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Influence of the big five on career paths among Trainees in TVET Institutions.

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Abstract
Examination of the relationship between personality types (five-factor model and its relationship) and career paths of TVET trainees in Kenya is critical. A correlational approach and regression analysis identified the association and regression line connecting independent and dependent variables. The targeted respondents were 1,007 individuals in seven purposely selected TVET institutions. A multi-stage random sampling method was used to select 321 respondents from this population. Data collection tools were questionnaires for TVET trainees and interview schedules for career masters/deans of students. The validity of the research tools was evaluated, and reliability was tested using Cronbach's Alpha, resulting in scores of 0.754 for the personality types Scale and 0.775 for the career paths Scale. Regression analysis indicated that the five personality Types explained 19.1 % of the variance in career path choices. The study resulted in positive correlation coefficient between the five major personality factors and career paths. The results showed statistically significant differences in the levels of the five major personality factors and career paths. The findings are expected to make available information on psychological characteristics underlying career paths for theory and practice since the promotion of appropriate personality is necessary for all students of all educational levels.
Keywords: *five-factor model of personality, career paths, TVET trainees*

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I. Introduction

A range of psychological factors influences career decision-making among post-secondary trainees. While changing an incompatible career is possible, it can lead to irreversible impacts such as wasted time and money, and psychological strain. Therefore, appropriate career paths should consider psychological factors and match individual personality types.

The study focuses on TVET trainees in Garissa County, where many parents and potential trainees consider TVET courses a last resort after failing to secure university placements. Kenya has over 40 public TVET institutions and over 900 vocational training institutions. Many youths who miss university opportunities struggle to make appropriate decisions about their courses of study in these institutions. TVET colleges offer various career pathways for trainees as they mature and prepare for the job market. How personality types attract TVET trainees to various careers and whether their initial career intentions change after starting their courses is an investigated area.

1.1 Background to the Study

According to McCrae and Costa (2003), personality is the patterns of affect, thoughts, and goals that bring individual differences in human behavior. They are portrayed in individuals as generally stable patterns of conduct, movements, and feelings. McCrae and Costa (2003) see character qualities as measurements of individual contrasts in inclinations that show steady examples of thoughts, feelings, and activities. Heckman et al. (2014) on the effect of the Perry Preschool Program on the cognitive and psychological characteristics of its participants, psychological characteristic factors such as personality traits had influenced academic achievements and careers of study.

The earliest grouping of human beings based on personality traits placed them into five categories. These categories of personalities included: extroversion, agreeableness, dependability, emotional stability, and culture. It was later grouped into the commonly known BIG FIVE or Five-Factor Model (FFM). FFM consists of openness, conscientiousness, extroversion, agreeableness, and neuroticism (Ajila, Bello & Felix, 2023). Studying relationships between careers and personalities of persons, Lounsbury et al. (2003) and Lounsbury et

al.(2012), used Psychological Style Inventory (PSI) to measure scientists' and nonscientists' personality traits and found openness higher among scientists compared to non-scientists. A study of full-time employees in the United States observed that people with highly extroverted, conscientiousness, and open traits were good at decision-making careers (Sutin & Costa, 2010). Understanding personality dimensions and career components ensures the right career pathways are compatible with personalities. Neuroticism (N) is a Big Five personality type that addresses the emotional response to change or enthusiastic stability behavior. People who score high on the N scale size of the NEO are inclined to have irrational thoughts, are less ready to control driving forces, and are helpless when adapting to pressure (Alkhelil, 2016). Those with low scores on the N scale are ordinarily quiet, wobbly, and ready to confront unpleasant circumstances without annoyance (Costa and McCrae, 1992). They show happiness even in events of disaster and are good at helping others towards psychological stability and decisiveness. Costa and McCrae (1992) observed that women scored higher on the neuroticism scale than men, and scientists had higher scores compared to non-scientists. Investigations of temperaments and task persistence showed that neuroticism predicted lower endurance of tough tasks. High scorers of this trait were associated with a tendency to psychiatric difficulty, poor stress management, and the main cause of insecure attachments in the workplace (Jalagat, 2017). Low scores indicated calmness and being less prone to anger, although they can be careless. Social trait predicts a high difficulty task resistance (Alkhelil, 2016).

