Assessment of Perceptual Accuracy and Analytical Reasoning Using Raven's Standard Progressive Matrices: A Case Study and Review of Indian Applications

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Abstract

Raven's Standard Progressive Matrices (SPM) is a widely used, largely language-free test of non-verbal reasoning that is taken to reflect Spearman's general factor (g), and in particular its eductive component. This paper reviews the conceptual background of intelligence and its measurement, situates the SPM within the broader psychometric literature, and synthesises five recent studies that have used the SPM or its coloured form (CPM) in Indian settings between 2021 and 2026. It then reports a single-case administration of the SPM, in which the raw scores obtained across the five sets (A to E) were compared with the Normal Expected Scores to evaluate the internal consistency of performance. The subject obtained a total raw score of 57 out of 60, corresponding to the 95th percentile and Grade I ("Intellectually Superior"), with all set-wise consistency scores within the accepted ±2 criterion. The findings are discussed in relation to the psychometric properties, applications and limitations of the SPM, and recommendations for continued cognitive engagement are offered. The review of Indian literature further indicates that, notwithstanding the SPM's continued applied use in Indian clinical, educational and epidemiological research, existing Indian norm tables may require re-examination in light of recent large-sample evidence.

Keywords: *Raven's Standard Progressive Matrices, intelligence, non-verbal reasoning, general intelligence (g), psychometrics, Indian norms*

1. Introduction

1.1 What Is Intelligence?

Intelligence is usually understood as the ability to learn from experience, reason, understand complex ideas and adapt to new situations. Psychologists have never agreed on a single definition. Spearman (1904) treated it as a general mental capacity that enters into every intellectual task, whereas Gardner (1983) argued for several fairly independent intelligences. In psychological testing, intelligence is sampled through tasks such as reasoning, problem-solving and pattern recognition, and a person's performance is then compared with that of others of the same age.

1.2 Gender and Cultural Differences

On general intelligence, males and females do not differ much. Where differences are reported they are small and depend on the ability tested; some spatial tasks tend to favour males slightly and some verbal and speed tasks tend to favour females, but the variation within each sex is much larger than the average gap between them. Cultural differences are harder to sort out. What a society counts as intelligent behaviour, the amount of schooling available, the language of testing and familiarity with test-taking all influence scores. The Flynn effect illustrates this well: in a formal meta-analysis of 271 samples from 31 countries, Pietschnig and Voracek (2015) found that test scores rose across the twentieth century, with the largest yearly gains (about 0.41 IQ points) on fluid-type tests. Gains of this magnitude are widely taken to point to environmental rather than genetic change, and they are one reason why test norms have to be periodically updated. Gonthier (2022) adds that even non-verbal visual tests carry cultural assumptions, so differences between groups on such tests should be interpreted with care.

1.3 Theories of Intelligence

Spearman's Two-Factor Theory. Charles Spearman (1904) noticed that scores on different mental tests are positively correlated and concluded that every test draws on two kinds of ability: a general factor (g) common to all intellectual tasks, and a specific factor (s) particular to a single task. Tests with a high g loading are the best indicators of a person's general ability. In later work, Spearman (1927) described g in terms of educing relations and correlates — seeing how things are related and working out what is missing — an idea that underlies Raven's Progressive Matrices.

Thurstone's Primary Mental Abilities. Thurstone (1938) disagreed with the idea of a single general factor. Using factor analysis, he identified a small set of relatively independent primary abilities — verbal comprehension, word fluency, number, spatial visualisation, memory, perceptual speed and reasoning — and argued that intelligence is better described by a profile of these abilities than by one score.

Cattell's Fluid and Crystallised Intelligence. Cattell (1963) separated fluid intelligence (Gf), the ability to reason and solve new problems independent of prior learning, from crystallised intelligence (Gc), the knowledge and skills gained through education and experience. Fluid ability is thought to depend less on schooling and culture, and is the ability that matrix tests such as the SPM are generally taken to reflect.

