

pISSN: 1906 - 6406 The Scholar: Human Sciences
 eISSN: 2586 - 9388 The Scholar: Human Sciences
<http://www.assumptionjournal.au.edu/index.php/Scholar>

Measuring College Graduates' Career Satisfaction in Hangzhou, China

Zhu Jiang*

Received: February 14, 2024. Revised: March 21, 2024. Accepted: February 18, 2025.

Abstract

Purpose: This study aims to explore the key influences on the career satisfaction of Hangzhou college graduates. The conceptual framework proposes a causal relationship between variable protean career orientation, career commitment, workplace innovation, trust level, leader-member exchange level, vitality, learning, career expectations, and career satisfaction. **Research design, data, and methodology:** The researcher used a quantitative method (n=500) to distribute questionnaires to Zhejiang Business College graduates employed in Hangzhou. Non-probability sampling included judgmental sampling in selecting graduates within one year of graduation, quota sampling in determining the range of graduates' majors, and convenience sampling in collecting data and distributing online and offline surveys. Structural equation modeling (SEM) and validated factor analysis (CFA) were used to analyze the data, including model fit, reliability, and validity. **Results:** Career commitment, workplace innovation, trust level, leadership member exchange level, vitality, learning, and career expectations have a significant effect on career satisfaction, and variable protean career orientation does not affect career satisfaction. Learning greatly affected career satisfaction, followed by career commitment, leadership member exchange level, and workplace innovation. **Conclusions:** This study helps higher education administrators better understand the antecedents of career satisfaction among college graduates to implement better coping strategies and improve higher education services.

Keywords : College Graduates, Higher Education, Career Satisfaction, China

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Employment is crucial for people's livelihoods as it connects families and the economy. High-quality employment not only provides satisfactory income but also ensures reliable social security. The full and high-quality employment of college graduates plays a vital role in improving the well-being of families and enhancing people's quality of life. Since the reform and opening, particularly since the 18th Party Congress, China's economic development has entered a new stage. The strategic adjustment, transformation, and upgrading of the economic structure have been accelerated, leading to a significant improvement in the coordination of the three industries' development. As the economic system transforms and

society changes, China's economic structure has experienced profound shifts. These changes in the industrial and ownership structures have continuously impacted the employment structure in the labor market, consequently affecting the career development prospects of college graduates (Zhang, 2023).

The twentieth CPC National Congress report proposes prioritizing employment and strengthening the policy, system, and support for employment. It also aims to eliminate unreasonable restrictions and discrimination in employment, providing equal opportunities for everyone to achieve personal development through hard work. In recent years, as China's higher education has become more accessible, college students' employment methods and career expectations have diversified. The employment problem of

*Zhu Jiang, Informatization Construction Office, Zhejiang Business College, China. Email: 36946278@qq.com

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college graduates has become increasingly prominent, drawing widespread concern from various sectors, including government departments. Undoubtedly, conducting an in-depth study on the career satisfaction of college graduates holds significant institutional importance and practical relevance (Zhang, 2023).

The career satisfaction of college students is a significant measure of the employment quality of college graduates (Yue & Bai, 2018). Currently, with a steady employment rate among college students, there is a shared concern among families, students, schools, and society to enhance the quality of employment. By 2023, the number of college graduates in China is projected to reach a record high of 11.58 million. In graduate employment industries, the advancement of technology, industrial upgrading, and digitalization have led to the emergence of research and development and innovation-related positions. There is a noticeable demand for roles such as big data analysts, automation control engineers, industrial robotics system operators, chip engineers, anti-fraud algorithm engineers, and cloud computing engineers. This demand consistently exceeds supply.

Much research has been conducted on career satisfaction among college students. Herrmann et al. (2015) explored the relationship between career calling and work engagement and examined the mediating roles of job meaning, career identity, and career self-efficacy. Another study by Salmela-Aro et al. (2009) investigated how achievement strategies during university studies impact graduates' burnout and engagement at the beginning of their careers. Schaufeli et al. (2002) examined the implications for job well-being, employee health, and career satisfaction, highlighting the distinction between job engagement and burnout as two separate psychological states. Judge and Bono (2001) emphasized the positive association between core self-evaluative traits, career satisfaction, and job performance. To promote success, Okunoye et al. (2008) argued that colleges and universities should strive to meet the needs and expectations of graduates and businesses in the face of intense competition.

The career satisfaction of university graduates is influenced by various factors, such as salary, development prospects, employment expectations, career planning, and the employment environment and atmosphere of their region and field. While career satisfaction is subjective, it plays a crucial role in determining whether talented individuals stay in their jobs for a long time. In today's competitive education market, higher education institutions should prioritize students' career satisfaction by establishing strong relationships and understanding their needs. This study focuses on promoting career satisfaction among graduates to achieve high-quality and full employment for college graduates.

