



## Chinese Management Studies

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To cite this document:

Cheng-Liang Yang Mark Hwang , (2014), "Personality traits and simultaneous reciprocal influences between job performance and job satisfaction", Chinese Management Studies, Vol. 8 Iss 1 pp. 6 - 26

Permanent link to this document:

<http://dx.doi.org/10.1108/CMS-09-2011-0079>

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# Personality traits and simultaneous reciprocal influences between job performance and job satisfaction

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## Abstract

**Purpose** – This paper aims to test the relationships among three important variables in the management of Chinese employees: personality trait, job performance and job satisfaction. A causal model is developed to hypothesize how personality trait affects job performance and satisfaction and how job performance and satisfaction simultaneously affect each other.

**Design/methodology/approach** – The survey was conducted from October to November 2009. In total, 414 questionnaires were distributed and 392 were returned. Using data collected, the theoretical model is empirically validated. Structural equation modelling using LISREL 8.8 is used to test the causal model.

**Findings** – Job performance and job satisfaction have a bilateral relationship that is simultaneously influential. All Big Five personality traits significantly influence job performance, with agreeableness showing the greatest effect, followed by extraversion. Extraversion is the only personality trait that shows a significant influence over job satisfaction.

**Originality/value** – This study contributes to the literature by clarifying the inconsistent findings of causal relationship between job performance and job satisfaction in previous studies. Another contribution is testing the effect of personality traits on job performance and job satisfaction in a simultaneous reciprocal model. A hybrid theory of expectance and equity is advanced in this study to explain the results.

**Keywords** Job satisfaction, Job performance, Personality, Big five personality traits, Simultaneous reciprocal influences

**Paper type** Research paper

## Introduction

The study of job performance and job satisfaction has a long history that can be traced to the Hawthorne studies (Roethlisberger and Dickson, 1939). The relationship between job performance and job satisfaction has been considered the “Holy Grail” of industrial psychology (Landy, 1989). This line of research has important practical implications for

The authors thank Yao-Chun Chang for her effort in data collection. This study could not be completed without her generous help.



corporate resources allocation. Specifically, knowing the causal relationship can help management direct limited resources toward enhancing the cause, be it job performance or job satisfaction (Bagozzi, 1980). In other words, if job performance influences job satisfaction, management should concentrate on creating a working environment conducive to job performance. On the other hand, if job satisfaction influences job performance, then attention should be given to factors that contribute to high job satisfaction, which, if present, can then lead to high job performance.

Despite the practical importance and the long history of research, questions about the relationship between job performance and job satisfaction abound. Several early studies failed to find any correlation between the two variables (Brayfield and Crockett, 1955; Chapman and Chapman, 1969; Katz *et al.*, 1951; 1950). Later studies had reported either a low correlation (Iaffaldano and Muchinsky, 1985; Vroom, 1964) or a medium correlation (Judge *et al.*, 2001; Petty *et al.*, 1984). In studies where the causal direction was specified, many researchers found a significant effect of job performance on job satisfaction (Brown *et al.*, 1993; Darden *et al.*, 1989; Henne and Locke, 1985; Leung *et al.*, 2008, 2004; MacKenzie *et al.*, 1998; Stumpf and Hartman, 1984), but an equally large number of researchers reported a non-significant effect (Behrman and Perreault, 1984; Birnbaum and Somers, 1993; Brown and Peterson, 1994; Dubinsky and Hartley, 1986; Dubinsky and Skinner, 1984; Hampton *et al.*, 1986). Relatively fewer studies have examined the effect of job satisfaction on job performance. While Shore and Martin (1989) reported a significant effect, Keaveney and Nelson (1993) found the effect non-significant. A recent meta-analysis of 16 studies that had repeatedly measured performance and job attitudes found a significant effect of satisfaction on performance but a non-significant effect of performance on satisfaction (Ricketta, 2008). Thus, studies investigating the causal relationship from either direction have produced inconsistent results.

A possible reciprocal relationship between job performance and job satisfaction has also been proposed (Bagozzi, 1980; Siegel and Bowen, 1971; Sheridan and Slocum, 1975; Wanous, 1974; Prestwich, 1980). Empirical results of related studies have been just as inconsistent. While Bagozzi (1980) and Siegel and Bowen (1971) found that job performance leads to job satisfaction but not the reverse, Sheridan and Slocum (1975) and Wanous (1974) found only partial support for the reciprocal relationship. Prestwich (1980), meanwhile, did not find a significant relationship in either direction.

One possible reason for the conflicting findings is that both job performance and job satisfaction could be concomitantly influenced by other variables (Brayfield and Crockett, 1955; March and Simon, 1958; Jones, 2006; Schwab and Cummings, 1970). Jones (2006) suggested that many organizational and personality variables could impact the observed relationship between job performance and job satisfaction. Similarly, Judge *et al.* (2001) proposed that moderators or mediators be included in future reciprocal relationship research.

