

**A LONGITUDINAL STUDY OF HOLLAND'S PERSONALITY
TYPES, OCCUPATIONAL CONSISTENCY, CONGRUENCE,
AND OCCUPATIONAL SATISFACTION IN KENYA**

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DECLARATION

This thesis is my original work and has not been presented elsewhere for a degree or any award.

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ACRONYMS AND ABBREVIATIONS

CBC	Competency Based Curriculum
KUCCPS:	Kenya Universities and Colleges Central Placement Service
NACOSTI:	National Commission for Science, Technology, and Innovation
RIASEC:	Realistic, Investigative, Artistic, Social, Enterprising, Conventional
SDS:	Self-Directed Search

OPERATIONAL DEFINITION OF TERMS

Choice of work environment	This refers to the selection of a job or an occupation by the respondent, based on Hollands RIASEC model
Congruence:	Degree of fit between an individual's personality type and their current or prospective work environment. In this study, congruence refers to the agreement between the personality type and the occupation.
Consistency:	Refers to the proximity of the two dominant Hollands personality types in the hexagon, where adjacent types on the hexagon structure show high consistency and opposite types reveal low consistency. In this study, consistency refers to the endurance of degree programmes studied as measured in the initial study and the current work environments/jobs of the respondents.
Environment:	Environment refers to careers as explained by Holland's RIASEC model; at college/University level, environment will be referred to as academic environment, while at employment level, the environment will be referred to as work/occupational/vocational environment
Initial study	This refers to the study carried out in 2012, which forms the basis of the current study
Occupational satisfaction:	Occupational satisfaction is the level of satisfaction someone has with their chosen career
Persistency:	The act of enduring in a personality type
Personality types:	In this study, personality refers to individual characteristics as explained by the RIASEC three-letter codes measured by the SDS activities, with the first letter indicating the individual's personality type.

ABSTRACT

Students' career choices at the university-level allow them to search for jobs after completion. The personality types of individuals influence the choice of a career pathway, thus, influencing the decision of choosing of a degree program that matches the vocational interests. In Kenya, there are rising levels of unemployed graduates and others employed in careers that are not aligned with their degree of study at the university level. Graduates in mismatched occupations are often dissatisfied with their careers thus leading to low productivity. This study sought to examine the persistency of the Hollands personality types, congruence of career choices, choice of work environment, consistency of career choices after completing degree programs, and the degree of occupational satisfaction. The theoretical framework was based on Holland's theory. Persistency of personality types, consistency of career occupations, congruence between personality and occupation, choice of work environment and occupational satisfaction was investigated. The study employed a longitudinal cohort research design to access participants involved in a previous study carried out in 2012, from which 122 participants were accessed. This being a longitudinal study, the sample was considered appropriate. Data was collected using an adapted Holland's Self-Directed Search 4th Edition questionnaire and an interview schedule. Quantitative data collected was analyzed using descriptives, logistic regression and correlation analysis. The findings were presented in graphs, tables, and pie diagrams. Researcher transcribed qualitative data from the interviews, organized the data into meaningful groups, and finally coding was done. The researcher arranged the coded information thematically and was presented narratively. The study's results demonstrated that a positive significant relationship existed between persistency of personality types and occupational satisfaction at $p < 0.05$; the moderating effect of choice of work environment was statistically significant on the relationship between personality types and occupational satisfaction at ($p < 0.05$); congruence has a positive significant mediating effect on the relationship between personality types and occupational at ($p < 0.05$) and consistency has a positive significant mediating effect on the relationship between personality types and occupational satisfaction at ($\beta = 0.254$, $p < 0.05$). Consequently, the study concludes that persistency of personality types influence occupational satisfaction; choice of work environment moderates the link between occupational satisfaction and personality types. Occupational congruence and consistency influences occupational satisfaction positively. This results denotes that, persistency, congruence, consistency and choice of work environment influence employees' satisfaction. The results of this study will inform policy decision-making concerning job placements, career choices, and retention of employees at the workplace. Further, the findings will go a long way in addressing the mismatch between the degree programs selected at college levels and the available job opportunities in the market. The study suggests further research on a similar study at intervals of 5 years to provide the trends in persistency of personality types and consistency of career choices over a period of time. In addition, a comparable research is recommended with a larger sample size over a period of time to determine the reliability of the Hollands SDS instrument amongst the Kenyan population.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Graduates actively seek pre and post-graduation careers to develop and maintain a decent lifelong career against labor needs (Hwang, 2017). However, due to limited work opportunities globally, most graduates work in occupations that do not match their academic programs (Rudakov, Figueiredo, Teixeira & Roshchin, 2022; Sloane, 2014). Further, graduates are forced to accept available job opportunities at their disposal thus finding themselves in unrelated fields of occupation, their formal qualification level notwithstanding (Somers, Cabus, Groot & Brink, 2019). This may lead the graduates to be overeducated, over-skilled or even under skilled.

Choosing a career is a slow process that develops over time, involving a series of decisions that shape one's career path (Nagy, Froidevaux & Hirschi, 2019). The career choice or vocational choice process includes various steps from primary, secondary and tertiary education; the enabling environments are then transferred to the workplace (Alkhelil, 2016). Meaning that the choices made at the lower levels of development are transferred to the work place whether there is a person-environment fit or not (Ahmed ,Ahmed & Salahuddin, 2019). According to Holland's theory (Nauta, 2010), individuals seek for occupational environments that match with their character traits while they participate in undertakings that best exploit their capabilities. Consequently, this implies that individuals match their skills and interests with various careers. Holland argues that there are specific vocational environments that every individual can fit into and that the vocational environments present the interests of an individual (Nauta, 2010). Holland presents six personality types and their matching six environments in a hexagonal model abbreviated as RIASEC, i.e., Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Individuals can be congruent or incongruent with the vocational environments based on whether their personalities match the environments.

An individual's choice of occupation shapes how their interests develop by influencing how they react to situations and adjust to different settings (Hogan & Roberts, 2000; (Pio Cavaliere, Poddar, Poddar, Patel, Kuragayala, Chakravarthi, Regin & Rajest, 2021). Conversely, the development of an individual's interest and abilities and

interests is shaped by their abilities and personality. The range of experiences that a person encounters, are influence by their environmental preferences, thus impacting on which character traits are established and developed overtime (Donohue, 2006; 2014). The development process of continues during the life of an individual, and as people mature and gain more capacity, in selecting their own surroundings, particularly learning and work environments, it becomes more stable throughout maturity (Nagy *et al.*, 2019; Bleidorn, Hopwood, Back, Denissen, Hennecke, Hill, Jokela, Kandler, Lucas, Luhmann, Orth, Roberts, Wagner, Wrzu & Zimmermann, 2021)

Individuals' express their preferences in education, occupation, and leisure by selecting situations and opportunities that are align with their traits, allowing them to showcase their personalities and talents (Hogan & Roberts, 2000). This argument agrees with Holland's (1997) theory that people's' personalities align with similar environments. Choosing a career is an expressive act that reveals the individual's knowledge, motivation, ability and personality (Ramadhani, Jannah & Putri, 2020; Spokane & Nguyen, 2016; Spokane, Moya & Faris, 2017). Thus, occupations symbolize an environment and a lifestyle, rather than just merely a collection of discrete abilities and responsibilities. Additionally, personality significantly influences crucial life decisions, such as selecting a partner, education, and occupation (Alkhelil, 2016).

Holland (1997) suggests that people pay attention to occupations that match with their personality types (Nauta, 2010), and he referred to this match between work environment and personality type as occupational congruence. Holland (1997) proposed that, compared to persons whose personalities match their occupations, those whose personalities don't match are more likely to change occupations. In addition, he contends that people who change careers typically do so to undertake careers that are more closely align with their abilities, interests and personalities. This is supported by Donohue's (2006) study, which found out that career changers often move towards careers that are more closely aligned to their personality types than their prior ones. Furthermore, those who persist in their careers score higher on congruence than those who change careers.

Individual's character traits are comparatively consistent patterns of behaviors, thoughts, and feelings that differentiate them from others (Bleidorn, Hopwood & Lucas, 2018). Although they are relatively stable, character traits may change throughout the life of a person. Personality traits envisage significant outcomes in life, such as endurance, economic well-being, health, and relationship success (Hopwood, Bleidorn & Zimmermann, 2022; Soto, 2021). Thus, an individual's occupation and satisfaction in the occupation may be influenced by the personality of the individual.

Personality development and traits change with age, and the changes can be attributed to people who change based on the changes in the environment and their social roles. For example, interests and decisions made early in life can be the result of parental demands and expectations of others (Bleidorn *et al.*, 2021; Hogan & Roberts, 2000). Further, the personality may also change due to new roles or in response to new demands in life, whereby an individual watches others' way of doing things and copies the same. This argument agrees with the theory of social learning by Albert Bandura, that contends that people are able to learn or unlearn behaviors through observation and imitation; thus, they acquire new behaviors over time (Koutroubas & Galanakis, 2022). Using Holland's argument that individuals match in the six (Realistic, Investigative, Artistic, Social, Enterprising and Conventional) personalities and the six corresponding environments, it can be argued that people may change their careers as a result of a change in personality types. Therefore, in order to fit in with the surroundings, a person may decide to change the careers they first chose during their early phases of personality development (Donohue, 2014).

Globally research in the area of personality types and vocations choices and decisions has been carried out, e.g. a study in Bangladesh indicated that personality traits influences the career decisions and choices, thus should be considered in career development (Kabir & Sajib, 2014). In Europe, studies have indicate that some graduates may find jobs that are unrelated with their university degree thus leading to negative consequences such as low job satisfaction (Boudarbat & Chernoff, 2012; Rudakov, Figueiredo, Teixeira & Roshchin, 2022). In Kenya, study by Kemboi, Kindiki and Misigo (2016), indicated that vocational aspirations and personality types are significantly related in that personality types influence the choice of careers.

A study by Gitonga, (2012) investigated personality types as classified by Holland, degree of matching, gender, and level of satisfaction with the academic field among third-year students at Kenyatta University in Kenya. Results of the study revealed that 50% of the students who participated in the study were registered in the academic degrees with comparable features as their personality types, thus concluding that the personality types influenced their decision of the academic degree. Further, 79.2% of the participants were in a matching academic programmes, while 20.8% were incongruent. For example, the School of Business had the highest percentage of 93.5%, while the School of Economics had the lowest of 35.5%.

Further, on gender distribution, male students predominated in physical sciences, while female students dominated the social sciences. In addition, there existed more male students in the investigative and realistic programs while the social fields had more females.

Finally, the study's findings indicated that 81.2% of the satisfied participants with their degree program were congruent, with a small percentage of 17.9% incongruent. Additionally, 73.7% of those who were dissatisfied were congruent, and 26.3% were incongruent. Therefore, congruence was a weak predictor of satisfaction with the degree program, thus indicating that congruence alone was insufficient to result in satisfaction with a degree program. This would mean that other factors would influence the satisfaction of a degree program.

The recommendation of Gitonga's (2012), study was that there was a need to carry out further research to determine whether the programs and the skills offered in different faculties in a university meet the job market demands. In addition, it would be essential to find out if the Hollands personality types persist with time, and whether the degree programs remain consistent after completing university education. Consequently, this study, sought to further Gitonga (2012), study by carrying out a longitudinal study to examine the persistency of the Hollands personality types, career choices, endurance of career choices and congruence of career choices after completion of undergraduate degree programs. In addition, the study examined the satisfaction level of the respondents in the current careers.

1.2 Statement of the Problem

The alignment of requirements in career choices, education, and occupational outcomes has become increasingly complex in our interconnected global society. The challenges associated with choice of a career, occupational adjustment, and career education require greater consideration. During the career choice process, students often select subjects and courses in colleges and tertiary institutions that do not align with their interests due to external influences such as peer pressure, and parental expectations and wishes. This misalignment can perpetuate into the work environment, leading to dissatisfaction and inefficiency. People invest significant time in career development and in matching their careers with suitable work environments. Therefore, establishing a standardized method for determining personality types and corresponding work environments could simplify the job placement process for graduates. This study aimed at addressing the discrepancy between available occupation opportunities in the market and university degree programs. It focused on a group of graduates assessed using Holland's typology in 2012, when they were university students at Kenyatta University in Kenya. The study sought to determine whether their personality types and occupational choices had persisted post-graduation and if there was consistency, congruence, and satisfaction in their current occupations.

1.3 Purpose of the Study

The purpose of the study was to examine the persistency and congruence of Holland's personality types, career choices, consistency of occupations and degree of occupational satisfaction after graduation.

1.4 Specific Objectives

The specific objectives of this study were to:

- i. Determine the relationship between persistency of Holland's personality types and occupational satisfaction in Kenya.
- ii. Examine the mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction in Kenya.
- iii. Examine the moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction in Kenya.
- iv. Assess the mediating effect of consistency on the relationship between Holland's personality types and occupational satisfaction in Kenya.

1.5 Hypothesis of the study

The study tested the following null hypotheses at $\alpha=0.05$ level of significance.

H₀₁: There is no significant relationship between persistency of Holland's personality types and occupational satisfaction in Kenya.

H₀₂: There is no significant mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction in Kenya.

H₀₃: There is no significant moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction in Kenya.

H₀₄: There is no significant mediating effect of consistency on the relationship between Holland's personality types and occupational satisfaction in Kenya.

1.6 Assumptions of the Study

The study considered the following assumptions:

- i) Majority of the participants of the initial study were still within reach.
- ii) Majority of the participants of the initial research were willing to take part in the current investigation.
- iii) Contacts given during the initial study were still active, ten years later

1.7 Justification of the Study

Kenya's current rising unemployment rates among graduates in addition to the employment of many in careers unrelated to their degrees highlight a critical issue in the alignment of education and job market needs. Despite efforts by the Kenya Universities and Colleges Central Placement Service (KUCCPS) to ensure secondary school graduates are placed tertiary institutions of learning, a significant gap persists between degree programs and job opportunities. Existing research on career choices has primarily focused on students, with limited studies on graduates' career paths long after completing their studies. Additionally, not enough research has been done on the persistence of personality types and career choices among graduates. In order to forecast job stability and consistency in the workplace, it is essential to comprehend the function that personality plays in career choice. By investigating the persistency

of personality types and endurance of job choices from postsecondary education and their impact on occupational satisfaction, this study seeks to close this gap in knowledge. The findings are expected to contribute valuable insights into improving job placement and career guidance, ultimately addressing the mismatch between education and employment patterns in Kenya.

1.8 Significance of the Study

This study's results and recommendations add into the rising body of information in the field of education focusing on career guidance, career choice and occupational satisfaction, particularly in the Kenyan context. The study's results are anticipated to provide evidence supporting existing literature on the relationship between personality types and work environments, informing policymakers to develop comprehensive career guidance programs. Educational institutions will benefit by offering tailored career guidance, helping learners make informed career choices based on their interests and abilities, thereby aligning their degree programs with future occupations. Employers will see higher employee retention rates if personalities match work environments and academic degrees' match job responsibilities. Additionally, the study findings will offer valuable insights for employers in selecting, employing, and retaining suitable employees. Thus, the study's outcomes are crucial for the attainment of Sustainable Development Goals (SDGs) pertaining to decent labor, high-quality education, and economic progress; also, Kenya's Vision 2030, a social pillar centered on training and education for a thriving and globally competitive nation. The findings will support initiatives such as Bottom-Up Economic Transformation Agenda (BETA) and other employment policies by providing a framework for aligning education with job market demands, ultimately fostering a more skilled and satisfied workforce ready to drive the economic transformation of the nation.

1.9 Scope and Limitations of the Study

1.9.1 Scope of the Study

The study analyzed the personalities and occupations of the respondents who participated in the initial study in 2012, pursuing various undergraduate programmes. The selected respondents included all the respondents who indicated their mobile contacts and email addresses. The study concentrated on Hollands personality types, career occupations, consistency, congruence, and occupational satisfaction. Further,

the study was guided by Holland's personality theory. The researcher analyzed secondary and primary data to come up with recommendations and conclusions about the topic under study.

1.9.2 Limitations of the Study

The study has some limitations that should be taken into account and addressed by future research. The study depended on the perspectives of the respondents through the interviews and questionnaires. The challenge was that the respondents were last contacted in 2012, thus posing a challenge of inactive contacts. Researcher made calls to the respondents and used emails, google forms, and WhatsApp chats to reach out to the respondents. The researcher also compiled a list of the respondents' contacts, and emails before data collection. This ensured that data collection was not interfered with for the study. In addition, the research was planned to take place within a specified timeframe which posed a challenge in reaching out to all the respondents on time. The study depended on the respondents' self-reported data, there could be some degree of subjectivity. Determining the degree to which the respondents' thoughts and feelings are representative of reality was outside the range of this investigation. Nonetheless, the investigator urged the participants to share their genuine thoughts. Additionally, the respondents were encouraged to be truthful since they were assured that their information would be treated as confidential.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews related literature that is organized into the thematic areas based on the specific objectives of the study. The areas to be considered are persistency of Holland's personality types and occupational satisfaction, congruence of Holland's personality types and occupational satisfaction, choice of work environment and occupational satisfaction, consistency Holland's work environments and occupational satisfaction. There were identified research gaps that the study aims to fill. In addition, the chapter will also provide a conceptual and a theoretical framework suitable for this study.

2.2 Persistency of Personality Types and Occupational Satisfaction

It has been suggested that character traits are rigid, difficult-to-change patterns of thoughts, emotions, and actions that differentiate an individual (Balasuriya & Perera, 2016). However, contemporary research increasingly supports the notion that these traits are dynamic and can evolve over the lifespan (Bleidorn *et al.*, 2021). While traditional conceptualizations emphasized permanency in temperament and traits, emerging perspectives highlight the influence of environmental, cultural, and contextual factors. For instance, Wilks (2009) acknowledged the impact of evolutionary mechanisms, life narratives, and cultural adaptations on personality development, though his work primarily centered on trait, rank-order, and temperament theories. This focus leaves unexplored area on how alternative models such as Holland's typology, can be used to capture the evolution or stability of personality types in occupational contexts. Therefore, further exploration is warranted to assess how Holland's classification aligns with personality changes over time.

Environmental factors and life events such as unemployment may have psychological implications on individuals, hence affecting personality types. Boyce, Wood, Daly and Sedikides, (2015) utilized the five-factor personality model to investigate whether a person's personality traits change due to natural maturation or contextual or environmental processes, using the case of unemployment, an expected life event, to investigate personality change. Their longitudinal study in Germany demonstrated that, unemployment significantly altered agreeableness, conscientiousness, and

openness, whereas reemployment was associated with minimal change. These findings underscore the role of contextual influences on personality. However, the study's reliance on the Big Five model limits its application to vocational contexts, in that there was no direct alignment of personality types and occupational environment. This limitation suggests a research gap that future studies could address by applying Holland's typology to understand how personality and job related experiences interact.

Although personality changes throughout life, youth and old age are when these changes are most visible, and societal pressures and experiences partly cause the shift (Sneed & Pimontel, 2012). As one ages and matures, their personalities may alter, indicating developmental adaptations that enable people to adapt their everyday activities and behavior to the available resources (Wagner, Orth, Bleidorn, Hopwood & Kandler, 2020). Furthermore, the varying reasons that contribute to stability or change of a person's personality, interact intricately with one another throughout their lifetime, causing changes in that person. Although personality is subject to change, personality traits are consistent patterns that set each person apart from others (Specht, Egloff, & Schmukle, 2011). Individuals personality changes across life span, but the changeability varies across the life course (Specht *et al.*, 2011). This changeability among individuals vary systematically, and it may be caused by social demands and experiences as well as intrinsic maturation of the individuals. The study found out that there is no one age at which all personality qualities achieve their most stable peak and that personality traits change throughout the lifespan. The study by Specht *et al.*, (2011), concentrated on personality classification of the big five model and the study was carried out once. Thus, the need to use the Hollands classification to test on their endurance using a longitudinal design.

The degree to which people persist in or changing occupations can be projected by the level of match between their work environment and the personality types. Donohue, (2014), examined how congruence between personality and work environment predicts occupational persistence and career shifts. Findings indicated that individuals with higher vocational identity and personality-environment fit were more likely to remain in their chosen careers, while those experiencing misalignment tended to switch to more congruent roles. This research supports Holland's theory of person-environment fit but stops short of examining how stable these personality traits remain

throughout career transitions. Thus, there is a need for longitudinal studies that investigate the interplay between personality persistency and occupational satisfaction within Holland's framework.

Numerous researchers have investigated the relationship between personality traits and occupational satisfaction. For instance, studies by Jalal, Zeb and Fayyaz, (2019); Rababah, (2019); Sindhulakshmi, (2022), found positive correlations between job satisfaction and traits such as conscientiousness, extraversion, openness, and agreeableness. These studies reinforce the idea that personality influences occupational outcomes. Furthermore, while they affirm the importance of understanding personality for enhancing employee satisfaction and organizational performance (Balasuriya & Perera, 2016; Said, Khamisabukraa & Rose, 2017) they are limited in exploring the stability of these traits over time. Consequently, a significant gap exists in linking personality persistency, particularly within Holland's framework to long-term occupational satisfaction. The studies were carried out as a one off study. It would be imperative to carry out a longitudinal study to examine the relationship between persistency of Hollands personality types and occupational satisfaction.

While extensive research supports the dynamic nature of personality and its influence on occupational outcomes, there remains a lack of critical engagement with vocationally oriented models like Holland's. Most studies focus on the Big Five traits, offering limited insight into how personality types persist or shift in specific career contexts. This review identifies the need for research that not only integrates Holland's typology but also examines the stability of personality types and their implications for occupational satisfaction over time.