2. Literature Review

2.1 Trust Level

Trust is a well-established and extensive theory that has been extensively studied by numerous scholars (Castaldo et al., 2010). Scholars have empirically examined different types of trust, focusing on interpersonal relationships, leadership, teams, and organizations at three levels: individual, team, and organization. According to Rousseau et al. (1998), trust is a psychological state where individuals are willing to accept the flaws of others when confronted with their intentions or actions. Trust is characterized by unanimous agreement. At the individual level, trust is seen as a personal belief regarding the reliability of a specific object of reference and one's willingness to be vulnerable to that object (Chan, 1998). Recent domestic and international research has discovered that trust can foster investment, trade, economic growth, financial development, investors' participation in the stock market, venture capital, corporate finance, cross-border mergers, and acquisitions, and more. In societies with low levels of trust, people demand greater guarantees from the government (Aghion et al., 2010). These studies demonstrate that trust is crucial in establishing credibility in contractual relationships, particularly when the transaction size is limited and parties cannot penalize each other for misconduct.

According to Ng and Ng (2015), a meta-analysis revealed that organizational trust positively impacts employee job satisfaction. Mincu (2015) also found a significant positive correlation, while Han (2010) discovered that trust can significantly affect job satisfaction. Trust among employees at a higher level facilitates the exchange of tangible and intangible benefits in social networks. Souerwine (1978) emphasizes that trust is crucial to an individual's professional growth and achievement. The level of mutual trust among coworkers is closely linked to the support provided by the organization (Ferres et al., 2004). This mutual trust helps fulfill employees' socio-emotional needs (Cohen & Prusak, 2002) and contributes to their overall satisfaction (Matzler & Renzl, 2006). Moreover, mutual trust among coworkers within a company can significantly influence career satisfaction and foster loyalty (Matzler & Renzl, 2006). Therefore, the researcher proposes the following hypothesis:

H1: Trust level has a significant influence on leader-member exchange level.

H5: Trust level has a significant influence on career satisfaction.

2.2 Protean Career Orientation

A versatile career is subjective, as it depends on an individual's values and desire to work in organizations that share similar values to avoid conflicts (Scheel et al., 2007). Those with a versatile career orientation are considered self-directed, as they can adapt to various performance and learning requirements. They are values-driven, as their intrinsic values guide and define their career success (Briscoe et al., 2006). A protean career orientation is characterized by an individual's ability and willingness to adapt, change, and explore different career paths throughout their working life (Greenhaus et al., 2010).

The presence of diverse career orientations explains why employees tend to plan and manage their careers in today's professional environment and why they increasingly opt for frequent career mobility instead of limited opportunities for advancement within the organization (Cortellazzo et al., 2020). Individuals with diverse orientations define career success differently than those following traditional career paths. They are motivated to work towards their desired career goals, leading to greater career success (Arthur et al., 2005).

Since its emergence, PCO has garnered attention from the fields of management, psychology, and organizational behavior. De Vos et al. (2011) investigated the relationship between competency development, career success, and the mediating role of employability. It was found that certain employees' work attitudes have a significant positive effect on career satisfaction (De Vos & Soens, 2008). Additionally, various career attitudes and personal preferences, such as core personal assessment, have been shown to influence career satisfaction and job actions (Herrmann et al., 2015). Arthur et al. (2005) introduced the concept of borderless career success and emphasized the importance of adapting to diverse and evolving career environments. Based on these findings, the following hypothesis is proposed:

H2: Protean career orientation has a significant influence on career satisfaction.

2.3 Career Commitment

Occupational commitment refers to a person's attitude towards their occupation or profession (Blau, 1985). Carson and Bedeian (1994) define occupational commitment as the level of dedication and loyalty an individual has towards their occupation. It is an expression of emotional connection and commitment to one's occupation. Career commitment encompasses satisfaction with one's current career and a commitment to future career advancement. This is demonstrated by an individual's willingness to pursue long-term career goals and invest resources to achieve them (Blau & Boal, 1987). Career commitment is also effective for

identifying related tasks in a specific job field. It is behaviorally manifested in coping with disappointment while striving toward career goals (Aryee & Tan, 1992).

Research findings suggest that college students' career commitment has a significant positive impact on their career success. For instance, Jones and Whitmore's (1995) study revealed a relationship between career commitment and advancement, while Poon's (2004) study demonstrated that career commitment can influence an individual's career success at the individual level. Building upon this foundation, this project investigates how career commitment affects career success outside the United States (Luthans & Sommer, 2005). By examining the relationship between career commitment and career success in the Middle East (specifically Lebanon) within the banking industry, we aim to explore the intrinsic link between career commitment. Therefore, the researcher proposes the following hypothesis:

H3: Career commitment has a significant influence on career satisfaction.

2.4 Workplace Innovation

Innovation can be defined as the introduction or adoption of something new, such as a new idea, practice, or object. It can also refer to the sequence of activities involved in generating and implementing new ideas (Dooley & Van de Ven, 1999). In the workplace context, innovation is a social activity that does not follow a linear change path. Instead, it requires a continuous commitment to learning, reflection, and the ability to challenge established practices (Totterdill & Exton, 2014). Workplace innovation encompasses diverse dimensions, including work systems, workplaces, high-tech applications, workplace boundaries, workspaces, people practices, workplace experiences, and workplace culture (Prus et al., 2017).

Workplace innovation (WI) drives economic development (Dhondt & Totterdill, 2015). It is a widely discussed topic among European countries, and governments are increasingly focusing on formulating policies related to WI (Alasoini, 2009; Kesselring et al., 2014). Workplace enterprises are vital to technological innovation and creation (Foucault & Miskowiec, 1986). Although WI emerged as a discourse in the early 1990s, it has yet to be clearly defined lexically (Ichniowski et al., 1996). It is widely recognized that innovation represents a new social value, encompassing both subtle advancements and groundbreaking breakthroughs. However, innovation does not necessarily have to be creative; it just needs to be perceived as novel by the adopting organization (Zaltman et al., 1973).

