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# Scientific Rationale & Development Methodology

The Nova Assessment Suite — A Practitioner's Technical Reference



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**NOVA ASSESSMENT SUITE – SCIENTIFIC WHITE PAPER**

This document provides the complete scientific rationale and development methodology for all five Nova instruments. It is intended for HR practitioners, occupational psychologists, and organisational leaders who require evidence that the tools they deploy are built on sound psychometric principles and calibrated for the GCC workforce.

# Executive Summary



The Nova Assessment Suite is a comprehensive, scientifically grounded talent measurement platform developed specifically for the Gulf Cooperation Council (GCC) region. Designed and validated by a team of occupational psychologists, the suite integrates five complementary instruments that together provide a holistic view of individual potential – spanning cognitive ability, personality, behavioural competencies, practical judgement, and emotional intelligence.

This white paper serves as the primary technical reference for practitioners deploying Nova assessments. It documents the theoretical foundations, development methodology, psychometric properties, and validation evidence underpinning each instrument. The document is intended for HR professionals, occupational psychologists, talent acquisition specialists, and organisational development practitioners who require assurance that the tools they deploy are built on sound scientific principles.

All Nova instruments are developed in compliance with the standards set by the British Psychological Society (BPS) Psychological Testing Centre and the International Test Commission (ITC) Guidelines on Test Use. The suite was co-developed simultaneously in Arabic and English, ensuring linguistic and cultural equivalence rather than relying on direct translation – a critical differentiator in the GCC's multilingual professional environment.

## The Five Instruments at a Glance

<p><b>COGNITIVE</b></p> <p><b>Nova Cognitive Ability Suite</b></p> <p>Numerical, Verbal &amp; Abstract Reasoning. Adaptive delivery, 12–15 min per domain.</p>	<p><b>PERSONALITY</b></p> <p><b>Nova Personality Questionnaire (NPQ)</b></p> <p>15 traits across the Five Factor Model. Sten-scored against GCC norms.</p>	<p><b>COMPETENCY</b></p> <p><b>Nova40 Architecture</b></p> <p>40 behavioural competencies in 5 clusters. 4-level career indicators.</p>
<p><b>SITUATIONAL</b></p> <p><b>Nova SJT (NSJT)</b></p> <p>Video-avatar scenarios at 3 organisational levels. Single percentile score.</p>	<p><b>EMOTIONAL INTELLIGENCE</b></p> <p><b>Nova EI Assessment (NEIA)</b></p> <p>8 EI scales mapped to Nova40. Behaviourally anchored items.</p>	<p><b>FRAMEWORK</b></p> <p><b>Integrated Scoring</b></p> <p>Competency potential scores blended from NPQ, NEIA, NSJT, and Cognitive data.</p>

## Introduction & Context

Psychometric assessment has become a cornerstone of evidence-based talent management globally. In the GCC, however, the market has historically been dominated by tools developed for Western populations – instruments that carry implicit cultural assumptions, lack Arabic-language equivalence, and are benchmarked against norms that do not reflect the regional workforce. This gap creates both a measurement problem and a fairness problem: assessments that are not calibrated for the population they are used on produce results that are less accurate and potentially inequitable.



Nova assessments are designed for the GCC workplace – culturally calibrated, bilingual, and purpose-built for Vision 2030 talent strategies.

Nova was developed to address this gap directly. The suite was conceived from the outset as a GCC-native platform – not an adaptation of an existing Western tool, but a purpose-built system grounded in the region's workforce realities, cultural context, and national transformation agendas. Every instrument in the suite was developed simultaneously in Arabic and English, piloted with GCC samples, and normed against a reference population of managers and professionals in the Kingdom of Saudi Arabia.

The suite is also explicitly future-oriented. The World Economic Forum's Future of Jobs Report (2025) identifies analytical thinking, creative problem-solving, resilience, and technological literacy as the defining capabilities of the next decade. Nova40 and the NEIA were designed with these demands in mind, ensuring that the competency architecture and emotional intelligence model reflect the skills organisations will need to assess and develop over the coming years.

"The Nova assessment suite is the first psychometric platform co-developed simultaneously in Arabic and English for the GCC region – ensuring cultural relevance without compromising scientific rigour."

## How the Instruments Work Together

The five Nova instruments are designed to be used independently or in combination, depending on the assessment purpose. When used together, they provide a layered picture of individual potential: cognitive ability establishes the intellectual foundation; personality reveals dispositional tendencies; Nova40 maps these onto observable workplace behaviours; the NSJT tests practical judgement in realistic scenarios; and the NEIA measures the emotional competencies that distinguish high performers in people-intensive roles. Integrated scoring algorithms combine data across instruments to generate competency potential scores for each of the 40 Nova40 competencies.



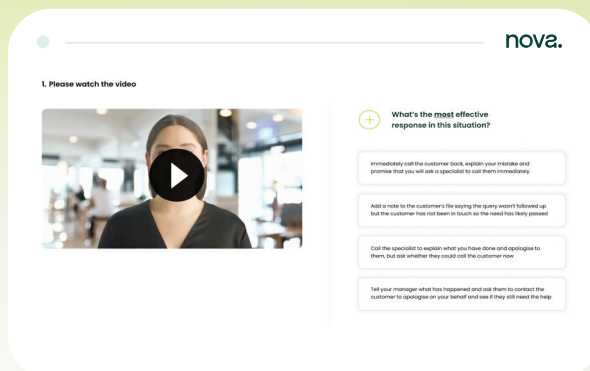
Nova assessments support talent decisions across all levels of the organisation – from graduate recruitment to executive succession.

# The Four Scientific Pillars

All Nova assessments are developed and evaluated against four core scientific principles that collectively define a high-quality psychometric instrument. These pillars align with the standards set by the BPS and ITC, and serve as the quality framework against which all development decisions are made.

<p><b>Standardised</b></p> <p>Rigorous item design and consistent scoring methodology across all delivery contexts and devices.</p>	<p><b>Reliable</b></p> <p>Cronbach's Alpha exceeds the BPS minimum threshold of 0.70 across all scales and instruments.</p>	<p><b>Valid</b></p> <p>Face, content, and criterion validity established through expert review and empirical piloting.</p>	<p><b>Fair</b></p> <p>GCC-specific norms, Arabic-first design, and adverse impact monitoring across demographic groups.</p>
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**Standardisation** ensures that assessment items are designed according to psychometric principles and delivered consistently across devices, with standardised scoring. **Reliability** confirms that the assessments measure constructs with precision and consistency, exceeding the BPS minimum threshold of 0.70. **Validity** establishes that the assessments measure what they purport to measure and predict relevant workplace outcomes. **Fairness** ensures that results are equitable across demographic groups, supported by GCC-specific norms and Arabic-first design.



