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Exploring Vocational Interest Measurement Instruments in Indonesia: Insights from a Scoping Review

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Abstract. The difficulty of finding vocational interest measurement tools with good psychometric properties and relevance to modern developments is a current concern in Indonesia. Therefore, this scoping review aims to compile a list of vocational interest measurement tools available in Indonesia that have been psychometrically tested. For this purpose, a total of 2,196 articles were extracted from the Google Scholar, Garuda, and Scopus databases. The article selection procedure followed the PRISMA-ScR flow diagram, and the screening process resulted in 17 sample articles (2014-2024). The analysis showed that most vocational interest measurement tools in Indonesia use a top-down development approach, based on Hollands Structure of Interests, and emphasize internal structure validity and internal consistency reliability as the tested psychometric properties. Further research is needed to address the gaps in validity evidence that remain among Indonesian vocational interest measurement tools.

Keywords: career interest measurement; psychometric properties; scoping review; vocational interest

Millions of people use vocational interest assessment tools to make important decisions in their career paths (Rounds et al., 2023). This is because vocational interests are crucial constructs used to identify the alignment between an individual's personal interests and their educational and occupational environment (Hansen, 2019; Nye, 2022). In the field of education, vocational interest tests serve to help students choose the most appropriate major when pursuing higher education (Hanna & Rounds, 2020). Meanwhile, in the organizational context, vocational interest tests are used as a basis for employee placement decisions, ensuring compatibility with desired job characteristics (Schelfhout et al., 2021). Congruence between interests and career choices encourages individuals to have a positive attitude toward their chosen career (Etzel & Nagy, 2021; Hoff et al., 2020). This is supported by Nye et al. (2021), who also stated that congruence between vocational interests and career choices can enhance motivation, satisfaction, and academic performance (Rabie et al., 2021). Therefore, understanding

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vocational interest tests can help individuals predict their academic and professional results (Rounds & Su, 2014; Su, 2020).

Given the role of vocational interest tests as predictive tools, particularly in career decision-making, they can also be used to avoid career mismatch. There are various factors that contribute to career mismatches, including the influence of significant individuals, failure to meet academic entry requirements, and the pursuit of careers that are incongruent with personal interests (Ali, 2018). The phenomenon of incongruence often stems from individuals not fully understanding their own interests and talents (Kim & Lee, 2019). A mismatch between personal interests and career choices can lead to low work engagement (Trépanier et al., 2014) and increased vulnerability to burnout (De Mol et al., 2018).

On the other hand, congruence between an individual's interests and their career shows a crucial role in driving positive outcomes, such as increased life satisfaction and improved career performance (Chummar et al., 2019). It also mediates the relationship between supervisors and employees, particularly in the context of job performance (Appienti & Chen, 2019). In this regard, alignment between an employee's passions and their career path fosters positive relationships with supervisors, which are closely linked to enhanced job engagement and job performance (Appienti & Chen, 2019; Trépanier et al., 2014). Therefore, it is essential to develop vocational interest measurement tools with robust psychometric properties in order to facilitate more informed career decisions and mitigate career mismatches.

Despite the importance of vocational interest, the use of such tests in Indonesia is still considered suboptimal, particularly in terms of psychometric property development. This is highlighted by Yudiana et al. (2019) criticism regarding the lack of psychometric properties for two of the most widely used vocational interest measurement tools in Indonesia today: the Kuder Preference Record Form C (KPR) (Kuder, 1948) and the Rothwell Miller Interest Blank (RMIB). Both the KPR and the RMIB feature activity and job options that are no longer relevant to modern subjects, are limited to paper-and-pencil-based tests that carry the risk of hand-scoring errors (Goddard et al., 2004), and fail to capture the dynamics of an individual's interests (Yudiana et al., 2019). Furthermore, according to preliminary studies conducted using bibliometric methodologies over the past 15 years, there has been imperceptible evidence of the validity and reliability of the KPR and RMIB in the Indonesian setting. This further emphasizes the crisis facing vocational interest measurement tools in Indonesia.

Since 2009, researchers in Indonesia have become increasingly aware of the lack of culturally relevant and modern vocational interest measurement tools. This awareness has led to the development of various new tests, including verbal and pictorial-based tools (WeiSSmann et al., 2022). Notable examples include the Ubaya Vocational Interest Inventory (UVII) (Artiawati et al., 2023), Padjadjaran Interest Inventory (PII) (Yudiana et al., 2019), Eureka Interest Inventory (EII) (Taqyah et al., 2024), Tes Minat Indonesia (TMI) (Periantalo, Saputra, & Sarman, 2019), and Pictorial Vocational Interest Inventory (PVII) (Nurcahyo et al., 2019). These developments indicate that psychometric experts are actively addressing the current gap between existing research and the need for contextual vocational interest measurement tools that fit the Indonesian population.

Unfortunately, there is still a lack of studies examining the development of vocational interest measurement tools in Indonesia, particularly regarding their psychometric properties. This is crucial for evaluating the quality of the current tools (Scholtz, 2023). For instance, Scholtz (2023) mapped the psychometric properties of vocational interest tools in Africa to identify their measures, evaluate their characteristics, and uncover their research gaps in African contexts. The results serve as a guideline for future research into African career and vocational interest measurement, ensuring that assessments there adhere to research-based principles. Similarly, the following study in the Indonesian context is required to identify Indonesian vocational interest measures and evaluate their psychometric qualities before they are used for decision-making (Yudiana et al., 2019).