The relationship between team innovativeness and employee job satisfaction has been explored in several studies. For instance, Valentine (2011) conducted a healthcare-based survey demonstrating this connection.

Cheng et al. (2010) conducted an empirical study on R&D teams in Taiwan's manufacturing industry and found that product and process innovations can enhance job satisfaction. Lambert and Hogan (2009) surveyed employees in a Midwestern correctional facility in the U.S. and discovered a significant positive relationship between employees' perceptions of organizational innovation and their job satisfaction. Similarly, García-Buades et al. (2015) surveyed local police officers in Spain and found that a creative atmosphere positively affected job satisfaction. Park et al. (2016) analyzed data from the Employee Perspective questionnaire in the United States and found a positive correlation between a company's innovative behavior and career satisfaction. Based on these findings, the researcher proposes the fourth hypothesis.

H4: Workplace innovation has a significant influence on career satisfaction.

2.5 Leader-Member Exchange Level

Leader-Member Exchange (LMX), refers to establishing communication relationships between leaders and subordinates at different levels through various forms of communication. LMX differences result from dynamic exchanges between leaders and members, which have a significant impact (Henderson et al., 2009). Ashkanasy and O'Connor (1997) described the leader-member exchange level (LMXL) development in two stages. First, a first impression is formed between the leader and the member based on their individual and group characteristics, starting from their initial contact. The second stage involves the leader's overall evaluation of the employee's performance, which determines the communication the leader will provide to the members. Employees who meet the leader's expectations are included in the organization and enjoy a higher level of leader-member communication.

LMX theory, a popular framework for examining leadership in the workplace, focuses on the quality of the relationship between a leader and their followers (Yammarino et al., 2005). According to LMX theory, a leader's attitudes towards subordinates may vary based on their participation in various social activities, resulting in variations in the quality of the leader-subordinate relationship (Graen & Cashman, 1975). Effective leader-member interactions promote productive employee collaboration (Graen et al., 2006). Additionally, a high level of teamwork relationships and improving teamwork can enhance overall teamwork (Tierney, 1999). Conversely, low-quality teamwork between team leaders and subordinates can lead to a contract-based cooperative relationship (Liden & Maslyn, 1998).

According to Dienesch and Liden (1986), leadership evaluations are subject to a 'halo' effect. For instance, if an

employee's performance falls short of expectations, it is often attributed to their loyalty to their supervisor. Erdogan et al. (2006) argue that treating subordinates equally reflects a leader's tolerance and sense of responsibility towards them, thereby enhancing communication. However, fairness does not necessarily imply equal treatment, and Scandura (1999) suggests that grouping team members into in-group and out-group categories without showing favoritism is acceptable to group members. Numerous studies support the notion that leader-member exchange significantly influences employee job satisfaction, as supported by (Epitropaki & Martin, 2005). Moreover, recent research in Sri Lanka indicates a strong correlation between job support and career satisfaction among employees in IT companies (Wickramasinghe & Jayaweera, 2010). Therefore, the study puts forward the following hypothesis:

H6: Leader-member exchange Level has a significant influence on career satisfaction.

2.6 Vitality

Vitality is an emotional state that drives work and engagement (Gardner, 1978). In social psychology, Ryan and Deci (2008) define vitality as a state of being "positive and energetic," where individuals experience enthusiasm, vitality, and a sense of self-available energy. Researchers in higher education have discovered that vitality can motivate students to learn and increase teachers' productivity, thereby enhancing job satisfaction, psychological well-being, and a sense of ownership of their work (Baldwin, 1990; Stewart, 2008). The literature identifies various components that contribute to vitality. The most commonly used interchangeable terms include homeostasis (Bland & Bergquist, 1997), challenge-seeking (Nicolson, 1988), creativity (Baldwin, 1990), curiosity (Baldwin, 1985), perseverance (Duckworth et al., 2007), growth mindset (Duckworth et al., 2007), and a sense of ownership of the work. Other terms associated with vitality are motivation (Nicolson, 1988), optimism (Peterson, 2003), and risk-taking (Gardner, 1978).

Building and sustaining vitality is a complex process that involves the formation of employees' work competencies and the work context (Spreitzer et al., 2005). While there has been some research on individual motivational strategies to enhance vitality (Block-Lerner & Cardaciotto, 2016), it is important to consider the systemic factors in the work environment that can deplete or sustain an employee's energy. Vitality at work promotes career success (Baruch et al., 2014) and contributes to work-life balance (Allen & Kiburz, 2012). Engaging in meaningful work (Niessen et al., 2012) and having opportunities for on-the-job learning (Fritz et al., 2011) are associated with increased vitality. On the other hand, working in a highly controlled environment may

decrease vitality (Ryan & Deci, 2008). Research findings suggest that productive employees tend to be more energized at work.

