Research Article

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Evaluating hydrologist specialist suitability applying the Holland's RIASEC model using FIKR (facet, insight, knowledge, and resilience) profiling assessment tool

Abstract

This study applies Holland's RIASEC model using FIKR (facet, insight, knowledge, and resilience) profiling assessment tool to evaluate the suitability of individuals for hydrologist specialist roles by focusing on the Investigative (I) and Realistic (R) traits, which are crucial for success in this field. The research analyzed data from 250 respondents to identify those with the highest alignment for hydrology careers, particularly regarding their analytical and practical abilities. The study found that only one individual possessed the ideal combination of high I and R scores with a lower Conventional (C) score, indicating strong potential for success in Hydrology. Additionally, 24 other individuals demonstrated high I and R traits but also exhibited high C scores, suggesting they may be better suited for roles that require a balance between investigative tasks and structured environments. These findings underscore the need for a comprehensive assessment of multiple RIASEC traits, a crucial strategy for ensuring proper career alignment and job satisfaction in environmental science roles.

Keywords: Holland's RIASEC model, hydrologist suitability, investigative traits, environmental career alignment

Chee Kong Yap,[1] Chee Seng Leow,[2] Wing Sum Vincent Leong[2]

[1]Department of Biology, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia
[2]Humanology Sdn Bhd, 73-3 Amber Business Plaza, Jalan Jelawat 1, 56000 Kuala Lumpur, Malaysia

Correspondence: Chee Kong Yap, Department of Biology, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia, Email yapchee@upm.edu.my

Introduction

In the rapidly evolving field of environmental science, aligning individual personality traits with occupational roles is becoming increasingly critical.[1] The Holland's RIASEC model, a significant framework that categorizes individuals into six personality types—Realistic (R), Investigative (I), Artistics (A), Social (S), Enterprising (E), and Conventional (C)—offers valuable insight into how specific traits correlate with success in various professions. This model has been widely used in vocational psychology to guide career decisions and improve job satisfaction.[2] By understanding the dominant traits within an individual, career counsellors and employers can better align personnel with roles that match their strengths and preferences.

Hydrology, a specialized field within environmental science, requires a unique blend of traits that are captured well by the I and R dimensions of the RIASEC model. Hydrologists engage in tasks that involve analyzing complex data, conducting field research, and applying scientific knowledge to address issues related to water resources. These responsibilities necessitate a strong aptitude for problem-solving, analytical thinking, and hands-on application, all characteristic of individuals with high I and R scores. However, success in this field also depends on the ability to work in dynamic, often unstructured environments, making the balance of these traits critical.[3]

Previous research has shown that while high I and R traits are essential, other dimensions, such as the C trait, can also significantly determine an individual's overall fit for a given role. Individuals with high C scores may prefer structured, routine tasks, which could impact their effectiveness in more dynamic, field-based roles like hydrology. Understanding this balance is key to identifying candidates who have the necessary technical skills and the right personality fit for the demands of the job.[4,5]

The FIKR (facet, insight, knowledge, and resilience) profiling assessment tool has been used by Humanology Sdn. Bhd. This study aims to apply the RIASEC model using FIKR profiling assessment tool to identify individuals within a sample of 250 respondents who are most suitable for hydrologist roles. By focusing on those with high I and R scores and analyzing the influence of the C trait, the research provides insights into how personality assessments can enhance career alignment in specialized fields like Hydrology. The findings are expected to inform both career counselling practices and recruitment strategies within environmental sciences.

Methodology

Humanology Sdn Bhd provided us with independent samples of 250 valid participants. Each participant provided a full set of item responses on a 200-item. This version of the OPQ uses relatively simple language and is intended for use in a wide range of occupational groups. The questionnaire is quantitative type (dichotomous survey scale) with Yes (1) or No (0) surveys. This allows the respondents to provide quick, straightforward answers by choosing between the two options. The 200-item included the personality traits needed to assess the Holland's codes, namely, R included Endurance, Variety, and Aggressive; I included Self-criticism, Analytical, and Intellectual; A included Intuition, Emotional, and Perceiver; S included Dependent, Nurturance, and Extrovert; E included Extrovert, Achievement, and Control; and C included Support, Structure, Self-conceptual, and Autonomy.

The methodology for this study involved a detailed assessment of 250 respondents using the Holland's RIASEC model, focusing on identifying those best suited for hydrologist specialist roles. Each respondent's scores were then analyzed to determine their alignment with the key traits required for hydrology. The selection criteria prioritized individuals with the highest scores in the I and

136

R dimensions, which are critical for Hydrology's analytical and practical demands. Additionally, the study considered the impact of the C trait, particularly in individuals who scored highly in both I and R, to assess their overall suitability for roles that may require less structure and more adaptability. Descriptive statistics were used to summarize the data, and a comparative analysis was conducted to identify the individual with the strongest alignment with the ideal trait profile for hydrologists. The results were then interpreted to determine the suitability of respondents for hydrologist roles, with a particular focus on those whose profiles indicated a strong potential for success in dynamic, field-based environments. This approach allowed for a nuanced understanding of how different trait combinations can influence career suitability in specialized fields within environmental science.