The extroversion (E) scale measures the extroversion/introversion tendency. Extroverts are the perfect assertive, active, and talkative. Cain (2013) defined introverts as people who prefer quieter, more minimally stimulating environments. Frequent traits observed among extroverts include thinking before talking, synthesizing information, and paying attention before engaging (Davidson, et al., 2015; Petric, 2022). Extroverted people show skills that positively correlate with occupations that require social interactions, training proficiency, leadership abilities (Duckworth et al., 2012), and more knowledge. High on the E scale fit in venturesome occupations that involve interaction (Holland, 1997). Costa and McCrae (1992) accept that contemplative people are more earnestly characterized and need extroversion as part of their character. A blended workforce with introverts and extroverts achieves remarkable results (Herbert et al//023). Learning institutions to structure educational programs that consider different temperaments and are respectful of student potential (Koech et al., 2016).

The Openness to Experience (O) factor includes a dynamic, creative mind, stylish affectability, mindfulness of internal emotions, and inclination for assortment, scholarly interest, and autonomy of judgment. Those scoring high on the O scale lead experimentally more extravagant lives, engage original thoughts, and experience feelings more grounded than closed people. Those scoring low on the O factor have a small degree and less interest in routine activities. The O factor has a connection with insight; however is not identical with knowledge. Open and shut people aspire for different significant responsibilities required in community activities (Costa and McCrae, 1992, 2003).

The Agreeableness (A) factors show relatedness with relational tendency. Show significant degrees of benevolence, compassion, and anxiety to assist others. Characterized as a tendency to be sympathetic, forgiving, and an agreeable person, usually trust others and might therefore be taken advantage of more easily than persons with low agreeableness. People lows in agreeableness reportedly are egocentric, suspicious of others, and look serious.

Costa and McCrae (1992) noticed that neither of the limits on this factor is ideal. An undeniable degree of pleasantness is not beneficial in numerous callings, for example, law and outfitted administrations. Careers that require evidence and proof like STEM may not be appropriate for this group of people. High agreeableness reflects reliance and stable character issues. Career paths, persistence in developing a career, and life fulfillment require people with the appropriate score on a pleasant scale.

Conscientiousness (C) personalities are inclined toward arranging, sorting out, and doing assignments. High C scores are characteristic of an individual who is trustworthy, dependable, and solid (Ajila et al., 2023). A Highly conscientious person focuses on relatively few goals at one time. Show structured, systematic, careful, thorough, responsible, self-disciplined, and achievement-oriented. A person low in conscientiousness tends to focus on several goals at a time. Consequently, the individual is more disorganized, careless, and irresponsible. They display inclinations, for example, being an obsessive worker or habitually slippery. Low C scores are generally rigid in observing ethical guidelines (Costa & McCrae, 1992).

1.2. Statement of the Problem

Research indicates a critical need to assist trainees in developing a deep understanding of them to choose careers aligned with their personality interests and talents. Despite the importance of this self-awareness, studies on occupational aspirations among trainees in Garissa County's Technical and Vocational Education and Training (TVET) institutions reveal a significant gap. Specifically, no assessments have been conducted to determine the alignment between trainees' personality types and their vocational interests. Lack of self-knowledge, combined with limited exposure to career opportunities that match their personalities, often results

in trainees selecting career paths not aligned with their inherent interests or talents. Consequently, the misalignment between a trainee's personality and their chosen career path lead to dissatisfaction and poor performance, as not every trainee is suited for every vocational type offered by TVET programs.

Further evidence suggests that TVET training programmes in Garissa County do not fully exploit the unique personality interests and abilities of the trainees enrolled in them. Instead, academic qualifications, particularly performance in national examinations like the Kenya Certificate of Secondary Education (KCSE), largely determine career pathways. This system often forces trainees into available degree programs rather than those they are genuinely interested in, resulting in a lack of motivation and engagement. The consequences of this misalignment are significant, with many trainees attempting to change courses midstream, facing delays in graduation, or dropping out entirely. The prolonged completion times, coupled with the trainees' disillusionment, result in a waste of both time and resources as they passively train in less motivating degree programs. This study aims to address the gap identified by previous research by exploring the relationship between personality types and career paths among TVET trainees in Garissa County, Kenya. The goal is to determine whether trainees are aware of their personality-vocational interests and how these interests can inform better career decisions, thereby optimizing the TVET training experience

1.3. Research Hypotheses

This research was guided by the following speculation:

H_0: There is no statistically significant relationship between personality types and career paths among trainees in TVET institutions in Garissa County in North Eastern Kenya.