Vitality plays a crucial role at work in enhancing career achievement (Baruch et al., 2014) and achieving work-family harmony (Allen & Kiburz, 2012). Niessen et al. (Fritz et al., 2011) found that gaining more knowledge at work is strongly associated with increased vitality. On the other hand, higher work intensity leads to a decrease in individual vitality (Ryan & Deci, 2008). It has been observed that highly productive employees are more motivated to work. However, despite the positive association between vitality and productivity (Baldwin, 1990; Chan & Burton, 1995; McLaughlin, 1999), research has shown that highly productive individuals still risk leaving the organization and thus lack job vitality. Based on these findings, the researcher proposes the following hypothesis.

H7: Vitality has a significant influence on career satisfaction.

2.7 Learning

From the beginning of psychology, research has focused on learning (Thorndike, 1911). However, even influential study textbooks have only sometimes provided comprehensive coverage of this topic (Schwartz et al., 2002). Given the broad and abstract nature of learning, it is not surprising that there is no consensus on its definition. Domjan (2010) defines 'learning' as a continuous change in an individual's mental activity rather than a 'long-term' outcome. On the other hand, most textbooks define learning as a change in behavior resulting from an experience, according to Rahman (1997). It is important to note that the existing definition of learning competence has several limitations (Ormrod, 1999, 2008). Dewey (1986) suggests in his book 'Experience and Education' that students learn best when they build upon previous experiences and external environments, connect present experiences to past ones, and prepare for future growth.

Learning plays a crucial role in an individual's integration into society. More learning can help job performance, concentration, and social skills. Learning encompasses various cognitive abilities, including perception, memory, attention, thinking, language, and information processing (Karpenko, 2008). Additionally, learning is influenced by motivation, social interaction, communication, and personal traits (Whybrow, 2015). Research has revealed a strong correlation between an individual's learning capacity and personality traits, with lower learning ability negatively impacting social and professional behavior. However, adults can enhance their professionalism through continuous learning, mitigating the decline in working memory and attention span associated with aging. Furthermore, continuous learning reduces the time and difficulty involved

in acquiring new information, thereby prolonging the benefits of learning. Therefore, the following hypothesis is proposed:

H8: Learning has a significant influence on career satisfaction.

2.8 Career Expectations

In the 1990s, the concept of career expectations was first introduced by Super (1980). Armstrong and Crombie (2000) defined career expectations as career ambitions. Geers et al. (2005) explain that expectations are judgments individuals make about the likelihood of future events. Career expectations can be seen as individuals' visions of their future careers. According to Vasconcellos (2015), employees' expectations in a company revolve around their future career paths, encompassing factors such as monetary compensation, credibility within the organization, and the alignment of tasks with personal interests (Oettingen & Mayer, 2002).

After joining an organization, individuals typically align their career expectations and abilities with the company's development expectations based on their personal goals and capabilities (Woods, 1993). According to Gottfredson (2005), career expectations are a dynamic process influenced by both the individual and the environment, affecting one's self-perception and orientation. New perspectives can help individuals gain insight into their career expectations (Cleveland et al., 2007). From a career standpoint, Metz et al. (2009) define career expectations as personal, authentic, achievable, and attainable goals.

More research is needed on the career expectations of individuals after joining an organization (Liu et al., 2019). Therefore, it is important to study the contextual factors of career expectations to understand organizations' career development in the workplace (Greenhaus et al., 1990). Vasconcellos (2015) stated that there needs to be more knowledge about the factors influencing career expectations. Verbruggen et al. (2007) stated that it is important to integrate employees' career expectations with their career management practices within organizations. Therefore, the following hypothesis is proposed:

H9: Career expectations has a significant influence on career satisfaction.

2.9 Career Satisfaction

Career satisfaction refers to employees' perceptions of their current career accomplishments, including their assessment of progress toward career goals such as advancement, earnings, progress, and development of new skills (Greenhaus et al., 1990). It is closely related to an individual's career fit, indicating their positive feelings about

career-related achievements and overall career success (Bester, 2018). Career satisfaction can be understood as an individual's subjective feelings about their chosen career path and their overall contentment with the activities involved in that career (Ng et al., 2005). Additionally, Burke et al. (2015) found a positive correlation between a passion for harmony and job outcomes, including job satisfaction, higher performance levels, and reduced intention to quit.

Career satisfaction is valuable to research life and job satisfaction (Bowling et al., 2010; Judge et al., 1998). It encompasses evaluating an individual's career experience thus far (Abele et al., 2011). Unlike job satisfaction, career satisfaction is a broader concept that can significantly indicate one's overall assessment of the work field. On the other hand, job satisfaction is influenced by factors such as general well-being, stress levels, job control, family-work balance, and working conditions (Harrison et al., 2006). It is closely tied to an individual's current job status, allowing for the translation of career success into job satisfaction or occupational satisfaction (Ng et al., 2005). Shaver and Lacey (2003) define occupational satisfaction as the employee's immediate work environment and relationship with the employer.

