ISSN: 2089-9823 DOI: 10.11591/edulearn.v19i3.22722

Assessment of occupational congruence on occupational satisfaction of graduates in Kenya

Ann Gathigia Waruita¹, Ciriaka Muriithi Gitonga¹, Edwin Benson Atitwa²

¹Department of Education, School of Education and Social Sciences, University of Embu, Embu, Kenya ²Department of Mathematics and Statistics, School of Pure and Applied Sciences, University of Embu, Embu, Kenya

Article Info

Article history:

Received Jul 9, 2024 Revised Aug 24, 2024 Accepted Sep 19, 2024

Keywords:

Career choices
Congruence
Graduates
Occupational satisfaction
Work environment

ABSTRACT

Graduates in mismatched careers with their personalities often feel dissatisfied and less productive. This research aims at assessing occupational congruence and occupational satisfaction of graduates in Kenya, informed by Holland's theory. Objective of the study is to investigate the mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction. A longitudinal cohort research design was adopted, involving participants from a 2012 study, with 76 respondents participating. Data was collected using Holland's Self-Directed Search (SDS) 4th Edition questionnaire and an interview schedule. Logistic regression was used to examine the mediating effect of congruence on the relationship between personality types and occupational satisfaction. Results indicated that the mediating effect of congruence was statistically significant at (p<0.05). This study provides additional empirical evidence for the educational institutions, career counsellors, and employers for policy making. Additionally, Holland's classification tool can be used for career guidance to align students with suitable academic fields and ensure congruence of learners with academic programmers, and that of employees with their careers resulting to employee satisfaction.

This is an open access article under the CC BY-SA license.



1238

Corresponding Author:

Ann Gathigia Waruita

Department of Education, School of Education and Social Sciences, University of Embu

Embu County, P.O. Box, 6-60100, Embu, Kenya

Email: waruita.ann@embuni.ac.ke

1. INTRODUCTION

Career development is a gradual process influenced by a series of choices that shape one's career path [1]. From primary to tertiary education, individuals are exposed to various environments that eventually influence their workplace dynamics [2]. These choices, whether they align with the individual and the environment or not, carry over to the workplace [3]. People seek environments aligned with their personality types and engage in activities that utilize their abilities [4]. Consequently, they align their skills and interests with suitable careers [5], [6]. The choice of occupation influences the development of interests and how individuals adapt to different environments [7], [8]. Interests also shape personality and abilities since environmental preferences affect experiences [9], thus influencing trait development over time [10]. This developmental process continues throughout an individual's life and stabilizes in adulthood [1], [11], indicating developmental adaptations that enable individuals to adapt in everyday life [12]. Super's career stage model [13], categorizes the age period between 25-44 years as the establishment stage, while Erickson's classifies the same period as the young adulthood stage [13]. During this stage individuals look for commitment, involvement and acquisition of competency on their careers; integrate work and personal spheres in an attempt to identify their life aims [14].

When individuals' express preferences in education, occupation, and leisure, they select environments and opportunities that allow them to express their talents and personalities [7]. Choosing an occupation is an expressive act reflecting a person's motivation, knowledge, personality, and ability [15], [16]. Therefore, occupations represent a way of life, encompassing more than just isolated work functions or skills.

In Kenya, joblessness and employees' dissatisfaction are driving many graduates to accept any job opportunity or start their own businesses, often in fields unrelated to their degree programs, as a means of survival [17]. It is unclear if these graduates maintain career congruence, and how this congruence, influences the relationship between personality types and occupational satisfaction. Considering the significant time invested in career development and aligning careers with suitable work environments, a standardized method for determining personalities and corresponding environments could streamline graduate employment. This study therefore, aims to examine the mediating effect of occupational congruence on the relationship between Holland's personality types and occupational satisfaction. The results of this study will add to the growing body of literature in education that focuses on career guidance, career choices and occupational satisfaction. The results of the study provide evidence on literature supporting the mediating effect of congruence on the relationship between personality types and occupational satisfaction. The study will inform policymakers in the Ministry of Education to formulate comprehensive career guidance programs to allow for informed career choices. On the other hand, organizations will benefit from the Hollands Self-Directed Search (SDS) tool to place employees and assign tasks based on employees' interests and abilities.

Personality traits encompass the consistent behaviors, thoughts, and emotional patterns that differentiate individuals [11], [18]. While relatively stable, these traits can change throughout a person's life and predict significant life events such as relationship success, financial security, physical well-being, and perseverance [19], [20]. People express preferences in education, careers, and leisure activities that align with their personality, showcasing their abilities, interests, and skills [7]. Occupational satisfaction refers to the degree of personal enjoyment derived from work and impacts both individual job outcomes and organizational performance [21]. Personality traits are associated with the degree of job satisfaction [22]–[25] in that personality traits such as extraversion; agreeableness, openness to experience, and conscientiousness have a significant positive relationship with job satisfaction. Furthermore, as employees age, their levels of agreeableness and conscientiousness generally increase, while neuroticism decreases [26], [27]. Older employees tend to exhibit better organizational citizenship behavior and less counterproductive behavior, such as substance misuse, workplace hostility, lateness, and absenteeism [13], [28].

Alignment between personality type and work environment, known as congruence [4], enhances individual satisfaction and productivity. Individuals seek environments that fit their personalities, creating a person-environment fit [29], crucial for personnel selection and retention [30]. Better fit leads to higher job satisfaction, employee well-being, and lower turnover rates [29]. Effective career planning matches job requirements with personal aptitudes, interests, and expectations, leading to better career adjustment [2]. Career choices based on personal interests and abilities result in higher job satisfaction and productivity [31], [2]. Alkhelil [2], suggests further studies to evaluate the satisfaction of such employees who choose careers based on their personalities after many years into their occupations. Thus, this paper addresses the gap.