II. Literature Review

Personality is understood as the patterns of thoughts, emotions, and behaviors that differentiate individuals, showing relatively stable traits over time. McCrae and Costa (2003) describe personality traits as dimensions of individual differences that manifest in consistent patterns of thinking, feeling, and behaving. Researchers, such as Heckman et al. (2014), have shown that these psychological characteristics, including personality traits, significantly influence career outcomes. The Five-Factor Model (FFM), which includes openness, conscientiousness, extroversion, agreeableness, and neuroticism, is widely used to categorize these traits, helping to understand how they relate to career paths.

Different personality traits are linked to specific career outcomes. Extroverts, who are typically sociable and assertive, excel in careers that require social interaction and decision-making. The study by Sutin and Costa (2010) found that extroverted, conscientious, and open individuals tend to perform well in such roles. On the other hand, neuroticism, associated with emotional instability, negatively impacts career success, particularly in challenging jobs where high stress is a factor. Those with high neuroticism are prone to irrational thoughts and struggle with pressure, which can lead to difficulties in workplace relationships and career persistence (Jalagat, 2017).

Extroversion, measured on a scale from introversion to extroversion, also plays a significant role in career suitability. Extroverts are typically more talkative, assertive, and comfortable in social settings, making them well-suited for careers that require leadership and interaction. In contrast, introverts, who prefer less stimulating environments, might find success in careers that allow for contemplation and less social engagement (Cain, 2013). Educational institutions are encouraged to design curricula that accommodate different temperaments, fostering both extroverted and introverted students' potential (Koech et al., 2016).

Other personality traits like openness and agreeableness also influence career paths. Openness, characterized by a vivid imagination and intellectual curiosity, is associated with a richer life experience and a propensity for creative and scientific careers. Meanwhile, agreeableness relates to interpersonal tendencies, with highly agreeable individuals being more compassionate and cooperative, though they may struggle in competitive or evidence-driven careers like law or STEM (Costa & McCrae, 1992). Conscientiousness, marked by organization and reliability, is crucial for success in structured and goal-oriented professions. Individuals with high conscientiousness are systematic and disciplined, key traits for achieving long-term career success.

III. Methodology

In addition to the quantitative data gathered from the students, the study incorporated qualitative perspectives from 12 career masters and heads of departments (HODs), who were selected through purposive sampling. These interviews provided valuable contextual insights, enhancing the interpretation of the data collected from the trainees. By integrating quantitative findings with qualitative feedback, the study offered a more comprehensive understanding of the research questions.

3.1. Research Instruments

Questionnaires on a 5-point Likert Scale on personality types and career paths were used. Personality traits were assessed using the self-report form of the Temperament and Character Inventory. It consists of eighteen (18) items, each assessed along a continuum from 1 to 5, and where 1 is "Strongly Disagree" and 5 is "Strongly Agree". An average score of 3.0 and above on the personality types scale indicates high personality types, and a mean below 3.0 indicates low personality types. The statements had Cronbach Alpha of 0.754.

The career paths Scale (CPS) is adapted to the Career Decision Scale (Osipow, Carney, & Barak, 1976). Respondents responded to a 5-point Likert scale agreement on the statements with Cronbach Alpha of 0.775 for the career paths Scale. Higher scores indicate greater indecision; higher scores on CDS-Certainty indicate greater certainty.

Career paths of trainees were assessed using the Career Paths Scale adapted from the Career Decision Making Inventory Çakır, 2004) to measure the career decision levels. The career paths Scale a five Likert-type scale (1 = strongly disagree, 5 = strongly agree) and consists of 11 items. The scale consists of items on internal conflict, lack of self-knowledge, lack of occupation and field knowledge, irrational beliefs about career of choice, and external conflict. The average total scores or the mean score vary from 1 to 5. A mean value closure to 5 indicates more career paths decisiveness, whereas a value of 1 indicates a low level of career decisiveness or satisfaction with the chosen career paths. The Cronbach alpha internal consistency coefficient is .809.