However, individuals may increasingly evaluate their careers based on subjectively chosen criteria (Dries et al., 2008). Job satisfaction is often derived from the ability to achieve rewarding career goals. Previous research has traditionally identified predictors of career satisfaction, such as communication, stress, and social connectedness (Bhagat, 1982; Cacioppo & Patrick, 2008). Career success can generally be classified into two types: objective success, which includes factors like promotions and salary increments, and subjective success, which pertains to increased job satisfaction or overall career satisfaction. Researchers have explored various factors regarding career satisfaction, including individual personality traits, ethnicity, and organizational support for career advancement. For instance, Lounsbury et al. (2003) discovered a positive relationship between career satisfaction and self-confidence, conscientiousness, emotional resilience, and extraversion. Additionally, Dreher and Ash (1990) argued that perceived organizational support, such as mentor-apprentice relationships, can contribute to higher levels of career satisfaction.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework of this study was developed based on previous research findings. It was adapted from five theoretical models. The first model was proposed by (Kim &

Beehr, 2017), who examined the potential impact of empowered leadership on subordinates' subjective career success through the lens of psychological empowerment, variable career orientation, and career commitment. The second model was proposed by Warit et al. (2014), which explored the relationship between employees' innovative behaviors in the work environment and job satisfaction. The third model was proposed by Han et al. (2017), who explored the effect of Leader-Member Exchange on peer trust and individual career satisfaction and analyzed peer trust as a key factor affecting the career satisfaction of college students. The fourth modeling study is from Chang et al. (2020), who explored the effect of authentic leadership on the career satisfaction of hotel employees, as well as the mediating role of learnability and dynamics in this relationship. The fifth model was completed by Kong et al. (2015), who analyzed the impact of career management on career aspirations in the hospitality industry, as well as the impact of career aspirations on overall job satisfaction. The conceptual framework of this study is shown in Figure 1.

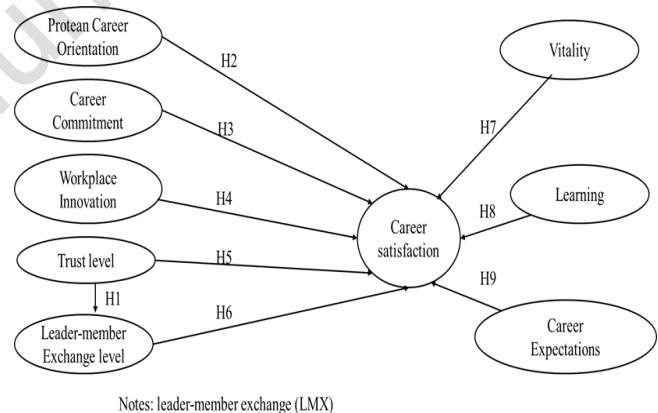


Figure 1: Conceptual Framework

H1: Trust level has a significant influence on leader-member exchange level.

H2: Protean career orientation has a significant influence on career satisfaction.

H3: Career commitment has a significant influence on career satisfaction.

H4: Workplace innovation has a significant influence on career satisfaction

H5: Trust level has a significant influence on career satisfaction.

H6: Leader-member exchange Level has a significant influence on career satisfaction.

H7: Vitality has a significant influence on career satisfaction.

H8: Learning has a significant influence on career satisfaction.

H9: Career expectations has a significant influence on career satisfaction.

3.2 Research Methodology

Using a quantitative non-probability sampling method, the researchers surveyed college graduates from universities in Hangzhou, China. The survey mainly consisted of paper questionnaires and online questionnaires. The researchers collected data and analyzed the influencing factors of college students' career satisfaction. The questionnaire was divided into three parts: the first part was screening questions, which were mainly used to determine whether the respondents met the scope of the survey. The second section was demographic questions, which were used to obtain basic personal information about the respondents. The third section was measurement questions, designed around nine variables to understand the relationship between the variables. The researcher used a five-point Likert scale to assess the career satisfaction of college graduates.

Once the questionnaire design was completed, the researcher tested it for reliability and validity; three professors who are leading experts in the field of career guidance were invited to score the questionnaire and validity test using Item Objective Congruence (IOC). The reliability test was conducted using Cronbach's alpha research technique. The researcher randomly selected 30 respondents for a pilot test. After collecting the data, the data was analyzed using statistical software, and Cronbach's alpha was obtained to assess the reliability of the questionnaire. As a result, the obtained Cronbach's Alpha score exceeded 0.7, affirming the reliable measurement of the intended construct and bolstering the overall credibility of the test results (Nunnally & Bernstein, 1994).

After determining the reliability and consistency of the questionnaire, the researcher distributed the questionnaire to 500 respondents through online and offline methods and collected and counted the relevant data. After that, the researcher used statistical software to perform statistical analysis, including validated factor analysis (CFA), model fit measure, and structural equation modeling (SEM) to test and statistically analyze the data. The researcher made corrections and drew appropriate conclusions based on the relevant results.

3.3 Population and Sample Size

The main target population of this study was college students who graduated from Zhejiang Business College (ZJBC) in the region of Hangzhou, Zhejiang Province, China. The researcher used six secondary colleges of the school as the sampling unit. By setting the relevant factor parameters and the number of variables (Soper, 2020), the minimum sample size was calculated to be 460. In order to strengthen the effectiveness of the measures, the researcher chose a sample size of 500 to achieve the purpose of the study and successfully recovered 500 valid questionnaires.

3.4 Sampling Technique

The researcher used non-probability sampling as a sampling technique and utilized stratified random sampling to sample students from six secondary colleges of ZJBC. The researcher calculated the sample size for each secondary college based on the number and proportion of students in each college. Finally, convenience sampling was done by distributing the questionnaires online through the university website and chat application and offline through the administrative office. The data were collected from April to July 2023. Please refer to Table 1 for the specific sample size for each secondary college.

