NEURO COGNITIVE PROFILER

A SCIENTIFIC REPORT ON COGNITIVE ANALYSIS FOR UPSC ASPIRANT

PLH INDIA AND C8 SCIENCES

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The Neuro Cognitive Profiler

The Neurocognitive Profiler stands as a groundbreaking cognitive assessment test, meticulously designed to delve into the intricate workings of the human mind. Developed by a team of esteemed neuroscientists at the Yale University, this assessment harnesses the power of cutting-edge neuroscience to evaluate and quantify an individual's cognitive capabilities with an unprecedented level of accuracy and depth.

The assessment scrutinizes thirteen pivotal dimensions of cognitive functions: working memory, self-control, focused attention, processing speed, and accuracy and risk appetite are a few of them.

The results generated by the Neuro cognitive Profiler are nothing short of extraordinary. They provide not just a numerical score, but an in-depth neuro cognitive profile of the individual, highlighting strengths and areas for improvement within each cognitive dimension. This information empowers individuals, educators, and organizations to tailor their learning strategies, interventions, and training programs to match the candidate's cognitive aptitudes and enhance their overall cognitive performance.

PLH INDIA with C8 SCIENCES, is the only cognitive training and evaluation experts who have made indelible marks in the realm of highly competitive corporate world by identifying, evaluating and improving cognitive factors of competitive exam aspirants and help them to perform the best of their capability.

DR. BRUCE.C. WEXLER

PROFESSOR EMERITUS,

NEUROSCIENCE DEPT

THE YALE UNIVERSITY, CONNECTICUT, USA

Dr. Bruce C. Wexler is a prominent figure in cognitive neuroscience whose work has reshaped our understanding of brain plasticity and its impact on human development. With a distinguished career, he has revealed the brain's remarkable adaptability and pioneered interventions that optimize cognitive abilities. Dr. Wexler's dedication to bridging research with practical applications, such as his cognitive training programs, showcases his commitment to enhancing human potential and exemplifies his role as a visionary in the field.

COGNITIVE MONITORING

What is cognitive monitoring?

- **Identifying the Conflict**:
- **Assessing the Situation**.
- **Listening Actively**:
- **Analyzing the Consequences**
- **Conflict Resolution**.
- **Mediation and Problem–Solving**: **Follow–Up and Monitoring**: **Feedback and Adaptation**:

These are the main factors influenced by cognitive monitoring.

The analysis on cognitive monitoring is done in percentage level, and also on percentile in the same age group for relative analysis.

If the candidate has **100%** cognitive monitoring skill, it translates to 100percentile in the same age and competition group.

100 percentile in cognitive monitoring refers to absence of **interference** in cognitions affecting efficiency.

What is cognitive interference?

Past experience and thoughts which interfere in the present

For a UPSC student gearing up for the exam, past disappointments or self-doubt, an experience, current environmental situations can interfere with thinking process. Negative experiences and thoughts might impact focus and confidence.

Suggestion: The candidate is best in cognitive monitoring and primed to UPSC preparations, keeping the same attribute will be highly advantageous.

Cognitive processing speed refers to how quickly our brain can take in and use information. Imagine it's like how fast a computer can process data. Some people have a fast "mental" computer, so they can think, learn, and react to things swiftly. Others might have a slower mental computer, so it takes them a bit more time to understand and respond to things. This speed can affect how well we perform tasks, make decisions, and even how quickly we learn new things.

	CURRENT	REQUIRED
CONGRUENT VALUE SPEED	540	350 TO 430
INCONGRUENT VALUE SPEED	654	400 TO 480

HERE, 654 MILLI SECOND IS THE COGNITIVE PROCESSING TIME FOR THE CANDIDATE

This speed is **average** in the same age group, an analogy on the speed could be taken as a 55 km speeding car, where the expected speed is 80km.

A student with average cognitive processing speed in the context of UPSC preparation demonstrates a balanced mix of cognitive attributes. While not excelling in rapid information processing, this profile suggests moderate reaction time. The student makes decisions in a balanced manner, employs effective learning strategies, and exhibits competent problem-solving skills. Despite not achieving extreme proficiency, there's consistency in performance, adaptive study habits, and moderate cognitive flexibility. However, stress management might require additional attention. Overall, this combination presents a pragmatic and potentially successful approach to UPSC preparation, acknowledging both strengths and areas for enhancement.

ACCURACY OF COGNITIVE PROCESS

GOOD++ - The candidate has a very good accuracy in cognitive process.

The accuracy of the student is best in the age and competitive group, the most important highlight is, the student's accuracy has affected the speed, this in corroborative to cognitive speed. Having speed and accuracy is like twin advantage and will be highly recommended position for exam management.

DECISION MAKING SPEED

Average++   653 milli second -

Decision making speed is low.