IV. Results

4.1 Descriptive Statistics

Respondents scored an overall mean of 4.0962 on the career paths scale and a standard deviation of 0.47882, as illustrated in Table 1. This is a high score on a scale of five. High mean scores indicated adjusted career paths. The item "I don't see myself changing my career paths after graduation" had the lowest mean of 3.47 and standard deviation of 0.2725. The item "I will do my best to make sure I finish studying for my career, even how challenging the course is" had the highest mean of 4.43 and standard deviation of 0.689. This item was highly ranked by the majority of respondents, an indication of decisive career paths.

Table 1: *Descriptive Statistics of sub-scale mean of career paths (N=309)*

	Mean		Std. Deviation
	Statistic	Std. Error	Statistic
I don't see myself changing my career path after graduation	3.47	.063	1.119
I don't regret for choosing this career of study	4.24	.045	.795
The more difficult the course is, the more determined I am to remain in it	4.07	.053	.948
I'm sure I'll finish studying for my career, even though the course is.	4.43	.039	.689
I'm satisfied with my career of study despite the long duration it takes.	4.25	.046	.810
I can enroll in another related course to develop my career	3.94	.056	.998
I will do my best to make sure I finish studying for my career.	4.41	.037	.664
Completing this course will give me a satisfying feeling of accomplishment	4.25	.045	.792
I enjoy this course so much that I would like to do post postgraduate	4.12	.048	.847
Its a pleasure to study a well-designed career like the one I'm in.	4.23	.043	.759
I intend to ask people about new academic courses to study.	3.68	.064	1.136
Valid N (listwise)			

Source: The researcher, 2024

4.2 Correlational Analysis

A correlation coefficient (r) between career paths and personality types was measured at 95% confidence level (p= 0.05). A statistically significant moderate positive correlation (r=.417*, n = 309; p<0.000) was found to exist between the personality types and career paths as indicated in table 2. Correlation values (r) show the certainty of relationship between personality types and career paths. Thus the null hypothesis was rejected. The study findings support earlier findings that an increase or decrease in personality type result has similar change in Career paths interest. Akosah-Twumasi,al. (2018) and Quiño (2022) observed personality types correlate positively with academic life among college students. Among intrinsic factors, personality is a strong force behind career decisions we make. Career construction theory regards vocational personality types and occupational interests as key determinants in career decisions.

Table 2**:** *Correlation Summary of Personality Type and Career paths*

		Career paths	Personality
Career paths	Pearson Correlation	1	.417**
	Sig. (2-tailed)		.000

**. Correlation is significant at the 0.01 level (2-tailed).

Source: The researcher, 2025

4.3 Bi-variate correlates of individual personality types

Analyzing the results in table 3, bi-variate correlates of individual personality types with career paths, the following conclusions were made: career paths correlates statistically significantly with personality traits; neuroticism (r(309) = .226), extroversion (r(309) = .265), openness to experience (r(309) = .333, agreeableness (r(309) = .411), and conscientiousness (r(309) = .444). The results revealed that, at the level of individual personality trait; conscientiousness is the highest predictor of career paths, while neuroticism is the lowest predictor. High levels of conscientiousness assist people to focus on specific goals. These people are reported to be organized, self-disciplined, and achievement-oriented (Sutin & Costa, 2010). Conversely, low levels of conscientiousness are associated with careless, irresponsible, rigidity in thinking and tend to show obsessive behavior at the workplace or habitually slippery (Costa & McCrae, 1992).