2.3 Congruence of Holland's Personality Types and Occupational Satisfaction

Albert Bandura's social learning theory proposes that individuals can learn, unlearn, or relearn behaviors through observation and imitation (Koutroubas & Galanakis, 2022). This perspective implies that personality, though relatively stable, is susceptible to environmental influences, potentially affecting career choices. In line with this Donohue (2006) investigated Holland's proposition on congruence, career change, and persistence. The findings of the study revealed that individuals with higher congruence scores were more likely to remain in their careers or transition to occupations that

better matched their personalities. While Donohue's study supports Holland's model, it primarily emphasizes vocational identity without exploring how long-term satisfaction evolves post-transition, a gap this study seeks to address.

Hogan & Roberts, (2000), similarly posits that individuals tend to seek environments that allow them to express their interests and abilities, reinforcing Holland's (2019) notion of personality-environment compatibility, which is referred to as congruence. The idea that occupational selection is an act of self-expression is echoed in other studies, which conceptualize careers as lifestyle expressions rather than mere job functions (Ramadhani *et al.*, 2020; Spokane *et al.*, 2017). Therefore, rather than being a collection of discrete job functions or skills, occupations symbolize an environment and a life style. However, while these studies affirm the significance of congruence, they are limited to short-term satisfaction and enduring of occupational fulfillment, limiting their applicability to long-term career development.

The concept of person-environment has been shown to correlate with job satisfaction, reduced turnover, and overall well-being (Tornroos, Jokela, & Hakulinen, 2019; Ostroff & Zhan, 2012). These studies support incorporating personality alignment with occupation into recruitment and retention strategies. Nonetheless, their findings are largely correlational, and further longitudinal research is needed to establish causal relationships between fit and sustained occupational satisfaction.

Good planning for a career entails matching up job requirements with an individual's interests, aptitude, personality, and parental expectations; thus, good career preparation promotes good career adjustment (Alkhelil, 2016). Furthermore, people who base their career decisions on their unique skills and interests show much greater levels of satisfaction with their occupational and record more productivity at work. Pio Cavaliere, Poddar, Poddar, Patel, Kuragayala, Chakravarthi, Regin and Rajest, (2021) argue that, personality affects the important decisions people make in life, such as who to date, what to study and what to do for a living. Alkhelil (2016) found that aligning job requirements with an individual's traits such as interests, aptitudes, and personality fosters better career adjustment and satisfaction. Alkhelil further recommends examining whether such alignment continues to influence satisfaction after individuals have been in their careers for an extended period. This recommendation highlights a

gap in current literature, which tends to focus on initial career decisions rather than long-term outcomes.

In a related study carried out among college students, Kim, Baek and Shin, (2020) found out that when openness to experience aligns with job characteristics, employees tend to demonstrate greater proactivity and engagement, thereby enhancing productivity and satisfaction. This implies that employees who match their work-environment are more engaged and consequently, have a better chance of generating increased productivity and job satisfaction. This study was conducted among college students, raising questions about the generalizability of its findings to working professionals. This limitation suggests the need for similar investigations within occupational settings involving experienced employees.

In the Kenyan context Wang'eri and Karanja, (2018), Gitonga, (2012) and Kemboi *et al.*, (2016), found out that many university students selected programs aligned with their personality types and reported satisfaction with their choices. However, these studies were conducted within academic settings and did not explore whether the congruence continued to influence job satisfaction after graduates entered the workforce. Investigating this transition from academic alignment to workplace satisfaction remains a critical gap that this study aims to fill.

According to Ahmed, *et al.*, (2019), poor career decisions not only lead to individual dissatisfaction but also hinder economic productivity and optimal human resource utilization. The implication here is that matching personality to career path has both personal and societal consequences. Still, this broader societal framing has not been sufficiently linked to empirical studies on personality congruence in the workforce, an area warranting deeper exploration

Nagrath and Gupta, (2018) found out that that personality-career misalignment could result in reduced commitment, increased stress, and diminished job satisfaction. This supports Holland's view that congruence influences occupational outcomes. However, the authors acknowledge that mismatches can occur due to lack of information or limited access to suitable careers, underscoring structural barriers towards achieving congruence that remain underexplored in the literature.

Furthermore, Xiao, Dong, Shi, Zeng, Shao, Xie and Li (2021), argue that person-environment fit is a predictor of occupational satisfaction and employee retention. This aligns with Holland's theory, which posits that individuals are more likely to remain in environments that align with their personality types (Donohue, 2006; Holland, 2019). While Kim *et al.*, (2020), links this fit to increased proactivity, the underlying mechanisms such as motivation or organizational culture have yet to be thoroughly examined. Individuals may decide to stay in an environment that they are satisfied with, and vice versa is also true.

Holland's model of personality types indicate that people derive joy and satisfaction with their occupations when they find themselves in congruent environments (Nauta, 2010). Congruence, based on Holland, is when an individual's personality is compatible with their workplace (Spokane *et al.*, 2017; Tornroos *et al.*, 2019). For instance, a realistic personality type person is congruent and hence likely to be happy in their area of work when they are in a realistic work setting.

In summary, while a substantial body of literature supports the notion that personality-congruence contributes to occupational satisfaction, several notable gaps remain. Most studies focus on students or early career stages, with limited exploration of long-term satisfaction in professional settings. In the Kenyan context, follow-up research on whether student-career congruence leads to lasting job satisfaction is lacking. Additionally, structural barriers to congruence, such as job market limitations, are underexplored. There is also minimal research on the mediating factors between congruence and outcomes like productivity. This study addressed these gaps by focusing on employed individuals and examining how Holland's personality types influence occupational satisfaction.

2.4 Choice of Work Environment and Occupational Satisfaction

The professional development and contentment of an individual are significantly influenced by their career choice and level of occupational satisfaction (Ghaleb, 2024). Furthermore, choosing a career wisely has a significant effect on satisfaction in a career, particularly when a person's work and personality match. According to Ghaleb (2024) continuous training, and balanced responsibilities and a supportive culture influences job fulfillment. Thus, occupational satisfaction is brought about by informed career selection based on self-awareness of the individual. Similarly, Nauta,

(2010) and Agbanobi, (2021), emphasize that individuals who make well-informed career decisions report higher job satisfaction and improved performance, reinforcing the importance of aligning personality traits with career paths.

Sokro, Osei-Bonsu, Agbola and Ankrah (2011), argue that career decisions should consider both internal dispositions and external influences. Their findings suggest that aligning personality traits, interests, and individual abilities with job demands enhances job satisfaction. This implies that during the process of career choice selection, individual's skills and abilities should fully match with their tasks and duties as well as their personality types

According to Farla, Baharudin, Diah and Hadjri (2020), individual careers significantly impact employees' satisfaction with their occupation. Farla *et al.*, (2020), identifies salary, promotion prospects and support from superiors at work as source of satisfaction at work. They also highlight the role of individual career planning and networking in shaping occupational fulfillment. Thus, employees can build their individual careers through recommendations from colleagues, leading to promotions and career progression that eventually leads to occupational satisfaction. However, the study overlooked the influence of personality types, and their persistency as a factor influencing occupational satisfaction.

Choice of work environment may be as a result of career choices made in early stages of life (Kemboi *et al.*, 2016). These career choices may have been made as a result of peer pressure or parental influence and not an individual's choice. As such, the same choice of an academic programme are carried over into the workplace. If the occupational choice does not match with the job, then the individual may end up dissatisfied with the job. Rababah (2019), supports this view, noting that interest job congruence contributes to workplace joy and engagement. Yet, longitudinal data tracking early career choices and later satisfaction would enrich this discussion.

According to Said *et al.*, (2017), personality is one of the many factors that affect an employee's satisfaction with their occupational. The study's result also indicated that employees' career satisfaction was significantly positively related with their neuroticism, agreeableness, conscientiousness, extraversion and openness to new experiences. The study (Said *et al.*, 2017), established a direct link between personality

types and career satisfaction, but it did not take into account the possibility that a person's preference for their workplace might moderate the relationship, thus leaving a potential gap for further exploration.

According to Holland's theory, there is need for personality types to align and match with study environment and working place setting (Zainudin, Rong, Nor, Yusop, Othman, 2020; Gitonga, Rukangu, Orodho, Wang'eri & Kigen, 2014). Consequently, the match between personality types and occupational satisfaction increases the performance of the employee. Since choice of work environment starts with selection of degree programme in college, informed decision making is required to ensure that study environment is matched with the interests of an individual. Organizations are concerned with occupational satisfaction because it leads to organization's productivity, efficiency and sustainability of the organization, in that satisfied employees remain in a given organization for a long period (Andoh, Ghansah, Okogun-Odompley, & Benuwa, 2021). Although the literature links personality and job satisfaction, there is limited research examining how initial work environment choices influence the long-term interplay between occupational satisfaction and personality congruence. This study aimed to address that gap.

Occupational satisfaction is closely tied to informed career choices that align with individual personality traits, interests, and abilities. Research shows that a match between personal attributes and work environments enhances job satisfaction and performance. While factors like salary and promotion influence satisfaction, studies often overlook the moderating role of choice of work environment. Holland's theory underscores the importance of aligning personality with the work environment. However, gaps remain in understanding how early work environment choices influence long-term occupational satisfaction an area this study seeks to explore.

2.5 Consistency of Holland's Work Environments and Occupational Satisfaction

The consistency of an individual can be hypothesized to relate to persistence and achievement. Individuals with RIASEC scores better fitting Holland's circular structure can find matching/congruent environments (Tracey, Wille, Durr & De Fruyt, 2014). This implies that a person with consistent totals in the RIASEC model would better find an agreeing working environment or congruent environment. Further, Tracey *et al.* (2014) argue that individuals with well differentiated profiles and those

with high scores of consistency are likely to be clear in selection of work environment and can find congruent environments, thus enhancing their chances of occupational satisfaction.

While income is commonly seen as a key factor in job satisfaction Wolniak and Pascarella (2005), argue that it does not fully account for the variability in occupational fulfillment. Their longitudinal study revealed that, beyond income, perceptions of person-environment congruence significantly influence job satisfaction. Notably, individuals who majored in the arts and humanities reported higher satisfaction due to perceived congruence, regardless of income. However, this study under looked other factors that may influence the relationship between an individual's personality traits and occupational satisfaction, a gap that would be explored by the current study.

Mismatch between a graduate's qualifications and job requirements can negatively impact productivity and satisfaction. Velciu (2017) and Kalleberg (2008), observe that over qualification or under qualification, whether in skills or credentials can lead to discontent and diminished job performance. Consequently, the mismatch may have negative implications on quality of quality of work and productivity of the employee. Organizations are thus encouraged to manage such mismatches to foster better employee satisfaction and performance.

Studies has been done on the relationship between years of schooling required for a job and its level, but the quantity of education is only one factor to take into account when evaluating the relationship between education and employment (Robst, 2007). A study by Robst, (2007) investigated the correlation between occupations and college majors. The research found out that nearly half of employees surveyed reported working in roles unrelated to their field of study, often due to a lack of job availability. In comparison to employees who were appropriately matched and had the same level of education, the mismatched workers earned less. In the same study, about twenty percent reported accepting occupations unrelated to their degree field since they couldn't get any occupation in their area of study. While the study focused on correlation between occupations and college majors, there exists a gap in the study to explore the persistence of degree programmes and its mediating effect on the relationship between personality types and occupational satisfaction.

Studies have consistently shown a positive relationship between person-environment congruence and job satisfaction. Wolniak and Pascarella (2005), found out that intrinsic job satisfaction increases when individuals' personality types align with their work environments. Notably, when gender differences were observed, congruence was more closely associated with overall satisfaction for women and extrinsic satisfaction for men. The study's conclusions support Holland's arguments by showing a correlation between person-environment fit and occupational satisfaction (Nauta, 2010). In addition, the study found out that the relationships were consistent for all the six of Holland's personality types that were examined. The study focus on congruence, thus, leaving a gap on the influence of consistency of work environments on occupational satisfaction.

People who work in professions that align with their needs, abilities, or preferences are probably content with their jobs and workplaces and run reasonably smoothly and efficiently (Kalleberg, 2008). Conversely, in the event of a mismatch or incongruence, a variety of challenges are likely to be encountered by employees, employers and their families. Such cases of mismatches may be as a result of graduates accepting any job that come their way due to hard economic times (Contreras, Gillmore & Puentes, 2017). Boudarbat and Chernoff, (2012), further argue that graduates with specific human capital (e.g., medicine) experience fewer mismatches compared to those with generic qualifications (e.g., social sciences). Similarly, Rudakov *et al.*, (2022) notes that, among the Russian university alumni, a third works in careers unrelated with their academic area of study. In addition, graduates in low-paying fields like agriculture, or fields like law, business, and social sciences, which produce more general human capital, are more likely to have an education-job mismatch. Conversely, graduates in professions like medicine that produce a particular kind of human capital are likely to be matched. Further, Rudakov *et al.*, (2022) argue that policymakers and researchers pay close attention to the problem of job-education mismatch because it illustrates how higher education fields align with labor market demands. Furthermore, the primary impact of mismatches between graduates' education and employment is that they result in the loss of the human capital acquired over the course of graduate school and have detrimental effects like reduced pay and contentment at workplace. These studies were conducted in Russia (Rudakov *et al.*, (2022) and Canada (Boudarbat & Chernoff,

2012). It would be necessary to investigate a match between job and education attained in a Kenyan environment and thus the current study.

Despite these insights, limited research has been conducted on the consistency of work environments and their influence on occupational satisfaction in the Kenyan context. Most existing studies have focused on developed countries such as Canada and Russia. This gap justifies the need for the current study to explore how consistency within work environments, interacts with Holland's personality model and occupational satisfaction among Kenyan graduates.

2.6 Summary of Literature

Personality traits, though initially thought to be stable, can change subtly over a lifetime due to life events and environmental influences. While minimal, such changes may impact career satisfaction and occupational outcomes. Research has shown that congruence between personality types and career choices positively influences occupational satisfaction. Holland's theory posits that individuals are more satisfied when working in environments that align with their personality types. Studies demonstrate that career persistence, job satisfaction, and productivity are higher when there is person-environment congruence. Poorly informed career decisions, often made under social or parental influence, may result in dissatisfaction due to a mismatch between work environments and personality. Additionally, consistent personality profiles, as described in Holland's hexagonal model, are linked to clearer career choices and better person-job fit. Work environment selection, influenced by early academic and career decisions, also plays a key role in satisfaction. Mismatches in skills, education, and job roles reduce both satisfaction and performance. While income and job characteristics are influential, alignment between personality, career, and work environment remains a strong predictor of occupational satisfaction. Overall, ensuring congruence and consistency in career paths and work environments enhances employee engagement, satisfaction, and organizational outcomes.

2.7 Theoretical Framework

The study was informed by Holland's theory of personality (Holland, 1997) which suggests that individuals can be classified into specific personality types. In addition, the theory argues that people make career decisions to satisfy their orientations and personalities. As such, people spend sufficient time choosing courses aligned to their

personalities. Therefore, it would turn that they also choose careers and working environments that agree with their personalities. According to Spokane & Nguyen (2016), choice of a career is an individual's representation that reveals their inspiration, personality, knowledge, and aptitude. The theory outlines seven assumptions about personality types and works environment as follows:

1. Individuals can be classified into six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), or Conventional (C). There is an occupation for each type of personality (see Figure 2.1)
2. The six modal personality types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C), corresponds to the six modal occupational environments. Every environment is characterized physical settings that present unique situations and is governed by a particular personality type (see Table 2.1)
3. Individuals look for settings in which they can use their strengths and skills, communicate their attitudes and values, and take on roles and circumstances that suit them.
4. The interaction between an individual's personality and work environment determines their behavior. Based on an individual's personality pattern and the pattern of the environment, some outcomes of such a pairing can be forecast using knowledge of personality types and environmental models. Such outcomes include a choice of vocation, job changes, vocational achievement, personal competence, and educational and social behavior.
5. The agreement (congruence) between a person and an occupation (environment) can be estimated by a hexagonal model (see Figure 2.1). The shorter the distance between the personality type and the occupational type, the closer the relationship.
6. Consistency within an environment or a person is explained using the hexagonal model. Adjacent types on the hexagon are most consistent or have compatible interests, personal dispositions, or job duties. Opposite types on the hexagon are most inconsistent or combine personal characteristics or job functions that are usually unrelated.
7. Differentiation of an environment or a person adjusts estimates made from a person's typology, occupational code, or interaction. Some persons or

environments are more closely defined than others; for instance, a person may closely resemble a single type and show little resemblance to other types, or a single type may mainly dominate an environment. In contrast, a person who resembles many types or an environment characterized by about equal numbers of workers in each of the six types would be labeled undifferentiated or poorly defined (Holland, 1997, p.4).

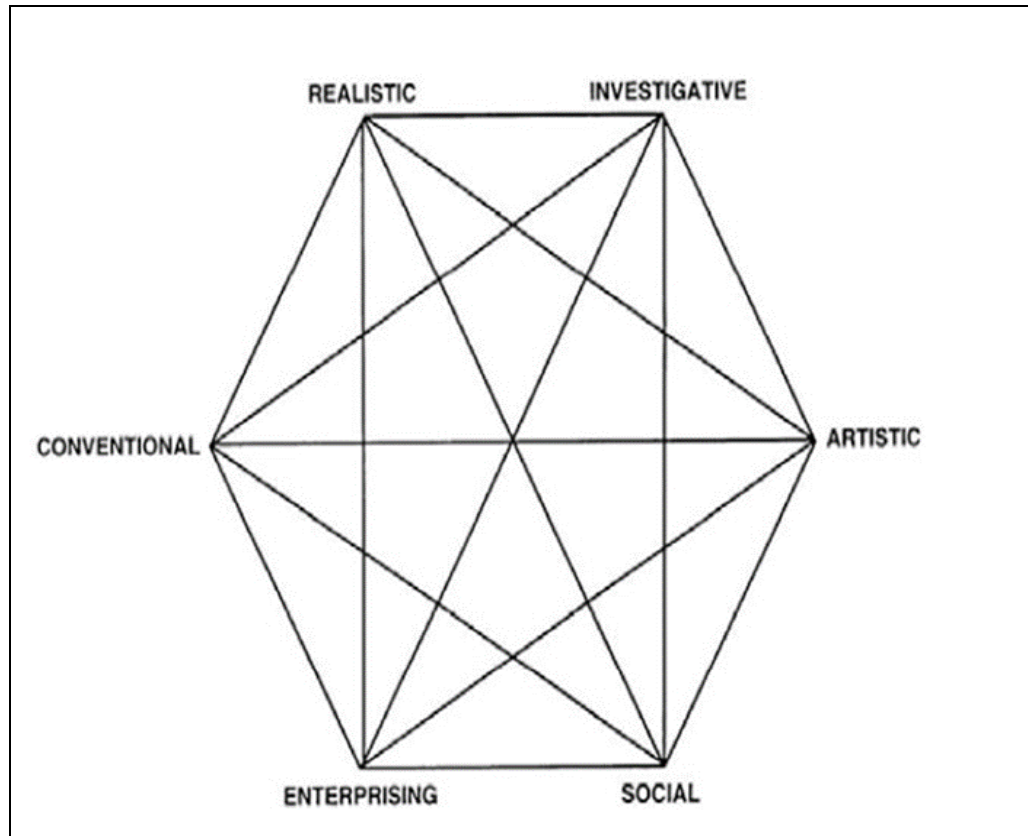


Figure 2.1: Holland's Hexagonal Model for Personality Types and Vocational Interests

Holland (1997) characterized individuals and environments into six vocational orientations, as shown in Table 2. I.

Table 2.1: Definition of the Six Vocational Environments

Vocational environment	Characteristics
Realistic (Doers)	The realistic personality is associated with individuals who are disposed to athletic or mechanical ability. These individuals lack social skills, value tangible qualities, and prefer tools, plants, and the outdoors. Examples of vocations would be Police Officers, Engineers, or Athletes.
Investigative (Thinkers)	The investigative personality is associated with an intellectual orientation and strong scientific and mathematical capabilities. These individuals value curiosity, analysis, evaluation, and problem-solving, and they are typically introspective, rational, and methodical. Example vocations would be Economists, Chemists, or Agronomists.
Artistic	The Artistic personality is associated with creative abilities in theatre, music, writing, or acting. These individuals value aesthetics, unstructured situations, and innovation. Example vocations would be Actors, Interior Designers, or Journalists.
Social	The Social personality is associated with individuals who have a predisposition to help, empathize and serve others. They may lack scientific abilities, but they value cooperation, insight, generosity, and training. Examples vocations would be Librarians, Teachers, or Social Workers.
Enterprising	The Enterprising personality is associated with persuasive, influential, and leadership orientations. They tend to lean towards economic achievement, ambition, optimism, and managing. Example vocations would be Entrepreneurs, Lawyers, and Sales Executives.
Conventional	The Conventional personality is associated with ecclesiastical and numerical individuals and has a relatively low artistic endowment. These individuals prefer to conform, carry out tasks in detail and follow systematic order. Examples of vocations would be accountants, customs inspectors, or auditors.

Congruence is the degree to which the occupational categories; Artistic, Realistic, Social, Investigative, Enterprising, and Conventional, conform to Holland codes linked to an individual's career aspirations or daydreams (Nauta, 2010). Consistency comprises of evaluating the closeness of an individual's two prominent Holland

personalities on the hexagonal model. High consistency is represented by adjacent types such as Social and Enterprising, and low consistency is represented by opposite types, such as, Artistic and Conventional. The difference between an individual's highest and lowest personality is known as differentiation, according to the theory. This variance is computed by subtracting the extreme-scale scores that are received from an evaluation instrument like the Self-Directed Search. When person's career interests are more clearly defined the larger the difference (Gitonga, 2012; Gitonga *et al.*, 2014).