In sum, there is empirical support for both the direct and inverse effect of job performance on job satisfaction. It will be helpful to extend previous studies to investigate the reciprocal influences with an antecedent variable. One promising variable is personality, which has been suggested by both Judge *et al.* (2001) and Jones (2006). In several reviews of the literature, personality has been found to have a significant effect on job performance (Hersén and Thomas, 2005; Hurtz and Donovan, 2000) and on both job performance and job satisfaction (Tokar *et al.*, 1998; Robson *et al.*,

2010; Raja *et al.*, 2011). Including personality in a study of job performance and job satisfaction also has practical significance. Rao (2007) indicated that personality characteristics were essentially required for the effective implementation of a performance management system. Huang *et al.* (2005) found that expatriate adjustment was significantly related to personality traits. Thus, personality traits appear to influence either directly or indirectly an employee's job satisfaction and job performance.

Although the relationships between personality, job performance and job satisfaction have been investigated in previous literature, no work has demonstrated the simultaneous reciprocal influences between job performance and job satisfaction which are affected by personality. Therefore, the current study was conducted to test the effect of personality in a simultaneous reciprocal causal model of job performance and job satisfaction, particularly in Chinese context. What distinguished the current research from previous studies is to clarify the inconsistent results of causal relationship between job performance and job satisfaction, and to help organizations identify personality traits associated with high job satisfaction and performance in Chinese setting.

## Literature review and hypothesis development

### *Personality traits*

The history of personality traits research is long. Allport (1937, p. 48) defined personality as "the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment." Systematic taxonomy of personality probably began with McDougall's (1932) five broadly distinguishable factors: intellect, character, temperament, disposition and temper. Eysenck (1947), based upon his analysis of experimental subjects' answers on personality inventory, concluded that there are two most important dimensions in personality traits: extraversion/introversion and neuroticism/emotional stability. Eysenck (1970) interpreted differences in personality through physiological point of view, adding a third dimension – psychoticism. Cattell (1943, 1946, 1947, 1948) developed a more complex trait taxonomy consisting of 16 factors. He believed that personality traits predict a person's inner and outer behavior in specific environments. Subsequent attempts to replicate the work of Cattell were unsuccessful. For example, Fiske (1949) found only four factors: social adaptability, emotional control, conformity and inquiring intellect. Tupes and Christal (1961) reanalyzed the correlations published by Cattell and Fiske and found five factors, namely, surgency, emotional stability, agreeableness, dependability and culture. Although research concerning the specification and the number of factors encompassed in the domain of personality were debatable, the labels presented by Norman (1963) became popularly in the literature. These labels, namely, extraversion, emotional stability, agreeableness, conscientiousness and culture, subsequently have been referred to as "Norman's Big Five" or simply as the "Big Five" (Barrick and Mount, 1991). Of the Big Five, the fifth factor has been the most difficult to identify and has been named culture (Norman, 1963), intelligence (Borgatta, 1964), Intellect (Goldberg, 1990) and openness to experience (McCrae and Costa, 1985). Nonetheless, Digman (1990) indicated that it is quite likely that all of them are correct and used the following names for the taxonomy of personality: extraversion, emotional stability, agreeableness, conscientiousness and openness to experience. These names and definitions were also adopted by Barrick and Mount (1991) and were most frequently used in meta-analyses

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(Barrick *et al.*, 2001). Since this taxonomy can serve as a meaningful classification of personality traits and has been used widely in the literature, the present study has selected it as the antecedent variable in the investigation of the relationship between job performance and job satisfaction.

### *Job performance*

Job performance measures an individual against his or her goal, with an emphasis on whether outcomes match the expected goal (Thorndike, 1913). Hall and Goodale (1986) pointed out that job performance is how an employee performs his or her tasks using time, techniques and interactions with others. Schermerhorn (1989) held that job performance represents the quantity and quality of work achieved by an individual or a group, stressing whether the task has been achieved effectively. However, Organ (1977) indicated that the meaning of performance defined narrowly as quantity of output or quality of task performance might be the reason that no relationship was found between job satisfaction and job performance. Similarly, Fisher (1980) noted that general attitudes (job satisfaction) can influence behavior (job performance) only when behavior is measured in broad manner. He further suggested that attendance, compliance, coordination and devoting personal time to work should be considered in the measurement of individual performance.

Katz and Kahnn (1966) have emphasized the influence of extra-role behaviors on organizational functioning. These behaviors that cannot be prescribed or required in advance of a given job, such as helping co-workers, protecting organizational resources and promoting a good work climate, are referred by Bateman and Organ (1983) as "Citizenship" behaviors. These extra-role behaviors, although not officially described in job descriptions, are appreciated by management authorities. Organ (1988a) further addressed "performance" as "organizational citizenship behavior (OCB)", and pointed out that OCB neither has a direct linkage with individual productivity nor is a compulsory requirement for the individual's in-role performance. Meanwhile, Organ (1988b) identified OCB with five dimensions: Altruism, Courtesy, Civic Virtue, Conscientiousness and Sportsmanship. To understand variation in citizenship behavior among different cultures, similar constructs have been developed in a Chinese context, which consist of identification with the company, altruism toward colleagues, conscientiousness, interpersonal harmony and protection of company resources (Farh *et al.*, 1997).

