 2011). For example, it often reduces sample size and statistical power, and yields biased parameter estimates under systematic missingness (Newman, 2014). Thus, in order to ensure the robustness of our results, we analyzed the data using modern missing data technique (FIML) to directly estimate parameters of interest from incomplete data matrix. In particular, we modeled missingness to be a function of auxiliary correlates of missingness, and attempted to use the observed data at earlier time points to predict the incomplete data at later time points.

We first assessed the model-data fit by employing a series of path analyses using Mplus 7.0 (Muthén & Muthén, 2010) with robust maximum likelihood (MLR) estimation. The results of the path analyses showed that the hypothesized model fit the data well ( $\chi^2(df) = 25.24(19)$ , RMSEA = 0.04, CFI = 0.98, TLI = 0.89, SRMR = 0.01, Scaling Correction Factor = 0.77). In order to test the superiority of the hypothesized model, we examined alternative models. The results indicated that the hypothesized model fit the data better than Model 2 (adding a path from proactive personality to internship quality) ( $\chi^2(df) = 88.99(39)$ , RMSEA = 0.07, CFI = 0.87, TLI = 0.63, SRMR = 0.03, Scaling Correction Factor = 0.73,  $\Delta\chi^2(\Delta df) = 88.99(39)$ ,  $p < .001$ ) and Model 3 (switching the independent variable and the mediator) ( $\chi^2(df) = 63.75(20)$ , RMSEA = 0.17, CFI = 0.70, TLI = -0.47, SRMR = 0.02, Scaling Correction Factor = 0.87,  $\Delta\chi^2(\Delta df) = 116.15(0)$ ,  $p < .001$ ).

Hypothesis 1 and 4 predict that proactive personality and internship quality were respectively correlated with career adaptability. As shown in Table 2 (Model 1), the results demonstrated that after controlling for gender, age, major, internship organization type, internship duration, training, mentor, relevance between internship position and major, and career adaptability measured at Time 1, proactive personality ( $B = .19$ ,  $p < .05$ ) and internship quality ( $B = .13$ ,  $p < .05$ ) was significantly associated with career adaptability. Thus, hypothesis 1 and 4 were supported. Hypothesis 2 conjectures that career adaptability can significantly predict student job search success, such as the number of job offers (H2a), starting salary (H2b), and job search efficiency (H2c). The results in Table 2 (Model 3-5) showed that career adaptability was significantly related with the number of offers ( $B = .19$ ,  $p < .05$ ) and salary ( $B = .26$ ,  $p < .05$ ), but not the time of the first offer ( $B = -.16$ ,  $p < .10$ ). Therefore, hypotheses 2a and 2b were supported, and hypothesis 2c was marginally supported.

-----Insert Figure 2 about here-----

Hypothesis 3 posits that career adaptability mediates the relationship between proactive personality and job search success. To examine the indirect effect, we calculated confidence intervals using the Monte Carlo resampling approach. This is because mplus 7.0 cannot provide bootstrapping results when MLR estimation is employed, and Monte Carlo performs similarly with bootstrapping approaches (Biesanz, Falk, & Savalei, 2010; Preacher & Selig, 2012). Thus, we calculated the indirect effects and estimated confidence intervals based on 20,000 simulated resamplings by using Mplus and R, respectively. The results demonstrated the indirect effects of proactive personality on the number of offers (indirect effect = .12, SE = .06, 95% CI = .00 to .26), salary (indirect effect = .14, SE = .06, 95% CI = .03 to .29) via career adaptability, but the indirect effect on the time of the first offer was not significant (indirect effect = -.10, SE = .06, 95% CI = -.24 to .01). Therefore, hypothesis 3 was partially supported.

Hypothesis 5 is that internship quality moderates the relationship between proactive personality and career adaptability. The results suggested that the interactive effects of internship quality on the link between proactive personality and career adaptability were significant ( $B = -.28, p < .01$ ). Following Aiken and West (1991)'s suggestion, we graphically plotted the interactive effect at one standard deviation above and below the mean of internship quality. This is because these two values respectively represent the high-score vs. low-score groups of the moderator (i.e., internship quality), which can help us compare the discrepant effects of proactive personality on career adaptability at conditional values of internship quality (Cohen & Cohen, 1975). Liu, West, Levy and Aiken (2017: p446) suggests that "researchers would follow consistent guidelines, facilitating comparison of the results across similar studies". In Figure 3, we can see that the slope is steeper when internship quality is low than when it is high. The results of simple slope tests indicated that when internship quality was low, the effect of proactive personality on career adaptability was significantly positive ( $B = .88, p < .001$ ). However, when internship quality was high, the relationship was not significant ( $B = -.48, ns.$ ). Thus, hypothesis 5 was supported.