In the process of career selection, personal characteristics are important, since employees are more likely to be proactive in carrying out their duties when there is a high level of unity between openness to experience and job characteristics Kim *et al.* [6]. The study of [6] was done on college students, and it would be prudent to carry out a similar study on a working population. There is a relationship between career choices and personality types since college students choose their programs of study based on their interests. Studies in Kenya indicate that students often choose degree programs aligned with their personalities, leading to satisfaction [31], [32]. However, further research is needed to assess this congruence after graduation and job market entry.

Albert Bandura's social learning theory, posits that behaviors can be learned, unlearned, or relearned through observation and imitation, suggesting that personality types may change and influence career choices and satisfaction [9]. Job satisfaction is brought about when there is a match between the individual's personality types and the work environment, i.e. congruence [4]. However, incongruence may come up when graduates accept available jobs as a means of survival leading to dissatisfaction [17]. Maslow's hierarchy of needs theory [33], argues that job satisfaction occurs when work environments meet individuals' priority needs. This study aims to investigate how work environment choice and congruence affect the relationship between personality types and occupational satisfaction.

This paper is guided by Holland's theory [4], which argues that people can be classified into six personality types (realistic, investigative, artistic, social, enterprising, and convetional (RIASEC)) and that the six personality types have corresponding work environment (RIASEC). In addition, the theory argues that people make career decisions to satisfy their orientations and personalities. Therefore, individuals seek for work environments that correspond to their personality types. For example, a realistic personality type in a realistic work environment. Figure 1 shows the six personality types/work environments.

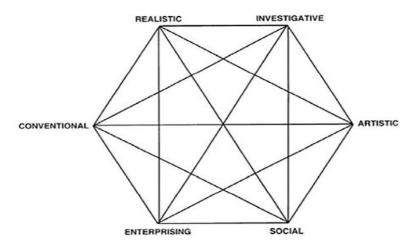


Figure 1. Holland's hexagonal model for personality types and vocational interests

Holland defines the alignment between a personality type and work environment as congruence. For example, an individual with an artistic personality is congruent if placed in an artistic work environment. but incongruent if in a conventional environment. According to Holland's theory, congruence leads to job satisfaction, while incongruence results in job dissatisfaction. Gitonga *et al.* [5] applied this theory to categorize university students' personality types and degree programs. This paper examines the longitudinal applicability of Holland's assumptions, focusing on the moderating effects of occupational choice and the mediating effects of congruence on occupational satisfaction.

2. METHOD

2.1. Participants and procedure

The study adopted a longitudinal cohort research design, selecting participants from an initial study in 2012 when they were university students [32]. This cohort was representative, fitting the definition by [34], [35]. The research design followed up on [32] earlier work, conducted ten years apart. According to Super's model, the age range of 25-44 years is the establishment stage of career development [13]. The researcher contacted all 112 respondents from the initial study who had completed the SDS questionnaire and provided contact details. Out of these, 76 agreed to participate in the follow-up study in 2023, using the same SDS tool for the second time. The study collected both qualitative and quantitative data, employing mixed methods to offer a comprehensive view on the persistence of personality types, consistency of career choices, and occupational satisfaction. Qualitative data provided deeper insights, complementing the quantitative data [36], [37].

2.2. Instruments

Primary data was collected using an adapted SDS questionnaire, comprising three sections. Section A comprised the respondent's demographic data. Section B comprised of the personality types of the individuals namely: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), and conventional (C). The respondents were required to check the boxes in the SDS test for "L" (likes) and "D" (dislikes); the totals were recorded in the boxes shown on the test. The researcher then counted the Ls, and picked the three top scores, e.g., RIA, whereby the highest, R, was the profile with the highest score, hence the individual's personality. Section C contained Likert scale with statements to describe the respondent's feelings concerning their current levels of occupation satisfaction. Data was gathered using a score of (1) satisfied and (2) dissatisfied, generated from a Likert scale, containing scores ranging from 1-5. The statements in the Likert scale assessed respondents' feelings regarding their occupation satisfaction, which were scored at five levels: The item contained a five-point scale (5=strongly agree (SA), 4=agree (A), 3=undecided (U), 2=disagree (D), and 1=strongly disagree (SD). The expected outcomes were either respondents were satisfied or dissatisfied with their occupations. The scores were dichotomized to have two categories of levels of satisfaction i.e. scores between 1-2.4 on average were considered dissatisfied, while scores between 2.5-5 on average were considered satisfied with the occupation. The questionnaire provided standardized guidelines for all participants, while an interview guide was employed to delve deeper into respondents' perspectives on their work environments, using a set of five questions. The researcher aimed to interview all study participants, gathering information until data saturation was reached [38], [39].

2.3. Data analysis

Quantitative data underwent analysis through descriptive and inferential statistics, and results presented using percentages and frequencies. A logistic regression analysis was employed to establish the relationship between choice of work environment, congruence of career choices, and occupational satisfaction. Due to the data's binary nature, logistic regression was the appropriate model for analyzing such data. A model specified in (1) was applied.

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$
 (1)

Where p is the probability of interest/success, 1-p is the probability of failure, β_0 is the intercept, β_1 , β_2 , β_n are the regression coefficients of respective independent variables, X_1 is the personality types, X_2 is the congruence of career choices, X_3 is the work environment, and ε is the error term.