Following the views of extra-role behaviors mentioned above, Borman and Motowidlo (1993, 1997) categorized job performance into task performance and contextual performance. Task performance is the traditional in-role performance, which is the most basic component of performance appraisal; it directly assesses task outcomes and relates directly to work effectiveness that contributes to the organization's technical core. Contextual performance borrows from OCB or extra-role behavior; it may stem from personality traits and is unrelated to in-role expectations. Contextual activities include volunteering to carry out task activities not formally part of the job and helping and cooperating with others in the organization to get tasks accomplished (Borman and Motowidlo, 1997). We adopted the view of Borman and Motowidlo and measured job performance by both task performance (in-role performance) and contextual performance (extra-role performance or OCB).

*Job satisfaction*

The earliest concept of job satisfaction was proposed by [Hoppock \(1935\)](#). He believed that job satisfaction is an overall psychological state; thus, the most straightforward way to measure job satisfaction is to inquire the employees directly of their self-assessed integral satisfaction level of the job, without having to divide the measurement into several dimensions. [Adams \(1963\)](#) viewed job satisfaction from an equity perspective. He suggested that, if one compares one's own qualifications to the rewards earned from one's job and finds that the results fair, then one will feel satisfied about one's job. [Porter and Lawler \(1968\)](#), on the other hand, reckoned that satisfaction is generated when certain needs or desires are fulfilled. In other words, when rewards are received from a job, satisfaction is formed. Such rewards can be intrinsic, created by work itself, and extrinsic, rewards received from others. Intrinsic rewards include, for instance, challenges, accomplishments and the ability to apply one's expertise. In contrast, extrinsic rewards comprise promotion, benefits, good working environment and so forth. [Locke \(1976, p. 1,300\)](#) defined job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." The "emotional state" and the "appraisal" aspects are interpreted by [Organ \(1988a\)](#) as "affect" and "cognition," respectively. Organ further indicated that job satisfaction responses can be interpreted as largely representing judgments of fairness, and reasoned that it is why satisfaction generally correlates more with citizenship-type behaviors than with traditional in-role performance.

In short, the viewpoints of the foregoing demonstrate that job satisfaction is the employee's psychological perception of his or her job. Such psychological perception comes mostly from the job itself, but also from the environment external to the job. Accordingly, we have adopted "intrinsic satisfaction" and "extrinsic satisfaction" ([Porter and Lawler, 1968](#)) and "fairness" ([Organ, 1988a](#)) as the measures of job satisfaction.

To sum up, both job performance and job satisfaction are related to how people feel about the job. The former emphasizes whether individual's outcomes match the expected goals. These goals not only concern formally organizational expectations such as work efficiency and effectiveness but also concern extra-role behaviors like helping colleagues and making suggestions. On the other hand, job satisfaction stresses individual's psychological content. This content is generated by job itself such as challenging job and by others like promotion, benefits and fairness.

*Hypotheses**Personality traits and job performance*

Recent studies show that personality traits affect job performance. For instance, agreeableness is an important social attitude with which one interacts with other people within a group. This is an essential factor to social interaction, for a person with great agreeableness trait finds interpersonal relationship easier, and blends into a group faster. Hence, [Mount et al. \(1998\)](#) suggested that agreeableness can effectively predict job performance. Furthermore, as job involves considerable interpersonal interaction such as cooperation with others, agreeableness may be the single best personality predictor of job performance ([Barrick et al., 1998](#); [Mount et al., 1998](#)). On the other hand, individuals with strong conscientiousness trait are mostly righteous and reliable,



earnest and responsible, careful and comprehensive, hardworking and good at planning, thus can perform better in most fields (Barrick and Mount, 1991; Tett *et al.*, 1991). Moreover, Matthews and Deary (1998) concluded that conscientiousness is the most consistent predictor of job proficiency. Meanwhile, Hurtz and Donovan (2000) showed that conscientiousness is positively relative to job performance in a meta-analysis. Extraversion is positively influence job performance as well because the main characteristic of extraversion is sociable, assertive and active. People with this characteristic are energetically direct participation, confident in putting forward their views and not conflict with the others; therefore, they could produce good job performance. Particularly, extraversion is significantly related to management job performance (Barrick and Mount, 1993; Schmit *et al.*, 2000). Similarly, McManus and Kelly (1999) found that extraversion is the predictor of task performance, while the other four of the Big Five predict contextual performance. Because extraverted trainees are likely more active and ask more questions during training, Hough (1992) showed that they are inclined to be better at training proficiency. Salgado (1997) suggested that emotional stability is positively correlated with job performance in most jobs. Moreover, emotional stability is more strongly related to performance in jobs that involve teamwork, for such trait helps one control temper, endure pressure and increase personal security, thus making one pleasant to others and achieving desirable job performance (Mount *et al.*, 1998). People with strong openness trait are inclined to trying out new experiences and would gladly accept new challenges, thus attaining better job performance (Salgado, 1997). Tokar *et al.* (1998) conducted a selective review of the literature from 1993 to 1997 and concluded that emotional stability, extraversion and conscientiousness emerged most frequently in associations with vocational behavior (i.e. job performance, job satisfaction, job search, interests and so on). Yang (2011) indicated that personal characteristics can also affect employees' work motivation. Those who have strong motivation for work will do their best in their jobs; consequently, they will generate good job performance. Based on the review above, we propose the following hypotheses:

- H1a.* Agreeableness will positively influence job performance.
- H1b.* Conscientiousness will positively influence job performance.
- H1c.* Extraversion will positively influence job performance.
- H1d.* Emotional stability will positively influence job performance.
- H1e.* Openness will positively influence job performance.