# Psychometric Development Methodology

The development methodology for the Nova suite combined Classical Test Theory (CTT) and Item Response Theory (IRT), consistent with best practice in modern psychometrics. This dual-framework approach ensures both the reliability of aggregate scores (CTT) and the precision of individual item calibration (IRT), enabling gradient-step testing architectures that deliver accurate measurement across a wide range of ability and trait levels. It is important to note that the current delivery format is fixed-length with gradient-step item bank selection, providing a consistent and equitable candidate experience.

## Item Development Process

Each assessment domain was supported by a dedicated item development process. Items were authored simultaneously in English and Arabic using parallel development – not direct translation – ensuring semantic and conceptual equivalence in line with cross-cultural test design recommendations. This approach is critical in the GCC's multilingual workforce, where linguistic and cultural nuance can significantly affect item interpretation and fairness.

The item review process involved blind evaluation by independent reviewers to verify clarity, cultural appropriateness, and psychometric quality. Items were then piloted with representative GCC samples, and empirical item functioning data was used to select the best-performing items for each domain. For the cognitive suite, 45 items per domain were selected based on IRT parameters and piloted response behaviours.

## Norms and Standardisation

The initial comparison group (norm group) for Nova comprises managers and professionals in the Kingdom of Saudi Arabia, providing a GCC-specific benchmark that ensures maximum relevance for regional applications. The initial group of Arabic-speaking individuals across mixed occupational roles enables localised standardised scoring. Sten scores (Standard Ten, on a 1–10 scale) are used for the Nova Personality Questionnaire, and Percentiles are used for the Nova Cognitive Ability Suite and NSJT, and Stens for competency potential reporting.

## Development Phases

### PHASE 1 – COMPLETE

#### Initial Norms & Reliability

Development of initial GCC norms, item piloting, reliability analysis, and refinement of the NPQ, Cognitive Suite, NSJT, and NEIA.

### PHASE 2 – GCC VALIDATION COMPLETE

#### Validation & Fairness

Established comprehensive GCC norm samples, validated criterion links to performance outcomes, and confirmed structural fairness across regional demographic groups.

### PHASE 3 – PLANNED

#### Ongoing Research Programme

Longitudinal predictive validity studies, construct validation across the full Nova suite, and continuous norm updates as the assessment population grows.

# Nova Cognitive Ability Suite

Grounded in over a century of research on general mental ability (g) and domain-specific aptitudes, the Nova Cognitive Ability Suite measures three core domains: **Verbal Reasoning**, **Numerical Reasoning**, and **Abstract Reasoning**. These domains are recognised in academic and applied literature as among the strongest predictors of job performance, leadership potential, and trainability. Meta-analyses confirm that cognitive ability predicted up to 40% of the variance in job performance (Schmidt & Hunter, 1998; Bertua et al., 2005).



Cognitive ability assessments measure the speed and accuracy of reasoning under standardised conditions – a proven predictor of learning potential and job performance.

## Numerical Reasoning

Numerical reasoning relates to the ability to interpret, analyse, and draw logical conclusions from numerical information. Contrary to speculation that this form of intelligence is being superseded by artificial intelligence, its relevance in data-rich environments has only increased. AI systems have enhanced the volume and accessibility of data but have not replaced the need for human oversight, interpretation, and critical thinking. Numerical reasoning is therefore critical not only for technical roles but also for policy-makers and administrators tasked with strategic resource allocation, cost-benefit analyses, and the evaluation of performance metrics.

## Verbal Reasoning

Verbal reasoning is the capacity to comprehend, analyse, and evaluate written and spoken information. Unlike language proficiency assessments, verbal reasoning directly measures linguistic processing – assessing a person's ability to work with unfamiliar material and discern logical relationships within text. This makes it highly relevant for both native and non-native English or Arabic speakers operating in the multicultural professional settings across the GCC. A key innovation in the Nova suite is the delivery of verbal reasoning via captioned video rather than static text passages, minimising AI-driven cheating and enhancing accessibility for mobile and tablet-based testing.

## Abstract Reasoning

Abstract reasoning measures an individual's ability to discern patterns, identify relationships, and solve novel problems without reliance on prior knowledge. It is a core element of fluid intelligence – the ability to think flexibly and solve problems in new situations. In today's VUCA conditions, abstract reasoning is increasingly recognised as a foundational cognitive capability for leaders, innovators, and strategists. It is also widely valued for its cross-cultural fairness, as it relies on visual patterns and non-verbal stimuli, reducing linguistic and educational biases.

All three cognitive domains are delivered via a fixed-length, gradient-step format using item banks calibrated by difficulty. Each test is designed for completion in 20 minutes, balancing efficiency and rigour.

## Linkage to the Nova40 Competency Framework

Cognitive Domain	Mapped Nova40 Competencies	Rationale
<b>Verbal Reasoning</b>	Intelligent Communication, Conflict Resolution, Persuades & Influences, Active Listening	Requires comprehension and communication of complex verbal information across diverse audiences.
<b>Numerical Reasoning</b>	Data-Driven Decision Making, Economic Acumen, Drive for Results, Quality Focus	Underpins evidence-based decision-making, financial analysis, and performance management.
<b>Abstract Reasoning</b>	Complex Thinking, Strategic Agility, Fosters Innovation, Adaptability	Fluid intelligence supports pattern recognition, strategic foresight, and creative problem-solving.