Gardner's Theory of Multiple Intelligences. Gardner (1983) proposed that human intelligence is made up of several distinct types, including linguistic, logical-mathematical, spatial, musical, bodily-kinaesthetic, interpersonal and intrapersonal intelligence. The theory has been influential in education but is criticised because these intelligences are difficult to measure with standard tests.

1.4 Levels of Intelligence

Intelligence is commonly expressed as an intelligence quotient (IQ) and grouped into levels. Terman (1916), working with the Stanford-Binet scale, described the categories in Table 1 below, and Wechsler (1958) later proposed a somewhat different classification for his deviation IQ scales.

IQ (Terman)	Category (Terman, 1916)	IQ (Wechsler)	Category (Wechsler, 1958)
Above 140	Near genius or genius	130 and above	Very superior
120–140	Very superior	120–129	Superior
110–120	Superior	110–119	Bright normal
90–110	Normal or average	90–109	Average
80–90	Dull	80–89	Dull normal
70–80	Borderline deficiency	70–79	Borderline
Below 70	Definite feeble-mindedness	69 and below	Mentally defective (intellectual disability)

In the DSM-5, intellectual disability (intellectual developmental disorder) is diagnosed only when deficits in intellectual functioning, confirmed by clinical assessment and standardised testing, occur together with deficits in adaptive functioning that begin in the developmental period; severity (mild, moderate, severe, profound) is judged on adaptive functioning and not on the IQ score alone (American Psychiatric Association, 2013).

1.5 Measurement of Intelligence

The first practical intelligence test was the Binet-Simon scale of 1905, later revised by Terman as the Stanford-Binet. The early conception of IQ was mental age divided by chronological age, multiplied by 100. Wechsler's scales replaced this with a deviation IQ, in which a person's score is compared with the scores of others of the same age. During the First World War, group tests such as the Army Alpha and Army Beta were developed so that large numbers of people could be tested simultaneously. Present-day tests can be classified along several dimensions.

Individual and group tests. Individual tests such as the Stanford-Binet and the Wechsler scales are administered to one person at a time by a trained examiner, allowing close observation and a detailed picture. Group tests, such as the Army Alpha, can be administered to many people together and are quicker and cheaper, but afford less control over motivation and attention. The SPM can be used in either format.

Verbal, non-verbal and performance tests. Verbal tests depend on language (e.g., vocabulary, verbal analogies, comprehension). Non-verbal tests use pictures, designs or figures and require little or no language; the SPM belongs to this category. Performance tests ask the person to manipulate materials, such as arranging blocks (Kohs Block Design) or completing form boards, and are useful for people with language or hearing difficulties.

Full-scale and specific-ability tests. Full-scale tests such as the Wechsler scales combine many subtests to yield an overall IQ. Specific-ability tests measure a single ability, such as abstract, spatial or verbal reasoning. The SPM is closer to the second type, as it concentrates on one kind of reasoning, although it is often used as an estimate of general ability.

Culture-based, culture-fair and culture-free tests. Culture-based tests use content, language and knowledge from a particular culture, advantaging people from that culture. Culture-fair tests, such as Cattell's Culture Fair Intelligence Test and Raven's Matrices, attempt to reduce this influence by using abstract figures and minimal language. Culture-free tests, which would be independent of all cultural influence, remain an ideal rather than a reality, since every test is constructed by people within a culture; it is therefore more accurate to describe the SPM as relatively culture-fair rather than culture-free (Gonthier, 2022).

1.6 About Raven's Standard Progressive Matrices

Raven's Progressive Matrices is a widely used non-verbal test of general intellectual ability, constructed by John C. Raven, a British psychologist who worked with Charles Spearman, whose own ideas grew out of the earlier work of Galton and Wundt. The test was first published in 1938, and its standardisation was reported by Raven (1941). Raven built the test on Spearman's two-factor theory; it is intended to assess g, and in particular the eductive component — the ability to make sense of confusing material, perceive relationships and go beyond what is given (Spearman, 1927; Raven et al., 2003).