The researcher assessed the mediating effect of congruence on the relationship between personality types and occupational satisfaction, the researcher categorized work environment into the six categories according to Holland's classification. Congruence was measured using the C index proposed by Brown and Gore [40]. The index uses the formula as shown in (2):

$$C = [3(x) + 2(x) + 1(x)] \tag{2}$$

Where x is a score of 3, 2, 1, or 0 assigned to each comparison according to the hexagonal distance between the letter (3=identical person and environment letters, 2=adjacent hexagonal letters, 1=alternate hexagonal letters, and 0=opposite hexagonal letters). Using the formula, the highest score for congruence is 18, and the lowest is 0. In this study, scores between 0-8 would be considered incongruent, and scores between 9 and 18 would be congruent.

Further, the researchers analyzed the mediating effect of congruence on the relationship between personality types and occupational satisfaction using the Baron and Kenny [41] four steps as shown in Figure 2. The following four steps were taken:

- Step 1: demonstrate a significant relationship between the independent and dependent variables (see Path C in Figure 2). It is represented by (3).

$$DV = \beta 0 + \beta 1 (IV) + \varepsilon \tag{3}$$

- Step 2: show that the independent variable is related to the mediator. The researcher treated the mediator variable as a dependent variable in this case. The researcher tested Path A (see Figure 2) using (4):

$$MEV = \beta 0 + \beta 1 (IV) + \varepsilon \tag{4}$$

- Step 3: show that the mediator variable relates to the dependent variable (see Path B in Figure 2). It is established by controlling for the effects of the independent variable on the dependent variable, as shown in (5):

$$DV = \beta 0 + \beta 1(MEV) + \varepsilon \tag{5}$$

- Step 4: show that the strength of the relation between the independent and the dependent variable is significantly reduced when the mediator is added to the model (see Path C in Figure 2), as shown in (6):

$$DV = \beta 0 + \beta 1 (IV) + \beta 2 (MEV) + \varepsilon$$
 (6)

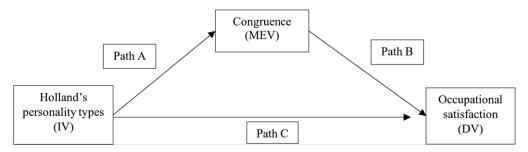


Figure 2. Mediating relationship between the IV and DV

The mediation variable acts as a full mediator if the relationship between independent and dependent variables will not differ from zero after including the mediator in the model. If the relationship becomes significantly smaller but still greater than zero, the mediator is considered a partial mediator. The mediation amount, also known as the indirect effect, refers to the combined effects of Path A and Path B in Figure 2.

Qualitative data analysis involves obtaining detailed information on the study topic, identifying patterns and trends from collected information, and organizing it into meaningful categories and codes [39]. These codes are then grouped into themes and presented narratively. Qualitative data analysis complements and enriches quantitative data analysis [42].

3. RESULTS AND DISCUSSION

3.1. Demographic results

3.1.1. Personality types

The distribution of respondents according to personalities was investigated and the results are as shown in Table 1. The results in Table 1 compares the personality types between 2012 and 2023 studies, demonstrating representation of all six types according to Holland's classification. Fluctuating numbers between personality types suggest potential changes over time; for instance, the social personality increased from 17 to 22, while the enterprising personality decreased from 20 to 14, indicating that personality types may change over time.

3.1.2. Academic environment and work environments

The distribution of respondents according to their academic environment (2012) and work environments (2023) was investigated, and the results are as shown in Table 2. Results in Table 2 presents Holland's classification, depicting all six work environments concerning academic degree (2012) and current occupation (2023). The results indicate notable shift from one environment to another, with individuals transitioning from their studied degree programs to different work environments. For example, while only one respondent pursued economics at the college level (classified as conventional), this number increased to 11 in the work environment. Conversely, the number of respondents in the enterprising work environment exceeded those in business-related academic courses, indicating a shift towards enterprising occupations. However, some classifications experienced a decrease in work environments; for instance, while 21 students pursued science programs (investigative) in college, only nine continued in the same field of work. This suggests a dynamic transition among different occupational categories.

Table 1. Comparison between 2012 and 2023 personalities

Personalities	Frequ	iency	Percentages		
Personanues	2012	2023	2012	2023	
Realistic	3	4	3.9	5.3	
Investigative	6	5	7.9	6.6	
Artistic	15	13	19.7	17.1	
Social	17	22	22.4	28.9	
Enterprising	20	14	26.3	18.4	
Conventional	15	18	19.7	23.7	
Total	76	76	100.0	100.0	

Table 2. Comparison between academic degree and work environments

Environments	2012		2023				
Environments	Academic disciplines	Frequency	%	Work environments	Frequency	%	
Realistic	Engineering	6	7.9	Engineering	5	6.6	
Investigative	Sciences	21	27.6	Sciences	9	11.8	
Artistic	Creative and performing arts	6	7.9	Creative and performing arts	5	6.6	
Social	Education	32	42.1	Education	27	35.5	
Enterprising	Business	10	13.2	Business	19	25.0	
Conventional	Economics	1	1.3	Economics	11	14.5	
	Total	76	100.0	Total	76	100.0	

3.2. Occupational satisfaction

3.2.1. Occupational satisfaction levels based on academic environments and occupational environments

The satisfaction levels within the academic environment was determined and the results were presented in Table 3. From Table 3, a majority of the respondents (63.2%) were satisfied with their academic programs back in college, while 36.8% were dissatisfied. The enterprising category, which entails courses in

business, had the highest (70%) level of satisfaction, while the one student who was in the conventional category was dissatisfied.