-----Insert Figure 3 about here-----

Our moderated-mediation hypothesis (H6) predicts that the indirect effect of proactive personality on job search success via career adaptability is stronger when internship quality is lower rather than when it is higher. To test the mediated moderation relationship, we examined the indirect effects at the contingent level of internship quality by using the Monte Carlo approach. When internship quality was low, the indirect effect was significantly positive (number of offers: *indirect effect* = .33, *SE* = .17, 95% *CI* = .00 to .48; salary: *indirect effect* = .40, *SE* = .18, 95% *CI* = .05 to .54) except the effect on offer time (*indirect effect* = -.29, *SE* = .18, 95% *CI* = -.12 to 0.08). However, when internship quality was high, the indirect effect was not significant (number of offers: *indirect effect* = -.09, *SE* = .11, 95% *CI* = -.08 to .13; salary: *indirect effect* = -.12, *SE* = .13, 95% *CI* = -.10 to .15; offer time: *indirect effect* = .08, *SE* = .10, 95% *CI* = -.46 to .03). Thus, the indirect effect in the case of high internship quality was different from the effect in the case of low internship quality ( $B_{diff} = -.42, SE = .26, 95\% CI = -.50 \text{ to } .00$ ;  $B_{diff} = -.52, SE = .29, 95\% CI = -.58 \text{ to } -.03$ ) except the effect on offer time ( $B_{diff} = .37, SE = .27, 95\% CI = -.02 \text{ to } .49$ ). Thus, hypothesis 5a and 5b were confirmed and hypothesis 5c was not supported. These results were consistent with the mediating tests.

## Discussion

In spite of the shared view on the benefits of internship on individuals' career development, results from prior research concerning the impact of internships on job search success are mainly based on quantitative indicators (Creed & Patton, 2003; Frone, 1999; Skorikov & Vondracek, 1997). In the present

study, we integrated the Job Characteristics Model and career construction theory to investigate the interactive effects of internship quality and proactive personality. The results of this study revealed that internship quality interacts with proactive personality to be associated with job search success through career adaptability. These findings carry implications for internship and career adaptability literature.

First, the present study expands our understanding of the role of internships in university students' career development by exploring the quality of internship instead of merely focusing on its quantitative aspects (Brooks et al., 1995; Gamboa et al., 2013; D'Abate et al., 2009). To respond to the call for expanding our understanding of internships (Oehlert et al., 2002), this study adopted a measure of internship quality based on the Job Characteristics Model (Hackman & Oldham, 1974), and examined its relationships with job search outcomes. The results suggest that the Job Characteristics Model enables us to analyze internship quality from an important angle, and future studies may examine the effects of these internship characteristics on other career outcomes.

Second, based on career construction theory (Savickas, 1997, 2005), the present study also examines the mechanism underlying the relationship between internship quality and employment success. While educators always encourage students to participate in more internships and even incorporate work-based learning into academic programs (e.g., Coco, 2000; English & Koeppen, 1993; Knechel & Snowball, 1987), little effort has been devoted to exploring the underlying mechanisms. A popular view is that internship experience improves students' résumés, which is helpful in their job searches (Taylor, 1988). This impression-management perspective has been demonstrated by empirical work (Knouse & Fontenot, 2008; Knouse et al., 1999; Taylor, 1988; Zhao & Liden, 2011). Can internship experience also cultivate students' career-related abilities in addition to making their résumés more attractive? The findings of this study clearly showed that internships promote university students' skill development and facilitate a smooth school-to-work transition. Specifically, a high level of internship quality can greatly ease the process of searching for a job by fostering career adaptability. Our investigation is among the first studies to clearly and systematically examine the actual gains from internship experiences in terms of self-regulatory resources. While our findings provide empirical evidence on this theme, the stream of research is still embryonic. Further research is needed to investigate other possible mediating processes. For instance, high-quality internships may improve individuals' self-efficacy or clarity of mind during their job searches (Brooks et al., 1995), thereby promoting their employment success.

Third, our findings contribute to the literature on career construction theory by demonstrating the role of human intervention in fostering career adaptability. Most studies on career construction theory have focused on the sequential model of "adaptivity, adaptability, adapting, and adaptation" and neglected the importance of external stimuli. As a matter of fact, the four components of career adaptability are

viewed as psychological resources or competencies that are not only predicted by personal characteristics (i.e., adaptivity) but also developed by employing human interventions (Koen et al., 2012). The findings of this study provide important empirical evidence supporting the malleability of career adaptability from the perspective of workplace learning. Gamboa et al. (2013) also found similar results by investigating high school students, focusing on the effect of “Vocational Education and Training courses (VET)” on career exploration. We suppose that internships in the context of VET are more closely related to career exploration than one-time internships at the end of college programs. In this sense, our findings extended those of Gamboa et al. (2013) by adding a conservative examination.

Fourth, this study provides empirical support for the interactive effects of personality traits (i.e., proactive personality) and context (i.e., internship) on career adaptability, which contributes to the career adaptability literature. Proactive personality has been established as one of the most important predictors of career adaptability (Guan et al., 2013; Cai et al., 2014). Our results suggest that contextual factors in general and internship quality in particular are more essential for those who are not very proactive. Students with a high level of proactivity are more likely to actively initiate changes in their environment than to passively adapt to undesirable circumstances (Crant, 2000; Seibert et al., 2006), thus relying less on internships per se to develop their abilities. These findings answer the calls of exploring the person-situation interaction in the fields of psychology (Lucas & Donnellan, 2009) and career development (Creed, Fallon, & Hood, 2009; Hall, 2002). Additionally, researchers of internship have seldom considered and tested the interactive effects with personal differences on work or career outcomes. Future studies can expand the present work by testing the roles of other relevant individual differences, such as learning orientation, openness, and extraversion, in this process.