#### *Personality traits and job satisfaction*

Van den Berg and Feji (2003) indicated that many meta-analyses have shown personality traits are not only related to job performance, but also to job satisfaction. McCrae and Costa (1991) believed that agreeableness is related to happiness, and that individuals with significant agreeableness trait are friendly and approachable. Their study pointed out that agreeableness is positively correlated to life satisfaction; if such study is replicated for job satisfaction, similar results may be obtained. Because friendly and approachable persons are more likely to fulfill their social needs from their jobs, thus, they are more inclined to produce job satisfaction. Besides, Organ and Lingl (1995) indicated that agreeableness contributes significantly to explained variance in job

satisfaction. They also showed that individuals with conscientiousness trait are more deeply involved with work and have greater chances of being rewarded for their works, thus having greater job satisfaction overall. Tokar and Subich (1997) proposed that, with stronger extraversion, comes greater job satisfaction; this may have to do with the empirical data demonstrated by Watson and Clark (1997), their study suggested that individuals who are extraverted tend to have more friends than do introverts, and are more inclined to spend time socializing; it will create good working environment, as a result, producing job satisfaction. The meta-analysis conducted by Judge *et al.* (2002) also showed that extraversion is related to job satisfaction. Connolly and Viswesvaran (2000) analyzed negative affectivity through a meta-analysis and found that individuals who are emotionally unstable have more difficulty in feeling satisfied towards their jobs. Magnus *et al.* (1993) suggested that individuals with strong trait of neuroticism (the opposite of emotional stability) experience more negative incidents in life; therefore, Tokar and Subich (1997) reckoned that the lower the neuroticism, the higher the job satisfaction. Peltokorpi (2008) similarly found that emotional stability has a positive influence on job satisfaction. Emotionally stable people can handle pressure well and endure frustrating from the jobs, and consequently they are more likely to generate job satisfaction than are neurotic people. On the other hand, study conducted by Topolinski and Hertel (2007) on the role of personality in psychotherapists' careers found "openness to experience" leads to higher job satisfaction. Those who hold this personality are curious, imaginative, independent and are more inclined to try new things, therefore, they are more likely to create job satisfaction. Furthermore, taken together as a set, the Big Five traits have a multiple correlation with job satisfaction, supporting the dispositional source of job satisfaction (Judge *et al.*, 2002). Boštjančič (2010) also indicated that managers that successfully control their emotions are satisfied with their work. Extraversion and emotional stability are the most significant factors of job satisfaction for trauma surgeons (Foulkrod *et al.*, 2010). More recently, Templer (2012) showed that extraversion, conscientiousness, emotional stability and agreeableness are all related to job satisfaction in Asian societies. Based on the above literature and arguments, we propose the following hypotheses:

*H2a.* Agreeableness will positively influence job satisfaction.

*H2b.* Conscientiousness will positively influence job satisfaction.

*H2c.* Extraversion will positively influence job satisfaction.

*H2d.* Emotional stability will positively influence job satisfaction.

*H2e.* Openness will positively influence job satisfaction.

#### *Job performance and job satisfaction*

Happy workers are productive workers. Such a statement originates from the observations gathered from the experiments conducted on Hawthorne studies at Western Electric, and is generally thought to be correct (Robbins and Judge, 2009). For example, Shore and Martin (1989) indicated a significant effect of job satisfaction on job performance. Riketta (2008) conducted a meta-analysis of panel studies and found that job satisfaction is more likely to influence performance than vice versa. Many researchers, however, subscribe to expectancy-based theories and believe that job performance affects job satisfaction (e.g. Lawler and Porter, 1967; Greene, 1973; Stumpf



and Hartman, 1984; MacKenzie *et al.*, 1998; Leung *et al.*, 2008). Wanous (1974) showed that job performance leads to intrinsic satisfaction, and that extrinsic satisfaction causes job performance. On the other hand, Sheridan and Slocum (1975) found that managers' performance influences their job satisfaction; while for machine operators it is their job satisfaction that affects performance. As discussed earlier, there is a wealth of studies on job performance and job satisfaction; however, whether the enhancement in job performance is the result of job satisfaction, or vice versa, is still open to debate. Although previous studies provided more support for performance causing satisfaction than vice versa, Organ (1977, p. 49) pointed out that "the connection here is that one need not view these contrasting approaches as running a horse race; there is no reason why attraction to either one excludes the other from consideration. Both relationships may exist, in varying degrees of mix from one situation to another." Similarly, Robbins and Judge (2009) suggested that perhaps both arguments are correct; for some individuals, job satisfaction leads to enhancement in job performance; for others, high level of job performance elevates their sense of job satisfaction. Yet, empirical evidence on this point of view is very limited and dated. We concur with the view of Organ, and Robbins and Judge, and propose the following hypothesis:

*H3.* Job performance and job satisfaction are positively and mutually influential.