Further, the satisfaction distribution of the work environments was analyzed and presented in Table 4. From Table 4, a majority (90%) of the respondents were satisfied with their career occupations, while 9.2% were dissatisfied. Based on the results presented in Tables 3 and 4, both academic and work environment, the enterprise category (business) had the highest degree of satisfaction, 70% for the academic environment and 100% for the work environment. It is evident that overall satisfaction levels improved from 63.2% in the academic environment to 90.8% in the work environment, and dissatisfaction was reduced. This implies occupational satisfaction increased over time.

Table 3. Satisfaction levels based on academic

environments							
	Sat	isfaction	n level	S			
Academic	Sat	isfied	Diss	atisfied	To	otal	
environment	N	%	N	%	N	%	
Realistic	3	50.0	3	50.0	6	100	
Investigative	12	57.2	9	42.8	21	100	
Artistic	4	66.7	2	33.3	6	100	
Social	22	68.7	10	31.3	32	100	
Enterprising	7	70.0	3	30.0	10	100	
Conventional	0	0.0	1	100.0	1	100	
Total	48	63.2	28	36.8	76	100	

Table 4. Satisfaction levels based on work

environments									
	Satisfaction levels								
Work	Sa	tisfied	Diss	atisfied	Total				
environment	N	%	N	%	N	%			
Realistic	5	100.0	0	0.0	5	100			
Investigative	7	77.8	2	22.2	9	100			
Artistic	3	60.0	2	40.0	5	100			
Social	26	96.3	1	3.7	27	100			
Enterprising	19	100.0	0	0.0	19	100			
Conventional	9	81.8	2	18.2	11	100			
Total	69	90.8	7	9.2	76	100			

3.3. Respondents' degree of congruence

The study investigated the congruence between the personality types tested in 2012 and the academic degree studied in 2012. The results are shown in Table 5. Results in Table 5 indicates incongruent individuals in the 2012 study, with 10 males and 10 females, compared to 2023, where there were 12 incongruent males and 8 incongruent females. Although overall congruence levels remained constant between 2012 and 2023, there were gender differences. The number of incongruent males increased over time (from 10 to 12), while congruent males decreased (from 25 to 23). Conversely, incongruent females decreased (from 10 to 8) over time, while congruent females increased (from 31 to 33) between 2012 and 2023.

Table 5. Congruence of personality types and academic degree/work environment

Congruence	Gender 2012		Gend	er 2023	Total	Percent
Congruence	Male	Female	Male	Female	Total	(%)
Incongruent	10	10	12	8	20	26
Congruent	25	31	23	33	56	74
Total	35	41	35	41	76	100

3.3.1. Congruence levels in relation to the individual's environment and personality type

The congruence levels in relation to individual environment was investigated and the results were presented in Figure 3. Social environment had the highest congruence rate (34.2%), whereas the realistic environment had the lowest (2.6%) as indicated in Figure 3. Conversely, the enterprising environment showed the highest incongruence rate (9.2%), while social work and artistic environments had the lowest (1.3%). This suggests that a significant proportion of congruent individuals were in the social category, which includes professions such as teaching. Thus, it indicates that many teachers chose their careers based on their interests.

In addition, the level of congruence was investigated in relation to personality types and the results were presented in Figure 4. Social personality types were more harmonious (25%), while realist was lowest (3.9%), as shown in Figure 4. Furthermore, the conventional personality was the most incongruent (7.8%), and realistic and investigative personalities were the lowest (1.3%).

3.3.2. Congruence and occupational satisfaction

The study investigated congruence in relation to occupational satisfaction, and the results were presented in Figure 5. Majority of congruent respondents (51) expressed satisfaction with their occupations, while only 5 respondents were dissatisfied, as illustrated in Figure 5. Furthermore, 18 congruent respondents reported satisfaction, with 2 expressing dissatisfaction. These findings suggest a strong correlation between congruence and occupational satisfaction, with most congruent individuals reporting satisfaction, and vice versa.

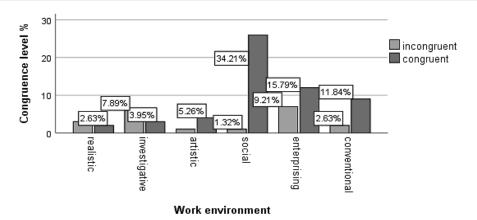


Figure 3. Congruence levels in relation to the individual's environment

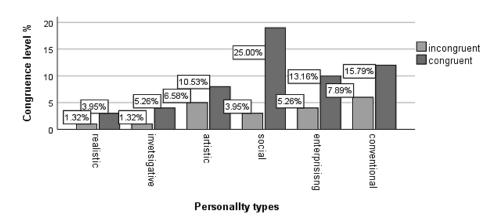


Figure 4. Congruence levels in relation to individual personality types

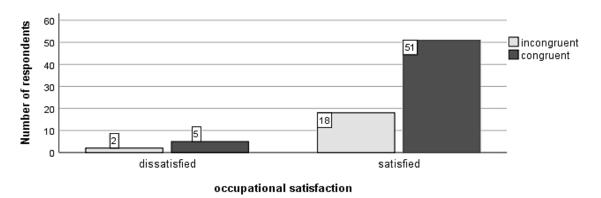


Figure 5. Congruence and occupational satisfaction

3.4. Mediating effect of congruence on the relationship between personality types and occupational satisfaction

The mediating effect of congruence on the relationship between personality types and occupational satisfaction was analyzed using the Baron and Kenny approach. In the first step, logistic regression was used to test the level of significance between Holland's personality types (IV) and occupational satisfaction (DV), and the results were presented in Table 6. Table 6 shows personality types as the independent variable and occupational satisfaction as the dependent variable. A positive significant effect exists between personality types and occupational satisfaction (B=0.127, P<0.05). Hence, the first condition has been fulfilled as per Baron and Kenny.