Psychometric properties refer to the characteristics of a measurement tool that explain its test attributes, such as quality, reliability, and validity (Marastuti et al., 2020). In general, the evaluation of psychometric properties provides an overview of whether the available tools are consistent and accurately measure what they are intended to assess. This scoping review aimed to identify vocational interest measurement tools currently used in Indonesia and evaluate their psychometric properties. It was intended to fill this gap by providing a comprehensive overview of the current state of knowledge on vocational interest measurement and identifying its strengths and limitations. The findings are expected to provide recommendations for psychometricians and psychologists to improve the development and application of these tools. Furthermore, this study seeks to consolidate existing knowledge in the field, serving as a foundation for future research in vocational interest assessment.

Methods

The method used in this study is a scoping review, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for scoping reviews (PRISMA-ScR) (Peters et al., 2020). This method aims to provide a synthesis of the current state of knowledge regarding vocational interest instruments available in Indonesia, along with the completeness of their psychometric evidence (Page et al., 2021). The choice of the scoping review technique is based on the goal of providing an overview of vocational interest measurement tools in Indonesia and their psychometric properties by presenting evidence from previous studies (Armstrong et al., 2011; Munn et al., 2018). The use of this method was confirmed through the work of Munn et al. (2018); https://whatreviewisrightforyou.knowledgetranslation.net/) to ensure that it aligns with the research objectives.

Table 1

Inclusion Criteria

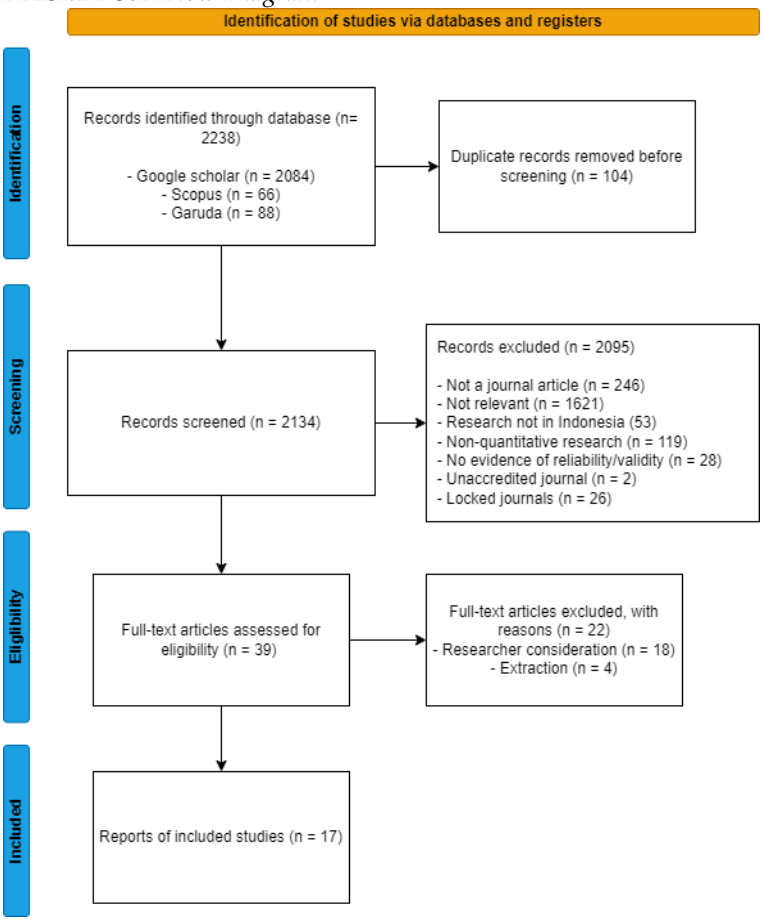
No	Inclusion criteria	Justification
1	Article quality and sources	Only journal articles published in accredited journals (Sinta or Scopus) are included to ensure high academic standards and peer-review credibility. Non-journal formats (e.g., book chapters, websites, reports) are excluded to avoid grey literature lacking methodological rigor.
2	Concept	Articles must primarily focus on vocational interest tests, including their development, validation, and application. Studies that only mention vocational interest tests briefly or as a secondary topic are excluded to maintain a specific and relevant scope. Articles must present evidence of validity or reliability for the vocational interest measurement tools. Studies lacking these psychometric measures are excluded to ensure the inclusion of rigorous and credible evaluations of the tools. Studies lacking these psychometric measures are excluded to ensure the inclusion of rigorous and credible evaluations of the tools.
3	Publication date	Articles must have been published between 2014 and 2024 to capture the most recent advancements in vocational interest measurement tools and align with contemporary practices and methodologies. Older studies are excluded to maintain relevance.
4	Population	Studies must involve Indonesian participants, reflecting the unique cultural, social, and educational context of Indonesia. Research on non-Indonesian populations is excluded to ensure contextual relevance and applicability to the target demographic. Study populations must consist of adolescents or adults, as vocational interest measurement tools are primarily designed for these age groups. Research on other age groups is excluded to align with the review's purpose.
5	Methodology	The research must use a quantitative approach, which is essential for evaluating psychometric properties such as validity and reliability. Qualitative studies, while valuable in other contexts, are excluded here as they do not provide empirical evidence for psychometric evaluations.