Contents and format. The current SPM comprises 60 problems arranged in five sets, A to E, of 12 problems each. Every problem is a matrix of geometric figures with one part missing, printed in black on a white background; the person selects the missing part from a set of options — six in Sets A and B, and eight in Sets C to E (Al-Thani, 2026). The sets are typically described as moving from continuous patterns (A), to analogies between pairs of figures (B), progressive changes in patterns (C), rearrangement of figures (D) and, finally, breaking a figure into its parts (E). Difficulty rises within each set and across sets, and the early items of each set orient the respondent to the harder items that follow (Raven et al., 2003).

Theoretical background. Following Spearman, Raven distinguished two components of general ability: eductive ability, the capacity to think clearly and work out relationships in new, unclear situations, and reproductive ability, the capacity to store and reproduce previously learnt information. The SPM primarily measures the eductive component, while reproductive ability is assessed separately by the vocabulary scales in the same manual (Raven, 1979; Raven et al., 2003).

Versions. Raven's Progressive Matrices exists in three principal forms. The Coloured Progressive Matrices (CPM) is the easiest, uses coloured designs and is intended for young children, older adults and people with learning difficulties. The Standard Progressive Matrices (SPM), used in the present study, covers a wide range of ability from childhood to adulthood. The Advanced Progressive Matrices (APM) contains harder items and is used with higher-ability individuals, for whom the SPM tends to produce a ceiling effect.

Psychometric properties. Evidence on the SPM has accumulated across many countries. In a sample of 6,529 Kuwaiti children aged 8 to 15, Abdel-Khalek (2005) reported Cronbach's alpha of .88 to .93, test–retest reliability of .69 to .85, and set loadings between .73 and .89 on a single salient factor. Abdel-Khalek and Raven (2006) compared Kuwaiti norms (N = 6,594) with the 1979 British norms and with data from other cultures; scores were remarkably similar across

cultures at any one time but had changed considerably over time, consistent with Raven (2000) and with the Flynn effect (Pietschnig & Voracek, 2015). A recent Qatari standardisation of a computer-based SPM (N = 4,279, aged 11 to 18) again found high overall internal consistency (about .92) and a clear rise in difficulty across sets, although the test was not strictly unidimensional and some Set E items discriminated poorly (Al-Thani, 2026). Short forms have also been studied: Myszkowski and Storme (2018) proposed using only the last series (SPM-LS); later reanalyses found it essentially unidimensional, with a specific factor on the last six items (Garcia-Garzon et al., 2019), and satisfactory reliability (Myszkowski, 2020). At the same time, Gignac (2015) has argued that Raven's is not a pure measure of g.

1.7 Applications and Uses

- General population. The SPM was designed to assess general intellectual ability, especially observation, abstract reasoning and problem-solving; because it depends little on language, it is used across clinical, educational, occupational and research settings.
- Personnel selection. It can indicate a candidate's ability to think clearly, identify problems and evaluate possible solutions against the available information, which is relevant to professional, managerial and technical roles.
- Education. It has a long history in schools and colleges, where it can help identify children who need additional support as well as those who are unusually able.
- Clinical work. Its non-verbal format makes it useful for people with reading, language or hearing difficulties, for older adults and for certain clinical groups, and it can be repeated to track progress or rehabilitation needs.
- Research. Its theoretical grounding, cross-linguistic and cross-cultural use, and availability of norms make it a common choice in studies requiring a measure of reasoning ability (Abdel-Khalek & Raven, 2006; Al-Thani, 2026).