Based on the Hollands typology theory, individuals remain in a given career based on whether or not the environment matches their personality type. As such, congruence influences an individual's decision to remain or change to a different occupation. However, according to job satisfaction Herzberg's Two-factor theory (Badubi, 2017), other causes that affect an employee's retention rate in an organization include accomplishment, achievement, recognition, the occupation itself, accountability, and promotion. Whether or not an employee is satisfied with their employment relies on how much they believe their work fulfills their needs (Badubi, 2017). The hierarchy of needs theory by Maslow (Gao, 2023) contends that people prioritize their wants based on importance and desire to increase what they want to attain in life. Maslow hierarchy of human needs theory organizes the needs into five stages in decreasing order; physiological needs such as the need for clothing, shelter and food; needs for protection and security, like having physical security; needs for social interaction; needs for esteem, like receiving praise from others; and needs for self-actualization, like the need to succeed or to leave a legacy (Trived & Metha, 2019). According to the model, employees derive satisfaction if their priority needs are satisfied. The theory only considers the outlined needs as a requirement for one to be satisfied in a job. It, however, does not check at personalities and the compatibility of those personalities with the workplace compared to the Hollands theory of personality.

In his social learning theory, Albert Bandura argues that human beings can learn, unlearn or relearn behaviors. Thus, new behaviors are developed to match the environment (Koutroubas & Galanakis, 2022) As individuals interact with the environment, they can learn new behaviors through observation, imitation, and modeling. However, social learning theory does not classify the behavior into

personalities, nor does it classify the environments and thus is not suitable for the study.

Many people going through the process of career selection, face challenges related to complex place of work, several known and unknown occupational choices, uncertainties in both professional and personal areas and numerous overwhelming factors present overwhelming concerns. Using Holland's theory, students and career counselors alike can make fulfilling career decisions. It can be empowering to have a practical, tried-and-true method to expedite the procedure. For instance, in the United States, Holland's approach has been used to categorize and arrange jobs (Deng, Armstrong, & Rounds, 2007).

Gitonga (2012) used the Hollands theory to categorize the respondents into various classifications and degree programs into various work environments. They found that Holland typology can classify students' personality types and degree programs. This study hypothesized persistency as the endurance of personality types over time, and consistency as the occupational choices endurance of over time. Consequently, the study examined the persistence of personality types and consistency of occupational choices after completing degree programs. Thus, it was prudent to use the same theory to get consistent results from the study.

2.8 Conceptual Framework

The study plans to investigate if the personalities of the sample have persisted and whether there is consistency, congruence, and satisfaction in the occupations they are currently pursuing. The independent and the dependent variables are as indicated in Figure 2.2.

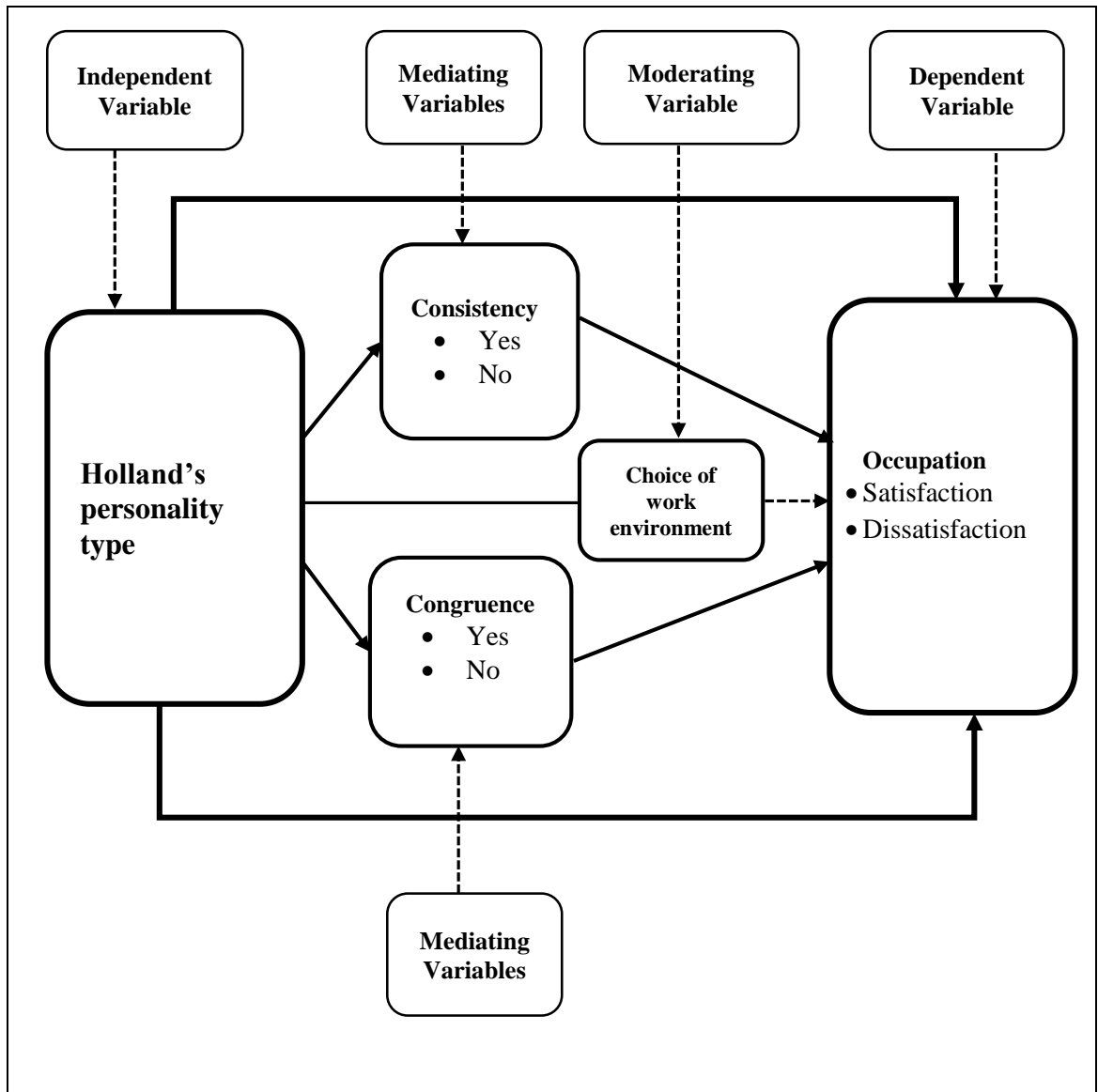


Figure 2.2: Conceptual Framework

The conceptual framework illustrates a group of issues that interrelate as individuals choose and build their careers and occupations. The framework comprises of four variables: independent, dependent, mediating, and moderating variables. The framework shows an interconnectedness of various elements that affect the process of occupational choice development. On one side, Hollands personality types, affect the selection and retention. Based on the Holland's model, people who find themselves in a degree program congruent with their personality are well fitted for the courses. Those in career occupations congruent with their degree programs are well fitted.

On the other hand, an individual's occupation may be determined via their academic field of choice at college level. So the degree program may be congruent or incongruent with their personalities and occupations in life. The agreement or disagreement of the two influences job satisfaction. In addition, an individual's consistency of personality might also influence their occupational satisfaction or lack of satisfaction.

Several studies on career choice, personalities, and job satisfaction have been carried out in Kenya. However, it is not known whether an individual's behaviors and personalities endure over time and whether early career decisions remain persistent throughout one's career progression. If the individual's personality influences the choice of careers, then the change of personality would translate into a change in work environment as individuals try to fit in workplaces that are congruent with their personality. Further, individuals' level of consistency may influence job satisfaction. Thus, this study investigated the endurance of career choices, personality types, and whether the same leads to occupational satisfaction.

2.9 Chapter Summary

This chapter reviewed related literature on the thematic areas; persistency of Holland's personality types and occupational satisfaction, congruence of Holland's personality types and occupational satisfaction, choice of work environment and occupational satisfaction, consistency of work environments and occupational satisfaction. Base on the reviewed literature, there exists research gaps that needs to be explored i.e., what is the relationship between Hollands personality types and occupational satisfaction?, does congruence have a mediating effect on the relationship between personality types and occupational satisfaction?, what is the effect of choice of work environment on the

relationship between personality types and occupational satisfaction?, and what is the mediating effect of consistency on the relationship between personality types and occupational satisfaction?. In addition, the chapter identified and explained Holland's theory and its applicability to the study. Finally, the chapter discussed the conceptual framework for the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a summary of the procedures and strategies that were employed in the study. This chapter covers; the research design, research instruments, target population, data collection procedures, validity and reliability, data analysis techniques and regulatory requirements.

3.2 Research Design

The study assumed a longitudinal cohort research design from which a cohort or a representative group was selected to participate (Caruana, Roman, Hernández-Sánchez, & Solli, 2015). Cohort designs, which involve studying the same populace over time, even though the sample size may vary from time to time, are characterized by membership in a particular group such as birth cohort (all individuals born in a certain year), a school admission cohort, or a prison cohort (Ployhart & Vandenberg, 2010). The study selected the research design because the investigator wanted to trace a group of respondents who participated in a previous research study by (Gitonga, 2012). The cohort was in its third year of study at Kenyatta University pursuing various undergraduate programmes, at the time of the previous study (2012). Consequently, the follow-up study was carried out ten years later. According to Super's model of career stages, the age period between 25-44 years lies in the second career development stage known as the establishment stage (Chourasiya & Agrawal, 2019). During the previous study (2012) majority of the respondents were in the age bracket of 20-30 years. Thus, ten years after the first data collection, the participants would be in the establishment stage (25-44 years), which is characterized with career stability and, therefore, the ten-year gap between the two studies. The study took a prospective form; whereby primary data was collected from the cohort that participated in the previous study. In addition, the study assumed a retrospective form (Caruana *et al.*, 2015), whereby the duly filled questionnaire were analyzed thus collecting secondary data, herein referred to as the initial study of 2012. The questionnaires from the 2012 study were obtained from the researcher, and they indicated the personality of the individual in addition to the name, email and or mobile number.

The longitudinal study used mixed methods in order to provide an in-depth and comprehensive angle on the variables under study. This type of research involves the use of both quantitative and qualitative techniques in the same study by the researcher. (Almalki, 2016). The use of both quantitative and qualitative data offers a more thorough comprehension of the research problem under study than using one of the approach alone (Ishtiaq, 2019). The use of mixed methods allowed the researcher to acquire a profound comprehension of personality types, occupational satisfaction, occupational consistency, choice of career environment and occupational satisfaction and interactions within the variables that would not have been possible with single research method. This is because the analysis of qualitative data complements, enhances and contextualizes the analysis of quantitative data (Andrews, 2019).

3.3 Target Population

The study's target population consisted of all the 348 respondents who took part in the initial study which was carried out in 2012. The accessible population was 122 from the 348 in the 2012 study who had completed the Self-Directed Search (SDS) tool and provided their emails and/or phone numbers. A census survey was carried out, to allow all respondents in the population to participate, thus highest accuracy is obtained and no element of chance is left (Kothari, 2014). The accessible population was reached out through phone calls, texts and emails since the researcher did not have their physical locations. The sampled respondents were as presented in Table 3.1. The area of study was also classified as per Hollands (1997) six environments i.e. Engineering (Realistic), Sciences (Investigative), Creative & performing arts (Artistic), Education (Social), Business (Enterprising) and Economics (Conventional).

Table 3.1: Sampled Population Gender Distribution

Area of study	Male	Female	Total
Engineering	8	6	14
Sciences	18	11	29
Education	14	24	38
Creative & performing arts	7	7	14
Business	9	9	18
Economics	5	4	9
Total	59	63	122

3.5 Data Collection Instruments

Data from the respondents in their various occupations was gathered by use of a questionnaire and an interview guide.

3.5.1 Questionnaire

An adapted Self Directed Search questionnaire was used to collect primary data, which provided respondents' demographic data, personality types and levels of occupational satisfaction of the individuals. The questionnaire had three sections: Section A contained the respondents' demographic data. Section B addressed the personality types, specifically: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), Conventional (C). The respondents were required to check the boxes in the SDS test for "L" (LIKES) and "D" (DISLIKES), the total Likes were noted in the boxes at the end of a certain personality type. 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, thus the individual's personality. Section C comprised statements that described the respondent's feelings concerning their current occupation. Data was collected using a Likert scale using ratings ranging from 1 to 5. The Likert scale comprised statements that were geared towards assessing the respondents' feelings regarding their occupation which were evaluated at five levels: The item contained a five-point scale as follows; 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Undecided (U), 2 for Disagree (D), and 1 for Strongly Disagree (SD). The expected outcomes were either the respondents were satisfied with their occupation, or dissatisfied with their occupations. Therefore, 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 standard guidelines to all the participants. (see Appendix A).

3.5.2 Interviews

An interview guide was utilized to collect and document information resulting from a few open-ended questions allow for further comprehension of the respondents' varied points of view to seek more insights into various views of the respondents (see Appendix B). A set of five questions guided the researcher to gain insights from the respondents. The researcher targeted all the informants under the study for interviewing and collected data until the data was saturated (Babbie, 2020; Ishtiaq,

2019). A total of ten informants were interviewed.

3.6 Pre-Testing of Research Instruments

A pilot study was carried out to respondents in selected organizations in Embu County who had graduated between 2012 and 2013. The respondents were not part of the target population. According to Umesh and Kothari (2022) piloting research instruments aid in the removal of uncertainty and misunderstanding regarding the research items. Researcher administered twelve (13) research instruments to the respondents who had similar characteristics with that of the sampled participants in the study. This represented 10 percent of the total population. The respondents had similar characteristics to the selected sampled group in that they had cleared their studies in the past ten years similar to the sampled population. Since the Self Directed Search (SDS) 4th Edition is a standard tool, it was piloted to ascertain the time take for the respondent to dully fill the form. In order to assess whether the questions posed were appropriately constructed in light of the study's objectives, the created satisfaction scale was also piloted. Very few changes were made on the instrument based on the feedback received results from the pilot study (Andrews, 2019). The final study did not include a sample of the people who were chosen for the pilot study.

3.6.1 The Validity

Validity refers to the extent to which a technique measures what it is supposed to assess and the degree to which a sample of test items accurately reflects the content that the test is designed to measure (Ishtiaq, 2019; Kim, 2015). The researcher employed content validity for the research instruments in this study. This is the extent to which test results accurately reflect the material that the scores are intended to assess (Andrews, 2019). According to Holland, Powell, and Fritzsche, (1994), the SDS instrument validity for the 1994 version was determined to be comparable with testing that had been completed in the prior years. The previous study carried out in 2012 (Gitonga, 2012), and study by Muthanje, Gitonga and Kaberia, (2021), found the instrument to be valid in an Kenyan context. To ensure both face and content validity, of the satisfaction scale and the interview guide, the instruments were reviewed by the researchers' supervisors. The opinion of the supervisors and the results from the pilot study facilitated the needed revision and correction of test items which ensured that they measured what they were intended to measure.

3.6.2 Reliability

Reliability is defined as the constancy with which a method measures a given quantity. According to Creswell (2014) a collection of measurements is deemed credible if the same outcome is consistently obtained under the same conditions utilizing the same techniques. Cronbach 's alpha reliability coefficient was used to determine internal consistency of the items. The method was suitable due to the fact that it involved only one administration of the test (Cohen & Swerdlik, 2009). The study used reliability coefficient value of 0.7 as a cut-off. This reliability coefficient is used to express the relationship between the scores of the same individual on the same instrument. The SDS 1994 version was found to have a reliability coefficient that ranged between 0.59-0.92 (Holland, Powell & Fritzsche, 1994). In this study the reliability coefficient in the questionnaire was 0.768 for the personality types and 0.771 for occupational satisfaction, indicating that the items were fairly reliable. According to Schober & Schwarte (2018) the closer Cronbach's alpha coefficient is to 1, the higher the internal consistency reliability. All the instruments met threshold of 0.7 and therefore the instruments were deemed reliable. The pre-testing helped to assess the clarity of the research items. The research items which were found not adequate were revised to improve the quality of the research instrument, thus increasing its reliability. The results of the analysis are as shown in Table 3.2.

Table 3.2: Cronbach Alpha for Reliability Assessments

Variables	Number of items	Cronbach alpha values
Personality types	66	0.768
Occupational satisfaction	8	0.771

3.7 Data Collection Procedures

The researcher sought for permission to conduct the research from National Council of Science, Technology and Innovation (NACOSTI) and ethical approval from Ethics Review Committee of Pwani University. Once the approvals were acquired, the researcher reached out to the respondents. Since the respondents were in different organizations in the country, the researcher reached out to the respondents through phone calls and emails. The questionnaire items were sent to the respondents via mail, with instructions to fill in and submit back. The researcher made calls to the 12

informants and interviewed them. In addition, the researcher collected secondary data through document analysis. This involved analyzing the questionnaires that had been completed in the initial study (2012). The obtained data included the personality types and career choices of the respondents in 2012

3.8 Data Analysis

The study involved the collection of secondary and primary data. The secondary data was from the analysis of data collected during the initial study, and primary data was collected in this study. Qualitative and quantitative data was gathered within the same time frame, analyzed separately, and then merged for interpretation.

Quantitative primary data obtained from the questionnaire were scrutinized, edited, and organized for analysis. The data was analyzed using descriptive and inferential statistics and the results were presented by use of percentages, frequencies tables, charts and figures. The relationship between persistency of personality types and occupational satisfaction was analyzed using spearman's rank correlation. A logistic regression analysis was employed to establish the relationship between personality types, congruence, career choices, consistency 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 *Equation 3.1* was applied.

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon \quad (\text{Equation, 3.1})$$

Where p is the probability of interest/success, $1 - p$ is the probability of failure, β_0 is the intercept, $\beta_1, \beta_2 \dots \beta_n$ 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, X_4 is the consistency of occupation, ϵ is the error term.

Qualitative data analysis involved obtaining detailed information about respondents' career choices, congruence, consistency and occupational satisfaction. The researcher established patterns and trends from the information collected (Andrews, 2019). The researcher transcribed all interviews and organized them into meaningful categories and grouped them into related codes. The coded information was then organized into themes and presented in a narrative, and this was used in making conclusions and recommendations. The qualitative data analysis enhances and enriches the quantitative

Figure 3.2: Moderating Relationship Between the IV and DV

$$DV = \beta_0 + \beta_1 (IV) + \beta_2 (MOD) + \beta_3 (IV) (MOD) + \varepsilon \dots\dots\dots \text{(Equation, 3.2)}$$

The coefficient β_3 measures the moderating effect, i.e., the interaction between independent and moderating variables.

Therefore, in the moderating analysis the researcher analyzed the effect of the independent variable on dependent variable, effect of moderating variable on dependent variable and the effect of the interaction of independent variable and moderating variable and the dependent variable. This would indicate the effect of the independent variable on the dependent variable in the presence of a moderating variable.

3.8.4 Mediating Variables

The mediating variables in the study were consistency and congruence. Consistency was derived through the comparison between the degree programme and the current job of the individuals. According to Holland, consistency refers to the proximity of the individual's two dominant Holland types with respect to the hexagonal scheme. The study compared the degree studied in 2012 with the current occupation. This was done after categorizing the degrees and professions into the six work environments as categorized by Holland. Consistency was derived from comparing the dominant codes of the degree programme and the current work environment, then categorizing into low (opposite codes) middle (alternate codes) or high (matching or adjacent codes) consistency as proposed by Holland (Tracey *et al.*, 2014).

Congruence refers to the match between the personality types and the work environment of the respondents. To achieve this, the researcher used the data on personality types, then categorized the work environment into the six environments classified by Holland. Once this was done, congruence was measured using the C index proposed by Brown and Gore (Chauvin & Miller, 2009). The C index is easy to calculate, and it is sensitive to both the order of the Holland codes and the distance between codes. The index uses the formula as shown in Equation 3.3

$$C = [3(x) + 2(x) + 1(x)], \dots\dots\dots \text{(Equation, 3.3)}$$

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 were considered incongruent, and scores between 9 and 18 were considered congruent.

Further, the research analyzed the mediating effect of consistency and congruence on the relationship between personality types and occupational satisfaction. The researcher followed the Baron and Kenny (1986) four steps of establishing that a variable mediates the relationship between an independent variable and the dependent variable (Otuya, 2019). *Figure 3.3* illustrates the mediation variable role.