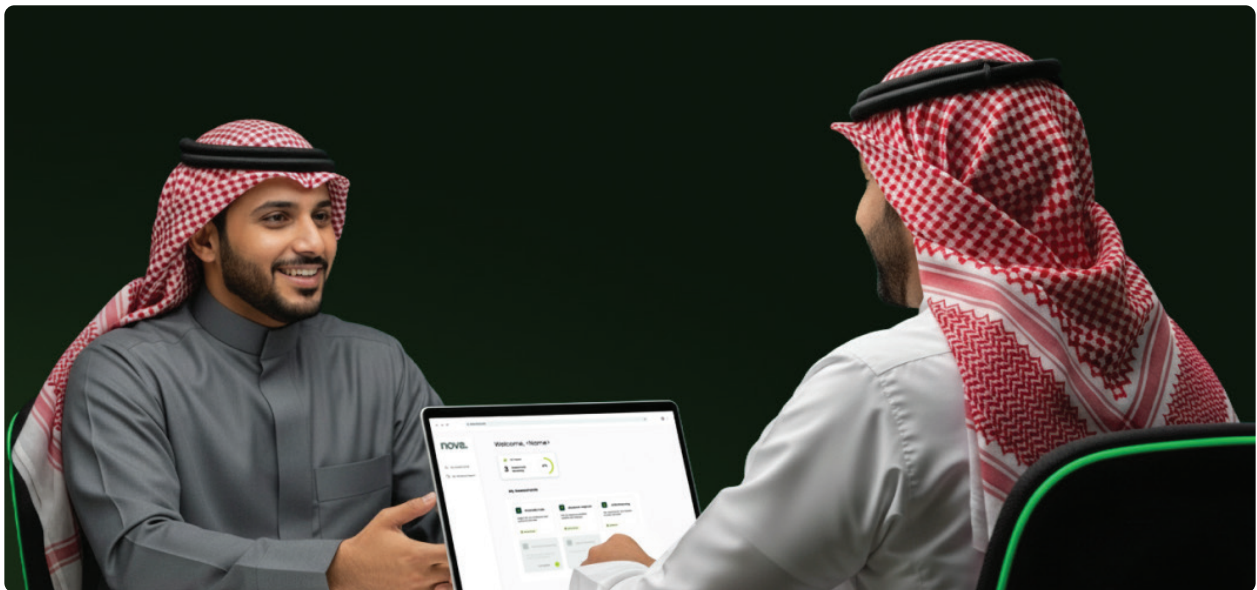
Table 1: Cognitive domain to Nova40 competency mapping.

## AI Security Measures

The Nova Cognitive Suite incorporates a multi-layered approach to assessment security that addresses the growing risk of generative AI-assisted cheating. The verbal reasoning module uses captioned video stimuli rather than text passages, making it substantially harder for candidates to copy-paste content into AI tools. The abstract reasoning module relies on proprietary visual pattern formats that are not readily interpretable by current generative AI systems. Numerical reasoning items are generated from dynamic data sets, ensuring that no two candidates receive identical item sets. These measures collectively preserve the validity and integrity of cognitive scores in high-stakes selection contexts.

## Nova Personality Questionnaire (NPQ)

The Nova Personality Questionnaire (NPQ) is a work-focused personality assessment grounded in the Five Factor Model (FFM) of personality – the most extensively validated framework in occupational psychology. The FFM, also known as the Big Five, organises personality into five broad domains: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN). Decades of meta-analytic research confirm that these five factors predict a wide range of workplace outcomes, including job performance, leadership effectiveness, team cohesion, and career success (Barrick & Mount, 1991; Tett et al., 1991).



The NPQ captures how individuals typically behave at work – providing practitioners with a nuanced, role-relevant personality profile grounded in the Five Factor Model.

### The 15-Trait Architecture

The NPQ extends beyond broad FFM domains to measure 15 specific personality traits – three facets within each of the five factors. This granular structure provides practitioners with actionable insight that broad-domain scores cannot deliver. For example, knowing that a candidate scores high on Conscientiousness is useful, but understanding whether this is driven by orderliness, goal-directedness, or reliability enables more precise role-matching and development planning.

FFM Domain	Trait 1	Trait 2	Trait 3	Workplace Relevance
Openness	Curiosity	Innovation	Adaptability	Learning agility, creative problem-solving, change readiness
Conscientiousness	Orderliness	Goal-Directedness	Reliability	Task completion, quality focus, dependability
Extraversion	Sociability	Assertiveness	Positive Affect	Leadership emergence, team engagement, client relationships
Agreeableness	Empathy	Cooperation	Trust	Team cohesion, conflict resolution, stakeholder management
Emotional Stability	Resilience	Self-Awareness	Composure	Stress management, leadership under pressure, wellbeing

Table 2: The NPQ 15-trait architecture mapped to the Five Factor Model.

## Relevance to the Future of Work

NPQ Trait	WEF Future Skill Alignment	GCC Relevance
Curiosity	Curiosity & Lifelong Learning	Continuous upskilling for Vision 2030 transformation
Innovation	Creative Thinking	Saudi entrepreneurship hubs, UAE AI Strategy 2031
Adaptability	Resilience, Flexibility & Agility	Navigating rapid regulatory and market change
Resilience	Resilience, Flexibility & Agility	Leadership under Vision 2030 transformation pressure
Empathy	Empathy & Active Listening	Multicultural workforce management across GCC
Assertiveness	Leadership & Social Influence	Driving results in hierarchical organisational structures
Self-Awareness	Motivation & Self-Awareness	Saudization leadership development pipelines

Table 3: NPQ trait alignment with WEF Future of Jobs priorities and GCC context.

## Scoring and Interpretation

NPQ results are reported as Sten scores on a 1–10 scale, standardised against the GCC norm group . Scores of 1–3 indicate below-average expression of a trait, 4–7 indicate the average range, and 8–10 indicate above-average expression. Practitioners are trained to interpret Sten scores in the context of role requirements rather than applying simplistic "high is good" heuristics – a critical distinction in occupational psychology practice.

## Item Development and Format

NPQ items were developed using a rigorous content specification process. For each of the 15 traits, a pool of candidate items was generated by occupational psychologists with expertise in both Western psychometric traditions and GCC workplace norms. Items were written simultaneously in Arabic and English by bilingual subject-matter experts, then reviewed by independent panels to ensure linguistic equivalence and cultural appropriateness. Items that referenced culturally specific scenarios, idioms, or assumptions were revised or replaced during the review phase.

The NPQ uses a five-point Likert response format ranging from "Strongly Disagree" to "Strongly Agree", with items balanced for acquiescence bias through the inclusion of both positively and negatively keyed statements. The questionnaire is designed for completion in approximately 20–25 minutes with built-in response consistency checks that flag potentially invalid profiles for practitioner review. The questionnaire also incorporates ipsative items to resolve tied item responses from the normative set, improving the precision of trait differentiation.

## GCC Cultural Calibration

A defining feature of the NPQ is its calibration against GCC-specific norms rather than Western reference populations. The initial norm group comprises managers and professionals employed across Saudi Arabia, with representation from both public and private sector organisations. This ensures that Sten scores reflect the actual distribution of personality traits in the regional workforce, rather than imposing Western population benchmarks that may systematically misclassify GCC candidates.

Cultural calibration also extended to item content. Constructs such as assertiveness, trust, and cooperation carry culturally specific connotations in the GCC context – shaped by hierarchical organisational structures, collectivist social values, and the dynamics of a highly diverse, multinational workforce. The NPQ item development process incorporated these nuances through expert review, cognitive interviewing with GCC participants, and iterative item revision based on pilot feedback.