Screening and Data Extraction

The article search process utilized the Google Scholar, Scopus, and Garuda databases. The search keywords included: "Indonesia," "Career development," "Interest Measure," "Padjajaran Interest Inventory," "Pictorial Vocational Interest Inventory," "RMIB," "SDS-Holland," "Ubaya Vocational Interest Inventory," "Vocational and Interest," and "RIASEC." This yielded 2,238 articles. After gathering the articles in a database, the screening process was conducted collaboratively by the four researchers. We checked for duplicate articles manually via Google Spreadsheet. Articles that passed the duplication screening were filtered based on title and abstract, after which 2,134 articles remained. Filtering then progressed to remove articles that were not from journals; that discussed topics irrelevant to the research objectives; whose research was not conducted in Indonesia; whose research was non-quantitative; that did not have evidence of reliability or validity; that were published in unaccredited journals; and that were from locked journals. A total of 39 articles were obtained from this process, and these would be further analyzed based on the full version in their respective journals through the inclusion criteria that had been set.

Figure 1

PRISMA-ScR Flow Diagram



The data extracted from the article are article title, authors, citation, first author, journal name, publication year, article link, DOI, country of publication, vocational interest measurement name, measure methodology, measure type, theory used in article, measure focus, measurement language, method approach, design, methodology, sample size, sampling method, data collection practice, demographic, sample language, mean age, age range, race, gender, country, cultural consideration, length (number of items), validity, reliability, purpose of article, and outcomes and limitations. The data extraction was performed using content analysis, which was deemed suitable for this research as it utilizes both inductive and deductive thinking processes (Peters et al., 2015).

Additionally, this method minimizes bias from both the researchers and the research subjects (information) and is useful for extracting large amounts of unstructured data (Duriau et al., 2007). During content analysis, all obtained data were coded with categories, followed by tabulation to identify the main findings (Aromataris & Munn, 2020). There are four stages of content analysis: data collection, coding, analysis, and interpretation of the coded data (Gaur & Kumar, 2018). The results were used to categorize the names of the available vocational interest measurement tools. This was followed by an evaluation of the 17 included articles based on the AERA Standards for Educational and Psychological Testing (AERA et al., 2013), assessing the availability of evidence for validity and reliability related to said tools. The validity evaluation was conducted using an evidence-based approach, which included content validity, response process validity, internal structure validity, concurrent validity, incremental validity, and validity related to other variables.

The Use of AI generated Tools in the Writing Process

The initial manuscript was written and translated manually from Indonesian to English. However, the authors utilized ChatGPT-4 to ensure grammatical correctness and maintain accuracy during the translation process. To ensure no loss of meaning, the authors also used ChatGPT-4 for back translation. This involved translating the English text back into Indonesian and comparing it with the original draft to confirm consistency in meaning.

Results

This study identifies the characteristics of the vocational interest measurement tools that exist in Indonesia, their sample characteristics, and their psychometric properties as a way of evaluating their quality. The extraction results are presented in Table 4 (and more detailed extraction results can be found in the Supplementary Materials at https://doi.org/10.6084/m9.figshare.27079996).

Characteristics of Measurement Tools

There are fourteen vocational interest measurement tools currently available in Indonesia. These are the Ubaya Vocational Interest Inventory (UVII) (Artiawati et al., 2023), Personal Globe Inventory-Mini (PGI-Mini) (Tao et al., 2022), Eureka Interest Inventory (EII) (Taqyah et al., 2024), Anne Roe

Career Exploration Instrument (IEKAR) (Suwidagdho & Purwanta, 2022), Pictorial Vocational Interest Inventory (PVII) (Nurcahyo & Valentina, 2022; Nurcahyo et al., 2019), Vocational Interest Scale (VIS) (Nurcahyo & Valentina, 2022), Tes Minat Indonesia (TMI) (Periantalo, 2018; Periantalo, Iranda, & Fadzlul, 2019; Periantalo, Saputra, & Sarman, 2019), Self-Directed Search Holland (SDS-Holland) (Fatuhrahmah et al., 2020), South African Career Interest Inventory Short Form (SACII-SR) (Juliana & Gunawan, 2021), and Padjadjaran Interest Inventory (PII) (Yudiana et al., 2019).

In addition, the extraction results identified several vocational interest measurement tools that were individually developed for research purposes, such as the self-constructed RIASEC Personality Test by Roebianto et al. (2021), the self-constructed RIASEC Personality Test by Tasrif (2022), the self-constructed spherical model of vocational interest by Wahyudi et al. (2022), and the modified SDS-Holland by Thamrin et al. (2023). This study also evaluates the use of theoretical constructs that serve as the basis for developing measurement tools. The results of this extraction are presented in Table 1. The majority of measurement tools currently used in Indonesia are based on Holland's Structure of Interests (Holland, 1974) and the spherical model of vocational interests (Tracey & Rounds, 1996). Hollands hexagonal model (Holland, 1974) is reflected in the EII, PVII, VIS, SACII-SR, and SDS-Holland, as well as the PGI-Mini. Meanwhile, Tracey and Rounds (1996) spherical model is present in the PGI-Mini and PII tools. Based on these two constructs, it is understood that vocational interests are considered a dispositional trait (Su & Rounds, 2020).