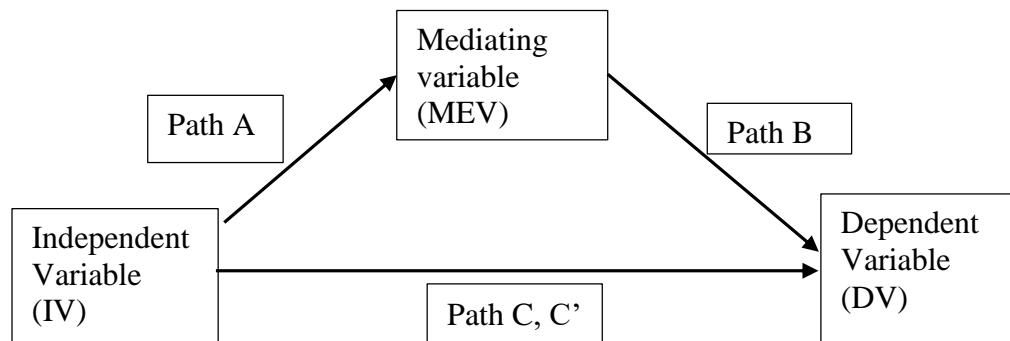


Figure 3.3: Mediating Relationship Between the IV and DV

The following four steps were undertaken;

Step 1: Demonstrate that there exists a significant relationship between the dependent and independent variables (*see Path C in Figure 3.3*). It is represented by the following Equation (3.4).

$$DV = \beta_0 + \beta_1 (IV) + \epsilon \dots\dots\dots \text{(Equation, 3.4)}$$

Step 2: Show that the relationship between the mediator variable and the independent variable. The researcher treated the mediator as a dependent variable in this case using Equation (3.5). The researcher tested Path A (*see Figure 3.3*).

$$MEV = \beta_0 + \beta_1 (IV) + \epsilon \dots\dots\dots \text{(Equation, 3.5)}$$

Step 3: Show that the mediator variable is related with the dependent variable (*see Path B in Figure 3.3*). This is established by controlling for the independent variable’s effects on the dependent variable as indicated in Equation (3.6).

$$DV = \beta_0 + \beta_1(MEV) + \varepsilon \dots\dots\dots \text{(Equation, 3.6)}$$

Step 4: Demonstrate that the strength of the relationship between the independent and dependent variables is considerably reduced with the addition of the mediator to the model (*see Path C' in Figure 3.3*) as shown in Equation (3.7).

$$DV = \beta_0 + \beta_1(IV) + \beta_2(MEV) + \varepsilon \dots\dots\dots \text{(Equation, 3.7)}$$

If the connection between the dependent variable and the independent variables does not change from zero once the mediation variable is incorporated into the model, then the mediation variable is considered a full mediator. If the correlation between the dependent variable and the independent variable is much less but still more than zero when the mediator variable is considered, then it is considered a partial mediator. Mediation amount is also referred to as the indirect effect represented by Path A and Path B in *Figure 3.3*.

3.9. Diagnostic Tests

The models are based on the presumption that the variables have a linear relationship. Following the collection of data, multicollinearity test was done to verify the validity and reliability of the data collecting tools as well as the purpose of the set questions. The multicollinearity test, according to Kothari (2014), assesses how well the independent variables are correlated. In this study, Variance Inflation Factor (VIF) was employed using Equation 3.8.

$$VIF = 1 / (1 - R^2) \dots\dots\dots \text{(Equation 3.8)}$$

Where R^2 denotes the coefficient of determination.

As a rule of thumb, if any of the VIF is larger than 10 it indicates that multicollinearity is significantly large and subsequently they are poorly assessed. The variable would therefore, be removed from the model. Multicollinearity is considered moderate if $5 < VIF < 10$, then, if $5 < VIF$, then multicollinearity is insignificant.

3.10 Logistical and Ethical Considerations

3.10.1 Logistical Considerations

The National Council of Science, Technology, and Innovation (NACOSTI) granted permission for the researcher to conduct the study, and the University of Embu granted permission for the research to be conducted. The researcher also received approval from the Pwani University Ethical Review Committee because the study involved the use of respondents' data from prior research

3.10.2 Ethical Considerations

The researcher of the initial study (Gitonga, 2012) was part of the current study as a supervisor, thus ensuring that the current study did not copy the 2012 work. In addition, Gitonga (2012) availed hard copy dully filled questionnaires of the 2012 study. This is in addition to the fact that the current study only used data of accessible population and that it was not practical to copy the findings of the initial study directly from the study, but rather analyze the 2012 questionnaires. The researcher wrote to all the respondents before the administration of the research instruments, requesting them to take part in the study and to clarify to them the nature of the study. The letter clarified to the respondents that the study was a follow up of the 2012 study, and that their involvement would be on voluntary basis, they were at liberty to terminate their participation without any penalty and that the data provided would be handled with total confidentiality and would only be used for the proposed study. To ensure their anonymity, the respondents were not required to indicate their names on the questionnaire. The respondents were required to consent by signing a consent form (see Appendix D). These procedures were intended to protect the participants' privacy and ensure confidentiality of their information and records.

3.11 Summary

The chapter outlines step of methodology that were applied for the study. The research area, sample size and target population and has been identified, whereby the researcher reached out to the respondents who took part in the initial study. Interviews and questionnaires have been identified as research instruments for the study. In addition, data collection procedures and analysis have been expounded, as well as ethical consideration observed during the study

CHAPTER FOUR

RESULTS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the research results of the study. In addition, the chapter also presents analysis and interpretation of the research data arranged under various themes that are in line with the specific research objectives of the study.

4.2 Instrument Reponses Rate

A total of 122 questionnaires were sent to the respondents through emails/mobile numbers. The distribution of the respondents was as shown in Table 4.1.

Table 4.1: Gender Distribution of the Respondents

Area of study	Male	Female	Total
Engineering	4	2	6
Sciences	14	7	21
Education	10	22	32
Creative & performing arts	3	3	6
Business	5	5	10
Economics	1	0	1
Total	35	41	76

As indicated in Table 4.1, 76 questionnaires were completed in full and returned. This indicates a 62.29% response rate, which is sufficient to provide enough confidence and dependability to the conclusions. (Babbie, 2020) states that return rates of 50% are appropriate for analysis, 60% are decent, and 70% are excellent. The study's response rate was therefore judged appropriate.

4.3 Demographic Data of the Respondents

The respondents' general characteristics were categorized into gender, age, personality types, status of occupations, academic and work environments, and the degree of occupational satisfaction of the respondents.

4.3.1 Gender

The results in Figure 4.1 reveals that the majority (53.9%) of the respondents were female, while 46.1% were male, indicating a 7.8% gender difference.

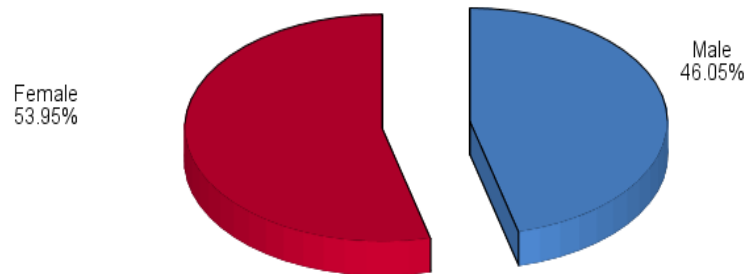


Figure 4.1: Distribution of Respondents by Gender

The study results indicate that more female students gave their contact information and have remained active compared to the male respondents. Further, the female respondents with active contacts were more willing to participate in the study compared to the male respondents. The findings support the argument that women are more likely to self-select to take part in online surveys than male respondents (Silverstein & Sayre, 2009; Smith, 2008).

4.3.2 Age

The results in Table 4.2 show the distribution of the respondents according to their age.

Table 4.2: Distribution of Respondents by Age

Age bracket	Frequency	Percent
30-34 Years	61	80.3
35-39 Years	14	18.4
40 years and above	1	1.3
Total	76	100.0

Table 4.2 shows that most respondents (80.3%) were in the age bracket 30-34 years, 18.1% were in the age bracket of 35-39 years and one was above 40 years. This implies that the respondents have been in the work environment for about ten years. Besides, the respondents were undertaking their undergraduate degree ten years ago within the age bracket of 20-30 years which is the common age in Kenya for college attendance (Gitonga, 2012; Waruita *et al.*, 2018).

Career choice is a developmental process that spreads out for the duration of life, and it entails a series of choices in structuring a career (Nagy *et al.*, 2019). In each of the developmental stages individuals have to resolve specific issues for them to transition to the next stage. Super’s career stage model (Nagy *et al.*, 2019) argue that, the age period between 25-44 years lies in the second career development stage, also known as the establishment stage (Chourasiya & Agrawal, 2019). The stage is similar to Erickson’s young adulthood stage, whereby 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 (Bishop, 2013). Thus, implying that ten years after completion of their studies, the respondents were in stable careers, with responsibilities at work and more focused to development of their career competencies and job stabilities.

4.3.3 Personality types

The respondents’ distribution according to personalities was analyzed and the results are as illustrated in Table 4.3.

Table 4.3: Comparison Between 2012 and 2023 Personality Types

Personalities	Frequency		Percentages	
	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 4.3 compares personality types between the 2012 and 2023 studies. The results show that all the six personality types, according to Holland’s classification, were represented. There is change based on the fluctuating numbers from one personality to another. This would be explained by the fact that personality type change or stability may result from environment and life experience (Wagner *et al.*, 2020). This implies that the respondents’ personality types may have changed over time. This may be attributed to their life experiences and or due to change in their environment. In addition, although small personality changes emerge across situations, a large body of research backs up the idea that personality stability endures throughout life (Wilks, 2009). Thus, indicating the minimal changes in personality types of the respondents.

The gender distribution within the personality types indicated high numbers of female in artistic, social, and in conventional fields, while as, male respondents dominated realistic, investigative and enterprising fields. Based on the 2023 study, the female respondents dominated in Artistic (12), Social (14) and in Conventional (10) types with no representation in Realistic and Investigative types. This finding agrees with Hollands argument, that social and artistic personality types are highly dominated by the female gender (Holland, 1997). Male respondents were dominant in Realistic (4), Investigative (5) and Enterprising (9) types as illustrated in Figure 4.2.

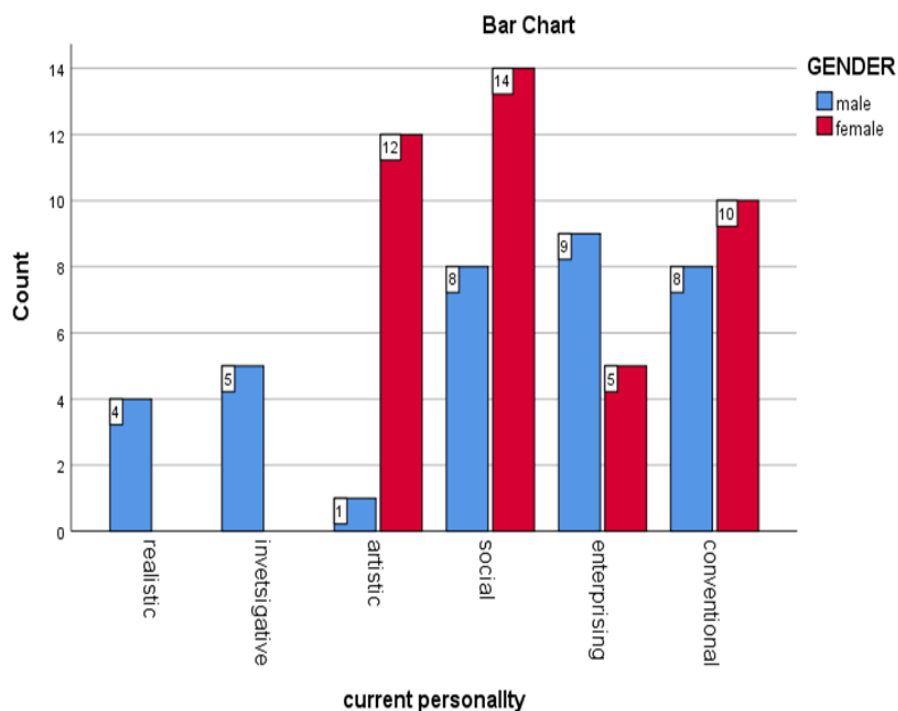


Figure 4.2: Respondents' Gender within Personality Types

These findings are supported by the findings of the 2012 study that reported more females in social sciences and more males in science fields (Gitonga, 2012; Holland, 2019; Smart, Feldman & Ethington, 2006).

4.3.4 Respondents' Occupational Status

The distribution of the respondents' occupational status was as shown in Figure 4.3

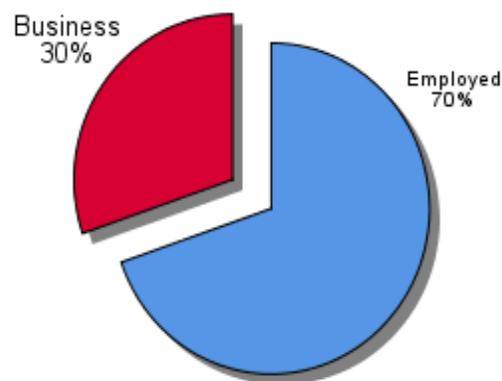


Figure 4.3: Status of Work Environment

The study's findings revealed that individuals in formal employment were the majority (70%), while those in self-employment were 30%. The findings support argument that, majority of individuals consider employment because it offers stability and social security (Pardoa & Ruiz-Tagle, 2017). This indicates that most graduates may have opted for employment for the same reasons. On the other hand, self-employment is associated with risks and uncertainties, hence, majority of individuals would, therefore, prefer employment to venturing into self-employment.

Self-employment and unemployment are more closely linked in developing countries (Mandelman & Montes-Rojas, 2009). This shows that graduates consider starting business as a means of survival after they fail to secure formal employment. Consequently, the decision to start the business is informed by the situations and not personal interests.

Graduates may decide to start up business in pursuit of their interests, and in search of congruence with their personalities in case they find themselves in incongruent work environments. Career choices in early stages in life may have been influenced by among other factors, parents and available programmes. Therefore, self-employment can be explained by rigidities and skill mismatches in the labor market, the outcome of a self-selection process, or by both (Pardoa & Ruiz-Tagle, 2017).

4.3.5 Occupational Satisfaction

The results in Figure 4.4 reveal that a majority (90.8%) of the respondents in the 2023 study were satisfied with their work environments, while 9.2% were dissatisfied.

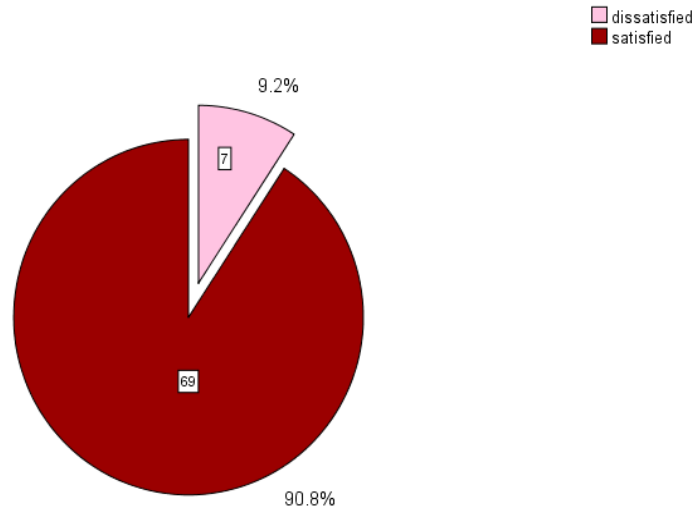


Figure 4.4: Respondents' Occupational Satisfaction

The results were compared with those of the 2012 study, whereby a majority (67.1%) of respondents were satisfied with their academic programs while 32.9% were dissatisfied, as shown in Table 4.4.

Table 4.4: Satisfaction with work environment by Personality Types

Personality types	Satisfaction levels					
	Satisfied		Dissatisfied		Total	
	N	%	N	%	N	%
Realistic	2	66.7	1	33.3	3	100
Investigative	4	66.7	2	33.3	6	100
Artistic	12	80	3	20.0	15	100
Social	11	64.7	6	35.3	17	100
Enterprising	13	65.0	7	35.0	20	100
Conventional	9	60.0	6	40.0	15	100
Total	51	67.1	25	32.9	76	100

The results in Table 4.4 indicate that majority of the respondents (67.1%) were satisfied with their careers. The fact that the majority of the respondents were in the 30–34 age bracket places them in the establishment stage (Chourasiya & Agrawal, 2019) and Erikson's young adulthood stage (Bishop, 2013), both of which are

characterized by stability in employment. This likely contributed to their levels of satisfaction.

Respondents satisfaction with their occupation would also be as a result of being in matching work environments with their personality types. Holland (1997), argues that a match between an individual’s personality and the work environment leads to a match in interests that results in occupation satisfaction. Thus, the respondents were in congruent work environments.

4.4 Persistency of Personality Types, Congruence, Choice and consistency of Work Environment and Occupational Satisfaction

This segment presents descriptive results and discussions aligned to the objectives of the study. The study focused on the following aspects; persistency of personality types, congruence of personality types and work environment, choice of work environment and consistency of career choices. The responses are in line with an SDS questionnaire and interviews administered to the respondents.

4.4.1 Persistency of Personality Types

Persistency was defined as the endurance of personality types over time. Persistency was derived from comparing the dominant codes of the personality types tested in 2012 and the current personality types tested in 2023. To achieve this, first a comparison was done between the personality types in the initial study and those of the current study. The variance between the two was discussed by comparing the dominant codes of the personality types in the two studies. Table 4.5 shows the results of comparing the personality types in the two studies.

Table 4.5: Variance Between 2012 and 2023 Personality Types

Personalities	Frequency		Percentages		Variance %
	2012	2023	2012	2023	
Realistic	3	4	3.9	5.3	1.4
Investigative	6	5	7.9	6.6	-1.3
Artistic	15	13	19.7	17.1	-2.6
Social	17	22	22.4	28.9	6.5
Enterprising	20	14	26.3	18.4	-7.9
Conventional	15	18	19.7	23.7	4
Total	76	76	100.0	100.0	

The results in Table 4.5 indicate that all the participants’ personality types were represented in the Holland’s classification in both studies. However, there were some

whose personality types changed as shown in the variances in Table 4.5. The enterprising personality experienced the biggest change with a difference of 7.9% decrease in 2023. This implies that while at the university the respondents scored highly in the enterprising personality types, 10 years later, they scored highly (28.9%) in social personality type. In addition, the numbers increased by 6.5% for the social personality type, and 4% for the conventional personality type in 2023. This implies that, later in life individuals shifted from other personalities such as the social and conventional personality type. This could be explained by the fact that through life experiences and work environments, individuals may have experienced changes that necessitated the shifted to other personalities types. According to Donohue (2006; 2014), individuals who change their careers move into jobs that are more congruent with their personality types than their present occupations., thus the respondents may have moved in search of matching careers with their personality types. Nevertheless, a certain number of individuals remain in the same personality types over the years, thus agreeing with the argument that personality types are stable traits of an individual over a life span (Wilks, 2009).

In the second step, the dominant codes of the personality types were compared to determine whether they were persistent or not persistent. Then the personality types were categorized into either not persistent (opposite codes, alternate codes) or persistent (matching or adjacent codes) as proposed by Holland (Tracey *et al.*, 2014). The results were as illustrated in Table 4.6.

Table 4.6: Persistency of Personality Types

Persistency	Frequency		Frequency %		Total	Percent
	Male	Female	Male	Female		
Not persistent	9	4	69.2	30.8	13	17.1
Persistent	26	37	41	58.7	63	82.9
Total	35	41			76	100.0

The findings in Table 4.6 revealed that most respondents' personality types (82.9%) were persistent, while 17.1% were not. Further, the results suggest that more females, 59% are likely to be persistent compared to males, 41%. In addition, 69% of the cases that were not persistent were male, while 31% were female. These findings denote that the female respondents were more persistent than the male respondents. Furthermore,

these findings show that gender is a factor in influencing persistency but not the only influence in determining persistency.

The results suggest that to a great extent, personality types endures over time for some individuals, but to others, they change (Badubi , 2017; Boyce *et al.*, 2015; Nagy *et al.*, 2019). Wilks, (2009) argues that, personality is initially conceptualized regarding temperaments and traits that indicate predominant personality stability across the lifespan. However, certain aspects of permanent personality stability persist throughout the life of the individual, although small personality changes occur in a variety of situations. The classical trait perspective of personality types proposes that personality traits in adulthood signify stable inter-individual variances, whereas, the contextual perspective stresses personality changes as a response to life experiences, such as change in roles (Nagy *et al.*, 2019). Environmental features such as unemployment may also influence personality changes (Boyce *et al.*, 2015). This argument supports the social learning theory that proposes that human behaviors can be learnt, unlearnt or relearnt (Badubi, 2017). Furthermore, an individual's personality varies during the course of their life, but these changes are more pronounced in their younger and older years, partly due to social pressures and life experiences. (Sneed & Pimontel, 2012). The findings of these study supports the argument that personality types are stable over time.

Regarding the 17.1% of individuals who were not persistent, Wagner *et al.*, (2020), posits that change in personality may occur as one matures, reflecting adaptations in developmental process that aid people to change their everyday practices and conduct themselves in accordance with prevailing resources. Besides, the different bases of personality stability or change of it do not operate independently of each other but interact in complex ways thus bringing about change throughout the lifespan of an individual. This indicates that the individuals that were not persistent may have changed their personality types as a result of adaptations to their environments that comes with age.

The level of congruence can predict the probability of individuals persevering in or shifting careers and the level of match between the individual's personality and the occupation (Donohue, 2014). Individuals who changed their careers were found to move to careers that were more congruent than their previous careers. Personality is

therefore seen as a factor influencing the work environment, and the reverse is also true. These findings indicate that personality types remain stable over time.