1.8 Advantages

- Little language needed: items are pictorial, so the test suits people of different linguistic backgrounds and limited reading skills.
- Reasoning rather than knowledge: it emphasises pattern recognition and problem-solving (fluid ability) rather than learnt facts.
- Wide range of use: the CPM, SPM and APM together span young children to high-ability adults.
- Easy to administer: instructions are brief, the format is multiple choice, and items increase gradually in difficulty.
- Suits special groups: appropriate for people with language barriers, hearing problems or learning difficulties, since it measures eductive ability (Spearman, 1927).
- Well researched: extensively studied across countries and widely used in cognitive research and population studies of score change, such as the Flynn effect (Pietschnig & Voracek, 2015).

1.9 Limitations

- Narrow scope: it measures abstract, non-verbal reasoning and does not assess verbal, social or practical intelligence; a single SPM score should not be read as an index of overall intelligence (Gignac, 2015).
- Not fully culture-free: cultural and educational experience can still influence how people perceive and solve visual problems (Gonthier, 2022).
- Test-taking familiarity: people accustomed to puzzles and testing situations may have some advantage.
- Sensitivity to administration conditions: altering the time limit or test length can change the abilities the score reflects (Tatel et al., 2022), so standard procedure should be followed closely.
- Ceiling effect: the SPM may not adequately differentiate individuals of very high ability, which motivated development of the Advanced version.

- Risk of over-reliance: decisions in hiring or education should not rest on a single score, and predictive-validity claims should be drawn only from sources that have been directly consulted.

2. Review of Literature: Raven's Standard Progressive Matrices in Indian Population Studies (2021–2026)

2.1 Enhancement of Cognitive Abilities Among Learning-Disabled Children in India

Yogeswarie (2021) conducted an empirical intervention study using Raven's Coloured Progressive Matrices (CPM) to examine whether a yogic stimulation technique (Thoppukaranam, or "Super Brain Yoga") enhances cognitive abilities among learning-disabled children. Sixty children from classes III–V in Coimbatore schools were assigned to an experimental group (21 days of Thoppukaranam practice) or a waitlist control group, in a before–after–follow-up design; the CPM was administered at all three phases alongside executive-function measures (Trail Making, Verbal and Design Fluency, Colour-Word Interference, Word Context). CPM scores improved significantly across the after and follow-up phases in the experimental group, as did several executive-function measures, though motor speed and inhibition did not improve. The study demonstrates the CPM's sensitivity as a repeat-measures outcome tool for tracking cognitive change following a low-cost, culturally rooted intervention in Indian children with learning disabilities.

2.2 Academic Cognitive Remedial Interventions for Children With Special Needs in India

Sharma and Malviya (2023) examined, in a single-group pre-test/post-test design, the effect of academic cognitive remedial interventions on the adaptive, personal-social, communication, motor and cognitive skills of children with special needs (CWSN). Ten such children, identified through teacher appraisal and achievement scores, were assessed before and after a remedial programme using the SPM alongside the Malin's Intelligence Scale for Indian Children (MISIC). Statistically significant improvements ($p < .001$) were found in raw scores across all sub-domains, with enhanced post-intervention scores on all MISIC indices. This study supports the applied utility of the SPM as a repeat-measures outcome tool in remedial and clinical intervention research with Indian children with special needs.

2.3 Gender Difference in Vocational Interest and Intelligence Among Indian High-School Students

A cross-sectional survey study (International Journal of Indian Psychology, 2023) examined whether vocational interest and intelligence differ between male and female high-school students. Students from two Government Intermediate Colleges in Prayagraj (Uttar Pradesh) were administered the SPM in a group setting, following institutional and parental consent, and scores were compared by gender. The paper cites established SPM reliability figures (Cronbach's alpha between .88 and .93) in support of the test's validity for this sample; the specific quantitative gender comparison could not be retrieved from the openly accessible excerpt and should be verified against the full published article. The study nonetheless represents continued Indian secondary-school use of the SPM to examine how measured intelligence relates to vocational orientation and gender.