# Nova40 Competency Architecture

The Nova40 Competency Performance Architecture (CPA) is a modern, work-related behavioural competency framework developed by Tharwah Group. It represents a comprehensive update to legacy frameworks such as Korn Ferry's Leadership Architect (38 competencies), Lominger (67 competencies), and SHL's Universal Competency Framework. Nova40 was designed to reflect the current and future world of work, reshaped by AI, hybrid working, and continuous disruption, and to be directly relevant to the GCC context, explicitly aligned with Saudi Vision 2030 and the broader national transformation agendas of GCC member states.



Nova40 defines 40 behavioural competencies across five clusters – enabling organisations to assess, develop, and promote talent against a consistent, future-ready framework.

## Theoretical Foundations

The framework draws on Bandura's (1986) Social Cognitive Theory, which emphasises that mastery develops through the reinforcement of specific, observable actions, and Boyatzis' (1982) competency iceberg model, which distinguishes surface-level skills from the deeper traits they collectively express. Competencies in Nova40 are designed as modular composites of discrete, measurable behavioural skills – enabling both precise assessment and targeted development intervention.

Nova40 also draws on Spencer and Spencer's (1993) threshold and differentiating competency distinction, which separates the minimum competencies required for adequate performance from those that differentiate outstanding from average performers. This distinction is operationalised in the four career-level indicator system, where each competency is defined at the Individual Contributor, Manager, Senior Leader, and Executive levels – enabling the framework to be applied consistently across the full talent lifecycle.

The framework's alignment with the World Economic Forum's Future of Jobs Report (2025) ensures that the 40 competencies reflect not only current performance demands but also the emerging skills that will define organisational success over the next decade. Competencies such as AI Augmentation, Technological Literacy, and Envisioning the Future were explicitly included to reflect the transformation agenda underway across GCC economies.

## Five-Cluster Architecture

Cluster	Focus	Key Competencies
01 – Tasks & Projects	Execution & Innovation	Agile Delivery, Drive for Results, Process Optimisation, Complex Thinking, Fosters Innovation, Inspires Creativity, Smart Planning, AI Augmentation
02 – People Leadership	Leading & Developing Others	Building Effective Teams, Upskills Talent, Strategic Talent Management, Energises Others, Conflict Resolution, Persuades & Influences, Directs Work, Empathic Leadership, Intelligent Communication
03 – Strategic & Cognitive Skills	Thinking & Strategy	Analytical Thinking, Strategic Agility, Data-Driven Decision Making, Economic Acumen, Envisioning the Future, Adaptability, Global Awareness, Applying AI in Practice
04 – Personal Effectiveness	Self & Growth	Resilience, Continuous Learning, Integrity & Trust, Inclusive Leadership, Emotional Intelligence, Technological Literacy, Cognitive Growth, Active Listening, Quality Focus
05 – Stakeholder & Org. Impact	External & Ethical Impact	Ensures Accountability, Ethical Stakeholder Management, Strategic Networking, Creates Meaning & Purpose, Ethics & Professionalism, Customer Focus

Table: Nova40 five-cluster architecture with key competencies.

## Career Level Indicators

Each of the 40 competencies is defined with behavioural indicators at five career levels: Graduate/Entry Level, Individual Contributor, Manager, Senior Leader, and Executive. This levelled structure enables the framework to be applied consistently across the full talent lifecycle – from graduate recruitment to executive assessment and succession planning. The indicators are written as observable, measurable behaviours, making them directly usable in structured interviews, 360-degree assessments, and assessment centre exercises.

The five-level architecture reflects a deliberate design choice to avoid the common pitfall of competency frameworks that define behaviours only at a single, generic level. By specifying how each competency manifests differently at each career stage, Nova40 enables organisations to set level-appropriate performance expectations, design targeted development interventions, and make defensible promotion decisions based on demonstrated behavioural evidence rather than subjective assessments.

Career Level	Characteristic Behavioural Indicators
Level 1: Graduate / Entry Level	Entry-level professionals who are primarily responsible for executing assigned tasks under direct supervision. They demonstrate adaptability within defined scopes, contribute to team outputs, and focus on building foundational skills.
Level 2: Individual Contributor	Seasoned professionals who independently manage their workload and are accountable for delivering high-quality results. They proactively identify and overcome obstacles, and adapt their approach based on feedback.
Level 3: Manager	Mid-level professionals who manage small projects and are responsible for coordinating, collaborating, and ensuring timely delivery. They begin to translate strategic objectives into operational plans and develop team capabilities.
Level 4: Senior Leader	Senior professionals who lead cross-functional teams or manage entire departments. They are accountable for optimizing workflows, aligning team efforts with strategic goals, and driving performance.
Level 5: Executive	Executive leaders who shape and drive enterprise-wide transformation. They are responsible for setting strategic direction, aligning organizational systems with long-term goals, and influencing industry standards.

Table: Nova40 career level indicator structure – illustrative behavioural anchors.

## Integration with the Nova Assessment Suite

Nova40 Competency	Primary Assessment Source	Supporting Sources
Strategic Agility	NSJT (Executive/Managerial)	NPQ: Adaptability, Curiosity; NEIA: Adaptive Mindset; Cognitive: Abstract
Empathic Leadership	NEIA: Empathic Understanding	NPQ: Empathy; NSJT: Managerial scenarios
Data-Driven Decision Making	Cognitive: Numerical Reasoning	NEIA: Emotional Regulation; NPQ: Orderliness
Resilience	NEIA: Stress Resilience	NPQ: Resilience, Composure; NSJT: All levels
Builds Effective Teams	NSJT (All levels)	NEIA: Relationship Influence, Empathic Understanding; NPQ: Cooperation
AI Augmentation	NSJT (Executive)	NEIA: Adaptive Mindset; NPQ: Innovation
Integrity & Trust	NPQ: Trust, Reliability	NEIA: Emotional Insight, Emotional Expression; NSJT: Ethics scenarios
Continuous Learning	NPQ: Curiosity, Goal-Directedness	NEIA: Emotional Insight, Adaptive Mindset; Cognitive: Abstract

Table 4: Selected Nova40 competencies and their primary and supporting assessment sources.

# Nova Situational Judgement Test (NSJT)

The Nova Situational Judgement Test (NSJT) is a contemporary assessment tool designed to evaluate practical judgement, behavioural adaptability, and tacit intelligence across three organisational tiers: Executive, Managerial, and Graduate/Individual Contributor. The NSJT employs AI-driven video avatars to present realistic, level-specific scenarios, thereby enhancing engagement and mitigating risks associated with generative AI-enabled cheating.