Dimensions of Executive Functions Strength & Weakness					Overall Speed & Accuracy Patterns	
Student Name	Focus	Self-Control	Working Memory		Speed	Accuracy
absolute2	Medium	Strong	Strong		Medium	Strong

UPSC demonstrates a decision-making speed of 653 milliseconds, exceeding the suggested optimal speed of 400 milliseconds. This indicates that UPSC takes a longer to process information and respond to stimuli. variance is relatively high, it's important to consider the context of the tasks involved. UPSC's decision-making capabilities may be perceived as efficient for certain scenarios, but there might be room for improvement in time-sensitive situations, such as those encountered in standardized tests or competitive examinations. Strategies to enhance cognitive speed, such as targeted practice and exposure to time-bound tasks, could be beneficial for UPSC in optimizing decision-making efficiency and aligning more closely with suggested benchmarks. Acknowledging and addressing this difference in speed can contribute to a more comprehensive approach to cognitive skill development.

SPEED OF INFORMATION PROCESS

The candidate's speed for processing information is **26 milli sec.**

A very small difference in speed between "Go" and "No-Go" trials in a Go/No-Go task suggests that the individual is responding similarly to both types of stimuli. This minimal discrepancy indicates a challenge in differentiating between "Go" (stimulus requiring a response) and "No-Go" (stimulus requiring inhibition) conditions. It may imply potential difficulties in response inhibition and the ability to withhold a response when needed.

The speed of information process, having at 26 milli sec, is detrimental in the exam, as capability of response inhibition is very low, causing to get unfocused, misaligned in the process.

Suggestions:

Need to get settled in thoughts and process in life

Curative meditation is very much advised

Counselling suggested and realign the priorities.

COGNITIVE FLEXIBLITY

Cognitive Flexibility - Moderate

Cognitive flexibility is the mental ability to adapt and switch between different tasks, concepts, or perspectives efficiently. It involves the capacity to revise one's thinking, problem-solve creatively, and adjusting to changing circumstances. Individuals with strong cognitive flexibility can navigate diverse situations, consider multiple viewpoints, and seamlessly transition between various cognitive processes, contributing to enhanced adaptability and problem-solving skill.

Individuals characterized by medium cognitive flexibility, as represented by UPSC, possess a well-rounded set of attributes that enables them to navigate cognitive tasks with adaptability and effectiveness. These individuals demonstrate openness to new ideas, exhibit problem-solving skills, and can switch between tasks with a moderate level of ease. Their learning agility allows them to absorb information from new experiences While not as resistant to change as those with low cognitive flexibility, they may not embrace it as swiftly as those with high cognitive flexibility. UPSC individuals generally manage stress moderately well, communicate effectively, and are open to learning from feedback, showcasing a versatile and adaptable cognitive profile for diverse situations

CHALLENGES

Individuals with medium cognitive flexibility, while striking a balance in their cognitive approach, may face drawbacks in certain aspects. Their moderately adaptable nature might result in a potential resistance to significant changes and a limited inclination towards innovation, impacting their ability to generate highly novel ideas. Additionally, a moderate level of risk aversion and difficulty in letting go of established patterns may hinder their willingness to explore unconventional approaches. The challenge in handling ambiguity and a potential struggle with rapid task switching further highlight the nuanced limitations associated with medium cognitive flexibility. Despite these drawbacks, it's crucial to recognize that these characteristics can be advantageous in specific contexts, demonstrating the importance of adaptability in diverse cognitive profiles.

RESPONSE INHIBITION

In everyday life, response inhibition plays a crucial role in situations like resisting temptations, avoiding distractions, or refraining from impulsive actions. Strong response inhibition contributes to effective self-regulation and goal-directed behavior, whereas difficulties in this aspect of cognitive control can lead to impulsivity and challenges in adapting to changing demands
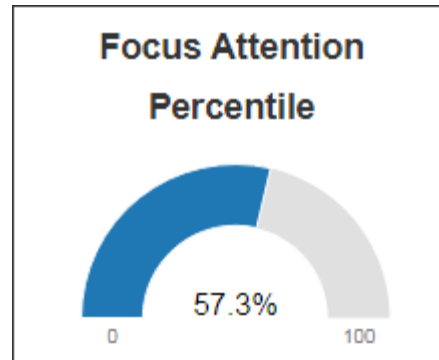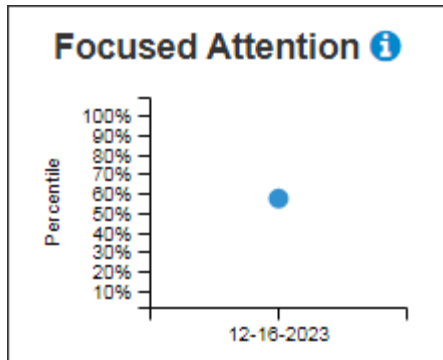
Response inhibition is low for the candidate. Percentile result on go no go analysis even though at 93% accuracy, the response time is very small which would point to low response inhibition.