### ***Practical Implications***

Educators should be aware that a high-quality internship is conducive to job search success. Several aspects of internships should be emphasized: First, a variety of skill development sessions is expected to be conducted for interns to acquire job-related knowledge and skills and achieve rapid development. Second, meaningful work should be assigned, which could help interns understand the requirements of the workplace and their own capabilities and encourage them to achieve career goals. Third, assigning interns whole tasks rather than parts of tasks can help them learn in a systematic manner and foster the development of a holistic attitude toward work. Fourth, work autonomy should be offered to cultivate in interns the ability to work independently and to encourage career adaptability. Fifth, timely feedback is encouraged, as it could help interns understand their strengths and weaknesses.

The results also suggest that internship quality is especially important in determining the career adaptabilities of students who are not very proactive. Educators should take this individual difference into consideration when designing or recommending internship programs to students.

### ***Limitations and Directions of Future research***

First, due to the limits of the sampling strategy, the findings of this study must be interpreted with caution when they are generalized to other university students. The majority of our participants were female and students who had majored in economics, even though we made efforts to collect data from diverse sources and controlled for the influence of demographic variables. Therefore, future studies should be encouraged to conduct a more conservative test by using an unbiased sample, especially to further examine if the same results would hold for male students and students studying the natural sciences. Specifically, it would be interesting to test if the relation between internship quality and career adaptability varies among students from different majors. Given that students who major in the natural sciences work on objective and technical issues at work, we predict that the relationship between internship quality and career adaptability may be weaker.

Second, although a time-lagged design was used in this study, the findings could not fully support the causal relationships among internship quality, career adaptability, and job search success. Future research should adopt a more rigorous design, such as an experimental design or a time-lagged panel design, to test the causal relationships among these variables.

Third, since the focus of this study is to test the role of internship quality in university students' job searches, we did not pay much attention to the effects of proactive personality on the basic level of career adaptability. As indicated in the correlation table, proactive personality not only was associated with employment success and career adaptability at Time 2, but it is also related to career adaptability at Time 1, implying that proactive individuals might be more likely to obtain high-quality internships and gain a competitive advantage at the beginning of their careers. Future research can extend the present study by investigating the role of proactive personality in increasing internship quality, which may give us a comprehensive understanding of the link between proactive personality and internship.

Fourth, since the main (e.g., internship and career adaptability) variables used in this study are multi-dimensional, it is optimal to test the hypothesized model using a full latent model. However, given the limited size of our sample and the complexity of the hypothesized model (Bentler & Chou, 1987; Jackson, 2003), we adopted path analysis rather than a full latent model to estimate the model. Using manifest variable path analysis that carries an assumption that measures are highly reliable in presenting the relevant construct (Bollen, 1989) may potentially lead to some methodology problems, when the above assumption is not met (e.g., Bollen, 1989; Ledgerwood & Shrout, 2011; Rubio & Gillespie, 1995;

Wansbeek & Meijer, 2000). In other words, unless the manifest variables are measured without errors, the results of manifest variables models should be interpreted with caution. This is because (random and normal) measurement errors derived from manifest variable path analysis could result in overestimation (i.e., “the shrinkage toward zero of path coefficient estimates” (Cole & Preacher, 2014: p.300)) on some path coefficients and underestimation (i.e., “the expansion away from zero of path coefficient estimates” (Cole & Preacher, 2014: p.300)) on others. Specifically, unreliability in manifest variables can spuriously attenuate or inflate the estimates of correlations and path coefficients (Blalock, 1965; Ledgerwood & Shrout, 2011), “also reducing power and increasing the possibility of Type II error” (Cole & Preacher, 2014: p.309). Therefore, if the measurement errors are so serious that it pervades the tested model, the possibility of rejecting an invalid model will be lower (Cole & Preacher, 2014). These problems will especially become serious when the model is more complicated. Thus, in our case, using path analyses is difficult to estimate and partial out the effects of measurement errors, thus increasing the possibility of misestimating path coefficients. Accordingly, it would be necessary to replicate our findings by employing more powerful analysis techniques. Latent variable modeling (e.g., SEM) methods will be highly recommended as it can well estimate the measure errors.

Fifth, we did not measure and control for the dependent variable (job search success) at Time 1, Time 2 and Time 3, as Chinese university graduates do not usually started their job search at Time 1 and thus none of the participants would have had job offers at that time. Nonetheless, it is plausible that some of students may have started job search during their internships and even have obtain job offers. Therefore, future study could conduct a more conservative test of our hypotheses by ruling out the potential effects of job search success at Time 2 and Time 3.

At last, the job search literature suggests that “job search success is a complex and multidimensional construct (Brasher & Chen, 1999: p. 65)” and the results from studies based on discrepant operationalization of search success are lack of consistency (Saks, 2006), indicating that it is needed to cautiously measure this construct, such as employing multiple indicators of job search success. While multi-indicators (i.e., job offers, starting salary and offer time) were adopted in this study (Boswell, Zimmerman, & Swider, 2012), the used indicators are not without shortcomings. For example, we treated the number of job offers as a continuous variable when analyzing data, but strictly speaking, these data were inherently counts (i.e., number of occurrences of some event), even though the number of job offers have been widely used to assess job search success in the literatures (e.g., Brasher & Chen, 1999; Brown et al., 2006; Kanfer et al., 2001; Saks, 2006; Steffy, Shaw, & Noe, 1989).