The NSJT presents realistic, level-specific workplace scenarios – measuring practical judgement in context rather than abstract ability alone.

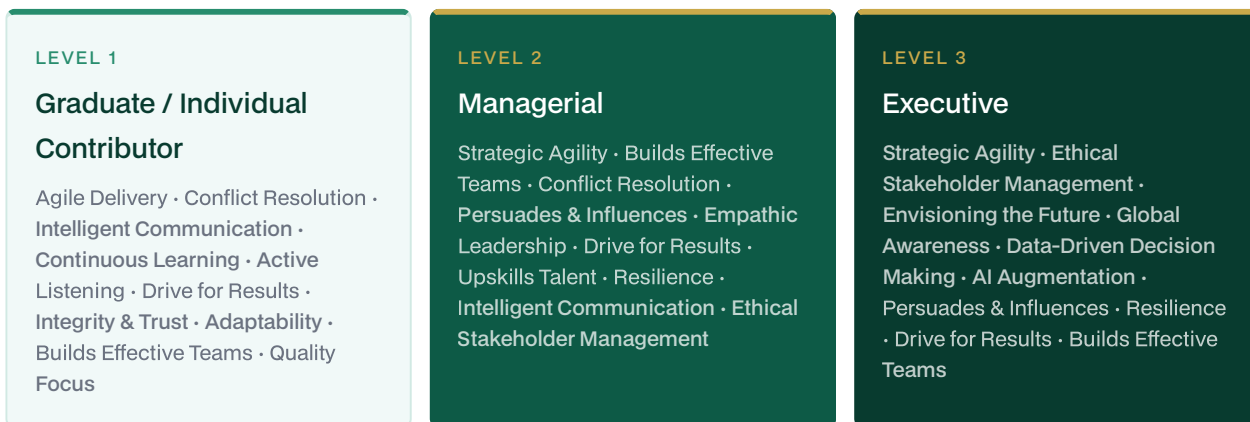
## Theoretical Foundations

Situational Judgement Tests have a robust history in industrial-organisational psychology, dating back to the early 20th century. Their theoretical underpinnings are rooted in behavioural consistency theory – which posits that past behaviour is the best predictor of future behaviour – and tacit knowledge theory, which emphasises the implicit, experience-based understanding required for effective problem-solving in real-world contexts (Sternberg et al., 2000). SJTs measure procedural knowledge – the "know-how" to act in specific situations – rather than declarative knowledge or cognitive ability alone.

## Validity and Reliability Evidence

Meta-analyses report average internal consistency (Cronbach's alpha) coefficients for SJTs ranging from .60 to .78 (McDaniel et al., 2007). For criterion-related validity, a seminal meta-analysis by McDaniel et al. (2007) found a mean corrected validity coefficient of  $r = .34$  for predicting overall job performance. After controlling for cognitive ability, SJTs consistently provide significant incremental validity, adding 5–10% to the explained variance in job performance. They also demonstrate lower adverse impact against minority groups compared to high-stakes cognitive ability tests – a critical consideration for GCC nationalisation agendas.

## Three-Level Design



## Video Avatar Delivery and AI Security

The NSJT's use of AI-generated video avatars to present scenarios represents a significant methodological innovation. Video-based scenarios increase cognitive load and situational fidelity, making it substantially more difficult for candidates to identify and simulate an idealised response strategy (Lievens & Peeters, 2008). The dynamic, multimedia nature of the scenarios also reduces the effectiveness of generative AI tools that rely on text-based prompts. Candidates are asked to rank four response options in order of preference, using a blended knowledge-based and behavioural tendency format that captures both what candidates know is correct and how they are likely to behave.

## Scoring and Reporting

NSJT responses are scored against an expert-derived scoring key developed through a structured judgement task with subject-matter experts across GCC organisations. The resulting single overall percentile score enables straightforward comparison against the GCC norm group, providing practitioners with a clear, defensible indicator for development planning and structured interview design. Item-level data is available to certified practitioners for deeper analysis.

Report Layer	Output	Primary Use Case
Overall Score	Single percentile vs. GCC norm group	Shortlisting and selection benchmarking
Nova40 Integration	Competency potential contribution score	Holistic talent profiling across the full suite

Table 4: NSJT report layers, outputs, and primary practitioner use cases (current release). Competency sub-score profiles and item-level data reporting are planned for a future release.

## Practitioner Guidance on NSJT Use

Practitioners deploying the NSJT in selection contexts are advised to use the overall score as a primary screening criterion at the shortlisting stage, then draw on competency sub-scores to design targeted structured interview questions for candidates who progress to interview. This two-stage approach maximises the predictive contribution of the NSJT while ensuring that the assessment process remains efficient and defensible. In development contexts, the NSJT sub-score profile is most effectively used as

the starting point for a development planning conversation, with the practitioner using the item-level data to identify specific scenarios where the candidate's response pattern differed most from the expert scoring key – these represent the highest-leverage development opportunities.

For organisations deploying the full Nova suite, the NSJT is typically administered alongside the NPQ and NEIA as part of a comprehensive talent profile. The combined profile provides a multi-dimensional view of the candidate: cognitive ability (from the Cognitive Suite) establishes the intellectual foundation; personality traits (from the NPQ) indicate dispositional tendencies; emotional competencies (from the NEIA) reveal how those tendencies translate into interpersonal effectiveness; and situational judgement (from the NSJT) demonstrates how the candidate applies all of these in realistic, contextually complex workplace scenarios. Together, these four layers produce a talent profile of exceptional depth and predictive power.



# Nova Emotional Intelligence Assessment (NEIA)

The Nova Emotional Intelligence Assessment (NEIA) is a modern, behaviourally anchored measure of emotional intelligence (EI) designed specifically for the GCC workplace context. The transition of EI from a psychological construct to a validated predictor of workplace success represents one of the most significant developments in occupational psychology over the past three decades. The NEIA is grounded in this evidence base and extends it through a culturally calibrated, competency-linked design that makes it directly actionable for practitioners.



Emotional intelligence is a measurable competency – the NEIA provides organisations with objective EI data to inform leadership selection, team composition, and development planning.

## Theoretical Foundations

The NEIA adopts an explicitly integrative theoretical architecture, drawing on both the ability model of EI (Mayer & Salovey, 1997) – which conceptualises EI as a cognitive-emotional capability – and trait and mixed models (Petrides & Furnham, 2001; Goleman, 1998) – which focus on self-perceived dispositions and learnable competencies. This synthesis results in a model that views EI not merely as an innate ability or a static trait, but as a set of developable behavioural competencies that manifest in specific workplace interactions.