Table 1: Sample Units and Sample Size

Six Main Subjects	Population Size	Proportional Sample Size
Institute of Electronic Commerce Students	1055	108
School of Accounting and Finance Students	941	96
School of Economics and Management Students	720	74
School of Applied Engineering Students	743	76
School of Art and Design Students	595	61
Institute of Culinary Tourism Students	838	85
Total	4892	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The researcher surveyed 500 samples, and the results of the demographic data are presented in Table 2. The survey results showed that 48.20% of the respondents were male and 51.80% were female. Regarding age level, the largest percentage of respondents was 21-22 at 62.60%, followed by 19-20 at 27.60% and 23 years old and above at 9.80%. In addition, regarding the type of career development of the graduates, full-time employment accounted for 84.40%, and self-employment accounted for 15.60%.

Table 2: Demographic Profile

Demographic and General Data (N=500)		Frequency	Percentage
Gender	Male	241	48.20%
	Female	259	51.80%
Age	19-20 years old	138	27.60%
	21-22 years old	313	62.60%
	More than 23 years old	49	9.80%
Types of	Full-time	422	84.40%

Demographic and General Data (N=500)		Frequency	Percentage
career development for graduates	employment		
	Self-employment	78	15.60%

4.2 Confirmatory Factor Analysis (CFA)

In this study, validated factor analysis (CFA) was used. Bollen (1989) stated that CFA is mainly used to test the validity or acceptability of items in a conceptual model. The

parameter estimation method used in CFA is the "maximum fit estimation." All entries for each variable are significant and represent factor loadings to test for discriminant validity, which should be greater than 0.5 or higher (Hair et al., 1998). In Table 3, each factor loading is greater than 0.50. 0.7 or higher for CR and 0.4 or higher for AVE are acceptable (Fornell & Larcker, 1981). Table 3 shows that all CRs were above the critical point of 0.7, and AVEs were greater than the critical point of 0.4.

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Protean Career Orientation (PCO)	Hall (2004)	3	0.803	0.711-0.799	0.804	0.578
Career Commitment (CC)	Lee et al. (2000)	3	0.810	0.740-0.812	0.811	0.589
Workplace Innovation (WI)	McMurray et al. (2013)	5	0.845	0.661-0.796	0.847	0.527
Trust Level (TL)	Yu et al. (2021)	4	0.795	0.641-0.765	0.798	0.499
Leader-Member Exchange Level (LMXL)	Graden (1995)	5	0.846	0.643-0.779	0.847	0.527
Vitality (VI)	Gardner (1978)	3	0.816	0.733-0.831	0.820	0.603
Learning (LN)	Illeris and Ryan (2020)	4	0.815	0.665-0.798	0.821	0.536
Career Expectations (CE)	Elchardus and Smits (2008)	4	0.845	0.702-0.809	0.847	0.581
Career Satisfaction (CS)	Jabeen and Isakovic (2018)	5	0.866	0.700-0.801	0.867	0.567

In Table 4, the square root of AVEs on the diagonal for each structure was greater than the corresponding value, and therefore, it was determined that the judgmental validity was valid. For the CFA test, the GFI, AGFI, NFI, CFI, TLI, and RMSEA were used as model fit indicators.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	2.188
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.890
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.869
NFI	≥ 0.80 (Wu & Wang, 2006)	0.854
CFI	≥ 0.80 (Bentler, 1990)	0.914
TLI	≥ 0.80 (Sharma et al., 2005)	0.903
RMSEA	< 0.08 (Pedroso et al., 2016)	0.049
Model Summary		Acceptable Model Fit

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

According to the data in Table 5, this study's convergent validity and discriminant validity are greater than the acceptable values, and both convergent and discriminant validity are valid. In addition, these model measurements validated the discriminant validity and subsequent structural model estimation validity.

Table 5: Discriminant Validity

	PCO	CC	WI	TL	LMXL	VI	LN	CE	CS
PCO	0.760								
CC	0.205	0.767							
WI	0.174	0.257	0.726						
TL	0.179	0.169	0.184	0.706					
LMXL	0.239	0.155	0.168	0.327	0.726				
VI	0.163	0.160	0.150	0.175	0.216	0.777			
LN	0.228	0.234	0.156	0.142	0.135	0.210	0.732		
CE	0.179	0.248	0.241	0.200	0.245	0.218	0.201	0.762	
CS	0.22	0.339	0.294	0.316	0.361	0.290	0.349	0.374	0.753

Note: The diagonally listed value is the AVE square roots of the variables

Source: Created by the author.