Table 6. Regression analysis model between personality types and occupational satisfaction

Model	В	S.E	Wald	df	Sig	Exp (B)
(Constant)	0.373	0.082	20.70	1	0.000	1.45
Personality types	0.127	0.019	44.6	1	0.000	1.14

In the second step, regression analysis model was run between Holland's personality types (IV) and congruence (MEV) to show the relationship between the independent variable and the mediator. The researcher treated the mediator variable as a dependent variable and the results were presented in Table 7. Table 7 shows personality types as the independent variable and congruence as the dependent variable. A positive significant effect (B=0.243, P<0.05) exists between congruence and personality types. This implies that personality types impact on an individual's congruence and vice versa, thus fulfilling the second condition. In the third step, a regression analysis was undertaken between congruence (MEV) and occupational satisfaction (DV) to show the relationship between the mediating variable and the dependent variable and the results were presented in Table 8.

Table 8 shows congruence as the independent variable and occupational satisfaction as the dependent variable. A positive significant effect (B=0.350, P<0.005) exists between congruence and occupational satisfaction. This implies that congruence influences occupational satisfaction. The more congruent an individual is, the more satisfied they are with their occupation. In the fourth and last step, regression analysis was carried out to investigate the statistical significance of Holland's personality types and occupational satisfaction in the presence of congruence as the mediating variable. The results of the regression model were as shown in Table 9.

From Table 9, using Nagelkerke R square (0.851) indicates that the model is capable of explaining up to 85.1% of variations when predicting occupational satisfaction using congruence and personality types. Since it is high, the model is adequate, thus it was used and data was presented in Table 10. Table 10 shows that personality types and congruence have a positive significant effect on occupational satisfaction (B=0.078, B=0.109, p<0.05). The effect of personality types on occupational satisfaction is still significant in the presence of a mediating variable. Comparing the beta value in step 1 (0.127) and, the beta value in step 4 (0.109), shows that after controlling the factor mediator, the beta value is reduced. This means that there is a partial mediation effect, therefore, indicating that, congruence partially mediates the relationship between Hollands personality types and occupational satisfaction.

Table 7. Regression analysis between personality

types and congruence								
Model B S.E Wald df Sig Exp (B)								
(Constant)	0.283	0.101	7.84	1	0.000	1.33		
Personality types	0.243	0.023	111.5	1	0.000	1.28		

Table 8. Regression analysis between congruence and occupational satisfaction

Model	В	S.E	Wald	df	Sig	Exp (B)
(Constant)	0.650	0.055	139.2	1	0.000	1.92
Congruence	0.350	0.065	28.9	1	0.000	1.42

Table 9. Model summary for mediating effect of congruence on the relationship between Hollands

personanty types and occupational satisfaction								
Step	-2 Log likelihood	Cox & Snell R square	Nagelkerke R square					
1	6.620 ^a	0.416	0.851					

Table 10. Regression analysis between personality types and occupational satisfaction in presence of

congruence								
Model	В	S.E	Wald	df	Sig	Exp (B)		
(Constant)	0.395	0.087	20.61	1	0.000	1.48		
Congruence	0.078	0.096	0.66	1	0.000	1.08		
Personality types	0.109	0.030	12.96	1	0.002	1.12		

3.5. Qualitative analysis

Respondents were interviewed on their feeling about their current occupations. Respondent 012 had the following to say about their occupation:

"I always wanted to be a teacher even in my primary school. I studied bachelor of education (arts). Two years after completion, I was absorbed by Teachers Service Commission (TSC), and I am now a Deputy Principal in a secondary school. I love what I do."

Respondent 012 studied a bachelor of education (social environment), and is currently working as a teacher (social environment). This means that there is a match between the degree program and the work environment. In addition, the Respondent, selected bachelor of education at college level because they were interested in the field of teaching.

On the other hand, it is evident that those who were incongruent in academic program were also incongruent in work environment. For example, Respondent 007, studied social work (social environment), which was not her interest, but the university placement agency placed her in the degree program. She eventually got a job as a social worker. Still, she stated:

"I am currently searching for a scholarship to study medical laboratory (investigative environment), which has been my passion".

The respondent believes the change will lead to congruence and satisfaction at work.

The changes in work environment and personalities may be as a result of mismatch between the academic degree program and the personality of an individual. For example, Respondent 001, who studied a degree in engineering (realistic environment), is currently engaging in business (enterprising environment);

"My first degree was in engineering. It was not my choice; my parents dictated the program. I went back to school and studied for a bachelor of commerce, which was my interest. Recently, I started my own business, and I love what I do."

Incongruence cases may result from a lack of employment opportunities, for example, Respondent 003 who studied a program in realistic environment ended up in a social environment due to lack of employment;

"I don't like my current job; I studied art and design in college. However, I waited for formal employment which was not forthcoming. I decided to look for a teaching job in a private school. I am currently a teacher in the school. I am hopeful that one day I will get a job in my profession because I would still like to practice art and design."

This implies that individuals may find themselves in incongruent occupations as they search for means to meet their needs in life.

Life experiences may cause the shift from one personality type, leading to a different work environment. For example, Respondent 007, in an investigative environment (chemistry), said that his interests changed while at the work place due to the environment, and he ended up in a conventional field (banking):

"I studied analytical chemistry in campus after being placed by the joint admission board (JAB). I tried changing the course but I was not successful. After completing my first degree, I joined a bank as a sales person. I became interested in banking-related things. I studied SDSCPA courses then a diploma in management and focused on working in the banking sector to date. I am happy now."