Dispositional traits refer to an individual's preferences for situations and activities they are interested in, which implies compatibility between the individual and their career environment (Garcia-Sedeño et al., 2009; Holland, 1959, 1974). In line with this, Nauta (2010) explains that Holland's Structure of Interests can be seen as an expression of personality. In practical terms, the alignment between these dispositional traits and the career environment leads to the person-environment fit paradigm (P-E theory) (Wiegand et al., 2021). The P-E theory posits that the fit between interests and the career environment can enhance motivation, satisfaction, and individual performance. Unlike the aforementioned theoretical perspectives, some measurement tools, such as the UVII and TMI, adopt a more practical approach. The UVII utilizes the Job Profile from the Indonesian Ministry of Manpower, mapping interests into four clusters with 20 vocational interests as references for instrument development (Artiawati et al., 2023). Meanwhile, the TMI is based on previous instruments, such as the Rothwell Miller Interest Blank (RMIB) and the Kuder Preference Record-Vocational (KPR-V). Both are used to provide job recommendations that align with individual interests in accordance with the available jobs in Indonesia.

Table 2

Theoretical Constructs Referenced in the Development of Vocational Interest Instruments

Interest Instrument	Theoretical Construct					
	Top-down Approach			Bottom-up Approach		
	Holland	Spherical	Anne Roe	Indonesian Ministry of Labor job profile	RMIB List	Kuder List
UVII	-	-	-	✓	-	-
PGI-Mini	✓	✓	-	-	-	-
EII	✓	-	-	-	-	-
IEKAR	-	-	✓	-	-	-
PVII	✓	-	-	-	-	-
VIS	✓	-	-	-	-	-
TMI	-	-	-	-	✓	✓
SDS-Holland	✓	-	-	-	-	-
SACII-SR	✓	-	-	-	-	-
PII	-	✓	-	-	-	-
Self-constructed RIASEC Personality Test by Roebianto et al. (2021)	✓	-	-	-	-	-
Self-constructed RIASEC Personality Test by Tasrif (2022)	✓	-	-	-	-	-
self-constructed spherical model by Wahyudi et al. (2022)	-	✓	-	-	-	-
Modified SDS-Holland by Thamrin et al. (2023)	✓	-	-	-	-	-

The majority of interest measurement tools utilize a Likert scale format, ranging from 4-point scales (1 = not interested; 4 = very interested) to 7-point scales (1 = strongly disagree; 7 = strongly agree). The length of the vocational interest instruments currently available in Indonesia varies significantly. The shortest is the PGI-Mini, which contains a total of 20 items, while the longest is the PII with a total of 288 items. The length of the PII instrument, followed by the EII and SDS-Holland, is closely related to the measurement of liking and competence aspects. In this context, test-takers are not only asked to evaluate how much they like a particular job but also to assess how capable they feel of performing that job.

Sample Characteristics

The majority of studies regarding interest measurement tools utilize purposive sampling (Periantalo, Saputra, & Sarman, 2019; Roebianto et al., 2021; Tasrif, 2022) and accidental sampling techniques (Juliana & Gunawan, 2021; Tao et al., 2022; Wahyudi et al., 2022). Sample sizes range from 50 participants, as in the study by Artiawati et al. (2023) to 2,648 participants, as in the study by Yudiana et al. (2019). Most participants were adolescents and young adults, with an average age range of 16.6 to 29.89 years. This is closely related to the practical use of interest measurement tools, which

are primarily deployed in educational settings, where they serve as guidance for choosing majors in higher education.

Psychometric Properties

In this study, the evaluation was conducted based on instruments' published evidence of validity and reliability (AERA et al., 2013). The results found that the PVII instrument has the most evidence of validity, including content validity, internal structure, and relationships with other variables. Evidence of internal structure validity appears to be the most frequently examined by researchers and developers of interest measurement tools, followed by evidence of relationships with other variables and content validity. On the other hand, evidence of validity based on response processes and test consequences are the two types that have been least investigated. A more detailed evaluation of the validity evidence for interest instruments in Indonesia is presented in Table 3.

Table 3

Validity Evidence for Vocational Interest Instruments in Indonesia

Interest Instrument	Evidence-Based Approach on Validity				
	Test content	Response processes	Internal structure	Relations with other variables	Consequences of testing
UVII	✓	-	-	-	-
PGI-Mini	-	-	✓	-	-
EII	-	-	✓	-	-
IEKAR	-	-	✓	-	-
PVII	✓	-	✓	✓	-
VIS	-	-	-	✓	-
TMI	-	-	✓	✓	-
SDS-Holland	-	-	-	✓	-
SACII-SR	-	-	-	✓	-
PII	-	-	✓	-	-
Self-constructed RIASEC Personality Test by Roebianto et al. (2021)	-	-	✓	✓	-
Self-constructed RIASEC Personality Test by Tasrif (2022)	-	-	✓	-	-
self-constructed spherical model by Wahyudi et al. (2022)	✓	-	✓	-	-
Modified SDS-Holland by Thamrin et al. (2023)	-	-	✓	-	-

The validity of relationships with other variables consists of several types, including convergent validity, discriminant validity, criterion validity (both predictive and concurrent), and incremental validity. After these were determined, a more in-depth evaluation was conducted to assess how much evidence of validity regarding relationships with other variables has been established for interest instruments in Indonesia. The identification results indicate that the TMI provides the most evidence of

validity in terms of its relationships with other variables, particularly convergent validity. Convergent validity refers to evidence demonstrating that this instrument correlates with other instruments measuring the same construct and objectives. Meanwhile, evidence of incremental validity is the least frequently examined. A more detailed evaluation of the validity evidence for interest instruments in Indonesia is presented in Table 4.