4.3 Structural Equation Model (SEM)

Watjatrakul (2013) argued that SEM is mainly used to analyze the influence relationship between the tested variables in structural models to ensure the reliability and validity of the data. Table 6 shows the goodness of fit indicators for structural equation modeling (SEM) where the model fit measure for the cardinality/degree of freedom (CMIN/DF) ratio should be less than 5.00, AGFI, NFI, CFI, and TLI should be greater than or equal to 0.80, GFI should be greater than or equal to 0.85, and the RMSEA should be less than 0.08. The fit results for the fitted metrics were CMIN/DF = 2.616, GFI = 0.851, AGFI = 0.830, NFI = 0.816, CFI = 0.877, TLI = 0.868, RMSEA = 0.057, and all results are in the acceptable range, which indicates that this model an acceptable model fit.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	2.616
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.851
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.830
NFI	≥ 0.80 (Wu & Wang, 2006)	0.816
CFI	≥ 0.80 (Bentler, 1990)	0.877
TLI	≥ 0.80 (Sharma et al., 2005)	0.868
RMSEA	< 0.08 (Pedroso et al., 2016)	0.057
Model Summary		Acceptable Model Fit

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

4.4 Research Hypothesis Testing Result

The research model in this paper focuses on calculating the significance of the relationship between the variables through the standardized regression weights and R^2 variance of each variable. According to the results in Table 6, eight out of nine hypotheses were supported with $p = 0.05$ significance. Trust level had the largest effect on the intermediate variable leader-member exchange level, with a result of 0.386. the remaining influencing factors are listed below in order: learning has an influence on career satisfaction at 0.246, career expectations have an influence on career satisfaction at 0.233, leader-member exchange level has an influence on career satisfaction at 0.225, career commitment has an influence on career satisfaction at 0.205, trust level has an influence on career satisfaction at 0.150, workplace innovation has an influence on career satisfaction at 0.149, vitality has an influence on career satisfaction at 0.142, the effect of protean career orientation on career satisfaction was not significant ($\beta = 0.017$). The model demonstrated the variance of career satisfaction, as shown in Table 7.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: TL→LMXL	0.386	6.622*	Supported
H2: PCO→CS	0.017	0.352	Not Supported
H3: CC→CS	0.205	4.093*	Supported
H4: WI→CS	0.149	3.101*	Supported
H5: TL→CS	0.150	2.732*	Supported
H6: LMXL→CS	0.225	4.115*	Supported
H7: VI→CS	0.142	2.924*	Supported
H8: LN→CS	0.246	4.830*	Supported
H9: CE→CS	0.233	4.681*	Supported

Note: * $p < 0.05$

Source: Created by the author

The results in Table 7 can be further refined as follows:

H1 confirms that trust level significantly affects leader-member exchange level with a standardized coefficient value of 0.386. According to Pillai et al. (1999), the Trust level plays a crucial role in the leader-member exchange level, affecting cooperation among team members and between members and leaders. Therefore, universities can create an educational environment that encourages trust, self-confidence, and growth that will help students to develop holistically in order to improve employers' impression of them and career satisfaction.

H2 shows that there is no significant relationship between PCO and CS, indicating a standardized coefficient value of 0.352 for structural paths. Indeed, PCO represents a career model in which individuals prioritize subjective career success, are guided by their values, and accomplish their career development through self-management. PCO is characterized by greater mobility in organizations (Hall, 1996).

H3 affirmed the significant relationship between CC and CS with a standardized coefficient value of 0.205. Lee et al. (2000) confirmed that there is a favorable association between employees' commitment to their careers and their employment satisfaction. The more committed employees are, the greater the impact of their career plans on career satisfaction (Aryee & Debrah, 1993).

H4 indicates that WI can directly influence CS with a standardized coefficient value of 0.149. According to Park et al. (2016), using data from the 2013 U.S. Federal Employee Opinion Survey, it was determined that group WI has a positive impact on career satisfaction.

H5 affirmed the significant relationship between TL and CS with a standardized coefficient value of 0.150. Matzler and Renzl (2006) confirmed that mutual trust between co-workers within a company can significantly affect their job satisfaction and that firms can ultimately foster loyalty.

H6 shows that LMXL is an intermediate variable between TL and CS and has a significant effect on CS with a standardized coefficient value of 0.225. Epitropaki and Martin (2005) stated that member exchange in leadership can significantly increase employee career satisfaction.

H7 affirmed the significant relationship between VI and CS with a standardized coefficient value of 0.142. According to Baruch et al. (2014), the positive impact of employees' job dynamics on career satisfaction was further verified.

H8 indicates that LN has a significant effect on CS with a standardized coefficient value of 0.142. Ryan (1995) suggests that self-directed learning plays a vital role in an individual's career development. It is also further confirmed by Joo and Ready (2012) that employees' orientation towards learning goals has a considerable positive impact on their

career satisfaction.

H9 confirms that CE has a significant effect on CS with a standardized coefficient value of 0.233. According to Macey and Schneider (2008), when there is a strong congruence between an individual's career expectations and the firm's values, they are more likely to be engaged in their work and ultimately increase their career satisfaction.

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study aims to investigate the factors that influence the career satisfaction of college graduates in Hangzhou. Using hypotheses as a conceptual framework, this study explores the significant effects of protean career orientation (PCO), career commitment (CC), workplace innovation (WI), trust level (TL), leader-member exchange level (LMXL), vitality (VI), learning (LN), and career expectations (CE) on career satisfaction (CS). The questionnaire was administered to students employed at Zhejiang College of Commerce in Hangzhou, Zhejiang Province, China. The data were analyzed to investigate the factors that impact the career satisfaction of college graduates. Confirmatory Factor Analysis (CFA) was conducted to assess the validity and reliability of the conceptual model. Subsequently, Structural Equation Modeling (SEM) was employed to analyze the factors that influence the career satisfaction of college students.

