



Success in the first phase of the vocational career: The role of cognitive and scholastic abilities, personality factors, and vocational interests☆

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ARTICLE INFO

Article history:

Received 1 July 2015

Received in revised form 16 July 2015

Accepted 23 August 2015

Available online 28 August 2015

Keywords:

Vocational education and training (VET)

Vocational interests

Big Five

Cognitive and scholastic abilities

Satisfaction

Dropout intention

ABSTRACT

The present study examines the relationship of cognitive and scholastic abilities, vocational interests, and personality traits with vocational success in the first phase of the vocational career. Drawing on large samples of technicians and industrial clerks, the effects of the covariates on satisfaction and dropout intention in the first months of vocational education and training (VET) were examined. Results show that the sets of predictor variables, especially personality traits and vocational interests, had a large proportion of variance in common, but exhibited different patterns of effects. Whereas in the case of personality traits the predictor-outcome relationships were largely invariant across different fields of VET, vocational interests exhibited a non-invariant pattern of effects that was in line with the congruence hypothesis (Holland, 1997). Vocational interests in the dominant domain characterizing the field of VET were the strongest predictors, whereas interests in the non-dominant VET domains were less important for predicting success. Abilities did not turn out to be important predictors of the markers of success under study. The results underscore the crucial role of personality traits and vocational interests in securing success in the first phase of vocational career.

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1. Introduction

The decision in favor of a vocational career is one of the most important developmental tasks in the transition from late adolescence to young adulthood (Havighurst, 1948; Savickas, 2002). This decision has tremendous consequences for the individual life path because it strongly limits the range of job options accessible to individuals who have completed their formal professional education (Havighurst, 1948). Additionally, the first phase of the vocational career is characterized by a high risk of failure, so that many individuals feel that they have decided on the wrong occupational pathway (Beicht & Walden, 2013). In many countries, the first phase of the vocational career is marked by vocational education and training (VET) programs. In Germany, successful graduation from VET is a key requirement for entry into later working life (Beicht & Walden, 2013). Success in VET is also a goal criterion from both the economic and the labor market perspectives. Minor completion quotes of VET indicate suboptimal investments in personal and educational resources (Stamm, 2012), implying costs for the organizations offering VET and for the whole society. In Germany, between 20 and 25% of VET contracts are prematurely dissolved, with almost two thirds of premature contract dissolutions taking

☆ The research reported in this article is part of the project “Mathematics and Science Competencies in Vocational Education and Training”. The project was funded by the Leibniz Association (SAW-2012-IPN-2). We would like to thank the Institute for Educational Quality Improvement in Berlin for providing the school achievement tests developed for assessing the German Educational Standards. Moreover, we thank Gráinne Newcombe for language editing.

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place within the first year of VET (Beicht & Walden, 2013). In this phase, the majority of contracts are terminated by the trainees, and not by their hiring organizations (Beicht & Walden, 2013).

Nowadays, a consensus exists that early dropout from educational programs and/or quitting a job is closely related to other indicators of educational and/or occupational success, such as, for example, satisfaction (Judge, Thoresen, Bono, & Patton, 2001). Hence, measures that aim to reduce dropout rates from VET might benefit from knowledge about predictors of the diverse indicators of success, other than dropout intention.