## Methodology

### *Construct measurement*

The questionnaire is divided into three parts: personality traits, job performance and job satisfaction. Five-point Likert scales are used, with 1 representing strongly disagree and 5 being strongly agree. For items that are inversely worded, 1 stands for strongly agree and 5 being strongly disagree. The personality inventory is adapted from the Big Five factors developed by Costa and McCrae (1992), with five dimensions, 20 items in all. The higher the average score, the more inclined the respondent is towards a certain personality trait. An example item is "I see other people's point of view." Job performance scale is based on Borman and Motowidlo's (1993) viewpoint and includes both task performance and contextual performance. The scale of task performance with eight items is adapted from McAllister (1995), and includes Fisher's (1980) viewpoint of attendance and coordination. A sample item is "I outperform my colleagues." The scale of contextual performance with eight items refers to Organ's (1988b) and Farh's *et al.* (1997) points of view. A sample item is "I actively help my colleagues with their work." The higher the average score, the better the job performance. Job satisfaction scale is based on Porter and Lawler (1968) with consideration of fairness as suggested by Organ (1988a). It is divided into intrinsic satisfaction and extrinsic satisfaction with three items each. Example items are: "My job is challenging," and "My company offers equitable promotion path." The higher the average score, the higher the job satisfaction.

### *Pre-test*

The questionnaire was sent to Standard Chartered Bank, Land Bank, King's Town Bank, Cathay United Bank, Union Bank of Taiwan, and E. SUN Commercial Bank for the first pre-test by 22 financial personnel. The purpose is to ensure correctness and clarity in wording. We then asked the managers of the IT and Operations department from Land Bank for further suggestions for correction. After revision, we asked 20

employees from the sales department of Citibank to do the third pre-test, and revised the questionnaire once again based on the result.

#### *Data collection*

The subjects of this study were financial personnel from 31 companies in the financial, securities and insurance industries in Taiwan. The survey was conducted from October to November of 2009. A total of 414 questionnaires were distributed and 392 were returned. Subtracting 32 invalid questionnaires, the remaining 360 valid questionnaires represented an 87 per cent response rate and were used in subsequent analysis.

#### *Data analysis*

Because there are a large number of parameters in the research model requiring estimation, the model may have insufficient identifiability. Moreover, a large number of parameters tend to result in a large chi-square goodness-of-fit index, increasing the chances of falsely rejecting the null hypothesis. To avoid these problems, this research adopted the two-step approach suggested by [Anderson and Gerbing \(1988\)](#); that is, the measurement model is first separated from the entire model, analyzed through confirmatory factor analysis (CFA), and estimated and re-specified, before the entire model is subjected to confirmation and estimation. The two-step approach has also been used, for example, by [Aquino et al. \(1997\)](#) in their research on employee turnover.

We used software LISREL 8.8 ([Jöreskog and Sörbom, 1996](#)) to analyze each hypothesis through structural equation modeling (SEM), which is a multivariate technique combining aspects of factor analysis and multiple regression that enables the researcher to simultaneously examine a series of interrelated dependences relationships among the measured variables and latent constructs as well as between several latent constructs ([Hair et al., 2010](#)). The reliability of each construct was measured using Cronbach's  $\alpha$ . An  $\alpha > 0.7$  indicates high internal consistency between all items within the construct ([Nunnally, 1978](#)). Convergent validity of the constructs was assessed by examining factor loadings. A loading over 0.5 is considered significant ([Hair et al., 2010](#)). A two-index presentation strategy of standardized root-mean-square residual (SRMR) and comparative fit index (CFI) was adopted to determine how well the hypothetical model fit the observed data ([Hu and Bentler, 1999](#); [Thompson, 2005](#)). As suggested by Hu and Bentler, acceptable fit is indicated when  $SRMR \leq 0.09$  and  $CFI \geq 0.95$ .

## **Results**

### *Reliability and validity analysis*

To increase the reliability and validity of the scales, items analysis and CFA were performed on the three measurement models and items with a corrected item-total correlation coefficient below 0.4 were deleted. As a result, four items were removed from personality traits and two items from job performance. [Tables I–III](#) report the results of the CFA for the remaining items in the three measurement models. The overall fit of each model was quite well. All models' CFI values were over the threshold value of 0.95 and their SRMR values were far below the threshold value of 0.09. As shown in the tables, all items (except one) had a factor loading greater than 0.5, indicating good convergent validity. The reliability analysis showed that, other than emotional stability, all constructs had a Cronbach's  $\alpha$  coefficient above 0.7. In sum, all the measurement models proved good fit and all the constructs exhibited proper reliability. Thus, we summarized the point values of items within the measurement models as the scores