The persistency of personality types by the occupational satisfaction of the respondents was investigated, as shown in Figure 4.5

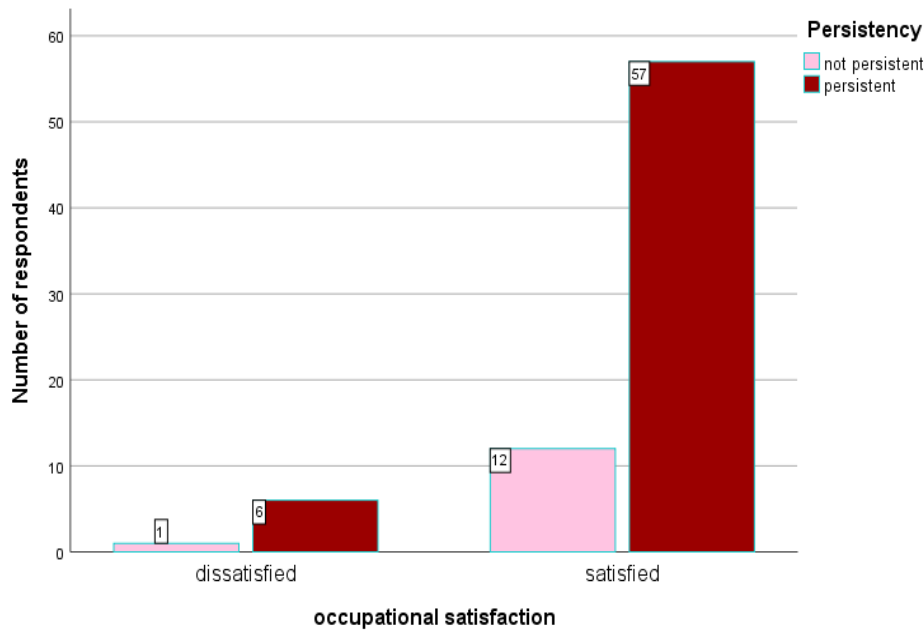


Figure 4.5: Persistency of Personality Types and Occupational Satisfaction

Figure 4.5 shows that a majority of the respondents (57) were persistent and satisfied, while 12 respondents were satisfied and not persistent. On the other hand, six respondents who were persistent were dissatisfied, and one respondent who was not persistent was dissatisfied. These results reveal that a majority of the respondents were persistent. This implies that, their personality types had endured over time. In addition, a majority of the persistent respondents were satisfied with their occupations, while, a minority of the respondents who were not persistent were also dissatisfied with their occupations. This denotes that persistency influence occupation satisfaction.

4.4.2 Degree of Congruence

In this study, congruence referred to the match between an individual’s work environment and personality (Tracey *et al.*, 2014; Nauta, 2010). To assess congruence, the C index formula as proposed by Brown and Gore (Chauvin & Miller, 2009) was used as shown in Equation 3.3 and the results presented in Table 4.7. based on the results in Table 4.7, the percentages of congruence (73.7%) and incongruence (26.3%)

were similar for both studies. However, the composition of the numbers for each year is different in terms of gender as shown in Table 4.7.

Table 4.7: Congruence by Gender

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

Table 4.7 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.

From Table 4.7 a majority of the respondents were congruent in their current environments and were also congruent in the 2012 study. Consequently, the respondents had remained congruent over time, hence, supporting the argument that people look for and select experiences and environments that are harmonious with their personality, bringing about congruence, hence making vocational choices a process and not a random event (Tornroos *et al.*, 2019).

The high number of congruent respondents is also supported by the fact that the individuals may have planned for their careers, so as to bring about a fit between a job's requirements, an applicant's aptitude, hobbies, and parents' expectations; as a result, effective career planning promotes effective career adjustment (Alkhelil, 2016). Moreover, personality affects the important decisions that individuals make in life such as career and education (Pio *et al.*, 2021) Consequently, the individuals' personalities may have influenced their careers hence congruent environments.

A match between the degree program the respondents undertook, may have led to the match in their work environments. This is because there exists a relationship between career choices and personality types, in that students at the college level select their programs of study based on their interests (Wang'eri & Karanja, 2018; Gitonga, 2012;

Kemboi *et al.*, 2016). In addition, Holland (1997), argues that six work environments match with the six personality types, and that individuals would seek to work in environments with similar interests, thus bringing about congruence (Kemboi *et al.*, 2016). For example, Informant 012, had a match between the degree program and the work environment and had the following to say;

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.

Informant 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 Informant, selected Bachelor of Education at college level because they were interested in the field of teaching.

On the other hand, it is evident those who were incongruent (mismatch) between the personality type and the academic program were also incongruent in the work environment. This is possibly attributed to the fact that individuals may seek work opportunities regardless of what they studied in the university. For example, Informant 007, studied a social work (social environment) against 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 Informant believed the change would 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 programme and the personality of an individual. For example, an individual who studied a course that was not in line with their interest would go back to college to pursue an academic programme of choice, that was in line with their interest. Informant 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. Graduate students may work against labor force demands to develop and maintain an adequate life-long career, despite actively seeking careers before and after graduation (Hwang, 2017). In addition, graduates may accept available job opportunities at their disposal thus ending up in incongruent work environments (Rudakov *et al.*, 2022; Somers *et al.*, 2019).

Further, Informant 003 who studied a programme in realistic environment ended up in a social environment due to lack of employment;

'I studied, art and design in college. However, I waited for a 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 still hopeful that one day I will get a job in my profession because I still would like to practice art and design.'

This suggests that hard economic times may compel an individual to move to an incongruent field just to make the ends meet (Contreras, *et. al.*, 2008). The mismatch between education and occupation can be viewed as a means by individual labor market to adjust in the case of imbalances between demand and supply and the lack of job opportunities for particular occupations Rudakov *et al.*, (2022). Further, the dynamics of labor markets may lead to fast variations in the nature and structure of available graduate jobs in the labor market. Consequently, the graduates are faced with the challenge of either accepting available jobs, remaining unemployed or venturing into self-employment as a survival tactic (Mandelman & Montes-Rojas, 2009; Pardo & Ruiz-Tagle, 2017).

On the one hand, the type and structure of graduate positions vary quickly according to labor market trends. There is often a race between education and technology because labor markets are often more dynamic than educational systems, which are unable to quickly adapt to changes in technologies or the demand for particular professions (Rudakov *et al.*, 2022; Somers *et al.*, 2019). Therefore, in such a situation the graduates released in the job market do not fit the available jobs due to the fast changing nature

of the labor market. Thus, leading to a mismatch of the individuals' work environment and their work environment.

Life experiences may also be a factor in the shift from one personality type, leading to a different work environment. This aspect of change is as explained by the social learning theory by Albert Bandura that individuals are capable of learning, unlearning or relearning behaviors (Koutroubas & Galanakis, 2022). Consequently, individual interests influence personality and skill development, as environmental inclinations influence the extent to which a person experiences, and consequently impacting on which traits develop and refine over time (Donohue, 2006; 2014). This process of development lasts throughout the life of an individual and is more steady at maturity (Nagy *et al.*, 2019; Wilks, 2009). Informant 007 who was 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 clearing my first degree, I joined a bank as a sales person. I became interested in banking related things. I studied CPA courses then a diploma in management and focused on working in the banking sector up to date'.

These results of this study imply that even though people may change their work environments, their personality types remain unchanged, thus, supporting findings that personality types are stable characteristics of a person over a period of time (Wilks, 2009). Furthermore, a person's hobbies impact how their personality and skills develop since their preferences for their surroundings impact the variety of experiences they have, which shapes the characteristics that emerge and become more honed over time. (Donohue, 2006).

4.4.2.1 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 4.6

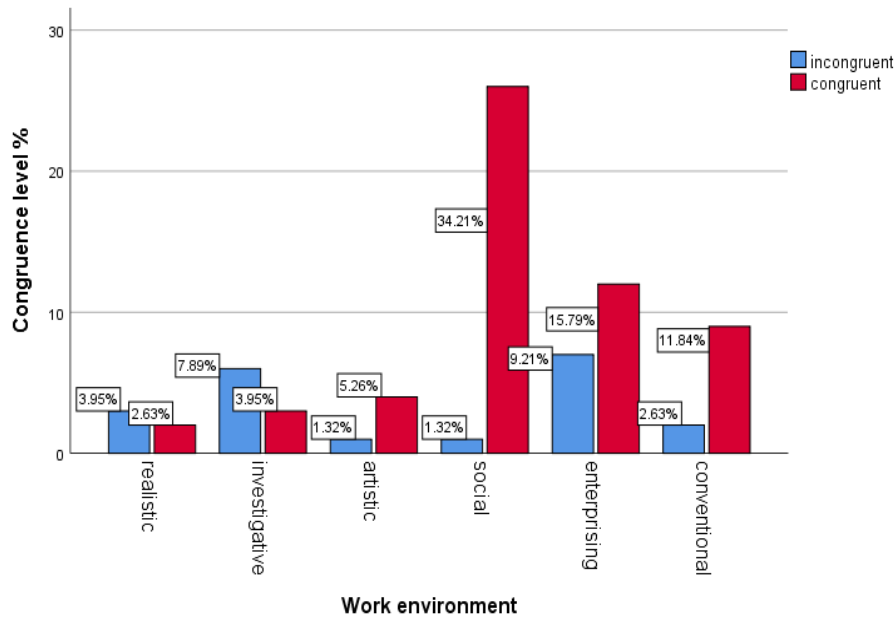


Figure 4.6: Congruence Levels by Individual's Environment

Figure 4.6 reveals that the social environment had the highest congruence rate (34.2%), whereas the realistic environment had the lowest (2.6%). Conversely, the enterprising environment showed the highest incongruence rate (9.2%), while social work and artistic environments had the lowest (1.3%) incongruence rates. 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 4.7

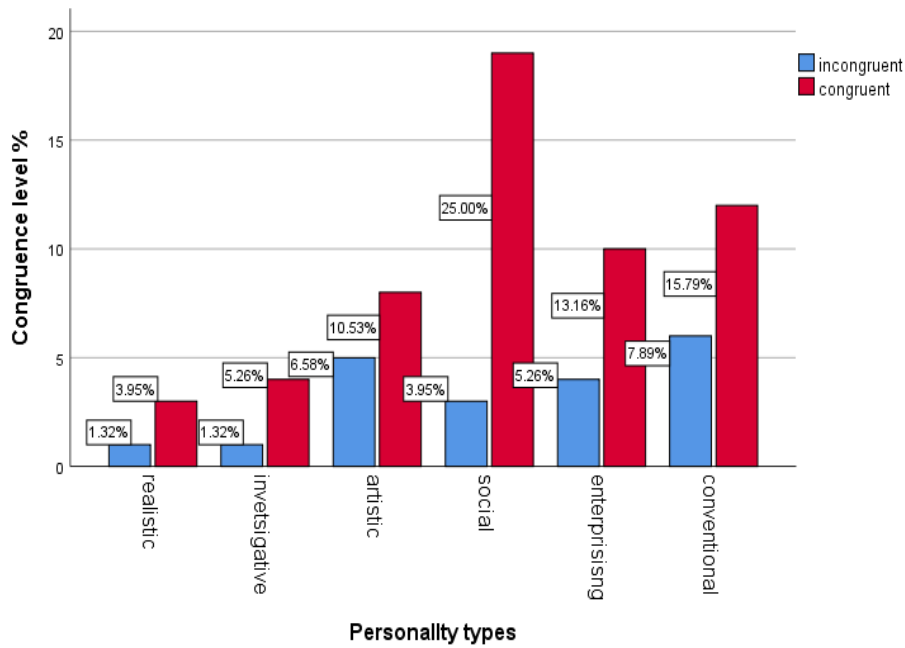


Figure 4.7: Congruence Levels by Individual's Personality Types

From Figure 4.7, social personality types were more harmonious (25%), while realist was lowest (3.9%). Furthermore, the conventional personality was the most incongruent (7.8%), and realistic and investigative personalities were the lowest (1.3%).

4.4.2.2 Congruence and occupational satisfaction

Figure 4.8 presents the results of individuals' congruence and the level of satisfaction.

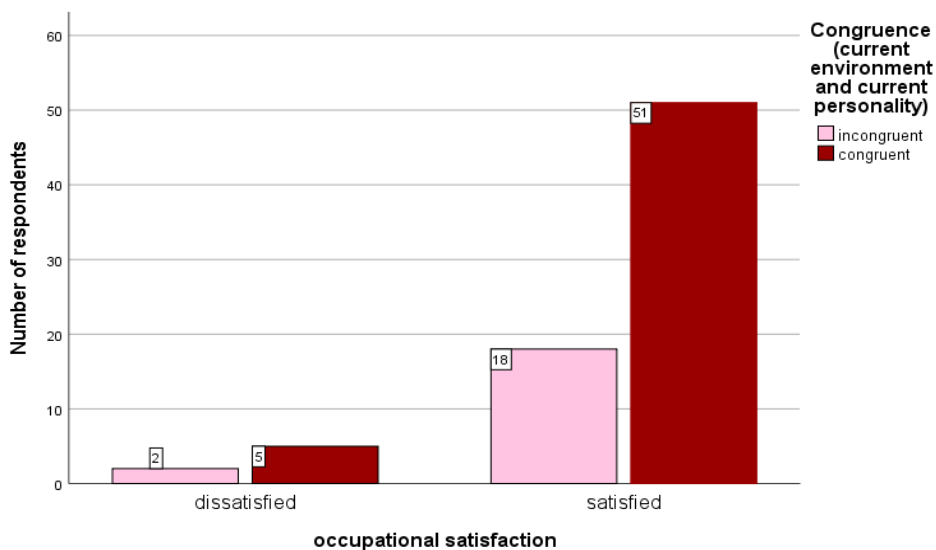


Figure 4.8: Congruence and Occupational Satisfaction

Results in Figure 4.8. illustrate the majority of congruent respondents (51) expressed satisfaction with their occupations, while only 5 congruent respondents were dissatisfied. Furthermore, 18 incongruent 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.

4.4.3 Choice of Work Environments

The study defines work environment as the occupations that individuals were undertaking. In addition, Holland defines work environment as occupational environments that correspond to the six personality types (Nauta, 2010). Moreover, the work environment starts from the choice of careers at degree level (study environment), then it progresses to work/job environment (Nagy *et al.*, 2019). The study compared the choice of academic degrees (2012 study) and that of work environment (2023 study).

4.4.3.1 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 4.8.

Table 4.8 Comparison Between Academic Degree and Work Environments

Environments	2012			2023		
	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 & Performing arts	6	7.9	Creative & 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.		76	100.
			0			0

The results in Table 4.8 show that according to Holland's classification, all the six work environments were represented in terms of choice of work environment, i.e., academic degree and current occupation (Gitonga *et al.*, 2014). The results indicate a notable shift from one environment to another. Individuals shifted from the degree program they studied and ended up in a different work environment. For example, at the college level, only one respondent pursued a course in economics, which is

classified as a conventional environment. However, in the work environment, the number increased to 11. This indicates that some respondents shifted and changed their occupations to join the economics field. Ten students pursued business related courses that are categorized as enterprising academic environment. However, the enterprising work environment has 19 respondents, indicating an increase from ten. The increase indicates that some respondents had shifted from other categories to join the enterprising category. On the other hand, some classifications experienced a decrease on the work environments. For example, the Investigative classification that includes the sciences had 21 students pursuing science programs in college. However, only nine were on the same field of work environment. Others shifted to other fields, which may explain the increase in enterprising and economics fields.

The changes from one academic environment to a different work environment could be as a result of personality change which would have influenced the change of work environment as the individuals were searching for a fit between their personalities and the jobs (Ramadhani *et al.*, 2020) It could also be as a result of incongruence, in that the respondents had been placed in mismatched academic programs and, as a result, ended up searching for careers that match with their personalities, leading to congruence Holland (Nauta, 2010). Furthermore, individuals may have moved from one environment to another in search for job satisfaction. This is because occupational satisfaction and fulfillment influence individuals decision to stay or remain in a certain work environment (Ghaleb, 2024). On the other hand, their personality types may have changed with age (Bleidorn *et al.*, 2021; 2022; Sun & Sun, 2021) and as adults they had different interests and thus making them to move to careers that were well aligned with their personality types (Nauta, 2010).

Choices made early in life may have been influenced by external factors such as parental, teacher, and peer influence, rather than by individuals' own interests and abilities (Kemboi *et al.*, 2016; (Hogan & Roberts, 2000). Consequently, at the adult stage, individuals make the career decision based on their interests and hence the move from academic environment to a different occupational environment.

4.4.3.2 Satisfaction Levels within Academic Environments and Occupational Environments

The results in Table 4.9 show the satisfaction distribution of the respondents within the academic environment and work environment. Based on the academic environment, the results indicate that, majority of the respondents (63.2%) were satisfied 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. This implies that majority of the respondents were satisfied with their degree programmes back in college (Gitonga, 2012).

Table 4.9: Satisfaction Levels Within Academic and Work Environments

Environment	Academic Satisfied (%)	Academic Dissatisfied (%)	Work Satisfied (%)	Work Dissatisfied (%)
Realistic	50.0	50.0	100.0	0.0
Investigative	57.2	42.8	77.8	22.2
Artistic	66.7	33.3	60.0	40.0
Social	68.7	31.3	96.3	3.7
Enterprising	70.0	30.0	100.0	0.0
Conventional	0.0	100.0	81.8	18.2
Total	63.2	36.8	90.8	9.2

On the other hand, the results reveal that majority (90%) of the respondents were satisfied with their work environment, while 9.2% were dissatisfied.

In both academic and work environment, the enterprise category (business) had the highest degree of occupational 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 may be as a result of maturation of work attitudes that improves as individuals become of age, become more positive about their job, and have positive attitudes and opinions at work (Wille *et al.*, 2014; Shane & Heckhausen, 2019). In addition, as older employees exhibit less counterproductive behaviors at work and have superior organizational conduct at work (Nagy *et al.*, 2019). they often contribute positively to the overall work environment, fostering greater stability and enhancing the efficiency of organizational processes. This study was carried out ten years after the respondents had completed their studies. As such, they may be in stable

careers as suggested by Supers model of career stages (Chourasiya & Agrawal, 2019), whereby, they have created good working relationships with their colleagues and have a developed positive values at work (Kang & Keinonen, 2017). Consequently, the respondents' satisfaction levels improved from the academic environments to work environments.

4.4.4 Consistency of Academic Environments and Work Environments

Consistency of the work environments/jobs was investigated. Consistency was defined as persistence of academic environments (degree programmes which simulates a work environment) as measured in the initial study and the current work environment (respondent's current jobs). The distribution of respondents according to academic environments is as shown in Table 4.10. The Table also compares academic environments 2012 (degree programs) and 2023 current work environments (jobs).

Table 4.10: Comparison between 2012 Academic Environments and 2023 Work Environments of the Respondent

Environments	Frequency		Percentages		Variance %
	2012	2023	2012	2023	
Realistic	6	5	7.9	6.6	-1.3
Investigative	21	9	27.6	11.8	-15.8
Artistic	6	5	7.9	6.6	-1.3
Social	32	27	42.1	35.5	-6.6
Enterprising	10	19	13.2	25.0	11.8
Conventional	1	11	1.3	14.5	13.2
Total	76	76	100.0	100.0	

Results in Table 4.10 show that most respondents (16%) moved from the Investigative field to other fields. This could be as a result of unemployment, lack of job opportunities, and personality change. This may explain why the number of enterprising increased by 12%, whereby the respondents became enterprising to meet life demands financially. Convention and Enterprising had the highest increase of 13% and 12%, respectively. This implies that the respondents moved from other work environments to these two fields.

The results show that all six work environments were represented according to Holland's classification. There was a notable difference based on the fluctuating numbers from one environment to another. The fluctuation indicates that the respondent's work environment is different from the academic program studied in college. This may result in a mismatch between the academic program and the work

environment of the respondents. To find out whether there was a match or a mismatch, the dominant codes of the academic environment and that of the work environment were compared, then categorized into the low middle or high consistency, as proposed by Holland, as shown in Figure 4.9.

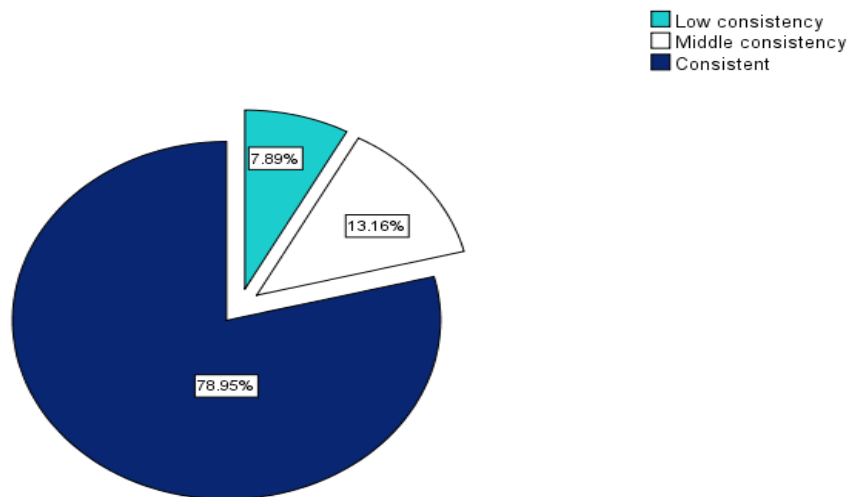


Figure 4.9: Consistency of Environments

Figure 4.9 shows the consistency between the academic degree programme and the current work environment. Figure 4.8 indicates that a majority (78.9%) of the respondents were consistent, while 13.2% had middle consistency and 7.9% were low in consistency. The results of this study support previous studies that explain why graduates find themselves in different fields from those they studied in college. Individuals who change jobs move to jobs more related to their interests. Thus they move to work environments that are congruent with their personalities (Donohue, 2014; Wilks, 2009). Moving from one environment to another could result in individuals searching for work environments that fit their personalities. As adults, the respondents may have moved to more congruent work environments, which explains the increase in those in conventional work environments from one in 2012 to eleven in 2023. The stability of personalities as a result of the maturity of the respondents may be a contributing factor whereby respondents get stability in careers as they mature with age (Donohue, 2014). During an interview Informant 006 said;

'I studied for a Bachelor's Degree in Social Work because it was my only option. I tried changing it, but I was not successful. I am already employed as a social worker,

but now I am looking for a scholarship to go back and study a course in medical laboratory technician because that is what I would like to be.'

Informant 006 studied a bachelor of education programme (social environment), but would like to change into medical laboratory technician (investigative field). The informant's willingness to study another programme was as a result of following their interests, this would lead into inconsistency between the studied degree and work environments.