Reliability is an index of the consistency of a measurement, indicating the extent to which it can be trusted. Most of the interest measurement tools currently available in Indonesia have had their reliability evaluated using internal consistency reliability testing, assessed through Cronbach's alpha and McDonald's omega. Unfortunately, instruments such as the UVII have not undergone field testing and therefore do not have a reliability coefficient. Test-retest reliability is also an important form of reliability to consider. Among the instruments that passed the inclusion stage for this study, it is noted that only the PVII has undergone test-retest reliability confirmation.

Table 4

Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Artiawati et al., 2023)	The Early-Stage Development and Content Validity Examination of Ubaya Vocational Interest Inventory	Test content validity of the UVII using the Aiken technique	Ubaya Vocational Interest Inventory (UVII)	Mapping interests into four clusters: 1. Administration and Service 2. Agriculture 3. Art 4. Engineering; and 20 vocational categories.	Indonesian Ministry of Labor Job Profile	n = 50 expert judgement	Content validity through Aiken value	NS	The UVII shows a valid Aiken coefficient. Therefore, the UVII can be used for assessing the vocational interests of individuals.
(Roebianto et al., 2021)	Development of a Holland-based Interest Test for Major Mapping in Junior High School (JHS) & Senior High School (SHS) Students	Develop an interest test tool for junior high school to high school and high school to college students based on Holland typology theory and interests in field of study majors.	Self-constructed RIASEC Personality Test by Roebianto et al. (2021)	Mapping interests by RIASEC Personality Test.	RIASEC Hexagonal Model of Vocational Interests by Holland	n = 518 (nSMP = 248; nSMA = 270) nSMA = 270)	1. Construct validity with confirmatory factor analysis (CFA) 2. Validity of relations to other variables with interest in majors	NS	RIASEC dimensions are able to predict the interests of college majors (Investigative with science, Social with social studies, and Artistic with arts and languages). The measuring instrument is valid.
(Wahyudi et al., 2022)	Development of Spherical Model of Interest-Based Interest Inventory Measurement Tool	Test the construct validity of a self-constructed Spherical Model of Interest Inventory developed by the author	Self-constructed Spherical Model of Vocational Interest by Wahyudi et al. (2022)	Mapping eight types of individual personalities: social facilitating, managing, business detail, data processing, mechanical, nature/outdoor, artistic, and helping	Spherical Model of Interests by Tracey and Rounds	n = 535 (M_{age}=17.7)	1. Content validity through Aiken value 2. Internal structure validity through Confirmatory Factor Analysis (CFA)	Tested using McDonald's omega (ω): Social facilitating 0.875 Managing 0.861 Business detail 0.828 Data processing 0.900 Mechanical 0.899 Nature/outdoor 0.835 Artistic 0.778 Helping 0.907	Both validity and reliability show good coefficients. Thus, the constructed inventory can be used for measuring the vocational/career interests of individuals.

Table 4 (Continued)
Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Tao et al., 2022)	Are Gender Differences in Vocational Interests Universal?	Test the universality of gender differences in vocational interests	Personal Globe Inventory-Mini (PGI-Mini)	Mapping personality type based on: 1. Octant 2. Hexagonal Model of RIASEC 3. People/Things 4. Idea/Data 5. Prestige Level	Spherical Model of Interests	*n*Indonesia = 1006	Internal structure through Randomization Test of Hypothesized Order Relations (RTHORR)	Tested across 59 countries 1. Octant = NS 2. Hexagonal = NS 3. People/things mean α = .70 (*SD* = .07, range = .35.90) 4. Ideas/data mean α = .70 (*SD* = .09; range = .31.89) 5. Prestige mean α = .79 (*SD* = .06, range = .58.95)	National cultural dimensions appear to moderate gender differences in interests beyond the influences of national gender inequality. Specifically, gender differences between interests in people (versus things) tend to be larger in countries of higher uncertainty avoidance and higher indulgence, whereas gender differences in ideas (versus data) tend to be larger in countries of higher indulgence, uncertainty avoidance, and lower power distance.
(Taqyah et al., 2024)	Structural Validity of Eureka Interest Inventory Among Indonesian High School Student: An Analysis on Holland's RIASEC Model	Analyze the structural validity of the Eureka Interest Inventory and measure differences in validity models based on gender, major	Eureka Interest Inventory (EII)	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interest by Holland	*n* = 1609	Structural validity through Randomization Test of Hypothesized Order Relations (RTHORR)	Tested using Cronbac's alpha coefficient (α = .735)	Indicates that Holland's model is a significantly good fit to the observed data (vocational interest). In the aspects of gender differences and high school majors, there are no significant differences