3.6. Discussion

This study investigated the mediating effect of congruence on the relationship between personality types and occupational satisfaction. While earlier studies investigated the relationship between personality types and occupational satisfaction, and career choice and occupational satisfaction, they have not specifically addressed the mediating effect of congruence on the relationship between personality types and occupational satisfaction. The study's findings revealed that the mediating effect of congruence was found to be statistically significant at p<0.05, thus, rejecting the null hypothesis that there is no mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction; consequently, supporting the alternative hypothesis that there is a mediating effect of congruence on the relationship between Hollands personality types and occupational satisfaction.

The findings of the study indicate that changes from academic to work environments could be attributed to personality shifts influencing job changes as individuals seek alignment between their personalities and their jobs [15]. Alternatively, such changes may result from incongruence between academic programs and career paths, prompting individuals to seek roles that are congruent [4]. The findings of the study reveal that the majority of respondents were more satisfied with their careers compared to their academic degrees. This could be attributed to respondents being in stable employments, indicated by their placement in the establishment stage [13] and Erickson's young adulthood stage [14]. As individuals mature, their work attitudes tend to improve, leading to more positive opinions and attitudes at work, ultimately resulting in

occupational satisfaction [26], [27]. Older employees have developed positive relationships and values in the workplace [28], thus the improvement from the academic environments to their work environments.

Majority of the respondents were congruent with both academic and work environments indicating they maintained this congruence over time. Thus, supporting the argument that individuals seek, and are selected into environments compatible with their personalities [8], creating a person-environment fit, hence making vocational choices a process and not a random event [29]. Personality influences the essential choices that individuals make in life including education and career [8]. Subsequently, good career planning leads to good career adjustment [2], hence job satisfaction.

Incongruence may be as a result of graduates moving to an incongruent field due to economic pressures [33]. The mismatch between education and occupation arises when individual try to adjust due to imbalances between demand and supply and the lack of job opportunities for particular occupations [17], [18]. Rapid changes in the labor markets nature and structure, force graduates to either accept available jobs, remaining unemployed or start their own business as a survival tactic [29], [30]. This leads to occupational dissatisfaction [4].

This study explored the congruence of career choices and its mediating effect on personality types and occupational satisfaction using a longitudinal approach, carried out ten years after the initial study. As such, some of the contacts were no longer active thus reducing the sample size. Therefore, based on the limitations of this study, further research is recommended to carry out similar study but with a larger population over a period of time with shorter year gaps to get access to a larger population.

This study demonstrates that Hollands SDS tool can be used to classify individuals into personality types (RIASEC) and further group them into matching work environments (RIASEC). As such, the policy makers in the Ministry of Education, career counsellors and employers will benefit from the standardized way of identifying people and placing them into corresponding academic programmers or occupations. Ensuring congruence with academic programmers and careers will contribute to the employees' satisfaction, thus increasing their productivity. Further studies may explore the use of the Hollands tool with a larger population to ascertain its reliability and validity among the Kenyan population. Future research may also explore the use of the Hollands SDS too for recruitment. It would also be useful to carry out a study on the match of the skills offered at the university and the requirements of the job market. This would help in explaining the cases of incongruence of individuals between their personalities and work environment as well as the inconsistency cases between the academic degree and work environment.

4. CONCLUSION

Recent observations suggest that congruence and personality types have a direct link with occupational satisfaction. Our findings provide conclusive evidence that the presence of congruence plays a mediating role in ensuring occupational satisfaction among the employees. Moreover, our study provides evidence that personality types, occupational congruence and satisfaction can be investigated using a longitudinal approach. Individuals whose personality types match with their jobs are found to enjoy their careers thus leading to job satisfaction. Occupational satisfaction has been found to contribute to increased employee productivity in organizations. Understanding these relationships can help educational policymakers and employers to create policies and environments that pay attention to individual's match of their personality types and career interests (congruence). Consequently, organizations will recruit employees based on their interests, thus bringing about occupational satisfaction. On the other hand, educational institutions will place students into academic programmers that match with individuals' interests and abilities. The findings of our study can serve as a basis for further studies on Holland's SDS tool, and its application on career guidance and job recruitment process.

REFERENCES

- N. Nagy, A. Froidevaux, and A. Hirschi, "Lifespan perspectives on careers and career development," in Work Across the Lifespan, Elsevier, 2019, pp. 235–259, doi: 10.1016/B978-0-12-812756-8.00010-4.
- [2] A. H. Alkhelil, "The relationship between personality traits and career choice: a case study of secondary school students," *International Journal of Academic Research in Progressive Education and Development*, vol. 5, no. 2, pp. 2226–6348, May 2016, doi: 10.6007/IJARPED/v5-i2/2132.
- [3] S. Ahmed, A. Ahmed, and T. Salahuddin, "How RIASEC personality traits crystallizes occupational preferences among adolescents: Match or mismatch," *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, vol. 13, no. 4, pp. 976–996, 2019.
- [4] M. M. Nauta, "The development, evolution, and status of Holland's theory of vocational personalities: reflections and future directions for counseling psychology," *Journal of Counseling Psychology*, vol. 57, no. 1, pp. 11–22, 2010, doi: 10.1037/a0018213.
- [5] C. Gitonga, R. S. Meru, J. A. Orodho, W. Tabitha, and K. Edward, "Is the choice of a degree program a factor of personality types and degree of congruence," *IOSR Journal of Humanities and Social Science*, vol. 19, no. 2, pp. 49–54, 2014, doi: 10.9790/0837-19254954.

[6] M. Kim, S. I. Baek, and Y. Shin, "The effect of the congruence between job characteristics and personality on job crafting," International Journal of Environmental Research and Public Health, vol. 17, no. 1, p. 52, Dec. 2019, doi: 10.3390/ijerph17010052.