Table 3: B*i-variate correlation Matrix of Personality Types and Career paths*

	Agreeableness	Openness	Neuroticism	Extroversion
Conscientiousness				
Agreeableness	1			
Extroversion				
Openness	.099			
Neuroticism				
Extroversion	.290	1		
Career paths				
	.261	.180	1	
	.182	.118	-.049	1
	.411	.333	.226	.265

Source: The researcher, 2025

To get the relationship between personality type and career paths, linear regression analysis was computed to establish the contribution of overall personality type on career paths among TVET trainees. First, the overall mean of the Big-five personality scales were regressed jointly with career paths. Results obtained were represented as statistical output in table 4, gave a regression line of;

Equation 3: y = 2.206 + 0.552x; y = Career paths, x = Personality Types

The regression line has positive gradient with career paths and y-intercept of 2.206 as shown in table 4. The null hypothesis of no relationship between personality and career path was rejected at 5 % level of significance. The y-intercept 2.206 in the model stands for the change in career paths when the personality type is zero units. Standardized coefficient or beta weights measures the change in standard deviation with one standard deviation increase in personality Type. Our findings indicate that a change of 0.437 standard deviations in career paths is attributed to a one standard deviation increase in personality type. This result highlights the significant influence of personality traits on career path decisions, suggesting that individual differences in personality contribute meaningfully to variations in career trajectories. The standardized coefficient of 0.437 underscores the moderate strength of this relationship, emphasizing the role of personality as a key predictor in shaping career outcomes

Table 4: *Regression Analysis overall Personality Type and Career paths*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.206	.224		9.859	.000
	Personality	.552	.065	.437	8.501	.000

Source: The researcher, 2025

In the full model, in table 4, t-test further confirmed the influence of personality type (β1 =2.206, t = 8.501; p (.00) < .05), observed statistically significant relationship with career path, accounting for 19.1% (R^2 = .191) of the variance in career paths, R^2 shows how well data points fit a regression line assuming every single variable explains the variation in career paths is true. Adjusted R^2 indicates how well the data points fit a regression line showing the percentage of variation explained only by the independent variables that actually affect the dependent variable. In our model, R^2 adj = 18.8%, implying that our predictor variable accounts for 18.8% of variation in our outcomes thus the model is fit for the data. This is outlined in table 5.

Table 5**:** *The Bivariate Regression Analysis: Career paths versus personality type*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.437[a]	.191	.188	.43149	.191	72.275	1	307	.000

a. Predictors: (Constant), Mean Personality

Source: The researcher, 2025

To get the relationship between individual personality type and career paths, linear regression analysis was computed to establish the contribution of each of the Big-five personality types on career paths among TVET trainees. The computed statistical output in table 6, shows that Conscientiousness, extraversion and agreeableness had significant statistical influence on career paths. The three personality types had p-values of less than 0.05 and Standardized Coefficients (Beta) of .223, .172 and .253 respectively in table 7. On the other hand, openness to experience and Neuroticism were found to be a statistically insignificant influence on career decisions. Their p-values exceeded the level of significance.

The regression equation linking the five variables from table 6;

Equation 4: $y= 1.292 + 0.211x_1 + 0.067x_2 - 0.062x_3 +0173x_4 + 0.172\ x_5 + \varepsilon$

x_1 =Agreeableness, x_2 = Openness, x_3 =Neuroticism, x_4 =Extroversion, x_5 =Conscientiousness, ε= Error term and y= Career Paths.

All independent variables have positive coefficients except neuroticism and y-intercept of 1.292. The null hypothesis of no relationship between respective personality type and career paths was rejected at 5 % level of significance since all coefficients are greater than absolute zero.

The y-intercept 1.292 in the model implies the change in career path when all the personality types are equal to zero. The observation from this study on openness to experience contradicts with observation made in a study on openness to experience on employees job performance was statistically significant at 1% ($p=0.000 < 0.01$) to employees job performance (Ajila, Bello & Felix, 2023).

Table 6: *Pearson Product Moment and t-Tests of Personality Type and Career paths*

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Agreeableness	.211	.044	.223	4.113	.000
	Openness	.067	.042	.092	1.611	.108
	(Constant)	1.292	.276		4.682	.000
	Neuroticism	.062	.026	.110	2.173	.031
	Extroversion	.173	.055	.172	3.480	.001
	Conscientiousness	.172	.045	.253	4.253	.000

a. Dependent Variable: Mean Career paths

Source: The researcher, 2025

In a correlation matrix results of career paths using John Holland typology and the Big-five established statistically significant relationship between variables such as realistic, investigative, artistic, social, enterprising, conventional and the personality trait variables such as openness to experience, conscientiousness, extroversion, agreeableness and neuroticism. The correlation matrix, however, showed no statistically significant relation between artistic and neuroticism (Owusu et al., 2023). From the findings, neurotic individuals are likely to be less compatible in many fields of careers and require much vocational counseling. Findings are highly supported by study, Wu (2020) on personality and career decision-making self-efficacy of students from poor rural areas in China. The study observed a β of 0.16 between neuroticism and self-efficacy.