2.4 SPM Within a Prospective Indian Birth-Cohort Study of Neurocognitive and Mental Health Outcomes

A prospective cohort study by the KEM Hospital Research Centre, Pune (2017–2025; NCT03096028) used the SPM as part of a wider neurocognitive battery to investigate the developmental origins of neurocognitive and behavioural endophenotypes and common mental health disorders among young adults from an Indian birth cohort. Participants underwent a roughly 60-minute battery including the SPM (general intelligence), the Colour Trail Test (executive function), the Digit Span Test (working memory) and Block Design (visuo-spatial ability). As a public registry record rather than a completed results publication, specific outcome findings are not reported in the open entry, which documents study design, sample and instrumentation rather than results. The study illustrates the SPM's continued role as a standard component of neurocognitive assessment batteries within large-scale Indian psychiatric and developmental epidemiology research.

2.5 Challenging Existing Raven's Norms for Indian Government-School Children

Vogelzang, Wigdorowitz and Tsimpli (2025–2026) conducted a large-sample psychometric norming study using the CPM (part of the same Raven's Progressive Matrices family as the SPM) to test the adequacy of existing Indian CPM norms for children attending government schools and to develop more representative norms. A total of 1,752 children aged 8–11 from government primary schools in Delhi, Hyderabad and Patna (combining the MultiLiLa and ASCI project datasets) completed the CPM. Under the existing norms, 78.5% of children scored in the bottom 10th percentile (IQ equivalent ≤ 80), revealing a severely skewed distribution; the existing norm sample was found to be roughly five times smaller than the present sample, linguistically underspecified, and skewed toward higher-SES private-school children. New age-banded percentile norms were derived and cross-validated, and gender differences that emerged were attributed to unequal educational access rather than an innate ability gap. This is the most substantial and up-to-date evidence that legacy Raven's norms for Indian children are unrepresentative of the majority government-school population and require revision, with direct implications for interpreting any Indian SPM/CPM assessment.

2.6 Synthesis

Across these five studies, the SPM/CPM family continues to be actively used in Indian research spanning clinical remediation (Studies 2.1 and 2.2), educational assessment (Study 2.3), large-scale psychiatric epidemiology (Study 2.4) and psychometric norm development (Study 2.5). The most methodologically significant recent contribution — Study 2.5 — raises a serious caution: existing Indian norms for the Raven's tests, developed from small, urban, higher-SES samples, may substantially misrepresent the ability of the majority of Indian schoolchildren who attend government schools. Meanwhile, applied and clinical studies (2.1, 2.2 and 2.4) continue to treat the SPM/CPM as a robust, easily repeatable outcome measure, reflecting confidence in its psychometric properties even as the underlying Indian norm tables are being actively re-examined. Together, these studies suggest that continued applied use of the SPM in Indian clinical and educational settings should be paired with urgent, large-sample renorming efforts that adequately represent India's socio-economic and linguistic diversity.

Note: Studies 2.3 and 2.4 are drawn from an openly accessible excerpt and a public clinical trial registry, respectively, rather than a full journal text; some citation and results details could not be independently verified through open web search. For formal citation purposes, final published details (author names, volume/issue/page numbers) should be cross-checked against the publisher or database of record.

3. Methodology

3.1 Aim

To assess the subject's perceptual accuracy and analytical reasoning using Raven's Standard Progressive Matrices, and, on that basis, to determine the subject's level of intelligence.

3.2 Plan

The SPM was administered to the subject, responses were scored, and the subject's percentile rank, grade and IQ were derived from the applicable norms; the consistency of performance across the five sets was also examined.