Results

Table 1 provides a clear overview of the suitability of respondents for hydrologist roles based on their RIASEC model scores using FIKR profiling assessment tool. The analysis of the 250 respondents using Holland's RIASEC model revealed a clear differentiation in suitability for hydrologist specialist roles based on their I, R, and C traits. Out of the total pool, only one individual was identified as highly suitable for the role of a hydrologist specialist. This individual's profile exhibited the highest scores in both the I and R dimensions, which are essential for Hydrology's analytical and practical demands. Additionally, this individual had a lower score in the C dimension, indicating a greater comfort with the dynamic, less structured nature of fieldwork and research typical in hydrology roles.

Table 1 Overall summary of overview of the suitability of respondents for hydrologist roles based on their RIASEC model scores using FIKR profiling assessment tool

No.	Category	Number of respondents	Key traits	Suitability	Potential roles
1	Highly Suitable for Hydrology	1	High in Investigative (I) and Realistic (R), Low in Conventional (C)	Ideal for hydrologist specialist roles.	Hydrologist Specialist
2	Moderately Suitable for Related Roles	24	High in Investigative (I) and Realistic (R), High in Conventional (C)	Less suited for hydrologist roles requiring flexibility and adaptability.	Environmental Planning, Administrative Positions within Hydrology Teams
3	Not Aligned with Hydrology	225	Lower in Investigative (I) and Realistic (R), or higher in Social (S), Enterprising (E), Artistic (A)	Not suitable for hydrology roles.	Roles better aligned with Social, Enterprising, or Artistic strengths.

In contrast, 24 other individuals also scored high in both the Investigative and Realistic traits. However, their high C scores suggest a preference for structured and organized environments, making them less suited for hydrologist roles requiring flexibility and adaptability. These individuals may be better suited to roles that balance investigative tasks with organizational duties, such as environmental planning or administrative positions within hydrology teams.

Moreover, the remaining 225 respondents did not demonstrate a strong alignment with the specific demands of hydrology. Either their Investigative and Realistic scores were lower, or they scored higher in other dimensions such as S, E, or A, which are less aligned with the core requirements of a hydrologist role.

Overall, the single individual identified as most suitable stands out due to their strong alignment with the I and R traits and a lower inclination toward C roles. This analysis underscores the importance of focusing on the right combination of traits—particularly I and R—when identifying candidates for specialized roles in environmental sciences like hydrology.

Discussion

The results of this study underscore the significance of I and R traits in determining the suitability of individuals for hydrologist specialist roles. The analysis revealed that these two traits are critical for success in hydrology, which demands analytical thinking and practical application. The single individual identified as the most suitable candidate exhibited the highest scores in both I and R dimensions while maintaining a lower score in the C trait.[6–8] This unique combination of traits suggests that this individual is well-equipped to handle the dynamic, less structured nature of fieldwork and research typical in hydrology. These findings align with existing literature that emphasizes the importance of these traits in scientific

and technical fields, particularly in roles that require problem-solving and hands-on work.[9]

Despite their strong I and R traits, high C scores in 24 other individuals indicate a potential challenge for their suitability in hydrology roles that require flexibility and adaptability. High C scores suggest a preference for structured, organized environments, which could limit these individuals' effectiveness in roles that require independent research and fieldwork. This finding is consistent with previous research that shows individuals with high C traits thrive in environments with clear guidelines and established routines, which may not always be present in hydrology.[10,11]

Therefore, while these individuals possess the necessary analytical skills, their preference for structure might make them more suited for roles that balance investigative tasks with organizational duties. Interestingly, the study highlights the need for a nuanced approach to career guidance and recruitment within environmental science fields. While high I and R scores are essential for roles like Hydrology, it is crucial to consider the individual's overall RIASEC profile using FIKR profiling assessment tool, including their C trait.[12–14] This holistic assessment can help identify candidates who are both intellectually capable and well-suited to navigate the dynamic and less structured nature of fieldwork and research in hydrology.

In sum, this study reinforces the value of applying Holland's RIASEC model using the FIKR profiling assessment tool for assessing career suitability in specialized environmental science roles. The findings demonstrate that while I and R traits are critical for success in hydrology, C traits also significantly determine the individual's fit for dynamic, field-based roles versus more structured administrative tasks. By considering the full spectrum of RIASEC traits, organizations and career counsellors can more effectively guide individuals toward roles that align with their strengths and preferences, leading to greater job satisfaction and improved performance in hydrology.[15,16]

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Conclusion

This study provides valuable insights into the suitability of individuals for hydrologist specialist roles through the application of Holland's RIASEC model using FIKR profiling assessment tool. By focusing on the I and R traits, the research identified one individual out of 250 respondents who exhibited the ideal combination of traits for success in hydrology. This individual's high scores in both I and R and a lower C score suggest a strong alignment with the dynamic, less structured nature of hydrology work, which requires analytical skills and practical fieldwork.

The study also highlighted the presence of 24 other individuals who, despite having strong I and R traits, also showed high C scores, indicating a preference for structured and organized environments. While these individuals possess the analytical and practical abilities required for hydrology, their preference for structure may make them more suited for roles that balance investigative tasks and administrative responsibilities, such as environmental planning or data management within Hydrology teams. These findings underscore the importance of a comprehensive assessment considering the full RIASEC profile using FIKR when guiding individuals toward specialized roles in environmental sciences. By understanding the nuances of each trait combination, organizations and career counsellors can more effectively align individuals with roles that match their strengths and preferences, leading to greater job satisfaction and performance. Ultimately, this study reinforces the value of the RIASEC model in career development, particularly in identifying candidates best suited for complex, interdisciplinary fields like Hydrology.

Acknowledgments

Conflicts of interest

The author declares there is no conflict of interest.

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