Construct/measure	Cronbach's $\alpha$	Factor loading	Personality traits and reciprocal influences
<i>Agreeableness</i>	0.88		
A1: I do my best to help others		0.79	
A2: I get along well with others		0.82	
A3: I see other people's point of view		0.83	
A4: I am considerate		0.75	
<i>Conscientiousness</i>	0.77		
C1: I am conscientious of my work		0.64	
C2: I am always looking for grow opportunity		0.68	
C3: I try to do my best in everything that I do		0.69	
C4: I am methodical		0.69	
<i>Extraversion</i>	0.79		
E1: I am a leader		0.79	
E2: I am persuasive		0.82	
E3: I am self-motivated		0.65	
E4: I am energetic		0.58	
<i>Emotional stability</i>	0.68		
ES1: I handle pressure well		0.75	
ES2: I am good-tempered		0.68	
<i>Openness to experience</i>	0.70		
OE1: I like to try new things		0.69	
OE2: I take a holistic approach		0.79	

**Notes:** CFI = 0.97, SRMR = 0.057; all factor loadings significant  $p < 0.01$

**Table I.**  
Personality traits reliabilities and factor loadings

Construct/measure	Cronbach's $\alpha$	Factor loading	Job performance reliabilities and factor loadings
<i>Contextual performance</i>	0.86		
CP1: I actively help my colleagues with their work		0.70	
CP2: I focus on team performance		0.69	
CP3: I am courteous at work		0.67	
CP4: I take measures to resolve conflict at work		0.71	
CP5: I actively make suggestions to improve my company		0.72	
CP6: I actively publicize my company's strengths		0.69	
CP7: I manage to complete assigned work that is beyond my responsibility		0.47	
CP8: I actively coordinate with my colleagues		0.72	
<i>Task performance</i>	0.79		
TP1: I outperform my colleagues		0.72	
TP2: I handle emergencies well		0.71	
TP3: I achieve objectives that are assigned to me		0.67	
TP4: I am never late nor take off early from work		0.52	
TP5: I aim to attain perfection in my work		0.59	
TP6: I am prudent and seldom make mistakes		0.61	

**Notes:** CFI = 0.96, SRMR = 0.055; all factor loadings significant  $p < 0.01$

**Table II.**  
Job performance reliabilities and factor loadings

of their corresponding constructs, which were treated as measured variables in the hypothesized model.

*Personality and model fitting*

Table IV provides the descriptive statistics and correlations of the study variables. The Table IV shows that personality measured by “Big Five” is scored relatively high on agreeableness and conscientiousness and relatively low on openness to experience and extraversion, with emotional stability falling in between. The Big Five model of personality has been broadly supported by many different cultures (e.g. McCrae et al., 1998, 2005). McCrae et al. (2005) indicated that examining the average personality traits, Americans were scored high on extraversion and low on conscientiousness; on contrast, Hong Kong Chinese were rated high on conscientiousness and low on extraversion; People’s Republic Chinese were rated low on extraversion but high on openness to experience. The current study revealed that extraversion was scored low by Chinese in Taiwan but high on agreeableness. Therefore, it seems to show that Chinese people are not as sociable, assertive and aggressive as Americans.

Figure 1 depicts the results of testing of the hypothesized model. This model exhibited an adequate fit to the observed data: CFI = 0.98 and SRMR = 0.033. In the model, agreeableness, conscientiousness, extraversion, emotional stability and openness to experience all had a positive and statistically significant influence on job performance. Agreeableness was the most influential (standardized coefficient = 0.33),

Construct/measure	Cronbach’s $\alpha$	Factor loading
<i>Intrinsic satisfaction</i>	0.86	
IS1: My job is challenging		0.69
IS2: My skillset fits well with my job		0.89
IS3: I can realize my full potential in my job		0.88
<i>Extrinsic satisfaction</i>	0.78	
ES1: My company offers equitable promotion path		0.72
ES2: My company provides good benefits		0.78
ES3: My company actively seeks to improve working conditions		0.71

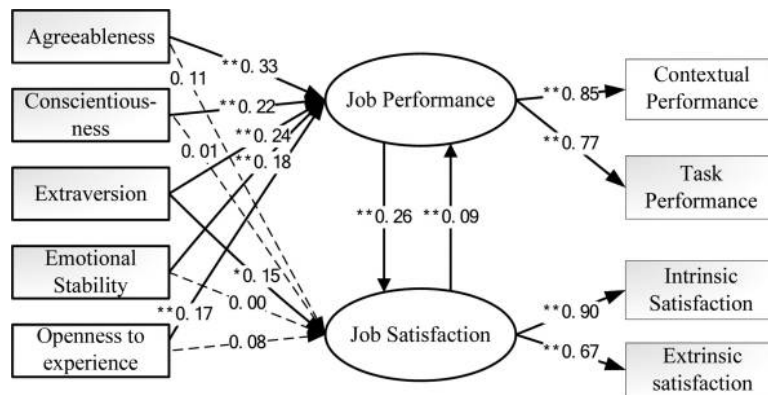
**Notes:** CFI = 0.98, SRMR = 0.039; all factor loadings significant  $p < 0.01$

**Table III.**  
Job satisfaction  
reliabilities and factor  
loadings

Construct	Mean	SD	1	2	3	4	5	6	7	8
1 Contextual performance	3.83	0.49								
2 Task performance	3.70	0.52	0.65							
3 Intrinsic satisfaction	3.51	0.74	0.48	0.35						
4 Extrinsic satisfaction	3.25	0.79	0.39	0.22	0.60					
5 Agreeableness	4.04	0.55	0.65	0.46	0.35	0.30				
6 Conscientiousness	3.91	0.54	0.60	0.65	0.38	0.27	0.55			
7 Extraversion	3.59	0.63	0.61	0.64	0.42	0.28	0.43	0.63		
8 Emotional stability	3.72	0.62	0.55	0.46	0.28	0.29	0.39	0.41	0.47	
9 Openness to experience	3.55	0.68	0.55	0.60	0.37	0.27	0.31	0.57	0.67	0.55