In this article, we investigate the individual predictors of success in the first phase of VET taken from three well-known research paradigms, namely the Big Five personality traits (Costa & McCrae, 1992), cognitive and scholastic abilities (Kuncel, Hezlett, & Ones, 2004; Lubinski & Benbow, 2000), and vocational interests (Holland, 1997). These variables have repeatedly been found to be predictive of success in academic and occupational settings (e.g., DeNeve & Cooper, 1998; Holland, 1997), but have rarely been investigated in a VET setting. Our study provides a favorable setting for estimating the aforementioned variables' effects on the success indicators of VET entrants. First, the apprentices were at the beginning of their vocational career (about three months after starting VET), which means that our sample might be less selective in terms of outcomes, compared to most convenience samples used in the literature (e.g., Pozzebon, Ashton, & Viser, 2014). Second, the sample consists of two large and distinct groups of occupations, namely technicians and industrial clerks. This situation allows for a straightforward interpretation of group-specific relationships between interest and ability domains with outcomes that can be related to the occupational activity profiles. Third, in contrast to most other studies focusing on a specific set of predictor variables (e.g., Judge, Heller, & Mount, 2002), our study allows cognitive variables, vocational interests, and personality traits to be jointly evaluated in the prediction of success. This point is important because cognitive variables, vocational interests, and personality traits are known to share a considerable amount of variance (e.g., Ackerman & Heggestad, 1997).

1.1. Cognitive and scholastic abilities, personality factors, and vocational interests

Research on personality traits and vocational interests is rooted in different traditions which emphasize different aspects of individual behavior. Personality researchers are often interested in individual factors that form the basis of behavioral patterns which are generalizable across situations (Costa & McCrae, 1992). Hence, personality factors are typically assumed to be related to occupational or academic success, regardless of the environmental characteristics (e.g., Barrick & Mount, 1991; McCrae & John, 1992). For example, it is assumed that occupational satisfaction can be predicted by the same personality factors in, say, industrial clerks, as in motor mechanics.

Research on vocational interests takes a different point of view. The key assumption is that success does not directly depend on interests, but rather that this relationship is moderated by the characteristics of the environment. Having high interests in a given domain is believed to be beneficial only if the environment allows these interests to be satisfied. Whenever individuals are located in an environment not supportive of specific interest domains, high interests in the corresponding domain are assumed to be rather detrimental. This point of view is most often expressed as an *interest congruence* hypothesis, stating that vocational satisfaction, achievement, and stability depend on the congruence between the individuals' interest profiles and the characteristics of the environment (Holland, 1997).

Much of the research that investigates the role which cognitive and scholastic abilities play in educational and occupational successes can be characterized either as assuming relationships that can be generalized across occupational and educational environments (e.g., Gottfredson, 1997), or as hypothesizing relationships that are moderated by environmental characteristics (e.g., Lubinski & Benbow, 2000). The most widely known class of theoretical models that assumes relationships that are independent from the environment stems from the *g-theory* (e.g., Jensen, 1998). Here, it is assumed that the ability outcome relations are due to a single general ability factor (*g*) being related to academic and occupational successes in diverse environmental settings. Additionally, some researchers working in the area of educational psychology also assume that scholastic abilities (e.g., reading and mathematics) play a largely identical role in diverse academic and occupational settings (Horn & Noll, 1997). This point of view is challenged by researches working with the theory of work adjustment (Dawis & Lofquist, 1984; Shea, Lubinski, & Benbow, 2001) and related theories. These theories assume that the impact of different kinds of abilities on occupational and educational successes depends on the specific demands imposed by different environments.

It should be noted that most researches on the usefulness of cognitive variables, personality factors, and vocational interests in predicting occupational or educational success focus on one set of predictors. This, however, can be considered as a major shortcoming because these sets of variables are known to be systematically related to each other (e.g., Ackerman & Heggestad, 1997), which means that focusing on a single group of predictors might fail to provide consistent estimates for each individual characteristic. This limitation applies to the majority of research findings summarized in the following sections.

1.2. Personality traits

Over the last 20 years, a consensus has emerged that a five-factor model of personality (i.e., Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness), often termed the Big Five (Costa & McCrae, 1992), can be used to describe the most salient aspects of the personality. Research focusing on these dimensions has established links between personality traits and success in academic and organizational contexts. Meta-analyses have documented the relationships between Big Five traits and occupational as well as educational performance (e.g., Barrick & Mount, 1991; Poropat, 2009; Trapmann, Hell, Hirn, & Schuler, 2007).

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