3.3 Materials

- Raven's Standard Progressive Matrices test booklet (60 problems)
- Answer sheet
- Scoring key
- Norms tables
- Stop clock

- Writing materials

3.4 Administrative Procedure

The subject was seated comfortably in a well-ventilated, well-lit room free from distractions, and rapport was established. The test booklet and answer sheet were placed before the subject. Using the first pattern as an example, the examiner explained the task and ensured that the subject understood it, guiding the subject through the first problem. Once the subject confirmed the task was clear, the test began with the signal "start". There is no formal time limit, but the subject was encouraged to work as quickly as possible and to mark an answer, even a guess, when unsure; Gonthier (2023) found that even mild time pressure lowered accuracy on Raven's matrices (Advanced form), which is why no strict time limit was imposed. The instructions administered were as follows:

"Each page of this booklet displays a pattern with a missing piece, and you must choose the correct piece from the options below to complete it. The answer you select should complete the picture and also make it meaningful. Write the number of your chosen piece next to the problem number on your answer sheet. If you need to change an answer, cross out the incorrect response and write the correct number beside it, immediately, and then move on to the next problem. Continue through all 60 problems, which are divided into five sets, A to E, of twelve problems each. The items start simply and become progressively more challenging, though focusing carefully on the patterns may make them easier to solve. Work at your own pace without skipping items or going back to problems already solved. Begin when I give the 'start' signal."

At the end of the test, the examiner collected the booklet and answer sheet, thanked the subject for participating, and noted the approximate time taken. Responses were scored by counting correct answers, and the raw score was converted into percentile rank, grade and IQ using the applicable norms. The results were interpreted in light of the subject's reasoning and problem-solving during the test.

3.5 Precautions

- The examiner ensured that the subject clearly understood the instructions before starting and clarified any doubts.
- The problems were solved sequentially, and the subject was not permitted to revisit previously answered problems.
- The subject was required to attempt every problem, providing only one answer for each.
- Where the subject was undecided or confused between two options, a sensible guess was encouraged rather than extended deliberation.
- The test material was not shown to the subject before the test began.
- The subject was asked not to take a break during the test.

3.6 Scoring and Analysis

Each correct answer earned one mark and incorrect or missing answers earned zero. The number of correct answers in each set (maximum 12 per set) constituted the raw score for that set, and the sum of the five set scores formed the total raw score (maximum 60). The total raw score was converted to a percentile rank using the norms for the subject's age group, indicating the percentage of the normative group scoring at or below the subject. The percentile was then placed into a grade, from which the corresponding IQ was obtained: Grade I — 95th percentile and above (intellectually superior); Grade II — 75th to 94th (definitely above average); Grade III — 25th to 74th (intellectually average; III+ above the 50th percentile, III− below it); Grade IV — 6th to 24th (definitely below average); Grade V — 5th percentile and below (intellectually impaired).

For each set, the Normal Expected Score (NES) — the score a person with a given total raw score would be expected to obtain in that set, taken from the manual's table of normal (expected) score composition (Raven, 1979) — was compared

with the Subject's Obtained Score (SOS) to derive a Consistency Score: CS = SOS − NES. A difference greater than ±2 in any set indicates inconsistent performance, in which case the total score should not be accepted at face value as a dependable estimate of general intellectual ability.

4. Results

Table 2 presents the subject's overall results on the SPM, and Table 3 presents the set-wise obtained scores, expected scores and consistency scores.

Table 2

Subject's Results on Raven's Standard Progressive Matrices

Subject	Total Raw Score	Percentile	Grade	Interpretation
CREST	57	95%	I	Intellectually Superior

Table 3

Normal Expected Score, Subject's Obtained Score and Consistency Score by Set

Raw Scores	A	B	C	D	E	Total
Subject's Obtained Score (SOS)	12	12	11	10	12	57
Normal Expected Score (NES)	12	12	12	11	10	57
Consistency Score (CS = SOS − NES)	0	0	−1	−1	+2	—

Note. CS = SOS − NES for each set; the total CS cell is not reported.