MEMORY RECALL

Candidate has good memory recall with 94% percentile success. Good ++

It involves the ability to recall both short-term and long-term memories, reflecting a well-functioning working memory system. Additionally, individuals with good memory recall typically exhibit effective retrieval cues, associations, and organizational strategies that aid in accessing stored information. This skill is pivotal in academic and professional settings, enhancing learning, decision-making, and problem-solving capabilities. Moreover, a reliable memory recall is often linked to heightened cognitive functions, supporting overall mental acuity and cognitive efficiency.

Focused Attention ⓘ

Percentile axis: 100%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%

12-16-2023

Focus Attention Percentile

57.3%

0 — 100

For UPSC aspirants, achieving a focus attention percentile of 80 or above is recommended. However, the observed score of **57.3 percentile** for a candidate with an average cognitive process could be attributed to factors such as Individuals with average focus attention possess a well-rounded cognitive profile characterized by moderate reaction times, sustained attention over reasonable durations, and adaptability to diverse tasks. They exhibit effective task-switching capabilities, balanced decision-making, and a moderate level of cognitive flexibility, allowing them to navigate different cognitive processes. Consistency in performance across various tasks, adaptive learning strategies, and responsive approaches to stress management contribute to their ability to handle challenges effectively. These individuals are generally open to feedback, using it to enhance their performance. Overall, their cognitive attributes strike a balance, allowing for effective engagement in various activities without experiencing extreme challenges in attention and focus.

SELF CONTROL

Self Control ⓘ

Self Control Percentile

96.0%
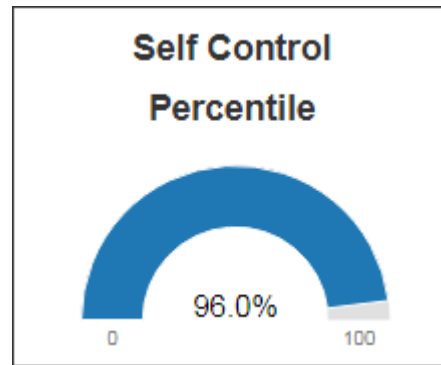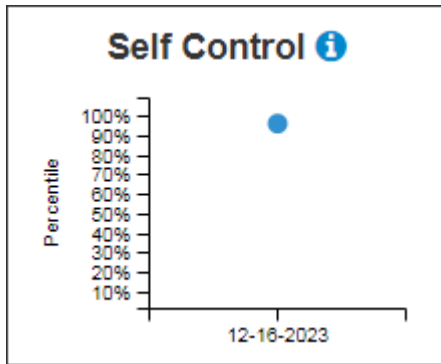
Candidate has excellent self-control of 96.percentile.

It suggests a high level of discipline, the ability to manage stress effectively, and a keen sense of professionalism. Individuals with such highself-control are often adept at handling challenging situations with composure, making sound decisions, and consistently adhering to ethical and organizational guidelines. The above attributes are indeed influenced by other cognitive factors too.
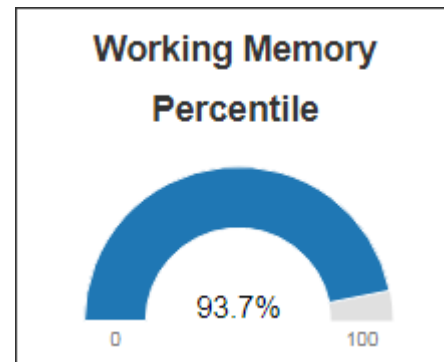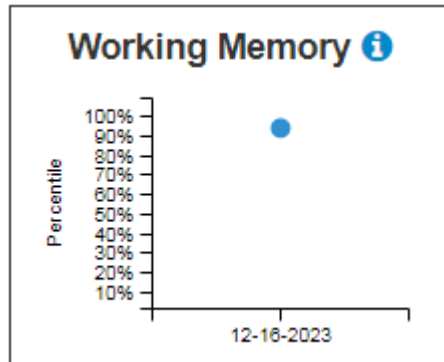
WHAT IS WORKING MEMORY?

Working memory is like your mental notepad, helping you remember and manipulate information in your daily life. It's what lets you follow a recipe, solve a puzzle, or hold a conversation by retaining relevant details in your mind for a short time. Whether you're making a shopping list, following directions, or tackling complex tasks at work, working memory plays a vital role in keeping your thoughts organized and ensuring you stay on track. It's an essential cognitive tool that helps you manage the myriad of information you encounter each day.

Information Retention: The ability to efficiently retain and recall information, which is crucial for understanding complex concepts and retaining vast amounts of information required for the UPSC exam.

Working memory of UPSC is aligned to the successful students in UPSC, its most relevant in objective question papers a with 93.7 percentile working memory and 80 above considered good for UPSC students, UPSC is one of the best contenders for the exam.

RISK APPETITE

The aspirant has acceptable range of risk taking. No rashness and risk aversion are seen in the evaluation.