Table 4 (Continued)
Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Suwidagdho & Purwanta, 2022)	Development of Instrumen Eksplorasi Karier Anne Roe (IEKAR) for Junior High School Students	Develop a career exploration instrument based on Anne Roe's classification to help junior high school students explore their career options.	*Instrumen Eksplorasi Karier* Anne Roe (IEKAR)	Mapping vocational interests based on: 1. Service 2. Business Contact 3. Organization 4. Technology 5. Outdoors 6. Science 7. General Culture 8. Art and Entertainment	Anne Roe's Theory	n = 306]n = 306	Internal structure validity through Confirmatory Factor Analysis (CFA)	Tested using Cronbach's alpha coefficient (α = .870)	These findings indicate a valid and reliable instrument to help explore the careers of junior high school students.
(Tasrif, 2022)	RIASEC Holland's Reliability and Validity on Personality of Informatics Engineering Education Students in Higher Education	Test the reliability and construct validity of the RIASEC Holland instrument as applied to 178 students of engineering education in Indonesia.	Self-constructed RIASEC Personality Test by Tasrif (2022)	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interests by Holland	n = 178	Internal structure validity through Confirmatory Factor Analysis (CFA)	Tested using Cronbach's alpha coefficient (α = ..601 - .699)	Prediction of the reliability shows that Cronbach's alpha is quite large, between 0.601 and 0.699, and the conformity of the empirical data with the RIASEC typology model which is used as a theoretical concept is at a valid level.
(Nurcahyo et al., 2019)	Development and Psychometric Properties of Pictorial Vocational Interest Inventory for Indonesian Adolescents.	Develop and establish psychometric properties of the Pictorial Vocational Interest Inventory (PVII).	Pictorial Vocational Interest Inventory	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interests by Holland	n = 826 high school students	1. Content validity through Aiken value 2. Construct validity through Confirmatory Factor Analysis (CFA)	Cronbach's alpha coefficients ranged from .60 to .79; test-retest reliability ranged from .71 to .82	Provides psychometric support for the PVII as an adequate instrument to assess vocational interests in Indonesian adolescents.

Table 4 (Continued)

Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Nurcahyo & Valentina, 2022)	Evidence of Validity Based on the Relation to Other Variable of Pictorial Vocational Interest Inventory	Test the construct validity of PVII with VIS.	1. Pictorial Vocational Interest Inventory (PVII) 2. Vocational Interest Scale (VIS)	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interest by Holland	*n* = 570	1. Convergent validity between PVII and VIS through Pearson correlation coefficient 2. Discriminant validity through Pearson correlation coefficient	NS	Reinforces the results of previous research, content validity and internal validity. However, the results on some constructs such as social interests are very weak, and enterprising and conventional interests are weak.
(Periantalo, 2018)	Construct Validity Test of Indonesian Interest Test Through Health Interest Components	Test the construct validity of TMI through health interest components.	1. Indonesian Interest Test 2. SDS-Holland	Health science interests	1. RMIB Theory & Kuder Theory of Interest 2. RIASEC Hexagonal Model of Vocational Interests by Holland	*N*studi1 = 388 *N*studi2 = 390 *N*studi3 = 177 *N*studi4 = 189	1. Convergent validity between TMI and SDS-Holland through Pearson correlation coefficient 2. Discriminant validity through Pearson correlation coefficient	NS	The results of the study strengthened the construct validity of the Indonesian Interest Test through aspects of the health field.

Table 4 (Continued)
Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Periantalo, Saputra, & Sarman, 2019)	Validity of the Psychic Science Interest Group - Indonesian Interest Test with TPA and Attitude Towards Course Scale	Examine the validity of the psychic interest component with the scale of attitude towards course subject.	Indonesian Interest Test	TMI Psychic Interests: 1. Philosophy 2. Psychology 3. Management 4. Children with special needs 5. Education 6. Theology	RMIB Theory & Kuder Theory of Interest	*n* = 180	Concurrent validity with Academic Potential Test (TPA) and Attitude Towards Course Scale. The analysis was conducted through Spearman's rho correlation coefficient	Academic Potential Test = 0.87 Basic studies scale = 0.93 Math and science scale = 0.92 Social humanities scale = 0.93	The results support the validity of the Indonesian Interest Test, showing that it is feasible for providing a picture of a person's interests.
(Periantalo, Iranda, & Fadzlul, 2019)	Validity Test of the Indonesian Interest Test for the Health Science Component with the Attitude Towards Course Scale	Explore relationships between the Indonesian Interest Test (health interest-specific) and variables in the Attitude Towards Course Scale.	Indonesian Interest Test	99 types of interests in the test, including medical, nutrition, mining, psychology, philosophy, politics, forestry, fisheries, and catering.	RMIB Theory & Kuder Theory of Interest	*n* = 638	Concurrent validity between TMI and Attitude Towards Course Scale through Spearman's rho correlation coefficient	Reliability of parallel tests: Foundation Subjects rxx' = 0.93 Math-Science rxx' = 0.92 Social Sciences and Humanities rxx' = 0.93	There is a negative relationship between the Indonesian Interest Test (health interest-specific) and the Attitude Scale towards subjects such as chemistry and biology. There is a negative relationship with social humanities subjects (history and geography).
(Irawan & Kumaidi, 2021)	The Relationship Between Vocational Interest and Learning Potential with Learning Achievement Among Vocational Students in the Field of Technology and Engineering	Find the effect of vocational interest and learning potential on learning achievement. Examine the partial influence of variables.	Vocational Interest Scale	Vocational interest scale (activities, competencies, and occupational dreams) based on Holland's RIASEC personality dimensions, focusing on R, S, and E.	RIASEC Hexagonal Model of Vocational Interests by Holland	*n* = 142	Predictive validity between vocational interest and student performance (average of academic performance score from first semester to sixth semester)	0.861 to 0.911	The vocational interest scale and learning potential scale instruments can predict student learning achievement.