- [7] R. Hogan and B. W. Roberts, "A socioanalytic perspective on person-environment interaction," in *Person-Environment Psychology*, 2000, p. 23.
- [8] O. Alhendi, "Personality traits and their validity in predicting job performance at recruitment: a review," *International Journal of Engineering and Management Sciences*, vol. 4, no. 3, pp. 222–231, 2019, doi: 10.21791/IJEMS.2019.3.21.
- [9] V. Koutroubas and M. Galanakis, "Bandura's social learning theory and its importance in the organizational psychology context," *Journal of Psychology Research*, vol. 12, no. 6, pp. 315–322, Jun. 2022, doi: 10.17265/2159-5542/2022.06.001.
- [10] R. Donohue, "Person-environment congruence in relation to career change and career persistence," *Journal of Vocational Behavior*, vol. 68, no. 3, pp. 504–515, Jun. 2006, doi: 10.1016/j.jvb.2005.11.002.
- [11] W. Bleidorn et al., "Personality trait stability and change," Personality Science, vol. 2, no. 1, Jun. 2021, doi: 10.5964/ps.6009.
- [12] J. Wagner, U. Orth, W. Bleidorn, C. J. Hopwood, and C. Kandler, "Toward an integrative model of sources of personality stability and change," *Current Directions in Psychological Science*, vol. 29, no. 5, pp. 438–444, Oct. 2020, doi: 10.1177/0963721420924751.
- [13] A. Chourasiya and V. Agrawal, "A comparative analysis of age based career stage models needs and characteristics at various career stages," *International Journal of Research and Analytical Reviews (IJRAR)*, vol. 6, no. 2, pp. 87i-91i, 2019.
- [14] X. Sun and T. Sun, "Research on lifelong education based on Erikson's psychosocial development theory," in *Proceedings of the 2021 6th International Conference on Modern Management and Education Technology (MMET 2021)*, 2021, doi: 10.2991/assehr.k.211011.047.
- [15] E. Ramadhani, A. T. Jannah, and R. D. Putri, "Analysis of Holland theory career guidance in student career planning," *ENLIGHTEN (Jurnal Bimbingan dan Konseling Islam)*, vol. 3, no. 1, pp. 19–25, Jun. 2020, doi: 10.32505/enlighten.v3i1.1492.
- [16] A. R. Spokane, M. Moya, and E. Faris, "Vocational personalities in work environments: perspectives on Holland's theory," Career psychology in the South African context, pp. 49–66, 2017.
- [17] M. A. Somers, S. J. Cabus, W. Groot, and H. M. van den Brink, "Horizontal mismatch between employment and field of education: evidence from a systematic literature review," *Journal of Economic Surveys*, vol. 33, no. 2, pp. 567–603, Apr. 2019, doi: 10.1111/joes.12271.
- [18] W. Bleidorn *et al.*, "Personality stability and change: a meta-analysis of longitudinal studies," *Psychological Bulletin*, vol. 148, no. 7–8, pp. 588–619, Jul. 2022, doi: 10.1037/bul0000365.
- [19] Z. N. Zainudin, L. W. Rong, A. M. Nor, Y. M. Yusop, W. Othman, and N. Wan, "The relationship of holland theory in career decision making: a systematic review of literature," *Journal of critical reviews*, vol. 7, no. 9, pp. 884–892, Jun. 2020, doi: 10.31838/jcr.07.09.165.
- [20] C. J. Hopwood, W. Bleidorn, and J. Zimmermann, "Assessing personality change: introduction to the special section," *Journal of Personality Assessment*, vol. 104, no. 4, pp. 431–434, Jul. 2022, doi: 10.1080/00223891.2022.2041650.
- [21] C. J. Soto, "Do links between personality and life outcomes generalize? testing the robustness of trait-outcome associations across gender, age, ethnicity, and analytic approaches," *Social Psychological and Personality Science*, vol. 12, no. 1, pp. 118–130, Jan. 2021, doi: 10.1177/1948550619900572.
- [22] Y. Xiao *et al.*, "Person–environment fit and medical professionals' job satisfaction, turnover intention, and professional efficacy: a cross-sectional study in Shanghai," *PLOS ONE*, vol. 16, no. 4, p. e0250693, Apr. 2021, doi: 10.1371/journal.pone.0250693.
- [23] R. N.-U.-D. Jalal, N. Zeb, and U.-E.-R. Fayyaz, "The effect of personality traits on employee job satisfaction with moderating role of Islamic work ethics," *The Journal of Asian Finance, Economics and Business*, vol. 6, no. 2, pp. 161–171, Apr. 2019, doi: 10.13106/jafeb.2019.vol6.no2.161.
- [24] N. M. Rababah, "An evaluation of the relationships between personality traits, job satisfaction and job performance: an empirical study of Jordanian hospitals," *Saudi Journal of Business and Management Studies*, vol. 04, no. 11, pp. 839–848, Nov. 2019, doi: 10.36348/sjbms.2019.v04i11.004.
- [25] S. B., "Job satisfaction and big five personality correlational study," *International Journal of Creative Research Thoughts (IJCRT)*, vol. 10, no. 1, pp. a549–a553, 2022.
- [26] B. Wille, T. J. G. Tracey, M. Feys, and F. De Fruyt, "A longitudinal and multi-method examination of interest-occupation congruence within and across time," *Journal of Vocational Behavior*, vol. 84, no. 1, pp. 59–73, Feb. 2014, doi: 10.1016/j.jvb.2013.12.001.
- [27] J. Shane and J. Heckhausen, "Motivational theory of lifespan development," in Work Across the Lifespan, Elsevier, 2019, pp. 111–134. doi: 10.1016/B978-0-12-812756-8.00005-0
- [28] J. Kang, J. Hense, A. Scheersoi, and T. Keinonen, "Gender study on the relationships between science interest and future career perspectives," *International Journal of Science Education*, vol. 41, no. 1, pp. 80–101, Jan. 2019, doi: 10.1080/09500693.2018.1534021.
- [29] M. Törnroos, M. Jokela, and C. Hakulinen, "The relationship between personality and job satisfaction across occupations," Personality and Individual Differences, vol. 145, pp. 82–88, Jul. 2019, doi: 10.1016/j.paid.2019.03.027.
- [30] R. De Cooman and W. Vleugels, "Person-environment fit: theoretical perspectives, conceptualizations, and outcomes," in Oxford Research Encyclopedia of Business and Management, Oxford University Press, 2022, doi: 10.1093/acrefore/9780190224851.013.377.
- [31] L. P. L. Cavaliere *et al.*, "The impact of employees' personality on the organizational performance: studying the five dimensions of personality," *Turkish Online Journal of Qualitative Inquiry (TOJQI)*, vol. 12, no. 7, pp. 9527–9554, 2021.
- [32] C. M. Gitonga, "The relationship between holland's personality types, gender, congruence and satisfaction with degree programs among third year students: a doctoral thesis submitted in partial fulfilment of the requirements for degree of Doctor of Philosophy (Educational," University Of Bahrain, 2012.
- [33] R. J. K. Kemboi, N. Kindiki, and B. Misigo, "Relationship between personality types and career choices of undergraduate students: A Case of Moi University, Kenya," *Journal of Education and Practice*, vol. 7, no. 3, pp. 102–112, 2016.
- [34] V. Rudakov, H. Figueiredo, P. Teixeira, and S. Roshchin, "Horizontal job-education mismatches and earnings of university graduates in Russia," *Journal of Education and Work*, vol. 35, no. 6–7, pp. 680–699, Oct. 2022, doi: 10.1080/13639080.2022.2126966.
- [35] C. H. Ong, C. H. Shi, T. O. Kowang, G. C. Fei, and L. L. Ping, "Factors influencing job satisfaction among academic staffs," International Journal of Evaluation and Research in Education (IJERE), vol. 9, no. 2, p. 285, Jun. 2020, doi: 10.11591/ijere.v9i2.20509.
- [36] E. J. Caruana, M. Roman, J. Hernández-Sánchez, and P. Solli, "Longitudinal studies," *Journal of Thoracic Disease*, vol. 7, no. 11, pp. E537–E540, 2015, doi: 10.3978/j.issn.2072-1439.2015.10.63.