---

**References**

- Aiken, L. S., & West, S. G. (1991). Multiple regression: testing and interpreting interactions. *Evaluation Practice*, 14(2), 167-168.
- Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, 14, 103-118. doi:10.1002/job.4030140202.
- Beatrice I.J.M. Van der Heijden, Lange, A. H. D., Demerouti, E., & Heijde, C. M. V. D. (2009). Age effects on the employability–career success relationship. *Journal of Vocational Behavior*, 74(2), 156-164. doi: 10.1016/j.jvb.2008.12.009.
- Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Social Methods & Research*, 16, 78-117.
- Blalock, H. M., Jr. (1965). Some implications of random measurement error for causal inferences. *American Journal of Sociology*, 71, 37-47. doi:10.1086/223991.
- Blustein, D. L. (1997). A context-rich perspective of career exploration across the life roles. *The Career Development Quarterly*, 45(3), 260-274. doi:10.1002/j.2161-0045.1997.tb00470.x.
- Biesanz, J. C., Falk, C. F., & Savalei, V. (2010). Assessing mediational models: Testing and interval estimation for indirect effects. *Multivariate Behavioral Research*, 45(4), 661–701. doi: 10.1080/00273171.2010.498292.
- Bollen, K. A. (1989). Structural equations with latent variables. *New York New York John Wiley & Sons*, 35(7), 289-308.
- Boswell, W. R., Swider, B. W., & Zimmerman, R. D. (2012). Employee job search: toward an understanding of search context and search objectives. *Journal of Management Official Journal of the Southern Management Association*, 38(1), 129-163. doi:10.1177/0149206311421829.
- Brasher, E. E., & Chen, P. Y. 1999. Evaluation of success criteria in job search: A process perspective. *Journal of Occupational and Organizational Psychology*, 72: 57-70. doi:10.1348/096317999166491.
- Breaugh, J. A. (1981). Predicting absenteeism from prior absenteeism and work attitudes. *Journal of Applied Psychology*, 66(66), 555-560. doi:10.1037/0021-9010.66.5.555.
- Brooks, L., Cornelius, A., Greefield, E., & Joseph, R. (1995). The relation of career-related work or internship experiences to the career development of college seniors. *Journal of Vocational Behavior*, 46, 332-349. doi:10.1006/jvbe.1995.1024.

- Brown, D. J., Cober, R. T., Kane, K., Levy, P. E., & Shalhoop, J. (2006). Proactive personality and the successful job search: a field investigation with college graduates. *Journal of applied psychology*, 91(3), 717-726. doi:10.1037/0021-9010.91.3.717.
- Brown, S. D., & Ryan-Krane, N. E. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (pp. 740-766). New York, NY: Willey.
- Boswell, W. R., Zimmerman, R. D., & Swider, B. W. (2012). Employee job search. *Journal of Management*, 38, 129-163. doi:10.1177/0149206311421829.
- Buss, D. M. (1987). Selection, evocation, and manipulation. *Journal of Personality and Social Psychology*, 53, 1214-1221. doi:10.1037//0022-3514.53.6.1214.
- Cai, Z., Guan, Y., Li, H., Shi, W., Guo, K., & Liu, Y., et al. (2015). Self-esteem and proactive personality as predictors of future work self and career adaptability: an examination of mediating and moderating processes. *Journal of Vocational Behavior*, 86, 86-94. doi:10.1016/j.jvb.2014.10.004.
- Callanan G., & Benzing, C. (2004). Assessing the role of internships in the career-oriented employment of graduating college students. *Education + Training*, 46, 82-89. doi:10.1108/00400910410525261.
- Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management*, 26, 435-462. doi:10.1016/S0149-2063(00)00044-1.
- Creed, P. A., Fallon, T., & Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior*, 74(2), 219-229. doi:10.1016/j.jvb.2008.12.004.
- Creed, P., & Patton, W. (2003). Differences in career attitude and career knowledge for high school students with and without paid work experience. *International Journal for Educational and Vocational Guidance*, 3, 21-33. doi:10.1023/A:1022674528730.
- Coco, M. (2000). Internships: a try before you buy arrangement. *Sam Advanced Management Journal*, 65(2), 41-43.
- Cohen, J and Cohen, P. (1975). *Applied Multiple Regression/ Correlation Analysis for the Behavioral Sciences*. (J. W. & Sons, Ed.) (p. 7). Hillsdale, New Jersey: Lawrence Erlbaum Associates, Inc.