Null Hypothesis One H_0: The study found no statistically significant relationship between personality types and career paths among TVET trainees in Garissa County, Kenya. However, a Pearson correlation coefficient of $r = 0.350$ and $p < 0.05$ indicated a significant association between personality types and career paths, leading to the rejection of the null hypothesis. Regression analysis supported this, showing that personality types significantly influence career paths, aligning with previous research. According to Holland (1997), career choices are an expression of an individual's personality and reflect efforts to apply general behavioral tendencies within the workplace. This underscores the importance of personality types in career decision-making and suggests further research on psychological factors affecting personality types.

High personality types were found to positively impact career paths, with theoretical and empirical research supporting this link. According to the Social Cognitive Career Theory (SCCT), individuals with high personality types are more likely to set ambitious career goals and persist despite challenges. Studies by Lent et al. and Chan confirm the positive correlation between personality types and career exploration. Personality types equip individuals to handle setbacks and maintain control, highlighting its role in career development.

Personality types significantly affect career decisions and overall life satisfaction. For instance, certain high personality types can prevent issues like high dropout rates due to poor career paths, as seen in Germany. Educators and parents should provide supportive environments for developing personality types, allowing students to explore and commit to suitable careers. Encouraging development of positive personality types in students leads to better career outcomes and personal fulfillment.

The study recommends that TVET institutions offer opportunities for trainees to explore their personality types and career interests through innovative, hands-on training programmes. Highly personality individuals allow trainees to reflect on more career opportunities and make better decisions. Trainees with high personality types had higher mean scores on career paths scales, indicating positive career paths. Guidance and counseling can nurture personality types, which is crucial for effective career decision-making. Conversely, trainees with low personality types showed avoidance and poor performance when facing challenges, emphasizing the need for targeted support

V. Summary and Conclusions

The paper attempted to see the fundamental variables that influence the career paths of the TVET trainees in Garissa County, Kenya. Mismatch of the personality and lack of interest in the subject is dangerous, and could end up in disastrous results in terms of student dissatisfaction, demotivation, lack of productivity, leading to increased drop-outs and career failure. On the contrary, the students' performance could excel and deliver better results if the area of study matches and aligns with the intrinsic factors of the individual's personality, leading to internal satisfaction, motivation, and commitment. The previous research revealed that the career path variables of the trainees have some association with the personality types; however, these variables vary with the demographic factors. The career choice of the students is also influenced by the level of their social status, financial resources, affordability, and future employability, which makes multiple interest areas available to them for making better career choices. It is also important to consider the personality type and intrinsic factors of the trainees while advising them on their career path preferences because their future performance and success is directly impacted by these factors, and a mismatch of the career paths with the personality could be disastrous.

VI. Recommendations and Further Research

To nurture high levels of personality types among TVET trainees, institutions must provide preliminary training during the admission process through orientations. Effective guidance and counseling services should be established from primary through to tertiary education, focusing on aligning personal traits with career paths, offering continuous on-the-job training, life skills education, and addressing gender-related information. Future studies should explore the reasons behind low personality types and other psychological variables not covered in this study to better understand the relationship between individual psychological traits and career paths among TVET trainees in Garissa County.

Additionally, TVET institutions should consider teaching career studies or vocational psychology as a common unit at the beginning of training. This approach would help learners understand their unique characteristics and the suitability of their chosen careers. Focusing on individual trainees rather than the group balances personal qualities and abilities with career demands. Bazyl and Valerii (2019) emphasize that career guidance in vocational education is crucial for planning and achieving professional careers among youths and propose career counseling as a vital educational activity. Understanding personal attributes to career paths calls for early intervention by parents and teachers to support trainees' optimism and engagement, enhancing personality types, positive behavior, and life satisfaction for better career development.

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