- [37] R. E. Ployhart and R. J. Vandenberg, "Longitudinal research: the theory, design, and analysis of change," *Journal of Management*, vol. 36, no. 1, pp. 94–120, Jan. 2010, doi: 10.1177/0149206309352110.
- [38] M. Ishtiaq, "Book review Creswell, J. W. (2014). Research design: qualitative, quantitative and mixed methods approaches (4th ed.). Thousand Oaks, CA: Sage," English Language Teaching, vol. 12, no. 5, pp. 40–41, Apr. 2019, doi: 10.5539/elt.v12n5p40.
- [39] J. Andrews, "Book Review Research methods in the social sciences, by Chava Frankfort-Nachmias, David Nachimas and Jack De Waard (8th Edition)," *Journal of Population Ageing*, vol. 12, no. 2, pp. 195–198, Jun. 2019, doi: 10.1007/s12062-017-9191-5.
- [40] S. D. Brown and P. A. Gore, Jr., "An evaluation of interest congruence indices: distribution characteristics and measurement properties," *Journal of Vocational Behavior*, vol. 45, no. 3, pp. 310–327, Dec. 1994, doi: 10.1006/jvbe.1994.1038.
- [41] W. Otuya, "Kenny and Baron 4 step analysis (1986): a case of employee job satisfaction as a mediator between ethical climate and performance among sugarcane transport Smes in Western Kenya," *Journal of Economics and Sustainable Development*, vol. 10, no. 14, pp. 108–118, 2019, doi: 10.7176/JESD.
- [42] R. Vebrianto, M. Thahir, Z. Putriani, I. Mahartika, A. Ilhami, and Diniya, "Mixed methods research: trends and issues in research methodology," *Bedelau: Journal of Education and Learning*, vol. 1, no. 2, pp. 63–73, Dec. 2020, doi: 10.55748/bjel.v1i2.35.

BIOGRAPHIES OF AUTHORS



Ann Gathigia Waruita is a Ph.D. candidate, Department of Education, School of Education and Social Sciences at the University of Embu, Kenya. She has a master's degree in education of the University of Embu, Kenya. She is the current principal of the University of Embu TVET Institute. Her research interest is in career guidance and counselling, vocational choices, educational administration, and planning. She can be contacted at email: waruita.ann@embuni.ac.ke.



Ciriaka Muriithi Gitonga holds a Ph.D. in educational psychology from Kenyatta University. She is a senior lecturer and teacher educator at the University of Embu. She was appointed as senior lecturer in 2015. Her research interests include teacher education and early childhood education. She is passionate about psychology of learning. She can be contacted at email: ciriaka.gitonga@embuni.ac.ke.



Edwin Benson Atitwa is a lecturer, Department of Mathematics and Statistic, School of Pure and Applied Sciences of the University of Embu, Kenya. His research focuses on data management, data analysis and data science, monitoring and evaluation, statistics, and epidemiology. He is currently serving as the examination's coordinator in the Department of Mathematics and Statistics at the University of Embu, Kenya. He can be contacted at email: atitwa.benson@embuni.ac.ke.