Table 4 (Continued)

Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Juliana & Gunawan, 2021)	Uji Validitas and Reliabilitas South African Career Interest Inventory Short Form	Test the validity and reliability of the South African Career Interest Inventory Short Form interest test.	South African Career Interest Inventory Short Form (SACII-SR)	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interest by Holland	*n* = 332	1. Face validity 2. Convergent validity between SACII-SR and Personality (ONET) through Pearson correlation coefficient	Cronbach's alpha reliability range of each dimension: 0.7590.901	In terms of face and convergent validity, the SACII measurement tool is valid based on O*Net Profiler. In terms of reliability, the range of scores of the six SACII dimensions is also above 0.759.
(Fatuhrahmah et al., 2020)	The Intertwining of Vocational Aptitude and Interest: A Study Among University Students in Indonesia	Explore the relationship between vocational interest and aptitude in the Indonesian context using SDS-Holland and EAS among university students.	SDS-Holland	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interests by Holland	*n* = 343	Concurrent validity with employee aptitude survey through Pearson correlation coefficient	Cronbach's alpha results show that the SDS-Holland has reliability coefficients ranging from .71 to .92 for the section scales and .87 to .92 for the summary scale.	The findings show that there is a correlation between several types of interest and several types of aptitude.

Table 4 (Continued)

Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Yudiana et al., 2019)	Padjadjaran Interest Inventory: Evaluation of Psychometric Properties	This study aims to: 1. Discover the psychometric properties of PII reliability and validity 2. Compare scores between males and females	Padjadjaran Interest Inventory (PII)	18 interest areas divided into eight basic interests, five high interests, and five low interests: 1. Social 2. Managing 3. Business Detail 4. Data Processing 5. Mechanical 6. Natural/Outdoors 7. Artistic 8. Helping 9. Social Sciences 10. Influence 11. Business Systems 12. Financial Analysis 13. Science 14. Quality Control 15. Manual Work 16. Personal Service 17. Construction & Repair 18. Basic Services	The Spherical Model of Interests	*n* = 2648	Construct validity through Confirmatory Factor Analysis (CFA)	Cronbach's alpha reliability range: 0.81 to 0.92	1. The PII has good psychometric properties 2. There is a significant difference in interest preferences between genders

Table 4 (Continued)

Extracted Results of the Psychometric Properties of Vocational Interest Measurement in Indonesia

Authors	Title	Aim/Purpose	Interest Measurement Tools	Measurement Methodology	Theoretical Constructs	Sample	Validity	Reliability	Results
(Thamrin et al., 2023)	Reliability and Validity of RIASEC Holland's on Predicting Success Career for Vocational Students	This study aims to: 1. Calculate the reliability coefficient of RIASEC Holland 2. Compare its impact on vocational students' career success 3. Examine its structural validity	Modified SDS-Holland by Thamrin et al. (2023)	Mapping personality type based on RIASEC: 1. Realistic 2. Investigation 3. Artistic 4. Social 5. Enterprising 6. Conventional	RIASEC Hexagonal Model of Vocational Interests by Holland	n = 178	Internal structural validity through Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA)	Cronbach's alpha coefficients ranged from 0.600 to 0.699: Realistic = .601 Investigative = .628 Artistic = .621 Social = .600 Enterprising = .699 Conventional = .669	1. The instrument has alpha coefficients ranging from 0.600 to 0.699 2. Majority of students from remote sensing technology majors had Social vocational interest, from informatics had Social vocational interest, from informatics engineering education had Artistic vocational interest 3. SEM shows that the modified SDS-Holland instrument has a well-fitted model (p = 0.270; RMSEA 0.2)

Discussion

Vocational interest congruence is essential for individuals' adaptive and motivational functioning in the context of career development (Hansen, 2019). Vocational interest measurement tools are expected to facilitate congruence by serving as a means to identify individual career preferences (Van Vianen, 2018). This identification significantly impacts motivation, satisfaction, and individual performance in academic and organizational contexts (Hansen, 2019; Nye et al., 2021). Based on the important role of interest inventories, this study aims to identify those developed in Indonesia from 2014 to 2024, along with their psychometric properties.

The findings demonstrate that over the past 10 years, various such tools have been developed in Indonesia. However, despite being listed in the Indonesian Psychological Association decree number 024/SK/PP-HIMPSI/VIII/18, tools such as the RMIB, SCCT, and Kuder Occupational Interest Survey lack evidence of validity and reliability according to this study. This highlights a gap in research concerning the psychometric properties of these measurement tools. The process of developing vocational interest measurement tools in Indonesia is divided into two approaches: top-down and bottom-up (Hansen, 2019). The top-down approach refers to the creation of instruments based on well-established constructs, which are then refined into job-related items for the interest inventory (Hansen, 2019). In contrast, the bottom-up approach adopts a more pragmatic paradigm, relying on existing job profiles for the creation of the inventory (Hansen, 2019).