**Note:** All correlations significant  $p < 0.01$

**Table IV.**  
Descriptive statistics and  
correlations



Notes:  $**p < 0.01$ ,  $*p < 0.05$ ; path coefficients are completely standardized

**Figure 1.**  
The effect of personality  
traits on job performance  
and job satisfaction in a  
simultaneous reciprocal  
model

followed by extraversion, conscientiousness, emotional stability and openness to experience respectively. Moreover, extraversion also had a significant positive influence on job satisfaction, but the other four had no significant effect. It is noteworthy that job performance and job satisfaction were significantly, positively and simultaneous mutually influential, with a  $p$ -value under 0.01. In other words, both the direct and inverse effect of job performance on job satisfaction was demonstrated. This result clarifies the conflicting findings in previous studies that some argued job performance has a significant effect on job satisfaction but others suggested the inverse causal effect.

## Discussion

### *The influence of personality traits on job performance and job satisfaction*

A fairly large body of evidence has been accumulated over the years that job performance is a function of all five personality traits (e.g. see Tokar *et al.*, 1998). Consistent with the literature, our results indicate that the effects of all five traits are significant, with agreeableness being the most influential, followed by extraversion. A possible reason is that, out of the 360 questionnaires distributed to financial personnel, 251 went to sales personnel, amounting to 70 per cent of the sample. Because agreeableness is the personality trait essential to salespeople, and is the characteristic of service quality and attitude, an abundance of agreeableness is a prerequisite of them. In addition, the financial industry focuses mainly on services and high achievers have to be devoted to serving others. Financial professionals must also be equipped with high extraversion to effectively communicate with their customers. Employees who are extravert are sociable. They also excel in communications skills and rarely come into conflicts with their customers, all of which are likely to lead to good job performance. Hence, of the financial personnel in Taiwan, those who possess strong agreeableness and extraversion traits are more likely to be good job performers.

Our results show that extraversion is the most influential personality trait on job satisfaction, while agreeableness, conscientiousness, emotional stability and openness to experience have no significant effect. Similar finding was presented by Spagnoli and Caetano (2012) that extraversion and conscientiousness affects satisfaction with the work itself. The reason may be that, individuals with more visible extraversion trait are

more achievement-oriented, and have a strong sense of self-actualization at work. They are good at socializing and have more friends than those who are introverted. In addition, they are devoted to their job, and are willing to spend more time engaging in social interaction, which can secure them a greater chance of job promotion. As a result, greater sense of job satisfaction emerges. This also coincides with several prior studies (e.g. Judge *et al.*, 2002; Tokar and Subich, 1997; Van Den Berg and Feij, 2003). The result of this study demonstrates the importance of agreeable characteristics, such as being helpful, considerate and respectful to others, as well as extraverted characteristics, such as being conversational, energetic, self-motivated, convincing and being a leader, to the financial industry of Taiwan. These two traits, agreeableness and extraversion, affect not only job performance, but also job satisfaction.

#### *Relation between job performance and job satisfaction*

Gu and Siu (2009) indicated a significant association between job satisfaction and job performance in the Chinese context, but they didn't point out the influential direction between the two. While among bank employees, job performance was found to be a predictor of job satisfaction (Shaikh *et al.*, 2012). Our data show that there is a significant mutual influence between job performance and job satisfaction. Moreover, higher job satisfaction results in better job performance and superior job performance leads to higher job satisfaction. The reason behind this may be that, employees who perform better at work are more likely to be approved of by the organization. Consequently, they find their occupation self-actualizing and are, therefore, more satisfied with the job. It may also be that, individuals who are more satisfied with their jobs feel more enthusiastic about them and hence perform better. In short, we have found strong evidence of the reciprocal relationship between job performance and job satisfaction as hypothesized by Organ (1977) and Robbins and Judge (2009). Our results also demonstrate that individuals with strong extraversion traits are likely to be more satisfied with their job and have better job performance. This is to some extent similar to the research findings of Barrick *et al.* (2002) that, with extraverted individuals, their job performance enhances when they are motivated by status striving, an indicator of job satisfaction.