The empirical case for EI as a distinct predictor of workplace outcomes is well-established. O'Boyle et al.'s (2011) seminal meta-analysis of 43 independent samples found that EI demonstrated a corrected correlation of  $\rho = 0.28$  with job performance, with incremental validity over both cognitive ability and the Big Five personality traits. For leadership roles specifically, meta-analyses report correlations of  $\rho = 0.35$ – $0.48$  between EI measures and transformational leadership ratings (Harms & Credé, 2010).

## The Eight-Scale Model

The NEIA measures eight distinct EI competencies, each defined by behaviourally anchored items that reflect concrete workplace situations. This approach serves a dual purpose: it increases face validity for participants, and it creates a direct bridge from assessment to development intervention.

<p><b>Emotional Insight</b> Productive self-understanding; identifying triggers and patterns in one's own emotional responses.</p>	<p><b>Emotional Regulation</b> Managing emotional impulses and maintaining composure under pressure and in high-stakes interactions.</p>	<p><b>Empathic Understanding</b> Accurately perceiving others' emotional states, unspoken concerns, and interpersonal needs.</p>	<p><b>Emotional Expression</b> Authentic and flexible communication of emotions in ways that build trust and influence.</p>
<p><b>Relationship Influence</b> Building and sustaining high-quality professional relationships; shaping group dynamics.</p>	<p><b>Stress Resilience</b> Maintaining performance quality and psychological equilibrium under sustained pressure.</p>	<p><b>Optimistic Outlook</b> Sustained belief in positive outcomes; motivating self and others through setbacks.</p>	<p><b>Adaptive Mindset</b> Cognitive and emotional flexibility; willingness to update beliefs and adjust behaviour.</p>

## Relationship with the NPQ

The NEIA was developed with explicit awareness of its relationship to the NPQ. While the NPQ measures traits including Empathy, Resilience, and Self-Awareness within its 15-trait personality structure, the NEIA scales of Empathic Understanding, Stress Resilience, and Emotional Insight measure related but distinct constructs. The critical distinction rests on the difference between **typical disposition** and **maximal competency**: the NPQ answers "What is this person like, generally?" while the NEIA answers "What is this person capable of doing, emotionally, when the situation demands it?" The two instruments are therefore complementary: the NPQ establishes a baseline of dispositional potential, while the NEIA measures the degree to which that potential has been translated into skilful, consistent workplace behaviour.

In practice, the NPQ and NEIA are used together to generate a richer, more diagnostic picture of an individual's emotional profile. A candidate who scores high on the NPQ Empathy trait but lower on the NEIA Empathic Understanding scale may possess the dispositional sensitivity to others' emotions but has not yet developed the behavioural competency to act on that sensitivity effectively in workplace situations. Conversely, a candidate with moderate NPQ Resilience scores but high NEIA Stress Resilience scores demonstrates that they have developed effective coping strategies that go beyond their baseline dispositional tendency. These cross-instrument patterns are among the most actionable insights the Nova suite generates for development planning.

Dimension	NPQ (Personality)	NEIA (Emotional Intelligence)
What it measures	Typical behavioural dispositions and personality traits	Maximal emotional competencies in workplace situations
Question answered	"What is this person like, generally?"	"What can this person do emotionally when it matters?"
Response format	Likert-scale self-report (typical behaviour) with ipsative response formats	Behaviourally anchored situational items (maximal performance)
Primary use	Role fit, team composition, culture alignment	Leadership readiness, EI development, coaching
Relationship	Dispositional baseline (potential)	Competency realisation (demonstrated capability)

Table 6: Distinguishing the NPQ and NEIA – complementary instruments measuring different aspects of the emotional domain.

## Practical Application of the NPQ–NEIA Combination

In practice, the most powerful applications of the NPQ–NEIA combination arise in leadership assessment and development contexts. When assessing candidates for senior roles, practitioners can use the NPQ to establish a dispositional baseline – identifying the personality traits that will shape the candidate's natural leadership style – and then use the NEIA to determine the degree to which the candidate has developed the emotional competencies required to lead effectively in complex, high-stakes environments. A candidate with high NPQ Openness and high NEIA Adaptive Mindset scores, for example, presents a compelling profile for roles requiring innovation and change leadership. A candidate with high NPQ Conscientiousness but lower NEIA Emotional Regulation scores may be highly organised and reliable but may struggle under sustained pressure – a development priority that the NPQ alone would not reveal.

For development planning, the NPQ–NEIA combination is used to generate a personalised emotional development roadmap. The NPQ identifies the dispositional strengths and potential derailers that are likely to be most stable over time, while the NEIA identifies the specific emotional competencies where targeted development investment is most likely to produce measurable performance improvement. This combination of stable trait data and developable competency data makes the NPQ–NEIA pairing one of the most actionable assessment combinations available to HR practitioners.

## NEIA Linkage to Nova40 Competencies

NEIA Scale	Primary Nova40 Competencies	Mechanism
Emotional Insight	Continuous Learning, Integrity & Trust, Inclusive Leadership	Accurate self-knowledge enables gap identification, consistent values-based behaviour, and bias awareness.
Emotional Regulation	Resilience, Data-Driven Decision Making, Directs Work, Ensures Accountability	Composure under pressure prevents emotionally-driven decision errors and enables difficult conversations.
Empathic Understanding	Empathic Leadership, Conflict Resolution, Persuades & Influences, Active Listening, Global Awareness	Accurate perception of others' emotional states is functionally necessary for influence, mediation, and cultural intelligence.
Emotional Expression	Intelligent Communication, Energises Others, Envisioning the Future	Authentic emotional expression enables inspirational communication and motivational leadership.
Relationship Influence	Builds Effective Teams, Fosters Innovation, Strategic Networking, Ethical Stakeholder Management	High-quality relationships are the substrate for team performance, innovation climate, and stakeholder trust.
Stress Resilience	Resilience, Agile Delivery, Drive for Results	Sustained performance under pressure is the direct behavioural expression of stress resilience.
Optimistic Outlook	Drive for Results, Energises Others, Envisioning the Future, Upskills Talent	Belief in positive outcomes sustains persistence, motivates teams, and enables inspiring vision articulation.
Adaptive Mindset	Adaptability, Strategic Agility, AI Augmentation, Cognitive Growth, Smart Planning	Willingness to update beliefs and adjust behaviour is the cognitive-emotional foundation of agility and AI adoption.