The top-down approach is widely used in the development of interest measurement instruments in Indonesia, referencing theoretical constructs such as the spherical model of vocational interests, Holland's Hexagonal Structure of Interests, and Anne Roe's Personality Theory. The scoping review results indicate that most measurement tools are developed based on Holland's Structure of Interests, as evidenced by the PVII (Nurcahyo et al., 2019), EII (Taqyah et al., 2024), and the self-constructed instrument by Roebianto et al. (2021). One of the reasons for the dominance of Holland's vocational interest theory (Holland, 1974) is that it provides a parallel method to conceptualize individual interests in relation to their environment (Hansen, 2019). Its widespread use across various settings, including high schools, higher education, and the workplace, has led to Holland's theoretical construct being viewed as one of the more robust frameworks for measuring vocational interests (Nauta, 2010). Later, the prestige aspect of a job was added to the basic RIASEC dimensions of Holland's theory, resulting in a new theory known as the Spherical Model of Vocational Interest (Tracey & Rounds, 1996), which was used in the development of the PII (Yudiana et al., 2019) and the self-constructed spherical model by Wahyudi et al. (2022).

The bottom-up approach is exemplified by instruments developed from current job profile lists. This approach is based on the perspective that existing vocational interest theories may not fully meet Indonesia's vocational education needs (Artiawati et al., 2023). Instruments created using this approach include the Ubaya Vocational Interest Inventory (UVII), which is based on job profiles from the Indonesian Ministry of Labor (Artiawati et al., 2023), and the *Tes Minat Indonesia* (TMI), which relies on the Kuder job list and the Rothwell Miller Interest Blank (RMIB) job list (Periantalo, 2018). This approach aims to pragmatically map individual vocational interests in accordance with actual career developments and the types of careers available.

There are several reasons why vocational interest measurement instruments are being developed. These include creating instruments suitable for educational contexts (Wahyudi et al., 2022), ensuring accessibility through the presentation of tests in visual form (Nurcahyo et al., 2019), and aligning with evolving Indonesian job demand and educational systems (Artiawati et al., 2023).

Therefore, strong psychometric properties, such as validity and reliability, are crucial. Internal structure validity and concurrent validity are the most frequently assessed types of validity for vocational interest instruments in Indonesia. However, validity based on response processes and test consequences have never been explored. A similar gap exists regarding incremental validity, as vocational interest instruments in Indonesia have yet to demonstrate differences and distinctive variance explained compared to previously available tools. This indicates a need for further research to meet established standards (AERA et al., 2013). Valid and reliable vocational interest measurement tools suitable for Indonesia's diverse cultural conditions are essential for assisting individuals in career decision-making. However, the research findings indicate a limitation regarding the transparency of demographic information and the geographic locations of data collection. Only a few studies specifically mention the city locations where data was collected e.g., Irawan and Kumaidi (2021) and Yudiana et al. (2019). Transparency in disclosing data collection locations is crucial for evaluating the socio-economic and cultural backgrounds of participants. According to Garza et al. (2017), representative involvement of racial or ethnic groups in research is vital for understanding the unique conditions of each demographic and assessing whether certain groups are underrepresented in vocational interest studies. Cultural understanding is especially needed in the bottom-up approach, since a job list is developed using many factors such as industrial demand and cultural perspectives. By prioritizing cultural context and ensuring diverse representation in research, psychometricians can develop more effective tools that genuinely support individuals' career decisions.

Conclusion

Based on the findings of this scoping review, vocational interest measurement tools in Indonesia demonstrate significant development over the past decade, yet gaps remain in their psychometric robustness. The review identified 14 instruments, with most adopting Hollands Structure of Interests and Tracey and Rounds' Spherical Model as theoretical foundations, while a smaller number employed practical approaches based on local job profiles. Despite progress, many tools lack comprehensive validity and reliability evidence, with internal structure validity being the most frequently assessed but response process validity and incremental validity rarely explored. Furthermore, transparency in reporting demographic and geographic details remains limited, hindering a nuanced understanding of participant diversity and its impact on psychometric evaluations. This is especially critical in Indonesia's culturally diverse context, where vocational interest tools must account for regional and socio-economic variations. The findings underscore the need for future research to address these psychometric gaps, particularly by expanding evidence of validity and reliability and ensuring inclusive representation of Indonesia's population. Doing so will strengthen the utility of these tools for career decision-making, educational guidance, and organizational development, ensuring alignment with both individual needs and the evolving demands of the labor market.

Recommendation

The difficulty in finding research-based vocational interest measures highlights the urgency of conducting this scoping review study, which aims to identify gaps in the validity and reliability evidence of vocational interest instruments in Indonesia. These gaps represent issues that must be addressed by future research to complete the psychometric properties of the related measures. Comprehensive evidence of validity and reliability is essential to ensure that the provision of psychological services related to vocational interest measurement is based on genuine, scientifically

validated instruments. This research is expected to provide direction for future studies in this area.

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Authors' Contributions

RSB conceptualized the research, managed the data, conducted formal analysis, investigated, developed methodology, provided resources, validated, wrote the original draft, and revised and edited the manuscript; HFGIN was responsible for data management, formal analysis, investigation, methodology, validation, and writing the original draft. HPDS and NNA managed data, validation, and writing the original draft. All authors read and approved the final version of the research article.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest in the writing of this article.

Data availability

The data that support the findings are available at https://doi.org/10.6084/m9.figshare.27079996

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