In addition, some respondents were still changing from one career field to the other in search for stable careers or employment in their respective fields of study due to hard economic times (Contreras, *et. al.*, 2008; Rudakov *et al.*, 2019). In addition, one-third of Russian university graduates work in unrelated careers with their degree programmes due to lack of matching careers with their degree of study thus bringing about incongruence (Rudakov *et al.*, 2022). For example, Informant 005 said.

'I studied Education, Early Childhood Specialization. As you know, Early Childhood Education was devolved to the County Governments. I have been following up for employment opportunities as a teacher. I have a family that requires me to provide upkeep, which means I had to look for an alternative job. I picked whatever came my way just to put food on the table. I am in the transport industry at the moment'.

Informant 005 studied for a bachelor in education programme that was in the social environment but is currently in the transport occupation which is in a realistic environment as a result of lack of employment. The informant is forced to fit in an environment they didn't study, for the sake of earning the daily bread and supporting his family.

Incongruence between work and personality may also lead to inconsistency and vice-versa. This means that individuals may find themselves in a field that does not match with their personalities, thus moving to more congruent fields (Donohue, 2014). Informant 001 who moved from engineering to business in an effort to find a fit in the work environment. The Informant 001 moved from a realistic environment (engineering) to an enterprising environment (business) in a move to get a match between the work environment and their personality; consequently congruence, plays a significant role on the consistency of the work environment (Pio *et al.*, 2021).

Further, inconsistency may result from career decisions in the early stages of life. The decisions on career choices made in the early stages may result from other influences and not necessarily personal interests and personalities. For example, interests and decisions made early in life can be the result of parental demands and expectations of others (Hogan & Roberts, 2000; Wilks, 2009). The parents influenced Informant 001 degrees' program choice. Due to incongruence, the informant pursued to change the program (engineering) to one fitting his interests (enterprising). Furthermore, the career development is a continuous process in an individual, and it becomes more stable in adulthood as a result of both the effects of maturation and increasing opportunities to self-select environments, especially life experiences and environments at work (Nagy *et al.*, 2019; Wilks, 2009). Thus, individuals may end up changing careers with changes in their developmental stages to adulthood.

4.4.4.1 Gender and work environment

The gender distribution within the work environments indicated high numbers of female in social (19), enterprising (10) and in conventional (8) fields; and high male respondents in realistic (4), investigative (8) and artistic (3) work environments as shown in Figure 4.10.

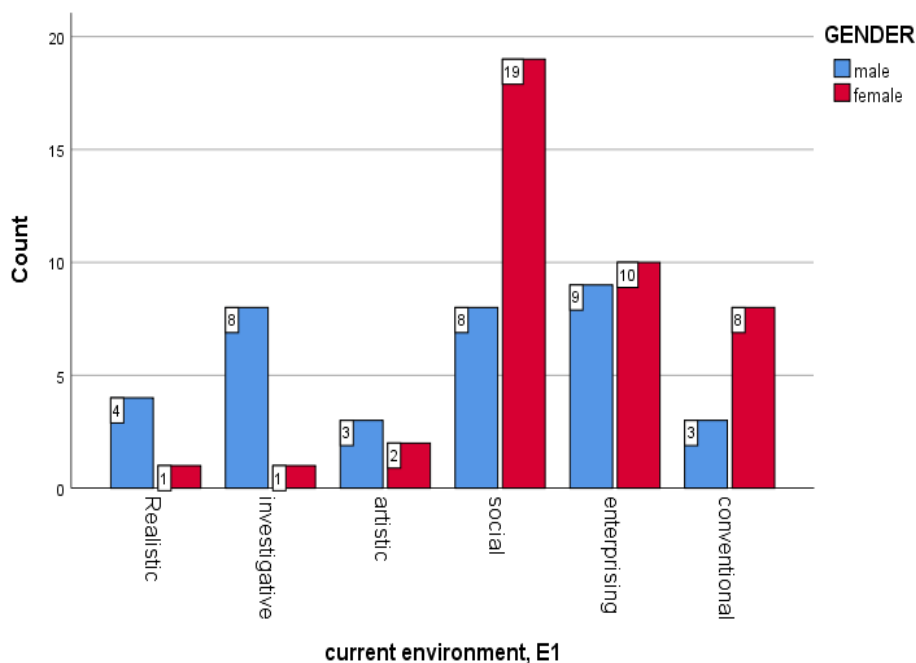


Figure 4.10: Distribution of Respondents' Work Environments by Gender

The results in Figure 4.10 imply that gender plays a vital role in the choice of work environment, with most females avoiding science-related fields. Studies have consistently shown that boys choose career fields that traditionally seem masculine, while girls choose those that seem feminine (Holland, 1997). Gender, therefore, remains significantly correlated with Hollands vocational classification (Gitonga, 2012; Holland, 2019; Smart *et al.*, 2006). Results of these studies revealed that there are high representations of males in realistic and investigative fields while females are highly represented in the social fields. Hostile work environments, discrimination and gender bias, may lead to the underrepresentation of women in male-dominated fields such as science and engineering. Thus, women may be pushed out of certain careers due to toxic climates (Xu & Zhao, 2020; Cha & Weeden, 2014).

4.4.4.2 Consistency and occupational satisfaction

The consistency of vocational environment was investigated in relation to occupational satisfaction as shown in Figure 4.11

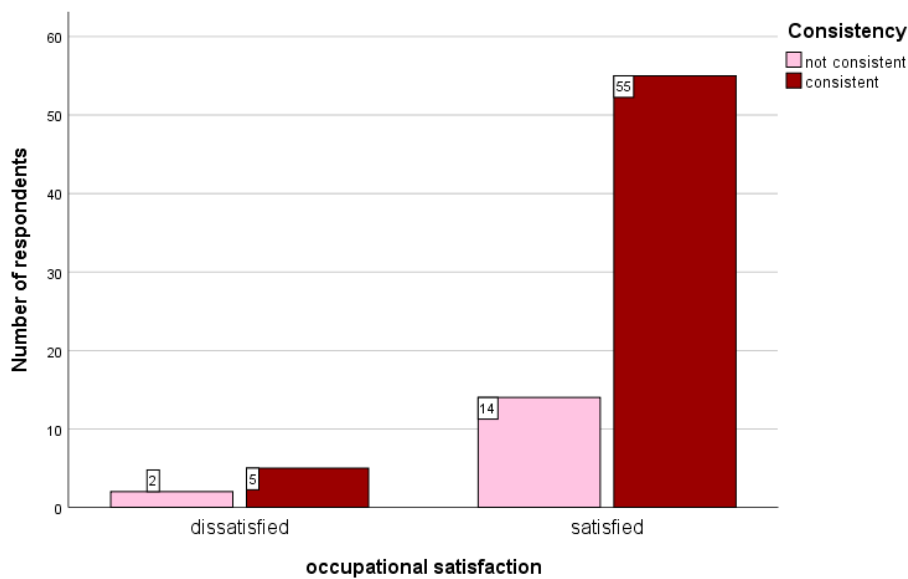


Figure 4.11: Consistency and Occupational Satisfaction

As shown in Figure 4.11, the majority of respondents (55) were both satisfied with their occupation and consistent in their career path. Additionally, 14 respondents reported being satisfied despite not being consistent. Among those who were dissatisfied, 5 had remained consistent, while only 3 were both dissatisfied and inconsistent. These findings indicate that occupational consistency is generally associated with higher satisfaction levels. A mismatch between one’s academic

qualifications and job placement can lead to underutilization of skills acquired during study, resulting in wasted human capital. Such mismatches often lead to negative outcomes, including wage penalties and reduced job satisfaction (Boudarbat & Chernoff, 2012). Consequently, the results support the argument that, when there is a misalignment between a person's academic background and their job role, career dissatisfaction may arise due to a lack of interest fit (Pio *et al.*, 2021; Ostroff & Zhan, 2012).

The lack of consistency in vocational environment may compel an individual to quit a certain work environment in search of an environment that matches with their skills and abilities, since the mismatch brings feelings of dissatisfaction. For example, Informant 005 who studied a Bachelor's Degree in Education ended up in transport, mentioned that, they were not happy and they were willing to go back to the teaching career if presented with the opportunity.

On the other hand, the respondents who were placed in consistent work environments were happy, for example Informant 020 had the following to say:

I studied for a Bachelor's Degree in Education, and I am currently teaching in one of the secondary schools. I love my job and I am happy working in this school. I would not change my career for anything, I love it that I mould students into great people in the society, I love my profession.

Informant 020 who undertook a degree programme in a social environment was working in a social environment and was happy. This was because the degree programme matched the informant's interests, abilities and skills matched with the work environment, this combination brought about satisfaction.

Those who cited dissatisfaction in their occupations cited other factors that have been found to influence satisfaction of employee by researchers. These factors include, incongruence (Holland, 1997), low pay, poor working conditions, lack of career progression and personality types (Badubi, 2017; Hee *et al.*, 2020; Gao, 2023; Sindhulakshmi, 2022).

4.5 Multicollinearity Test

The study conducted multicollinearity test on the data to test whether the variables were strongly related to each other. The results were tabled in Table 4.11

Table 4.11: Multicollinearity Test

Variables	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.150	.235		4.902	.000		
Persistency	-.089	.094	-.115	-.942	.349	.847	1.181
Congruence	-.018	.080	-.028	-.232	.817	.861	1.162
Choice of Occupation	-.192	.078	-.305	-2.456	.016	.824	1.213
Consistency	.035	.058	.073	.600	.551	.862	1.160

a. Dependent Variable: satisfaction level

The test results in Table 4.11 show that the VIF for persistency was 1.181, congruence was 1.162, choice of occupation was 1.213 and consistency was 1.160. The VIF values were less than five, thus indicating that there was no collinearity among the independent variables. According to Kumar, (2019), a tolerance of more than 0.5 indicates lack of collinearity amongst the independent variables Therefore, the study found out that there was no multicollinearity amongst the independent variables.

4.6 Hypothesis Testing

The testing of hypothesis was guided by the four specific objectives of the study, which were to:

1. Determine the relationship between persistency of Holland's personality types and occupational satisfaction in Kenya.
2. Examine the mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction in Kenya.
3. Examine the moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction in Kenya.

4. Assess the mediating effect of consistency on the relationship between Holland's personality types and occupational satisfaction in Kenya.

Subsequently, the four specific hypotheses were:

H01: There is no significant relationship between persistency of Holland's personality types and occupational satisfaction in Kenya.

H02: There is no significant mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction in Kenya.

H03: There is no significant moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction in Kenya.

H04: There is no significant mediating effect of consistency on the relationship between Holland's personality types and occupational satisfaction in Kenya.

4.6.1 Persistency of Hollands personality types and occupational satisfaction

The relationship was defined using the Spearman rho rank correlation as shown in Figure 3.2. The analysis results were as indicated in Table 4.12.

Table 4.12: Correlation Between Persistency and Occupational Satisfaction

			Persistency	Occupational satisfaction
Spearman's rho	Persistency	Correlation Coefficient	1.000	.701**
		Sig. (2-tailed)	.	.000
		N	76	76
		Occupational satisfaction	Correlation Coefficient	.701**
		Sig. (2-tailed)	.000	.
		N	76	76

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

Table 4.12 indicates that there exists a high positive significant ($R=0.701$, $P<0.05$) relationship between the persistency of Holland's personality types and occupational satisfaction. This implies that individuals whose personalities endure over time are more likely to be satisfied in their occupations as compare to the individuals whose personality types are not persistent

Therefore, the study rejected the null hypothesis that there is no significant relationship between persistency of Holland’s personality types and occupational satisfaction; thus supporting the alternative hypothesis that there is a significant relationship between persistency of Holland’s personality types and occupational satisfaction.

4.6.2 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), (*see Path C in Figure 3.3*), using Equation (3.4) and the results were presented in Table 4.13.

Table 4.13: Regression Analysis Between Personality Types and Occupational Satisfaction

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.373	.082	20.70	1	.000	1.45
Personality types	.127	.019	44.6	1	.000	1.14

a. Dependent Variable: Occupational satisfaction

Table 4.13 shows personality types as the independent variable and occupational satisfaction as the dependent variable. There is a positive significant relationship between personality types and occupational satisfaction (B=0.127, P<0.05). Thus, the first condition has been fulfilled as per Baron and Kenny approach.

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 as shown on Path A (*see Figure 3.3*) using Equation (3.5) and the results were presented 4.14

Table 4.14: Regression Analysis Between Personality Types and Congruence

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.283	.101	7.84	1	.000	1.33
Personality types	.243	.023	111.5	1	.000	1.28

a. Dependent Variable: Congruence

Table 4.14 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 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 (*see Path B in Figure 3.3*), using equation (3.6) and the results were presented in Table 4.15

Table 4.15: Regression Analysis Between Congruence and Occupational Satisfaction

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.650	.055	139.2	1	.000	1.92
Congruence	.350	.065	28.9	1	.000	1.42

a. Dependent Variable: Occupational satisfaction

Table 4.15 shows congruence as the independent variable and occupational satisfaction as the dependent variable. A positive significant relationship ($B= 0.350$, $P<0.005$) 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 applied to investigate the statistical significance of Holland's personality types and occupational satisfaction in the presence of congruence as the mediating variable (*see Path C in Figure 3.3*) using Equation 3.7. The regression model results were as shown in Table 4.16.

Table 4.16: Model Summary for Mediating Effect of Congruence on the Relationship Between Hollands Personality Types and Occupational Satisfaction

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6.620 ^a	.416	.851

From Table 4.16, using Nagelkerke R^2 (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 illustrated in Table 4.17

Table 4.17: Regression Analysis Between Personality Types and Occupational Satisfaction in Presence of Congruence

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.395	.087	20.61	1	.000	1.48
Congruence	.078	.096	0.66	1	.000	1.08
Personality types	.109	.030	12.96	1	.002	1.12

a. Dependent Variable: Occupational satisfaction

Table 4.17 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

Individuals are more likely to experience job satisfaction when their career aligns with their personality traits. According to Ahmed *et al.*, (2019) making the right career choice can lead to occupational satisfaction. Since personality influences career preferences, aligning one's career with their personality traits is likely to enhance job satisfaction. Conversely, a mismatch between the two can lead to dissatisfaction and uncertainty about one's career fulfillment. Moreover, (Xiao, *et al.*, 2021) posits that an individual's person-work fit determines their occupational satisfaction as well as their turnover intentions in case they are not satisfied with the occupation. Consequently, congruence brings about occupational satisfaction (Donohue, 2006; Holland, 2019). In addition, individuals working in environments that align with their personality tend to be more proactive, which enhances productivity and contributes to greater occupational satisfaction (Kim *et al.*, 2020).

4.5.3 The moderation effect of choice of work environment on the relationship between personality types and occupational satisfaction

The study conducted correlation analysis to establish the moderating effect of choice of work environment on the relationship between personality types and occupational satisfaction as shown in *Figure 3.2*, using Equation, 3.2.

In the moderating analysis, the researcher analyzed the effect of personality types on occupational satisfaction, the effect of choice of work environment on satisfaction, and the effect of the interaction of personality types and choice of work environment on occupational satisfaction, as shown in *Figure 4.12*

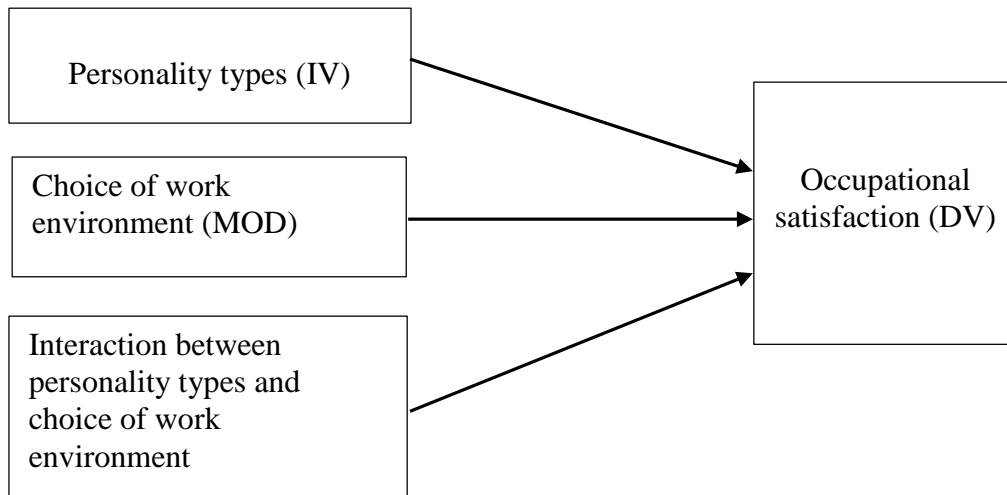


Figure 4.12: Moderating Effect on Independent and Dependent Variable

The results of the moderation effect of choice of work environment on the relationship between personality types and occupational satisfaction were as shown in Tables 4.18 and 4.19

Table 4.18: Model Summary of the Moderating Effect of Choice of Work Environment on the Relationship Between Holland’s Personality Types and Occupational Satisfaction

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	4.499 ^a	.426	.928

From Table 4.18, using Nagelkerke R Square (0.928) indicates that the model is capable of explaining up to 92.8% of variations when predicting occupational satisfaction using choice of work environment and personality types. Since it is high, the model is adequate, thus it was used and data was presented in Table 4.19

Table 4.19: Regression Analysis Model Between Personality Types and Occupational Satisfaction in Presence of Choice of Work Environment

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.499	.052	91.96	1	.000	1.65
Personality types	.304	.056	29.48	1	.001	1.36
Choice of work environment	.750	.059	161.5	1	.000	2.12
Personality-choice of work environment	.152	.045	11.42	1	.002	1.16

a. Dependent Variable: Occupational satisfaction

Table 4.19 shows that work environment has a positive significant effect on occupational satisfaction. Consequently, there is a positive relationship and is statistically significant at $p < 0.05$. Further, the interaction variable has a positive

significant relationship (0.002) on the dependent variable. Thus, choice of work environment has a moderating effect on the relationship between Hollands personality types and occupational satisfaction.

Therefore, the study rejected the null hypothesis there exists a moderation effect of choice of work environment at $p < 0.05$ on the relationship between Hollands personality types and occupational satisfaction.

Therefore, the study rejected the null hypothesis that there is no significant moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction, thus supporting the alternative hypothesis that there is a significant moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction.

4.6.4 The mediating effect of consistency on the relationship between personality types and occupational satisfaction

The effect was determined using Baron and Kenny (Otuya, 2019) approach. The respective equations were analyzed using logistic regression. The first step was to determine the effect of personality types (IV) on occupational satisfaction (DV), see *Figure 3.3*, Equation (3.4) and it was presented in Table 4.20.

Table 4.20: Regression Analysis Model Between Personality Types and Occupational Satisfaction

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.373	.082	20.69	1	.000	1.453
Personality types	.127	.019	44.62	1	.000	1.135

a. Dependent Variable: Occupational satisfaction

From Table 4.20, personality types have a positive significant effect on occupational satisfaction ($B=0.127$, $P < 0.05$). Thus, the first condition was fulfilled as per Baron and Kenny approach.

The second step was to determine the effect of personality types (IV) on consistency (MEV). The researcher treated the mediator (consistency) variable as a dependent variable as shown on Path A (*see Figure 3.3*) using Equation (3.5). The results were presented in Table 4.21.

Table 4.21: Regression Analysis Between Personality Types and Consistency

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.368	.073	15.52	1	.000	1.467
Personality types	.212	.023	84.82	1	.000	1.236

a. Dependent Variable: Consistency

Table 4.21 shows that, personality types have a positive significant effect ($B=0.212$, $P<0.05$) on consistency. This implies that majority of the respondents were consistent in their career choices, and personality types influence career choices. The second condition was fulfilled.

The third step, was to determine the effect of consistency (MEV) on occupational satisfaction (DV), (see Path B in Figure 3.3), using Equation (3.6). The results of the regression analysis are as shown in Table 4.22.

Table 4.22: Regression Analysis Between Consistency and Occupational Satisfaction

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.562	.058	93.89	1	.000	1.754
Consistency	.438	.065	45.43	1	.000	1.549

a. Dependent Variable: Occupational satisfaction

Table 4.22 shows consistency as the independent variable and occupational satisfaction as the dependent variable. There is a positive significant effect ($B= 0.438$, $P<0.05$) between consistency and occupational satisfaction. This implies that consistency impacts on occupational satisfaction. The more consistent an individual is, the more satisfied they are with their occupation. The third step was fulfilled.

The fourth step was to investigate the statistical effect of Holland's personality types and consistency on occupational satisfaction. In this case, the mediation variable is a full mediator if the relationship between independent and dependent variables does not differ from zero after the mediation variable is included in the model. It is a partial mediator if the relation between the independent and dependent variables is significantly smaller but greater than zero when the mediator variable is included (see Path C in Figure 3.3) using equation (3.7). The results were presented in Tables 4.23 and 4.24.