Table 5: NEIA scale to Nova40 competency linkage with explanatory mechanisms.

## Cultural Calibration for the GCC

The NEIA was designed with explicit attention to cultural nuances within the GCC context. For example, the MSCEIT's westernised consensus scoring may penalise a GCC respondent who correctly identifies that restrained emotional expression is the socially intelligent response in a hierarchical meeting context. NEIA items addressing similar constructs have been re-worded to account for context and cultural norms, ensuring that the assessment measures emotional competence rather than cultural conformity to Western expressiveness norms. This cultural calibration is a core differentiator of the NEIA relative to imported EI tools.

# Reliability & Validity Evidence

## Internal Consistency (Cronbach's Alpha)

The table below summarises the internal consistency reliability coefficients for each instrument and scale within the Nova suite, based on the GCC pilot sample. All scales exceed the BPS minimum threshold, with the majority substantially above the 0.70 benchmark.

Instrument / Scale	$\alpha$ Coefficient	BPS Threshold	Status
NPQ – Overall	.87	$\geq .70$	Exceeds
NPQ – Openness facets	.82	$\geq .70$	Exceeds
NPQ – Conscientiousness facets	.85	$\geq .70$	Exceeds
NPQ – Extraversion facets	.83	$\geq .70$	Exceeds
NPQ – Agreeableness facets	.80	$\geq .70$	Exceeds
NPQ – Emotional Stability facets	.84	$\geq .70$	Exceeds
<b>Cognitive – Numerical Reasoning</b>	.88	$\geq .70$	Exceeds
<b>Cognitive – Verbal Reasoning</b>	.86	$\geq .70$	Exceeds
<b>Cognitive – Abstract Reasoning</b>	.89	$\geq .70$	Exceeds

Table 6: Internal consistency reliability coefficients for the Nova suite (GCC pilot sample).

Reliability data for the NSJT and NEIA are currently being compiled from the initial GCC pilot and will be reported in a forthcoming technical supplement.

## Validity Evidence

Validity evidence for the Nova suite is established across three dimensions: face and content validity (confirmed through expert review panels and practitioner feedback); construct validity (verified through factor analysis demonstrating precise item loading on intended constructs); and criterion-related validity (empirically established through comprehensive criterion studies linking scores to performance outcomes).

The meta-analytic literature provides strong prior evidence: cognitive ability tests predict job performance with corrected validities of  $r = .51$  (Schmidt & Hunter, 1998); personality measures show corrected validities of  $r = .15-.31$  (Barrick & Mount, 1991); SJTs demonstrate mean corrected validity of  $r = .34$  (McDaniel et al., 2007); and EI measures show corrected correlations of  $\rho = .28$  with job performance (O'Boyle et al., 2011). When combined in a battery, these instruments produce compound validities that substantially exceed any single measure.

Instrument	Validity Type	Evidence Source	Criterion $r / \rho$
Cognitive Suite	Criterion-related	Schmidt & Hunter (1998) meta-analysis	.51
NPQ (Personality)	Criterion-related	Barrick & Mount (1991) meta-analysis	.15–.31
NSJT	Criterion-related	McDaniel et al. (2007) meta-analysis	.34
NEIA	Criterion-related	O'Boyle et al. (2011) meta-analysis	.28
Nova Battery (Combined)	Incremental validity	Compound validity modelling	> .60 (est.)
All Instruments	Content validity	Expert panel review; SME item ratings	—
NPQ & NEIA	Construct validity	Confirmatory factor analysis (GCC pilot)	—

Table 8: Validity evidence summary for the Nova Assessment Suite.

Criterion validity coefficients are drawn from published meta-analytic benchmarks. Nova-specific criterion validity studies are ongoing; findings will be reported in technical supplements as they become available.

## Incremental Validity of the Multi-Instrument Battery

A core design principle of the Nova suite is that no single instrument is used in isolation. The battery approach is grounded in the well-established psychometric principle of incremental validity: each additional instrument contributes unique predictive variance over and above what any prior instrument captures. Cognitive ability and personality measures, for example, are largely orthogonal predictors of job performance – their combination consistently yields higher criterion-related validity than either alone (Schmidt & Hunter, 1998; Schmitt, 2014). The addition of SJT scores provides further incremental prediction of contextual performance and interpersonal effectiveness, while NEIA scores add unique variance in leadership emergence and team climate outcomes. Nova's assessment architecture is therefore designed to maximise the compound validity of the battery while maintaining practical administration efficiency.

Nova's research programme is designed to generate GCC-specific criterion validity data. As these studies progress, findings will be made available to licensed organisations through practitioner-accessible technical reports.

# Fairness, Equity & GCC Alignment

## Adverse Impact Monitoring

Fairness in assessment requires that score differences between demographic groups are minimised to the extent possible without compromising validity. Nova's Arabic-first development approach, GCC-specific norm group, and cultural calibration of item content are all designed to reduce adverse impact against GCC nationals, Arabic-speaking candidates, and other regional demographic groups. Systematic adverse impact analyses across gender, nationality, and educational background groups confirm the structural fairness of the instruments.

## Alignment with GCC National Visions

GCC Vision Priority	Relevant Nova Instruments	Specific Alignment
Saudi Vision 2030 – Human Capital Development	Nova40, NPQ, NEIA	Saudization pipeline development; competency-based succession planning; leadership potential identification
Saudi Vision 2030 – Digital Transformation	Cognitive Suite, Nova40	Technological Literacy and AI Augmentation competencies; numerical and abstract reasoning for data roles
UAE We the UAE 2031 – AI Leadership	Nova40, NSJT (Executive)	AI Augmentation and Applying AI in Practice competencies; executive-level strategic AI scenarios
Qatar National Vision 2030 – Human Development	NPQ, NEIA, Nova40	Empathic leadership, stakeholder management, and continuous learning for national talent pipelines
Oman Vision 2040 – Workforce Diversification	Cognitive Suite, NSJT	Objective, fair assessment for Omanisation programmes; reduced adverse impact
Kuwait Vision 2035 – Economic Diversification	Nova40, NPQ	Strategic agility and innovation competencies for private sector development

Table 7: Nova suite alignment with GCC national vision priorities.

# Ongoing Research Agenda

The Nova team is committed to a continuous programme of research and validation that ensures the suite remains scientifically current, empirically grounded, and responsive to the evolving needs of the GCC workforce.