- Cole, D. A., & Preacher, K. J. (2014). Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods*, 19(2), 300-315. doi:10.1037/a0033805.
- Cook, S. J., Parker, R. S., & Pettijohn, C. E. (2003). The perceptions of interns: a longitudinal case study. *Journal of Education for Business*, 79(3), 179-185.
- D'Abate, C. P., & Wenzel, K. E. (2009). Making the most of an internship: an empirical study of internship satisfaction. *Academy of Management Learning & Education*, 8(4), 527-539. doi:10.5465/AMLE.2009.47785471.
- Dennis, A. (1996). The next generation: the benefits of using college interns in a firm. *Journal of Accountancy*, 182(6): 89-92.
- Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological Methods*, 20(4), 489-505. doi:10.1037/met0000041.
- Dyer, L. (1973). Job search success of middle-aged managers and engineers. *Industrial and Labor Relations Review*, 26, 969-979. doi:10.1109/EMR.1978.4306666.
- Enders, C. K. (2010). Applied missing data analysis. *Guilford Press*.
- Enders, C. K. (2011). Analyzing longitudinal data with missing values. *Rehabilitation Psychology*, 56(4), 267-288. doi:10.1037/a0025579.
- Edwards, J. R., & Lambert, LSL (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods* 12(1): 1–22. doi:10.1037/1082-989X.12.1.1.
- English, D. M., & Koeppen, D. R. (1993). The relationship of accounting internships and subsequent academic performance. *Issues in Accounting Education*, 8, 292-299.
- Feldman, D. C., Folks, W. R., & Turnley, W. H. (1999). Mentor–protégé diversity and its impact on international internship experiences. *Journal of Organizational Behavior*, 20(5), 597-611. doi: 10.1002/(SICI)1099-1379(199909)20:53.0.CO;2-#.
- Frone, M. R. (1999). Developmental consequences of youth employment. *Young Workers: Varieties of Experience*. doi:10.1037/10309-004.
- Gamboa, V., Paixão, M. P., & Jesus, S. N. D. (2013). Internship quality predicts career exploration of high school students. *Journal of Vocational Behavior*, 83(1), 78-87. doi:10.1016/j.jvb.2013.02.009.

- Garavan, T. N., & Murphy, C. (2001). The co-operative education process and organizational socialization: a qualitative study of student perceptions of its effectiveness. *Education & Training, 43*(6), 281-302. doi:10.1108/EUM0000000005750.
- Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: Are they related? *Journal of Marketing Education, 22*, 45-53. doi:10.1177/0273475300221006.
- Gill, A., & Lashine, S. (2003). Business education: a strategic market-oriented focus. *International Journal of Educational Management, 17*(5), 188-194. doi:10.1108/09513540310484904.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual review of psychology, 60*, 549-576. doi:10.1146/annurev.psych.58.110405.085530.
- Granovetter, M. (1974). *Getting a job: A study of contacts and career*. Cambridge, MA: Harvard University Press.
- Greenhaus, J. H., Callanan, G. A., & Godshalk, V. M. (2000). *Career Management, 3<sup>rd</sup> ed.*, Thomson-South-Western, Mason, OH.
- Guan, Y., Deng, H., Sun, J., Wang, Y., Cai, Z., & Ye, L., et al. (2013). Career adaptability, job search self-efficacy and outcomes: a three-wave investigation among Chinese university graduates. *Journal of Vocational Behavior, 83*(3), 561-570. doi:10.1016/j.jvb.2013.09.003.
- Guan, Y., Dai, X., Gong, Q., Deng, Y., Hou, Y., Dong, Z., ... & Lai, X. (2017). Understanding the trait basis of career adaptability: A two-wave mediation analysis among Chinese university students. *Journal of Vocational Behavior, 101*, 32-42. doi:10.1016/j.jvb.2017.04.004.
- Guan, Y., Wang, F., Liu, H., Ji, Y., Jia, X., Fang, Z., Li, Y., Hua, H., & Li, C. (2015). Career-specific parental behavior, career exploration and career adaptability: A three-wave investigation among Chinese university students. *Journal of Vocational Behavior, 86*: 95-103. doi:10.1016/j.jvb.2014.10.007.
- Guan, Y., Yang, W., Zhou, X., Tian, Z., & Eves, A. (2016). Predicting Chinese human resource managers' strategic competence: Roles of identity, career variety, organizational support and career adaptability. *Journal of Vocational Behavior, 99*, 116-124. doi:10.1016/j.jvb.2015.11.012.
- Hackman, J. R., & Oldham, G. R. (1974). The Job Diagnostic Survey: An Instrument for the Diagnosis of Jobs and the Evaluation of Job Redesign Projects. *Affective Behavior, 4*, 87.
- Hall, D. T. (2002). *Careers in and out of organizations*. Thousand Oaks, CA: Sage.