Table 4.23: Model Summary for the Mediating Effect of Consistency on the Relationship Between Hollands Personality Types and Occupational Satisfaction

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6.730 ^a	.409	.891

From Table 4.23, using Nagelkerke R Square (0.891) indicates that the model is capable of explaining up to 89.1% of variations when predicting occupational satisfaction using consistency and personality types. Since it is high, the model is adequate, thus it was used and data was presented in Table 4.24

Table 4.24: Regression Analysis Model Between Personality Types and Occupational Satisfaction with the Presence of Consistency

	B	S.E	Wald	df	Sig	Exp (B)
(Constant)	.397	.080	24.60	1	.000	1.487
Consistency	.245	.091	7.23	1	.001	1.278
Personality types	.076	.026	8.32	1	.002	1.078

a. Dependent Variable: Occupational satisfaction

Table 4.24 shows that personality types and consistency have a positive significant effect on occupational satisfaction ($B=0.245$, $B= 0.076$, $p<0.05$). Comparing the beta value in step 1 (0.127) and, the beta value in step 4 (0.076), shows that after controlling the factor mediator, the beta value is reduced. This means that there is a partial mediation effect, thus indicating that consistency partially mediates the relationship between Holland's personality types and occupational satisfaction.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The general purpose of this study was to examine if Holland's personality types and occupations remain persistent and congruent after graduation. In addition, the study also sought to find out if the respondents were satisfied with the occupations they were currently pursuing. Therefore, this chapter presents a summary of major findings in relation to the persistency of Hollands personality types, congruence, consistency, choice of work environment and occupational satisfaction in Kenya. The subsequent section covers the conclusions, which are derived from the results and findings of the study. The study suggests recommendations from the conclusions which can lead to interventions needed to bring about occupational satisfaction among employees. The study also recommends further areas of research in the field of occupations and personality types.

5.2 Summary of the findings

This section presents the summary of the study findings based on the specific objectives of the study:

- i. To determine the relationship between persistency of Holland's personality types and occupational satisfaction.
- ii. To examine the mediating effect of congruence on the relationship between Holland's personality types and occupational satisfaction.
- iii. To examine the moderating effect of choice of work environment on the relationship between Holland's personality types and occupational satisfaction.
- iv. To assess the mediating effect of consistency on the relationship between Holland's personality types and occupational satisfaction.

5.2.1 Persistency of Holland's Personality Types and Occupational Satisfaction

The study found out that Hollands personality types persist over time (82.9%) and that persistency influences individual's satisfaction in their occupations. The study revealed that the relationship between persistency of Hollands personality types and occupational satisfaction was positive and statistically significant ($r=0.701$, $P<0.05$). This indicates that the persistency of Hollands personality types influences how

employees feel about their job. The more persistent they are the more satisfied they are. Various factors may have contributed to the persistency of the personality types. This may include congruence of the individuals with their work (Nauta, 2010), and the fact that personality types are stable personality traits of an individual across lifespan (Wilks, 2009). Personality types of an individual endures over time to a great extent for some individuals but to others they keep changing (Boyce *et al.*, 2015; Nagy *et al.*, 2019). Furthermore, Personality changes throughout the life span, but with more noticeable changes in young and old ages, and that this change is partially attributable to social demands and experience (Sneed & Pimontel, 2012). The population was in the middle age thus their personality types were at a stable stage thus noticeable changes. The results imply the endurance of Hollands personality types influences the occupational satisfaction of individuals.

5.2.2 Mediating Effect of Congruence on the Relationship Between Holland's Personality Types and Occupational Satisfaction

The results of the study show that congruence plays a positive role in the relationship between Hollands personality types and occupational satisfaction. The study revealed that congruence had a positive significant effect ($r=0.628$, $p<0.05$) on the relationship between Hollands personality types and occupational satisfaction. This implies that the respondents were in work environments that were matching with their personality types. This means that they were in work environments that supported their interests and abilities. Furthermore, the findings suggest that individuals working in congruent environments experienced greater happiness and job satisfaction. Holland's theory (Nauta, 2010) argues that, a match between an individual's personality and their work environment brings about satisfaction. Consequently, congruence is a determining factor for the respondent's satisfaction with their occupations.

5.2.3 Moderating Effect of Choice of Work Environment on the Relationship Between Holland's Personality Types and Occupational Satisfaction

The findings of the study revealed that choice of work environment play a role in the relationship between Hollands personality types and occupational satisfaction. The study revealed choice of work environment had a positive significant effect on the relationship between Hollands personality types and occupational satisfaction ($r=0.002$; $p<0.05$). This implies that individuals who choose careers that are in line

with their personality types are more satisfied than those who choose careers that do not match with their personalities. As such, satisfied employees are found to be more productive in an organization (Andoh *et al.*, 2021; Velciu, 2017). It is also an indication that when interests of employees are in line with the job and tasks, the employ derive joy in accomplishing the tasks (Rababah, 2019; Said *et al.*, 2017).

5.2.4 Mediating Effect of Consistency on the Relationship Between Holland's Personality Types and Occupational Satisfaction

The findings of the study indicate that consistency play a role in the relationship between Hollands personality types and occupational satisfaction. The study revealed consistency had a positive significant effect ($r=0.666$, $p<0.005$) on the relationship between Hollands personality types and occupational satisfaction. This implies that endurance of career choices influences individual's levels of satisfaction. Consistency of career choices meant that the individuals degree programmes had endured over time and that the individuals were satisfied with their occupations.

The career choices made during the college years through the choice of degree programmes were found to endure over time. This was seen with the respondents choosing work environments that are similar with their academic degrees.

5.3 Conclusion

The research investigated the persistency of Holland's personality types, congruence and consistency of occupations and occupational satisfaction. The study came to the following conclusions based on its findings:

The study established that Holland's personality types persist over time. The personality types tested in 2012 had remained the same over time. The persistency of the personality types was also found to influence occupational satisfaction. The more persistent an individual's personality was, the more satisfied they were with their occupation. Thus, the study concludes that persistency of personality types influences occupational satisfaction.

Based on the findings of the study, congruence of personality types persists over time. Moreover, a match between personality types and work environment (congruence) brings about satisfaction among the employees. Therefore, the study concludes that employee congruence is a determining factor influencing occupational satisfaction.

The choice of work environment plays a significant role in an employee's occupational satisfaction. The study therefore concludes that choice of work environment moderates the relationship between personality types and occupational satisfaction.

Finally, the study found out that career choices made in early stages of life endure over a long period of time. Additionally, consistency mediates the relationship between personality types and occupational satisfaction. The study concludes that consistency of career choices influences occupational satisfaction.

Previous studies indicate that there is a direct link between personality types and occupational satisfaction; congruence and occupational satisfaction; career choice and occupational satisfaction. The findings of this study show the relationship between persistency of personality types and occupational satisfaction; congruence and consistency as a mediating factors on the relationship between personality types and occupational satisfaction; and choice of work environment as a moderating factor on the relationship between personality types and occupational satisfaction. Furthermore, the study concludes that personality types and career choices endure after completion of college degree.

5.4 Implications of the Study

The study's findings provide support for Holland's theory and its application. The results indicate that individuals can be classified into six distinct personality types, aligning with six corresponding work environments (RIASEC) as per Holland's theory. Furthermore, the study reveals that majority of individuals were in work environments that matched their personality types during the initial study (2012) and continued to maintain this congruence ten years' post-graduation. Their personality types also showed consistency over time. Those whose personality types remained persistent; career choices remained congruent, and consistent reported higher satisfaction with their occupations, consistent with Holland's assertion that a well-matched work environment enhances individual satisfaction.

These findings suggest significant implications for research and policy based on Holland's theory in career guidance, occupational counseling, and employee recruitment. Globally, some countries already utilize Holland's theory in career guidance, and its adoption in Kenya's Ministry of Education could enhance career

counselors' ability to align students' personalities with suitable work environments. The current Competency Based Curriculum (CBC) education system in Kenya would benefit from the study by using the Holland SDS too to classify students into their personalities and further match them with their interests. This would ensure that the career pathways are done based on the students' interests.

Employers in various organizations could also benefit by matching job roles and responsibilities to individual's personality types. This study confirms the feasibility of identifying individuals' personality types and placing them in appropriately matched work environments, thereby offering a systematic approach to classifying individuals and improving both job satisfaction and organizational productivity.

5.4 Recommendations

The findings of this study provide empirical data in areas related to personality types, career choices, occupational congruence, consistency and satisfaction. Thus, the findings can have important implications for policy makers in institutions of learning, career counselors and employers. Based on the findings in this study, the following recommendations were made:

1. Holland's classification of personality types and occupations can be used as a tool to categorize individuals into various personality types and further match them into work environments based on their interests. This would make it easy for individuals to understand themselves better and their matching careers
2. The Ministry of Education should ensure that schools and institutions of higher learning are equipped with career guidance tools and materials so as to ensure that students make choices on their careers based on informed decision because career choices made in early stages persist over time. Also career guidance should start early in life to allow students to be well versed with information. Hollands classification can be used as a tool for career guidance to match students' personality types with corresponding academic programmes.
3. Organizations should check the personalities of individuals during recruitment to ensure congruence, which leads to occupational satisfaction. The Hollands classification allows the employers to understand employee's

personalities and their interests thus placing them to congruent environments. While assigning duties and responsibilities, the match between the individual's interest on the assignment should be considered since it can lead to satisfaction by the employee thus increasing productivity.

4. Organizations should also consider the academic degrees and the available position and responsibility during recruitment, since a mismatch of academic degree and the work environment may lead to dissatisfaction thus influencing productivity.

5.5 Suggestions for Further Research

From the findings, limitations and delimitations of this study, the researcher suggests further research on the following:

1. A similar study should be conducted at the intervals of 5 years so that data collected can provide the trends in persistency of personality types and consistency of career choices over time.
2. It would also be useful to carry out similar study but with a larger population over a period of time so as to ascertain the reliability and validity of Hollands SDS tool among the Kenyan population.
3. 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 inconsistent cases between the academic degree and work environment.

REFERENCES

- Agbanobi, E. (2021). Impact of Career Selection on Job Satisfaction. *Modul Biokimia Materi Metabolisme Lemak, Daur Asam Sitrat, Fosforilasi Oksidatif Dan Jalur Pentosa Fosfat, March*, 6.
- Ahmed, S., Ahmed, A., & Salahuddin, T. (2019). How RIASEC personality traits crystallizes occupational preferences among adolescents: Match or mismatch. *Pakistan Journal of Commerce and Social Science*, 13(4), 976–996.
- Alkhelil, A. H. (2016). 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*, 5(2). <https://doi.org/10.6007/ijarped/v5-i2/2132>
- Almalki, S. (2016). Integrating Quantitative and Qualitative Data in Mixed Methods Research—Challenges and Benefits. *Journal of Education and Learning*, 5(3), 288. <https://doi.org/10.5539/jel.v5n3p288>
- Andoh, S. S., Ghansah, B., Okogun-Odompley, J. N., & Benuwa, B.-B. (2021). The Effect of Job Satisfaction on Turnover Intentions. *International Journal of Risk and Contingency Management*, 10(1), 20–35. <https://doi.org/10.4018/ijrcm.2021010103>
- Andrews, J. (2019). Book Review – Research Methods in the Social Sciences, by Chava Frankfort-Nachmias, David Nachimas and Jack De Waard (8th Edition). *Journal of Population Ageing*, 12(2), 195–198. <https://doi.org/10.1007/s12062-017-9191-5>
- Babbie, E. R. (2020). *The practice of social research*. Cengage Au.
- Badubi R. (2017). Theories of Motivation and Their Application in Organizations: A Risk Analysis. *International Journal of Innovation and Economic Development*, 3(3), 44–51. <https://doi.org/10.18775/ijied.1849-7551-7020.2015.33.2004>
- Balasureya, B. L. L. ., & Perera, D. (2016). The Impact of Personality on Job Satisfaction: A Study of Executive Employees in Selected Private Hospitals in Colombo East, Sri Lanka. *Journal Of Business Management*, 2(12), 7–15.
- Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Psychological and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1177/1350506818764762>
- Bishop, C. L. (2013). Psychosocial Stages of Development. *The Encyclopedia of Cross-Cultural Psychology*, February, 1055–1061. <https://doi.org/10.1002/9781118339893.wbeccp441>
- Bleidorn, W., Hopwood, C. J., Back, M. D., Denissen, J. J. A., Hennecke, M., Hill, P. L., Jokela, M., Kandler, C., Lucas, R. E., Luhmann, M., Orth, U., Roberts, B. W., Wagner, J., Wrzus, C., & Zimmermann, J. (2021). Personality trait stability and change. *Personality Science*, 2, 1–20. <https://doi.org/10.5964/ps.6009>
- Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2018). Life Events and Personality Trait Change. *Journal of Personality*, 86(1), 83–96. <https://doi.org/10.1111/jopy.12286>
- Bleidorn, W., Schwaba, T., Zheng, A., Hopwood, C. J., Sosa, S. S., Roberts, B. W., & Briley, D. A. (2022). Personality Stability and Change: A Meta-Analysis of Longitudinal Studies. *Psychological Bulletin*, 148(7–8), 588–619. <https://doi.org/10.1037/bul0000365>
- Boudarbat, B., & Chernoff, V. (2012). Education-job match among recent Canadian university graduates. *Applied Economics Letters*, 19(18), 1923–1926.

- <https://doi.org/10.1080/13504851.2012.676730>
- Boyce, C. J., Wood, A. M., Daly, M., & Sedikides, C. (2015). Personality change following unemployment. *Journal of Applied Psychology, 100*(4), 991–1011. <https://doi.org/10.1037/a0038647>
- Brown, J., Ferrians, J. O. J., Heginbottom, J. A., & Melnikov, E. S. (1997). Holland's theory of vocational personalities and work environment applied to students majoring in family and consumer sciences. In *Icassp* (Vol. 21, Issue 3). Texas Tech University.
- Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease, 7*(11), E537–E540. <https://doi.org/10.3978/j.issn.2072-1439.2015.10.63>
- Cha, Y., & Weeden, K. A. (2014). Overwork and the Slow Convergence in the Gender Gap in Wages. *American Sociological Review, 79*(3), 457–484. <https://doi.org/10.1177/0003122414528936>
- Chauvin, I. A., & Miller, M. J. (2009). Congruency Between a Traditional and an Online Career Assessment Among Undergraduate Students Using the Brown and Gore Index. *Psychology Journal, 6*(1), 2–6. <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=37247482&site=ehost-live>
- Chourasiya, A., & Agrawal, V. (2019). *A Comparative Analysis of Age Based Career Stage Models Needs and Characteristics at Various Career Stages. 6*(2), 87–91.
- Cohen, R. and Swerdlik. M. (2009). *Psychological Testing and Assessment: An Introduction to Tests and Measurement* (7th ed.).
- Contreras, D., Gillmore, R., & Puentes, E. (2017). Self-Employment and Queues for Wage Work: Evidence from Chile. *Journal of International Development, 29*(4), 473-499.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). SAGE Publications, Inc.
- Deng, C. P., Armstrong, P. I., & Rounds, J. (2007). The fit of Holland's RIASEC model to US occupations. *Journal of Vocational Behavior, 71*(1), 1–22. <https://doi.org/10.1016/j.jvb.2007.04.002>
- Donohue, R. (2006). Person-environment congruence in relation to career change and career persistence. *Journal of Vocational Behavior, 68*(3), 504–515. <https://doi.org/10.1016/j.jvb.2005.11.002>
- Donohue, R. (2014). Holland's constructs in relation to career persistence and career change: A study of Australian managerial and professional workers. *Australian Journal of Management, 39*(2), 167–189. <https://doi.org/10.1177/0312896213501179>
- Farla, W., Baharudin, Diah, Y. M., & Hadjri, M. I. (2020). *Individual Career and Employee Career Satisfaction. 142*(Seabc 2019), 367–370. <https://doi.org/10.2991/aebmr.k.200520.061>
- Gao, S. (2023). *Analysis of Maslow's Hierarchy Theory in Today's Team Management. 1106–1112.* https://doi.org/10.2991/978-94-6463-098-5_124
- Ghaleb, B. D. S. (2024). The Relationship between Career Selection and Career Satisfaction. *Journal of Business Management and Economic Development, 2*(03), 1045–1056. <https://doi.org/10.59653/jbmed.v2i03.851>
- Gitonga, C. (2012). *The relationship between holland's personality types, gender, congruence and satisfaction with degree programmes among third year students.* Kenyatta University
- Gitonga C., Kigen E., Orodho, J., Wangeri, T. (2012). *The relationship between*

- Holland's personality types, gender, congruence and satisfaction with degree programme among third year students.* Kenyatta University.
- Gitonga C., Rukangu S., Orodho, J., Wang'eri T., & Kigen E. (2014). Is the choice of a degree program a factor of personality types and degree of congruence. *IOSR Journal of Humanities and Social Science*, 19(2), 49–54. <https://doi.org/10.9790/0837-19254954>
- Hee, O. C., Shi, C. H., Kowang, T. O., Fei, G. C., & Ping, L. L. (2020). Factors influencing job satisfaction among academic staffs. *International Journal of Evaluation and Research in Education*, 9(2), 285–291. <https://doi.org/10.11591/ijere.v9i2.20509>
- Hogan, R. T., & Roberts, B. W. (2000). *A socioanalytic perspective on person/environment interaction.* In W. B. Walsh, K. H. Craik, & R. H. Price (Eds.), *New directions in person-environment psychology* (pp. 1–24). Erlbaum.
- Holland, J. L., Powell, A. B., & Fritzsche, B. A. (1994). *The self-directed search technical manual.* Psychological Assessment Resources.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Psychological assessment resources.
- Holland, John L. (2019). Holland 's theory of career choice. *Career New Zealand*, 2. www.career.govt.nz
- Hopwood, C. J., Bleidorn, W., & Zimmermann, J. (2022). Assessing Personality Change: Introduction to the Special Section. *Journal of Personality Assessment*, 104(4), 431–434. <https://doi.org/10.1080/00223891.2022.2041650>
- Hwang, Y. (2017). What Is the Cause of Graduates' Unemployment? Focus on Individual Concerns and Perspectives. *Journal of Educational Issues*, 3(2), 1. <https://doi.org/10.5296/jei.v3i2.11378>
- Ishtiaq, M. (2019). Book Review Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage. *English Language Teaching*, 12(5), 40. <https://doi.org/10.5539/elt.v12n5p40>
- Jalal, R., Zeb, N., & Fayyaz, U. (2019). The effect of personality traits on employee job satisfaction with moderating role of islamic work ethics. *Journal of Asian Finance, Economics and Business*, 6(2), 161–171. <https://doi.org/10.13106/jafeb.2019.vol6.no2.161>
- Kabir, T., & Sajib, M. R. H. (2014). Do Personality Traits Influence Career Decisions in Bangladesh? - A Study on Undergraduate Business Students of Different Public and Private Universities. *ASA University Review*, 8(1), 109–127. <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=116393425&site=ehost-live>
- Kalleberg, A. L. (2008). The mismatched worker: When people don't fit their jobs. *Academy of Management Perspectives*, 22(1), 24–40. <https://doi.org/10.5465/AMP.2008.31217510>
- Kang, J., & Keinonen, T. (2017). Gender Differences in Relationships Between Science Interest and Future Career Perspectives. *ESERA 2017 Conference*, 17(2), 30–40.
- Kemboi, R. J. K., Kindiki, N., & Misigo, B. (2016). Relationship between Personality Types and Career Choices of Undergraduate Students: A Case of Moi University, Kenya. *Journal of Education and Practice*, 7(3), 102–112.
- Kim, K. (2015). On the Method: Quantitative Reasoning and Social Science. *SSRN Electronic Journal*, August. <https://doi.org/10.2139/ssrn.2595633>
- Kim, M., Baek, S., & Shin, Y. (2020). The effect of the congruence between job

- characteristics and personality on job crafting. *International Journal of Environmental Research and Public Health*, 17(1), 1–20. <https://doi.org/10.3390/ijerph17010052>
- Kothari, C. R. (2014). *Reserach Methodology: Methods and Techniques* (2nd revision). New Age International (P) Ltd.
- Kumar, R. (2019). Reaserch Methodology: A step by step guide for beginners. In *Sustainability (Switzerland)* (Vol. 11, Issue 1). http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbe.co.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_sistem_pembetulan_terpusat_strategi_melestari
- Koutroubas V., & Galanakis M. (2022). Bandura’s Social Learning Theory and Its Importance in the Organizational Psychology Context. *Journal of Psychology Research*, 12(6), 315–322. <https://doi.org/10.17265/2159-5542/2022.06.001>
- Mandelman, F. S., & Montes-Rojas, G. V. (2009). Is Self-employment and Micro-entrepreneurship a Desired Outcome? *World Development*, 37(12), 1914–1925. <https://doi.org/10.1016/j.worlddev.2009.05.005>
- Nagrath, G., & Gupta, A. (2018). A Study on Holland’S Personality Types and Employment Realities- an Empirical Evidence. *Indian Journal of Training and Development*, 48(1), 34–43.
- Nagy, N., Froidevaux, A., & Hirschi, A. (2019). Lifespan perspectives on careers and career development. In *Work Across the Lifespan* (Issue March). <https://doi.org/10.1016/B978-0-12-812756-8.00010-4>
- Nauta, M. M. (2010). The Development, Evolution, and Status of Holland’s Theory of Vocational Personalities: Reflections and Future Directions for Counseling Psychology. *Journal of Counseling Psychology*, 57(1), 11–22. <https://doi.org/10.1037/a0018213>
- Ostroff, C., & Zhan, Y. (2012). Person-Environment Fit in the Selection Process. *The Oxford Handbook of Personnel Assessment and Selection*, October. <https://doi.org/10.1093/oxfordhb/9780199732579.013.0012>
- Otuya, W. (2019). Kenny and Baron 4 Step Analysis (1986): A case of employee job satisfaction as a mediator between ethical climate and performance among sugarcane transport SME’s in western Kenya. *Journal of Economics and Sustainable Development*, 10(14), 108–118. <https://doi.org/10.7176/JESD>
- Pardoa, B. C., & Ruiz-Tagle, J. (2017). The dynamic role of specific experience in the selection of self-employment versus wage-employment. *Oxford Economic Papers*, 69(1), 189–212. <https://doi.org/10.1093/oenp/gpw047>
- Pio, L., Cavaliere, L., Poddar, A., Poddar, S., Patel, V. B., Kurabayala, P., Chakravarthi, M. K., Regin, R., & Rajest, S. S. (2021). *The Impact of Employees’ Personality on the Organizational Performance: Studying the Five Dimensions of Personality*. 12(7), 9527–9554.
- Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, 36(1), 94–120. <https://doi.org/10.1177/0149206309352110>
- Rababah, N. M. (2019). 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*, 04(11), 839–848. <https://doi.org/10.36348/sjbms.2019.v04i11.004>
- Ramadhani, E., Jannah, A. T., & Putri, R. D. (2020). Analysis of Holland Theory Career Guidance in Student Career Planning. *ENLIGHTEN (Jurnal Bimbingan*