5. Discussion

The aim of the present study was to assess the subject's perceptual accuracy and analytical reasoning using Raven's Standard Progressive Matrices (SPM), and to determine the subject's percentile rank and grade from the applicable norms. The subject, identified for the purposes of this report as CREST, obtained a total raw score of 57 out of 60. This score corresponds to the 95th percentile and Grade I, with the interpretation "Intellectually Superior." A percentile rank of 95 indicates that the subject performed at or above approximately 95% of individuals in the relevant normative group. Within the scope of the SPM, this result reflects a high level of performance on non-verbal reasoning tasks involving perceptual accuracy, analytical reasoning, pattern recognition and problem-solving. An IQ value is not reported, as no IQ conversion was available in the norms consulted.

As shown in Table 3, the subject obtained 12, 12, 11, 10 and 12 in Sets A, B, C, D and E respectively, against Normal Expected Scores of 12, 12, 12, 11 and 10. The resulting consistency scores were 0, 0, −1, −1 and +2 for Sets A to E, all of which fall within the ±2 criterion. The obtained performance is therefore consistent across the five sets, with no marked discrepancy between the subject's obtained pattern and the expected score composition for a total score of 57.

This pattern is broadly compatible with the progressive structure of the SPM, in which item difficulty increases across sets. The subject achieved the maximum score in Sets A and B, scored 11 in Set C and 10 in Set D, and again obtained the maximum in Set E. The small deviations from the expected scores in Sets C, D and E do not exceed the stated consistency criterion. It should be noted that percentile interpretation depends on the specific age group and normative

table used; as the norm year and normative population were not specified in the data available for this study, no additional assumption about the norm source is made here.

The findings should be interpreted in light of the limitations of the SPM discussed in Section 1.9. The SPM assesses a relatively specific range of non-verbal, abstract reasoning ability and should not be treated as a complete measure of intelligence. The test is relatively culture-fair rather than entirely culture-free, and performance can be influenced by testing conditions and the subject's state at the time of administration. The review of recent Indian literature (Section 2), and in particular the norming study by Vogelzang et al. (2025–2026), further underscores that percentile and grade interpretations for Indian respondents should be treated with caution pending updated, representative norm tables.

6. Conclusions

The respondent, identified as CREST, completed the 60-item Raven's Standard Progressive Matrices and obtained a total raw score of 57 out of 60, indicating a high level of performance on the non-verbal reasoning tasks included in the SPM. This corresponds to a percentile rank of 95%, Grade I, and the interpretation "Intellectually Superior," indicating performance at or above approximately 95% of individuals in the relevant normative group.

The set-wise scores were A = 12, B = 12, C = 11, D = 10 and E = 12, against Normal Expected Scores of 12, 12, 12, 11 and 10. The resulting consistency scores (CS = SOS − NES) were A = 0, B = 0, C = −1, D = −1 and E = +2, all within the ±2 criterion, indicating a consistent pattern of performance across the five sets.

Overall, the findings suggest strong non-verbal reasoning performance involving perceptual accuracy, pattern recognition, analytical reasoning and problem-solving as measured by the SPM. This result should be interpreted as a test-specific indication of non-verbal reasoning ability, and not as a complete assessment of every aspect of intelligence or functioning.

7. Recommendations

- The respondent may be encouraged to engage regularly in intellectually stimulating activities involving pattern recognition, logical reasoning and problem-solving, such as Sudoku, crosswords, logical reasoning puzzles, non-verbal matrix puzzles, number-series problems and visual pattern-completion tasks.
- Strategy-based games such as chess, checkers and selected board or logic games may be used to practise planning, attention, weighing alternatives and flexible problem-solving, with emphasis on solving unfamiliar problems rather than repeating familiar exercises.
- Reasoning skills can be further developed by practising increasingly complex problems, explaining the logic used to reach an answer, and trying more than one solution strategy where possible; regular reading, learning a new subject or skill, and mentally analysing everyday problems can also provide continued cognitive engagement.
- Given the high SPM result, a more difficult measure such as Raven's Advanced Progressive Matrices may be considered for further differentiation of higher-level non-verbal reasoning performance. The SPM score should continue to be interpreted alongside other relevant information and should not be used alone for important decisions.

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