- Healy, C. C., & Mourton, D. C. (1987). The relationship of career exploration, college jobs, and grade point average. *Journal of College Student Personnel*, 28, 28-36.
- Hou, Z. J., Leung, S. A., Li, X., Li, X., & Xu, H. (2012). Career adaptabilities scale—China form: construction and initial validation. *Journal of Vocational Behavior*, 80(3), 686-691.  
doi:10.1016/j.jvb.2012.01.006.
- Hoyle, R. H. (1995). *Structural equation modeling: concepts, issues, and applications*. Sage Publications.
- James, L. R., Mulaik, S. A., & Brett, J. M. (1982). *Causal analysis: Assumptions, models, and data*. Beverly Hills, CA: Sage.
- Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N:q hypothesis. *Structural Equation Modeling*, 10(1), 128-141. doi:10.1207/S15328007SEM1001\_6.
- Jr, C. P. M., Stoeberl, P. A., & Marks, J. (2014). Building successful internships: lessons from the research for interns, schools, and employers. *Career Development International*, 26(3), 281-2.  
doi:10.1108/CDI-03-2013-0025.
- Kammeyer Mueller, J. D., & Wanberg, C. R. (2003). Unwrapping the organizational entry process: disentangling multiple antecedents and their pathways to adjustment. *Journal of Applied Psychology*, 88(5), 779-794. doi:10.1037/0021-9010.88.5.779.
- Koen, J., Klehe, U. C., & Vianen, A. E. M. V. (2012). Training career adaptability to facilitate a successful school-to-work transition. *Journal of Vocational Behavior*, 81(3), 395-408.  
doi:10.1016/j.jvb.2012.10.003.
- Knechel, W. R., & Snowball, D. (1987). Accounting internships and subsequent academic performance: An empirical study. *The Accounting Review*, 62, 799-807.
- Knouse, S. B., & Fontenot, G. (2008). The benefits of the business college internship: a research review. *Journal of Employment Counseling*, 45, 61-66. doi:10.1002/j.2161-1920.2008.tb00045.x.
- Knouse, S. B., Tanner, J. R., & Harris, E. W. (1999). The relation of college internships, college performance, and subsequent job opportunity. *Journal of Employment Counseling*, 36, 35-43.  
doi:10.1002/j.2161-1920.1999.tb01007.x.
- Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in early childhood education: the role of job crafting. *Academy of Management Journal*, 52(6), 1169-1192.  
doi:10.5465/AMJ.2009.47084651.

- Ledgerwood, A., & Shrout, P. E. (2011). The trade-off between accuracy and precision in latent variable models of mediation processes. *Journal of Personality and Social Psychology*, 101, 1174–1188. doi:10.1037/a0024776.
- Li, Y., Guan, Y., Wang, F., Zhou, X., Guo, K., & Jiang, P., et al. (2015). Big-five personality and bis/bas traits as predictors of career exploration: the mediation role of career adaptability. *Journal of Vocational Behavior*, 89, 39-45. doi:10.1016/j.jvb.2015.04.006.
- Liu, Y., West, S. G., Levy, R., & Aiken, L. S. (2017). Tests of simple slopes in Multiple regression models with an interaction: Comparison of four approaches. *Multivariate behavioral research*, 52(4), 445-464. doi:10.1080/00273171.2017.1309261.
- Lucas, R. E., & Donnellan, M. B. (2009). If the person-situation debate is really over, why does it still generate so much negative affect. *Journal of Research in Personality*, 43(2), 146-149. doi:10.1016/j.jrp.2009.02.009.
- Ma, L., You, Y., Xiong, Y., Dong, L., Wang, M., & Kou, K. (2016). Gender differences of students professional choice: based on the investigation of the 85 universities in China. *Journal of Higher Education*, 5, 36-42.
- Marsh, H. W., Balla, J. R., & Hau, K. T. (1996). An evaluation of incremental fit indices: a clarification of mathematical and empirical properties. *Proceedings of the National Academy of Sciences*, 97(24), 13108-13113.
- Maskooki, K., Rama, D. V., & Raghunandan, K. (1998). Internships in undergraduate finance programs. *Financial Practice & Education*, 8, 74-82.
- Molseed, T. R., Alsup, J., & Voyles, J. (2003). The role of the employer in shaping students' work-related skills. *Journal of Employment Counseling*, 40, 161-171. doi:10.1002/j.2161-1920.2003.tb00867.x.
- Muthén, L. K., & Muthén, B. O. (2010). Mplus 7 base program. *Net.aupf.net*.
- Newman, D. A. (2014). Missing data: five practical guidelines. *Organizational Research Methods*, 17(4), 372-411. doi:10.1177/1094428114548590.
- Oehlert, M. E., Sumerall, S. W., Lopez, S. J., & Merkley, K. B. (2002). Internship placement data: is nonplacement the only concern? *Journal of Clinical Psychology*, 58(10), 1323-1326. doi:10.1002/jclp.10045.

- Perera, H. N., & Mcilveen, P. (2014). The role of optimism and engagement coping in college adaptation: a career construction model. *Journal of Vocational Behavior, 84*(3), 395-404.  
doi:10.1016/j.jvb.2014.03.002.
- Perry, P. (1989). Firms want more from marketing schools. *Marketing News, 23*, 1-2.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.  
doi:10.3758/BRM.40.3.879.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Assessing moderated mediation hypotheses: theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*(1), 185-227.  
doi:10.1080/00273170701341316.
- Preacher, K. J., Selig, J. P. (2012). Advantages of Monte Carlo confidence intervals for indirect effects. *Communication Methods and Measures, 6*, 77-98. doi: 10.1080/19312458.2012.679848.
- Porfeli, E. J., & Savickas, M. L. (2012). Career adapt-abilities scale-usa form: psychometric properties and relation to vocational identity. *Journal of Vocational Behavior, 80*(3), 748-753.  
doi:10.1016/j.jvb.2012.01.009.
- Raymond, M. A., McNabb, D. E., & Matthaedi, C. F. (1993). Preparing graduates for the workforce: The role of business education. *Journal of Education for Business, 68*, 202-206.  
doi:10.1080/08832323.1993.10117613.
- Rothman, M. (2007). Lessons learned: Advice to employers from interns. *Journal of Education for Business, 82*, 140-144. doi:10.3200/JOEB.82.3.140-144.
- Rubio, D. M., & Gillespie, G. F. (1995). Problems with error in structural equation models. *Structural equation modeling, 2*, 367-378. doi:10.1080/10705519509540020.
- Saks, A. M. (2006). Multiple predictors and criteria of job search success. *Journal of Vocational Behavior, 68*(3), 400-415. doi:10.1016/j.jvb.2005.10.001.
- Savickas, M. L. (1997). Career Adaptability: An integrative construct for life-span, life-space theory. *Career Development Quarterly, 45*, 247-259. doi:10.1002/j.2161-0045.1997.tb00469.x.
- Savickas, M. L. (2005). The theory and practice of career construction. In R. W. Lent, & S. D. Brown (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 42-70). Hoboken, New Jersey: John Wiley & Sons.