Finally, the two relations are simultaneously established. It seems to indicate that there is a virtually instantaneous mutual adjustment to any changes induced by either variable. The case of virtually instantaneous interaction in path analysis has long been demonstrated (Wright, 1960). The simultaneous reciprocal causation between job performance and job satisfaction could be explained by a hybrid theory of expectancy and equity. The expectancy theory suggests that as rewards (intrinsic and extrinsic) are perceived to be equitable and desirable, the individual is motivated to perform well to get the rewards, which in turn will result in higher satisfaction (Lawler and Porter, 1967; Vroom, 1964; Schwab and Cummings, 1970; Organ, 1977). On the other hand, the equity theory posits that an individual who perceives himself or herself as inequitable, either under-rewarded or over-rewarded, will experience resentment (dissatisfaction) or gratefulness (satisfaction) and accordingly will take appropriate action to increase or decrease performance to restore equity (Adams, 1965; Organ, 1977). Considering the complicated mechanisms in which the internal and external states of individuals operate, it is expected that job satisfaction and job performance are interdependent and exerting concurrent effect. Specifically, an individual's attempt to adjust performance is



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simultaneously affected by a person's expectation of satisfaction and his or her desire to restore equity. In other words, the order of the two influences is indeterminate. At the same time, this mutual relationship is affected by personality traits, as shown in our study.

### Research implications

The major contribution of this research is the empirical support for the mutual influences of job performance and job satisfaction, and to clarify the inconsistent findings of causal relationship between the two in previous literature. The small number of studies that have investigated the reciprocal relation between job performance and job satisfaction found either partial support for the bilateral relation or support for a unilateral relation. By adding a third variable (personality) to our research model, we were able to show a significant effect from both directions. Consistent with the literature, job performance is found to have a positive influence over job satisfaction and job satisfaction a positive influence over job performance. As to personality, all the Big Five personality traits have shown a significant effect on job performance. For job satisfaction, extraversion showed a significant effect but the other four personality traits did not. These findings have important implications for both theory and practice as discussed next.

In terms of theory development, although numerous studies have justified the unidirectional causal relationship between job performance and job satisfaction, our study seems to be the first to provide support for the simultaneous reciprocal influences of the two. A hybrid theory of expectancy and equity is advanced in this study to explain our result. We encourage researchers to explore other theories in further studies. Similarly, more theory-driven investigations of the satisfaction and performance simultaneous reciprocal relationship should be conducted in the future.

In terms of resource allocation, priority should be equally given to factors that foster job performance and job satisfaction. Creating good working environment such as autonomy in the work, involvement in decision-making and rewards system for motivation can lead to good job performance. On the other hand, producing job satisfaction measured by intrinsic satisfaction and extrinsic satisfaction is also important. Of the two measures, intrinsic satisfaction has a higher factor loading than does extrinsic satisfaction. In practice, this means that management should pay attention to the work itself to ensure that every job is fulfilling and rewarding by itself. This makes sense because if employees are happy about the requirements and responsibilities that come with their job, they are more likely to work hard and that in turn can lead to better job performance. Extrinsic satisfaction that comes from financial compensation is still important, but priority should be given to programs such as job design and job enrichment that contribute to intrinsic satisfaction.

In terms of personality, the Big Five factors have been found to have a positive impact on job performance. This finding is consistent with the literature and management is advised to recruit and retain employees with desirable personality traits. Particularly, as we consider selecting a person for the job of facing customers, agreeableness is the most important trait in Chinese society, which agrees with an old Chinese saying "Ho Qi Sheng Chai" (meaning agreeable attitude is conducive to business success). Job-person fit is important because it creates congruence between personal and organizational goals and motivates employees to perform (Zheng and

Lamond, 2009). Selecting the right people for the right position is also reflected in the thinking of Yanzi, an ancient Chinese sage (Zheng and Lamond, 2009). However, application of this finding in practice entails caution since many different types of jobs exist and not all of them require the same personality traits. For instance, extraversion has a positive effect on job performance as long as there is an interpersonal component in the job requirements (Tokar *et al.*, 1998). Therefore, it may not be a desirable trait for, say, accountants. Consequently, extraversion should *not* be factored into some recruitment or work assignment decisions. Similarly, even though extraversion is found to have a positive impact on job satisfaction and other personality traits are not, this should not be overemphasized in personnel decisions beyond the scope of this study.

### Recommendations for future studies

To protect the confidentiality of participants and let them feel free to answer the questionnaire, an anonymous survey was conducted in this study. Consequently, the evaluation of job performance in the current study is measured by self-reported data. If privacy concerns could be alleviated, additional studies can obtain more objective data such as supervisory ratings to further validate the bilateral relations between job performance and job satisfaction. The current study contains human resource management guidelines for financial firms in Taiwan, but the applicability of those guidelines to other industries or countries remain to be investigated. Another extension is to test longitudinal data in a causal model. The current study provides a snapshot of the relations between job performance and job satisfaction measured concurrently. It will be interesting to see if the relations still hold when there is a lag between job performance (or satisfaction) and job satisfaction (or performance).

Since only one or two personality traits have been found in most studies, including the current research, to affect job satisfaction, other variables that can have an impact on job satisfaction warrant inclusion in further studies. Tokar and Subish (1997) suggested that factors such as the job market, supervisory or working conditions should be considered. Job characteristics including autonomy, skill variety and feedback are related to job satisfaction (Van den Berg *et al.*, 2003) and are therefore promising candidates too. These and other moderators proposed by Judge *et al.* (2001) can be further tested in a reciprocal model. Judge and colleagues also suggested many mediators, for instance, goal progress mediates the effect of job performance on job satisfaction and behavioral intention mediates the effect of job satisfaction on job performance. These mediation models can similarly be tested for bilateral relations between job performance and job satisfaction.

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