The study presents its findings: Firstly, the trust level significantly impacts the Leader-Member Exchange Level (LMXL). This relationship between trust level and leadership member exchange level has been previously confirmed by Scandura and Graen (1984) in the literature. Trust between leaders and employees not only enhances employees' innovative behaviors and career satisfaction (Dulebohn et al., 2012) but also indicates that employees with higher LMXL levels receive more support from the organization and have a significant positive correlation with pay, promotion, and career satisfaction (Wayne et al., 1999). Secondly, learning also has a very significant effect on career satisfaction. This result was confirmed by Ryan's (1995) study, and the results of Ryan and Deci (2000) analysis support that self-directed learning plays a vital role in individual career growth and positive performance outcomes, thus contributing to higher graduate career attainment and career satisfaction. Thirdly, the effect of career aspirations on career satisfaction was supported. This result was also confirmed by Locke (1976), whose study showed that career aspirations significantly affected individuals' working hours and career satisfaction. Higher aspirations helped establish a clear career direction and improve one's job competence.

Fourthly, career commitment has a significant effect on career satisfaction. Previous literature (Lee et al., 2000) confirms this result. Fifth, the effect of workplace innovation and dynamism on career satisfaction is positively correlated, but its correlation is weak relative to the other variables. Previous literature by Valentine (2011) and (Gunasinghe et al., 2020) also confirms this result.

However, this study found no significant relationship between protean career orientation and career satisfaction. It suggests that career satisfaction may be influenced by other factors, such as adaptability, career interests and values, career development opportunities, and the psychological stability of individuals entering the workplace. This study aimed to determine the factors affecting the career satisfaction of students in Zhejiang College of Commerce, Hangzhou, Zhejiang Province, China. The factors identified include Career commitment (CC), Workplace innovation (WI), Trust level (TL), Leadership member exchange level (LMXL), Vitality (VI), Learning (LN), and Career expectation (CE).

5.2 Recommendation

The researchers studied the factors influencing students' career satisfaction at Zhejiang College of Commerce in Hangzhou City, Zhejiang Province, China. They identified several key factors, including career commitment (CC), workplace innovation (WI), trust level (TL), leadership member exchange level (LMXL), vigor (VI), learning (LN), and career expectations (CE). The researchers suggest several aspects that can enhance students' career satisfaction based on their findings. Firstly, they emphasize the significance of trust level as the most influential factor in graduates' career satisfaction. They recommend that schools focus on improving trust levels and optimizing the school service system to ensure students receive timely and effective support in their studies and daily lives.

Additionally, enterprises should provide employees with a clear career development path to help them visualize future opportunities within the company, thereby fostering long-term trust. The researchers also highlight the impact of transparent communication, teacher-student relationships, evaluation systems, integrity systems, and campus culture on the school's image in students' minds. They emphasize the importance of utilizing various channels, particularly new media on the internet, to effectively enhance the school's image in the modern era through words and pictures.

In order to enhance students' learning capacity, improve their career competitiveness, and increase their career satisfaction, colleges and universities should consider establishing digital learning resource centers, conducting study skills training programs, implementing inquiry-based learning approaches, establishing mentorship systems, and

strengthening industry-teaching integration platforms. To better assist graduates in clarifying their career aspirations, enhancing their career commitment, improving their career satisfaction, and preparing them for future career challenges, schools should consider implementing the following initiatives: establishing career planning counseling and tutoring services, creating internship and practice platforms, integrating practical courses into the curriculum, offering career development courses, and organizing career lectures and activities. Fourthly, both universities and enterprises can enhance vitality and innovation in the workplace through a series of innovative and energizing measures, thereby enhancing the career satisfaction of employees or students. Universities can establish academic innovation centers to promote academic innovation and practice, promote interdisciplinary cooperation, provide entrepreneurial support, encourage students to carry out innovative research projects, support student entrepreneurship, set up business incubators, provide business mentors, and help students turn innovative ideas into practical projects. Enterprises can create innovative work environments, organize regular innovation activities, set up innovation reward systems, enhance the leadership's awareness and ability to innovate and advocate a culture of innovation.

While there may not be a significant relationship between variable career orientation and career satisfaction, colleges and universities can still implement measures to assist students in dealing with career uncertainty and variability. One approach is to offer timely and accurate career market information, which can help students better understand career prospects and development opportunities in various fields. Additionally, providing mental health support services can aid students in managing the psychological stress caused by career uncertainty. Strengthening alum networks can also be beneficial, as students can leverage alums' experience and resources to plan their career development effectively.

5.3 Limitation and Further Study

This study has several limitations that should be acknowledged. Firstly, the population and sample of this study were limited to graduates from Zhejiang Business College in Hangzhou City, Zhejiang Province, China. To enhance the generalizability of the findings, future research should include graduates from a wider range of colleges and universities in Hangzhou City, representing different regions. Secondly, the questionnaire was conducted exclusively online. While efforts were made to exclude invalid questionnaires, the quality of the responses may have been influenced by uncontrollable factors, such as respondents' attitudes and subjective influences. Thirdly, the conceptual

framework of this study only considers a few influencing factors of graduates' career satisfaction. It would be beneficial to expand the scope to include additional variables, such as organization size, social practice activities, geographic location, and corporate culture. Lastly, although quantitative studies can provide statistical significance, it is recommended to incorporate qualitative studies to compare and complement the results, leading to more robust implications and recommendations.

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