- Savickas, M. L. (2013). Career construction theory and practice. In R. W. Lent, & S. D. Brown (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 147-183) (2nd ed.). Hoboken, New Jersey: John Wiley & Sons.
- Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84*(3), 416-427. doi:10.1037/0021-9010.84.3.416.
- Seibert, S. E., Kraimer, M. L., & Crant, J. M. (2006). What do proactive people do? A longitudinal model linking proactive personality and career success. *Personnel Psychology, 54*(4), 845-874. doi:10.1111/j.1744-6570.2001.tb00234.x.
- Sims, H. P., & Keller, R. T. (1976). The measurements of job characteristics. *Academy of Management Journal, 19*(19), 195-212. doi:10.2307/255772.
- Shoenfelt, E. L., Stone, N. J., & Kottke, J. L. (2013). Internships: an established mechanism for increasing employability. *Industrial & Organizational Psychology, 6*(1), 24-27. doi:10.1111/iops.12004.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods, 7*: 422-445. doi:10.1037/1082-989X.7.4.422.
- Skorikov, V. B., & Vondracek, F. W. (1997). Longitudinal relationships between part-time work and career development in adolescents. *Career Development Quarterly, 45*(3), 221-235. doi:10.1002/j.2161-0045.1997.tb00466.x.
- Steffy, B. D., Shaw, K. N., & Noe, A. W. (1989). Antecedents and consequences of job search behaviors. *Journal of Vocational Behavior, 35*(3), 254-269. doi:10.1016/0001-8791(89)90029-8.
- Taylor, S. M. (1988). Effects of college internships on individual participants. *Journal of Applied Psychology, 73*, 393-401. doi:10.1037/0021-9010.73.3.393.
- Teixeira, M. A. P., Bardagi, M. P., Lassance, M. C. P., Magalhães, M. D. O., & Duarte, M. E. (2012). Career adapt-abilities scale—brazilian form: psychometric properties and relationships to personality. *Journal of Vocational Behavior, 80*(3), 680-685. doi:10.1016/j.jvb.2012.01.007.
- Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., & Plewa, C. (2014). Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism. *Journal of Vocational Behavior, 84*(1), 39-48. doi:10.1016/j.jvb.2013.11.004.

- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, 80(1), 173-186. doi:10.1016/j.jvb.2011.05.009.
- Wanberg, C. R., Zhu, J., & Hooft, E. A. J. V. (2010). The job search grind: perceived progress, self-reactions, and self-regulation of search effort. *Academy of Management Journal*, 53(53), 788-807. doi:10.5465/AMJ.2010.52814599.
- Wansbeek, T., & Meijer, E. (2000). *Measurement error and latent variables in econometrics*. Amsterdam, the Netherlands: Elsevier.
- Wilkins, K. G., Santilli, S., Ferrari, L., Nota, L., Tracey, T. J. G., & Soresi, S. (2014). The relationship among positive emotional dispositions, career adaptability, and satisfaction in Italian high school students. *Journal of Vocational Behavior*, 85(3), 329-338. doi:10.1016/j.jvb.2014.08.004.
- Zacher, H. (2014). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behavior*, 84(1), 21-30. doi:10.1016/j.jvb.2013.10.002.
- Zhao, H., & Liden, R. C. (2011). Internship: A recruitment and selection perspective. *Journal of Applied Psychology*, 96, 221-229. doi:10.1037/a0021295.