- Dan Konseling Islam*), 3(1), 19–25. <https://doi.org/10.32505/enlighten.v3i1.1492>
- Robst, J. (2007). Education and job match: The relatedness of college major and work. *Economics of Education Review*, 26(4), 397–407. <https://doi.org/10.1016/j.econedurev.2006.08.003>
- Rudakov, V., Figueiredo, H., Teixeira, P., & Roshchin, S. (2019). The Impact of Horizontal Job-Education Mismatches on the Earnings of Recent University Graduates in Russia. *Ssrn*, 12407.
- Rudakov, V., Figueiredo, H., Teixeira, P., & Roshchin, S. (2022). Horizontal job-education mismatches and earnings of university graduates in Russia. *Journal of Education and Work*, 35(6–7), 680–699. <https://doi.org/10.1080/13639080.2022.2126966>
- Said, H. M., Khamisabukraa, M., & Rose, R. M. (2017). The Relationship between Personality and Job Satisfaction among Employees in Libyan Oil and Gas Company. *American Research Journal of Business Management*, 1, 18–24. <https://doi.org/10.21694/2379-1047.15010>
- Schober, P., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia and Analgesia*, 126(5), 1763–1768. <https://doi.org/10.1213/ANE.0000000000002864>
- Shane, J., & Heckhausen, J. (2019). Motivational theory of lifespan development. *Work Across the Lifespan*, 111–134. <https://doi.org/10.1016/B978-0-12-812756-8.00005-0>
- Silverstein, M. J., & Sayre, K. (2009). The female economy. *Harvard Business Review*, 87(9).
- Sindhulakshmi, B. (2022). Job satisfaction and big five personality – correlational study. *International Journal of Creative Reserach Thoughts*, 10(1), 549–553.
- Sloane, P. (2014). Overeducation, skill mismatches, and labor market outcomes for college graduates. *IZA World of Labor*, November, 1–10. <https://doi.org/10.15185/izawol.88>
- Smart, J. C., Feldman, K. A., & Ethington, C. A. (2006). Holland’s theory and patterns of college student success commissioned report for the national symposium on postsecondary student success: spearheading a dialog on student success. *Nationa Postsecodary Education Cooperative (NPEC)*, July, 1–17. https://nces.ed.gov/npec/pdf/Smart_Team_Report.pdf
- Smith, W. G. (2008). Does gender influence online survey participation? A record-linkage analysis of university faculty online survey response behavior. *Eric Ed501717*, 1–21. <http://files.eric.ed.gov/fulltext/ED501717.pdf>
- Sneed, J. R., & Pimontel, M. A. (2012). Journal watch review of stability and change of personality across the life course: the impact of age and major life events on mean-level and rank-order stability of the Big Five. *Journal of the American Psychoanalytic Association*, 60(5), 1057–1059. <https://doi.org/10.1177/0003065112459954>
- Sokro, E., Osei-Bonsu, N., Agbola, R. M., & Ankrah, E. (2011). The Impact of Career Choice on Job Satisfaction among Employees in Ghana. *Indian Journal of Commerce & Management Studies*, 2(6), 83–88. www.scholarshub.net
- Somers, M. A., Cabus, S. J., Groot, W., & van den Brink, H. M. (2019). Horizontal Mismatch Between Employment and Field of Education: Evidence From a Systematic Literature Review. *Journal of Economic Surveys*, 33(2), 567–603. <https://doi.org/10.1111/joes.12271>
- Soto, C. J. (2021). 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*, 12(1), 118–130. <https://doi.org/10.1177/1948550619900572>
- Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and Change of Personality Across the Life Course: The Impact of Age and Major Life Events on Mean-Level and Rank-Order Stability of the Big Five. *Journal of Personality and Social Psychology*, 101(4), 862–882. <https://doi.org/10.1037/a0024950>
- Spokane, A. R., & Nguyen, D. (2016). Progress and Prospects in the Evaluation of Career Assistance. *Journal of Career Assessment*, 24(1), 3–25. <https://doi.org/10.1177/1069072715579665>
- Spokane, A. R., Moya, M., & Faris, E. (2017). Vocational personalities in work environments: Perspectives on Holland's theory. *Career psychology in the South African context*, 49-66.
- Sun, X., & Sun, T. (2021). Research on Lifelong Education Based on Erikson's Psychosocial Development Theory. *Proceedings of the 2021 6th International Conference on Modern Management and Education Technology MMET 2021*, 582(Mmet), 267–270. <https://doi.org/10.2991/assehr.k.211011.047>
- Tarsianer, M. P., Ciriaka, M. G., & Kaberia, I. K. (2021). Influence of personality types, instructional supervision practices, and performance in public primary schools in Kenya. *Educational Research and Reviews*, 16(2), 27–39. <https://doi.org/10.5897/err2020.4108>
- Tornroos, M., Jokela, M., & Hakulinen, C. (2019). The relationship between personality and job satisfaction across occupations. *Personality and Individual Differences*, 145, 82–88. <https://doi.org/10.1016/j.paid.2019.03.027>
- Tracey, T. J. G., Wille, B., Durr, M. R., & De Fruyt, F. (2014). An enhanced examination of Holland's consistency and differentiation hypotheses. *Journal of Vocational Behavior*, 84(3), 237–247. <https://doi.org/10.1016/j.jvb.2014.01.008>
- Trivedi, A. J., & Metha, A. (2019). Maslow's Hierarchy of Needs. A Theory of Human Motivation. Psychological. *International Journal of Research in All Subjects in Multi Languages*, 7(6), 38–41. <http://kalyan-city.blogspot.com/2010/06/maslow-hierarchy-of-needs-theory-of.html>
- Umesh K. B. D., & Kothari, D. P. (2022). *Research Methodology: Techniques and Trends*. Chapman and Hall/CRC. <https://doi.org/10.1201/9781315167138>
- Velciu, M. (2017). Job Mismatch – Effects on Work Productivity. *SEA – Practical Application of Science*, V(15), 395–398.
- Wagner, J., Orth, U., Bleidorn, W., Hopwood, C. J., & Kandler, C. (2020). Toward an Integrative Model of Sources of Personality Stability and Change. *Current Directions in Psychological Science*, 29(5), 438–444. <https://doi.org/10.1177/0963721420924751>
- Wang'eri, T., & Karanja, R. N. (2018). Extent of Students' Knowledge of their Personality Traits, and Career Information in Career Aspirations Among Secondary School Students in Kiambu County, Kenya. *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 5(5), 61–70. www.ijiras.com
- Waruita, A., Thurair, S., Karuku, S. (2018). *Student Social Identity and the University Image: A Case of Selected Public Universities in Kenya*. 5, 779–795. <https://doi.org/10.36347/sjahss.2017.v05i07.023>
- Wilks, L. (2009). The stability of personality over time as a function of personality trait dominance. *Personality and Individual Differences*, 1, 1–9.
- Wille, B., Tracey, T. J. G., Feys, M., & De Fruyt, F. (2014). A longitudinal and multi-

- method examination of interest-occupation congruence within and across time. *Journal of Vocational Behavior*, 84(1), 59–73. <https://doi.org/10.1016/j.jvb.2013.12.001>
- Wolniak, G. C., & Pascarella, E. T. (2005). The effects of college major and job field congruence on job satisfaction. *Journal of Vocational Behavior*, 67(2), 233–251. <https://doi.org/10.1016/j.jvb.2004.08.010>
- Xiao, Y., Dong, M., Shi, C., Zeng, W., Shao, Z., Xie, H., & Li, G. (2021). Person–environment fit and medical professionals’ job satisfaction, turnover intention, and professional efficacy: A cross-sectional study in Shanghai. *PLoS ONE*, 16(4 April 2021), 1–14. <https://doi.org/10.1371/journal.pone.0250693>
- Xu, W., & Zhao, S. (2020). The Influence of Entrepreneurs’ Psychological Capital on Their Deviant Innovation Behavior. *Frontiers in Psychology*, 11(August), 1–10. <https://doi.org/10.3389/fpsyg.2020.01606>
- Zainudin, Z. N., Rong, L. W., Nor, A. M., Yusop, Y. M., & Othman, W. N. W. (2020). The relationship of holland theory in career decision making: A systematic review of literature. *Journal of Critical Reviews*, 7(9), 884–892. <https://doi.org/10.31838/jcr.07.09.165>

APPENDICES

Appendix A: Questionnaire for the Participants

Introduction

I am a student at the University of Embu pursuing a Doctor of Philosophy (PhD) degree in Education. I am conducting a longitudinal study on Persistency of Holland's personality types, occupational congruence, consistency, career choices and job satisfaction in Kenya. The focus of my research is on the persistence of career choices made during the early stages of life.

You have been selected to participate in this study because you were part of the initial research conducted in 2012 when you were a student at Kenyatta University. At that time, the researcher indicated that a follow-up study would be conducted in the future. This current study is therefore, a continuation of that 2012 research. Your experiences will provide valuable insights and greatly contribute to the findings of this study.

Kindly complete the questionnaire by ticking the appropriate responses and filling in the blank spaces where necessary. Do not write your name on the questionnaire. Please answer honestly, and all information you provide will be treated with strict confidentiality.

SECTION A: Demographic Data *(Please tick one)*

1. Gender

Male []

Female []

2. Age bracket

30-34 []

35-40 []

Above 40 []

3. Nature of occupation

Employed []

Business []

None []

4. Degree programme studied in 2012. Eg, BSc Agriculture, B.Ed Arts

.....

5. Current occupation. E.g teacher, engineer,

.....

SECTION B: Personality Types

Indicate those activities that you like by checking "Like" "L," and for those activities, you dislike by checking "Dislike" "D."

R	L	D
Fix electrical things	<input type="checkbox"/>	<input type="checkbox"/>
Repair cars	<input type="checkbox"/>	<input type="checkbox"/>
Fix mechanical things	<input type="checkbox"/>	<input type="checkbox"/>
Build things with wood	<input type="checkbox"/>	<input type="checkbox"/>
Take a Technology Education (e.g., Industrial Arts, Shop) course	<input type="checkbox"/>	<input type="checkbox"/>
Take a mechanical drawing course	<input type="checkbox"/>	<input type="checkbox"/>
Take woodworking course	<input type="checkbox"/>	<input type="checkbox"/>
Take an Auto Mechanic or technician	<input type="checkbox"/>	<input type="checkbox"/>
Work with an outstanding mechanical or technician	<input type="checkbox"/>	<input type="checkbox"/>
Work outdoors	<input type="checkbox"/>	<input type="checkbox"/>
Operate motorized machines or equipment	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	
I	L	D
Read scientific books or magazines	<input type="checkbox"/>	<input type="checkbox"/>
Work in a research office or laboratory	<input type="checkbox"/>	<input type="checkbox"/>
Work on a scientific project	<input type="checkbox"/>	<input type="checkbox"/>
Study a scientific theory	<input type="checkbox"/>	<input type="checkbox"/>
Work with chemicals	<input type="checkbox"/>	<input type="checkbox"/>
Apply mathematics to practical problems	<input type="checkbox"/>	
Take a Physics course	<input type="checkbox"/>	<input type="checkbox"/>
Take a Chemistry course	<input type="checkbox"/>	<input type="checkbox"/>
Take a Mathematics course	<input type="checkbox"/>	<input type="checkbox"/>
Take a Biology course	<input type="checkbox"/>	<input type="checkbox"/>
Study scholarly or technical problems	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	

A	L	D
Sketch, draw, or paint	<input type="checkbox"/>	<input type="checkbox"/>
Design furniture, clothing, or posters	<input type="checkbox"/>	<input type="checkbox"/>
Play in a band, group, or orchestra	<input type="checkbox"/>	<input type="checkbox"/>
Practice musical instrument	<input type="checkbox"/>	<input type="checkbox"/>
Create portraits or photographs	<input type="checkbox"/>	<input type="checkbox"/>
Write novels or plays	<input type="checkbox"/>	<input type="checkbox"/>
Take an Art course	<input type="checkbox"/>	<input type="checkbox"/>
Arrange or compose music of any kind	<input type="checkbox"/>	<input type="checkbox"/>
Work with a gifted artist, writer, or sculptor	<input type="checkbox"/>	<input type="checkbox"/>
Perform for others (dance, sing, act, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Read artistic, literacy, or musical articles	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	<input type="checkbox"/>
S	L	D
Meet important educators or therapists	<input type="checkbox"/>	<input type="checkbox"/>
Read sociology articles or books	<input type="checkbox"/>	<input type="checkbox"/>
Work for a charity	<input type="checkbox"/>	<input type="checkbox"/>
Help others with their problems	<input type="checkbox"/>	<input type="checkbox"/>
Study juvenile delinquency	<input type="checkbox"/>	<input type="checkbox"/>
Read psychology articles or books	<input type="checkbox"/>	<input type="checkbox"/>
Take Human Relations course	<input type="checkbox"/>	<input type="checkbox"/>
Teach in high school	<input type="checkbox"/>	<input type="checkbox"/>
Supervise activities for the mentally ill patient	<input type="checkbox"/>	<input type="checkbox"/>
Teach adults	<input type="checkbox"/>	<input type="checkbox"/>
Work as a volunteer	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	<input type="checkbox"/>
E	L	D
Learn strategies for business success	<input type="checkbox"/>	<input type="checkbox"/>
Operate my service or business	<input type="checkbox"/>	<input type="checkbox"/>
Attend sales conferences	<input type="checkbox"/>	<input type="checkbox"/>
Take a short course on administration or leadership	<input type="checkbox"/>	<input type="checkbox"/>

Serve as an officer of any group	<input type="checkbox"/>	<input type="checkbox"/>
Supervise the work of others	<input type="checkbox"/>	<input type="checkbox"/>
Meet important executives and leaders	<input type="checkbox"/>	<input type="checkbox"/>
Lead a group in accomplishing some goal	<input type="checkbox"/>	<input type="checkbox"/>
Participate in a political campaign	<input type="checkbox"/>	<input type="checkbox"/>
Act as an organizational or business consultant	<input type="checkbox"/>	<input type="checkbox"/>
Read business consultant	<input type="checkbox"/>	<input type="checkbox"/>
Read business magazines or articles	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	
C	L	D
Fill out income tax forms	<input type="checkbox"/>	<input type="checkbox"/>
Add, subtract, multiply, and divide numbers in business or bookkeeping	<input type="checkbox"/>	<input type="checkbox"/>
Operate office machines	<input type="checkbox"/>	<input type="checkbox"/>
Keep detailed records of expenses	<input type="checkbox"/>	<input type="checkbox"/>
Set up a record-keeping system	<input type="checkbox"/>	<input type="checkbox"/>
Take an Accounting course	<input type="checkbox"/>	<input type="checkbox"/>
Take a commercial Math course	<input type="checkbox"/>	<input type="checkbox"/>
Take inventory of supplies or products	<input type="checkbox"/>	<input type="checkbox"/>
Check paperwork or products for errors or flaws	<input type="checkbox"/>	<input type="checkbox"/>
Update record or files	<input type="checkbox"/>	<input type="checkbox"/>
Work in an office official	<input type="checkbox"/>	<input type="checkbox"/>
Total No. of Ls	<input type="checkbox"/>	

SECTION C: Job occupation satisfaction scale

The statements below describe feelings you may have regarding your current occupation. Indicate from the scale if you 5 (Strongly Agree-SA), 4 (Agree, A), 3 (Undecided, U) 2 (Disagree, D), or 1 (Strongly Disagree, SD)

S/N	Statements	SA	A	U	D	SD
1.	The current occupation is my preferred choice.					
2.	I wish I could choose another occupation.					
3.	I wish I were happier in my occupation.					
4.	I am strongly considering changing to another occupation.					
5.	I am satisfied with my current occupation.					
6.	I have studied/ I am studying another course to change my current occupation.					
7.	I get much fulfilment in my current occupation.					
8.	I feel proud of my current job					

Appendix B: Interview Guide for the Participants

1. Do you enjoy working in your current occupation? Tell me about your job and your interests.
2. How does your current occupation make you feel? Explore the feelings of either happy or sad
3. Does your current occupation match your degree program? Specifically, does it relate to the undergraduate degree you pursued ten years ago? Discuss whether there is a match or mismatch, and explain the reasons behind it.
4. What factors influenced the choice of your current occupation?
5. Given a chance, would you change your occupation?
 - If yes, what occupation would you choose?
 - What would make you choose that occupation?
 - If no, what would make you stick to your current occupation.

Appendix C: Consent Form for Participants

CONSENT FORM

I, the accept to participate in the research project by which the contract of confidentiality is binding. I also declare that I will notify the researcher in case of any inconvenience or commitment that necessitates my withdrawal.

Signature: Date.....

Appendix D: Introductory Letter



UNIVERSITY OF EMBU

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OFFICE OF THE CHAIRMAN (DEPARTMENT OF EDUCATION)

REF: UoEm/DoE/SR/VOL. 1/009

DATE: 23rd May, 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,


**SUBJECT: INTRODUCTORY LETTER FOR ANN GATHIGIA WARUITA
REG NO: E880/289/2020**

This is to confirm that the above named is a PhD student in the Department of Education at the University of Embu.

Ms. Waruita is conducting a research study as part of the requirements for the PhD course. Her research topic is "*Does occupational choice endure after graduating? A longitudinal study of Holland's personality types, occupational consistency, congruence and occupational satisfaction in Kenya.*"

Any assistance accorded to her is greatly appreciated. For any questions regarding this recommendation, please contact the undersigned via simon.karuku@embuni.ac.ke or 0708851478.

Yours faithfully,


Dr. Simon Karuku
CoD, Department of Education
SK/tn



ISO / IEC 27001 : 2013 Certified

Knowledge Transforms



ISO 9001 : 2016 Certified

Appendix E: Research License

Republic of Kenya
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **837627** Date of Issue: **29/May/2022**

RESEARCH LICENSE



This is to Certify that Ms. ANN GATHIGIA WARUITA of University of Embu, has been licensed to conduct research in Baringo, Bomet, Bungoma, Busia, Elgeyo-Marakwet, Embu, Garissa, Homabay, Kakamega, Kericho, Kiambu, Kilifi, Kirinyaga, Kisii, Kisumu, Kitui, Laikipia, Machakos, Makeni, Mander, Marsabit, Meru, Migori, Mombasa, Muranga, Nairobi, Nakuru, Nandi, Narok, Nyamira, Nyandarua, Nyeri, Siaya, Taita-Taveta, Tanariver, Tharaka-Nithi, Transzoia, Uasin-Gishu, Vihiga, Wajir on the topic: DOES OCCUPATIONAL CHOICE ENDURE AFTER GRADUATING? A LONGITUDINAL STUDY OF HOLLAND'S PERSONALITY TYPES, OCCUPATIONAL CONSISTENCY, CONGRUENCE, AND OCCUPATIONAL SATISFACTION IN KENYA for the period ending : 29/May/2023.

License No: NACOSTI/P/22/17923

Applicant Identification Number: **837627**

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code



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Appendix F: Certificate of Ethical Approval

NACOSTI ACCREDITED



P.O. Box 195-80108
Kilifi, Kenya.

ERC/PhD/008/2022

REF: ERC/PhD/008/2022

Date: 07th June, 2022

TO: Ann Gathigia Waruita

Dear Sir/madam

RE: STUDY TITLE: Does Occupational Choice Endure After Graduating? A Longitudinal Study of Holland's Personality Types, Occupational Consistency, Congruence, and Occupational Satisfaction in Kenya

This is to inform you that **Pwani University Ethics Review Committee** has reviewed and approved your above research proposal. Your application approval number is **ERC/PhD/008/2022**. The approval period is **07th June, 2022 – 06th June, 2023**. This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by **Pwani University Ethics Review Committee**.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Pwani University Ethics Review Committee** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to **Pwani University Ethics Review Committee** within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to **Pwani University Ethics Review Committee**.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely

Chair, IERC

*Ethics Review Committee,
Pwani University, www.pu.ac.ke, email: j.ndiso@pu.ac.ke tell: 0720785791
The ERC, Giving Integrity to Research for Sustainable Development*

ETHICS REVIEW COMMITTEE

**ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION (NACOSTI, KENYA)**

CERTIFICATE OF ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:

ANN GATHIGIA WARUITA

REFERENCE NO:
ERC/PhD/008/2022

ENTITLED:
**Does Occupational Choice Endure After Graduating? A Longitudinal
Study of Holland's Personality Types, Occupational Consistency,
Congruence, and Occupational Satisfaction in Kenya**

TO BE UNDERTAKEN AT:
KENYA

FOR THE PERIOD
FROM: 07/06/2022 TO: 06/06/2023

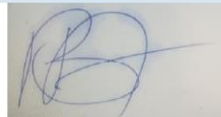
HAS BEEN **APPROVED** BY THE ETHICS REVIEW COMMITTEE AT ITS
SITTING HELD AT PWANI UNIVERSITY, KENYA

ON THE 24/05/2022

CHAIRMAN



SECRETARY



LAY MEMEBER