## Validation and Fairness Studies

Nova's validation programme is structured around four primary objectives: establishing a robust regional norm group; building criterion-related validity evidence linking Nova scores to job performance indicators; verifying fairness through systematic adverse impact analyses across demographic groups; and confirming the construct validity of the NPQ and NEIA models within the GCC sample via confirmatory factor analysis.

## Phase 3: Longitudinal Research Programme (Planned)

Phase 3 will establish the longitudinal predictive validity of the Nova suite – the gold standard in psychometric research. This involves tracking assessment scores against career outcomes over a minimum of 24 months, including construct validation studies examining convergent and discriminant validity relative to established international tools, and norm updates reflecting the growing diversity of the assessment population as the suite scales across the GCC.

Nova's research programme is designed to be transparent and cumulative. Findings from each phase will be published in practitioner-accessible technical reports and made available to all licensed organisations, ensuring that clients can track the evolving evidence base for the tools they deploy.

# Professional Standards & Accreditation

## British Psychological Society (BPS) Standards

All Nova instruments are developed in compliance with the BPS Psychological Testing Centre standards for test construction, validation, and use. These standards specify minimum reliability thresholds (Cronbach's  $\alpha \geq .70$  for most scales), requirements for validity evidence, and guidelines for norm group composition and ongoing expansion. BPS compliance is a key assurance signal for HR practitioners and occupational psychologists evaluating assessment tools for deployment.

## International Test Commission (ITC) Guidelines

The ITC Guidelines on Test Use provide the international framework for responsible assessment practice, covering test selection, administration, scoring, interpretation, and communication of results. Nova's development process, documentation, and practitioner training materials are all designed to support compliance with ITC guidelines, with particular attention to the guidelines on adapting tests for use in different cultural and linguistic contexts.

## Data Governance and Privacy

Nova operates in full compliance with the Kingdom of Saudi Arabia's Personal Data Protection Law (PDPL). Assessment data is stored on servers located within the Kingdom, ensuring data residency compliance for Saudi government and enterprise clients. All assessment results are treated as confidential personal data and are accessible only to authorised practitioners and the assessed individual.

## Practitioner Qualification Requirements

Nova assessments are restricted to qualified practitioners who have completed the Nova Practitioner Certification Programme. The programme covers psychometric theory, instrument-specific interpretation, ethical use of assessment data, feedback delivery, and integration of assessment results into talent management decisions. Certification is renewable on a biennial basis, ensuring that practitioners remain current with updates to the suite and its evidence base.

The certification programme is structured across three levels. Foundation Certification qualifies practitioners to administer and interpret individual instruments, deliver candidate feedback, and integrate results into selection decisions. Advanced Certification qualifies practitioners to design assessment centres incorporating the full Nova suite, conduct group-level talent analytics, and advise on competency framework implementation. Master Practitioner status is awarded to practitioners who demonstrate advanced expertise in psychometric research, cross-instrument integration, and organisational consulting applications of the suite.

Certification Level	Scope of Practice	Renewal
Foundation	Individual instrument administration, candidate feedback, selection integration	Every 2 years
Advanced	Full suite assessment centres, talent analytics, competency framework design	Every 2 years
Master Practitioner	Psychometric research, cross-instrument integration, organisational consulting	Annual CPD portfolio

Table 9: Nova Practitioner Certification Programme – levels, scope, and renewal requirements.

All certified practitioners receive access to Nova's practitioner portal at [www.nova.com.sa](http://www.nova.com.sa), which provides instrument technical manuals, norm tables, scoring guides, feedback templates, and updates to the evidence base as new research is published.

## Ethical Use and Candidate Rights

Nova's ethical framework is grounded in the principle that assessment data should be used to benefit both organisations and the individuals assessed. All candidates are entitled to a clear explanation of the purpose of the assessment, the nature of the instruments being used, and how their results will be used in decision-making. Candidates have the right to receive feedback on their results from a qualified practitioner, and organisations are required to ensure that assessment results are not used as the sole basis for high-stakes decisions such as selection or redundancy without corroborating evidence from other sources.

Nova's data governance framework ensures that assessment results are retained only for the period necessary for the stated purpose, are not shared with third parties without the explicit consent of the assessed individual, and are stored securely in compliance with the PDPL. Practitioners are trained to handle assessment data with the same confidentiality obligations that apply to other sensitive personal information, and organisations are required to implement appropriate technical and organisational controls to protect data integrity.

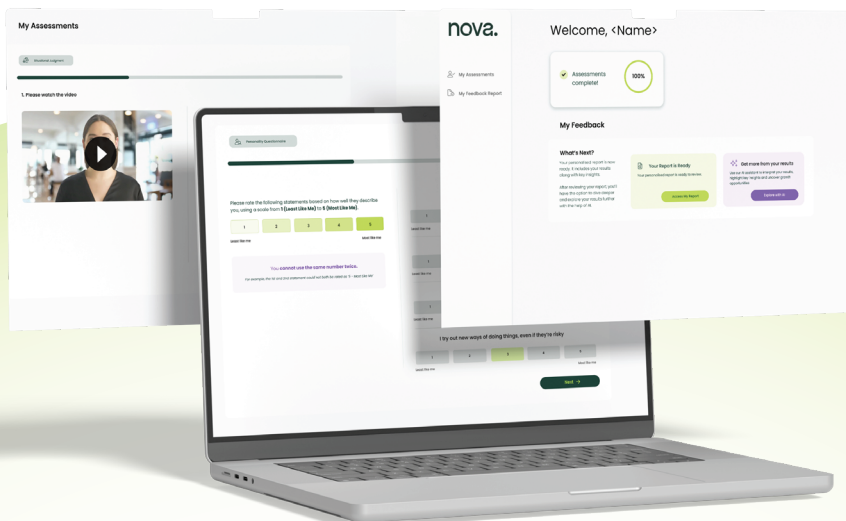
## Commitment to Continuous Improvement

Nova's commitment to professional standards is not a static compliance exercise but a dynamic, ongoing process. The Nova Scientific Advisory Board – comprising occupational psychologists, HR practitioners, and academic researchers from across the GCC – meets annually to review the evidence base for each instrument, assess emerging research in occupational psychology and psychometrics, and recommend updates to the suite. This governance structure ensures that Nova remains at the leading edge of assessment science while maintaining the stability and consistency that practitioners and organisations require.

Nova participates in the international psychometric research community through conference presentations, peer-reviewed publications, and collaborative research partnerships with regional universities. This external engagement ensures that Nova's development practices are subject to independent scrutiny and that the suite benefits from the latest advances in measurement theory and applied psychometrics.



Nova-certified practitioners are equipped to deliver evidence-based feedback that drives meaningful talent decisions and individual development.



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