Appendix

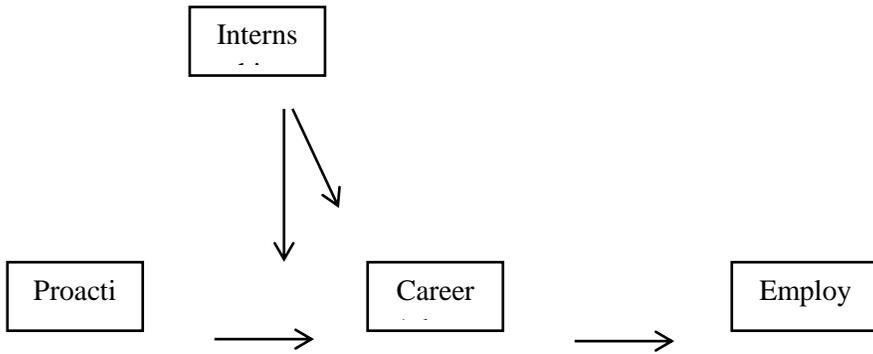
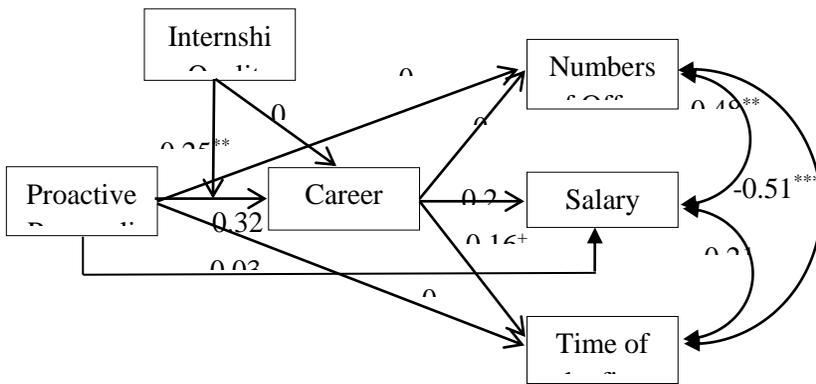
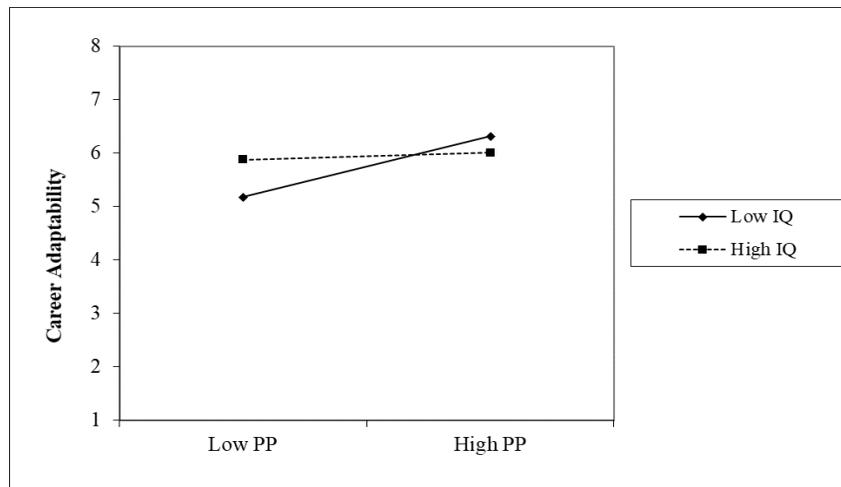


Figure 1. The theoretical model



Note. + $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Figure 2. Structural paths for the effects of internship quality on employment success



Note: IQ = Internship quality; PP = Proactive personality.

**Figure 3. Moderating effect between internship quality and proactive personality on career adaptability**

Table 1. *Descriptive statistics and inter-correlations among variables*

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Internship quality	3.17	.49	1										
2. Career adaptability 1	3.85	.56	.45**	1									
3. Career adaptability 2	3.79	.60	.36**	.54**	1								
4. Career concern 2	3.61	.73	.33**	.50**	.85**	1							
5. Career control 2	3.95	.66	.23**	.41**	.88**	.65**	1						
6. Career curiosity 2	3.74	.66	.34**	.46**	.90**	.68**	.72**	1					
7. Career confidence 2	3.87	.68	.37**	.49**	.89**	.63**	.73**	.78**	1				
8. Proactive personality	3.60	.64	.46**	.65**	.49**	.47**	.36**	.44**	.43**	1			
9. Number of offers	3.07	1.16	.35**	.27**	.29**	.28**	.18**	.26**	.27**	.28**	1		
10. Salary	2.33	1.07	.21**	.25**	.29**	.22**	.25**	.27**	.29**	.26**	.52**	1	
11. Offer time	2.26	1.21	-.24**	-.21**	-.25**	-.25**	-.18*	-.23**	-.19**	-.26**	-.58**	-.30**	1

*Note.* Career adaptability 1: career adaptability measured at Time 1; Career adaptability 2: career adaptability measured at Time 3.

<sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Table 2. The effects of proactive personality on job-search success

Variable	Career Adaptability		Number of offers		Salary		Offer time			
	Model 1		Model 2		Model 3		Model 4		Model 5	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Constant	4.49 <sup>**</sup>	1.70	5.84 <sup>***</sup>	.41	-.01	1.71	-.20	1.76	6.55 <sup>***</sup>	1.64
Proactive personality	.19 <sup>*</sup>	.08	.18 <sup>**</sup>	.08	.01	.10	-.03	.10	-.09	.08
Internship quality	.13 <sup>*</sup>	.07	.09	.07	.29 <sup>***</sup>	.08	.15 <sup>+</sup>	.08	-.22 <sup>*</sup>	.09
Internship quality × proactive personality			-.28 <sup>**</sup>	.08	.07	.06	.08	.10	-.05	.07
Career adaptability					.19 <sup>*</sup>	.09	.26 <sup>*</sup>	.10	-.16 <sup>+</sup>	.09

*Note.* Results were reported after controlling for gender, age, major, school level, internship organization type, internship tenure, mentor, training, relevance between internship position and major, and career adaptability at Time 1. <sup>+</sup> $p < .10$ , <sup>\*</sup> $p < .05$ , <sup>\*\*</sup> $p < .01$ , <sup>\*\*\*</sup> $p < .001$ .