27ECHO

PERSONALITY ASSESSMENT TECHNICAL GUIDE

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promoting excellence in psychology

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27ECHO

01/INTRODUCTION

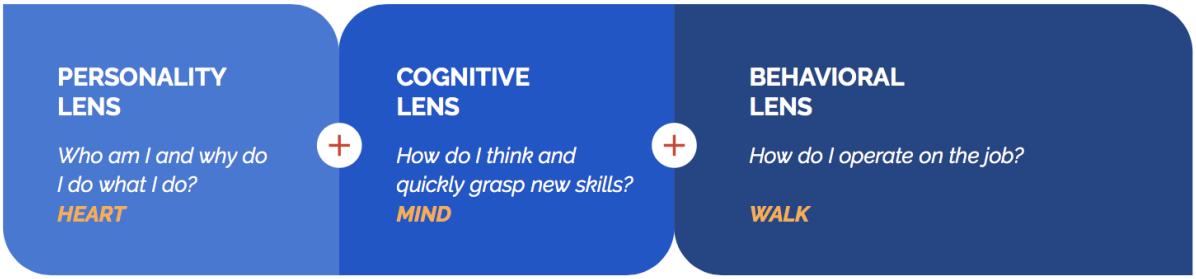
OUR ASSESSMENT ECOSYSTEM

In the new world of work, talent is global! As boundaries are diminishing, the talent around the world has access to wider opportunities. To stay relevant and appealing to this talent pool, organizations have started looking for fast and effective ways to assess an individual's behaviors and cultural fit.

On top of this, good talent will continue to command a premium, thereby making the candidate experience of any talent activity a crucial aspect of employer branding. Recruitment processes will be speeding up - online, mobile, and remote assessment will be the new norm. Responsibility for talent development will no longer be restricted to Human Resource professionals. Employees along with their managers will be owning the growth. Career development will be self-led and the 'gig' economy will change the rules of employment. In light of this, new competencies are permeating the workspace, creating a gap that broadens each time we stick to competencies of the past that may not be as relevant.

Jombay has been carrying out end-to-end talent assessment and development work for over a decade by conducting assessments, assessment centers, and development centers. Jombay is a born digital-first company and has been designing & delivering assessments in the digital world (online, remote, hybrid formats) long before these formats became the quintessential need of the hour.
To make online assessments effective and powerful, Jombay adopts an assessment creation approach that is built on vast industry knowledge, insights on the future of work, and a strong theoretical foundation. ***This approach forms the core of Jombay's suite of assessments.***

Jombay's ecosystem views an individual as unique, with an understanding that identities are layered and complex. The view of an individual should thus be multifaceted. ***Hence, the ecosystem consists of three salient lenses: Personality Lens, Behavioral Lens, and Cognitive Lens.***



a) **Personality Lens** enables one to understand the inner dispositions and inclinations of an individual. This lens answers the questions - *"Who am I and why do I do what I do?"* The answer to this question forms the basis of an individual. In layman's terms, one can refer to it as the **'heart'** of the individual.

b) **Cognitive Lens** enables one to understand the fluid intelligence and the higher-order thinking skills of an individual. This lens answers the questions - *"How do I think and quickly grasp new skills?* And *"To what extent do I keep my biases in check?"* In layman's terms, one can refer to it as the **'mind'** of the individual.

c) **Behavioral Lens** enables one to understand the observable behaviors demonstrated in a situational context that determines the capabilities of an individual to be on an accelerated growth path. This lens answers the questions - *"How do I operate on the job?"* and *"How will I react?"* In layman's terms, one can refer to it as the **'walk'** of the individual.

The approach to viewing an individual at work must be holistic and well-rounded. If, for example, a strong focus is levied on merely a behavioral point of view, what information do managers and organizations have about what truly makes their talent tick? Conversely, if only internal inclinations are looked into, assessments could wholly bypass learned behaviors at work that are demonstrated in a specific context. A diced approach lends minimal aid to gauging an individual's true disposition and ability. To combat this, Jombay's assessment ecosystem embodies all three lenses to get a holistic and robust perspective of an individual. **The *27 Echo Personality Assessment falls under the Personality Lens of Jombay's Ecosystem of Assessments.***

PERSONALITY AS A PREDICTOR OF WORKPLACE BEHAVIORS

Personality can be defined as a unique constellation of characteristics and dispositions in an individual that informs enduring patterns of behavior, attitudes, and emotions (Tett et. al., 2017). Personality tools are designed to assess an individual's dispositions, tendencies, and innate inclinations. They provide valuable insights on "Who an individual is" and "Why they do what they do". Through personality assessments, organizations look toward recruiting or promoting talent who have the required dispositions that align with the role's requirements, the context of their work, and the organizational culture. Thus, it is no surprise that a considerable amount of research on the linkages of personality traits with workplace behaviors has taken place.

An important conclusion from these studies is that personality seems to correlate with contextual performance more than task performance in the workplace (Touzé, 2005). Contextual performance includes peripheral activities that maintain the social and psychological environment in which the task performance takes place. This includes job engagement, initiative, cooperation at work, organizational citizenship behaviors, team-oriented behaviors, punctuality, and client centricity among others (Touzé, 2005; Cortina et al., 1992; Judge et al., 1997; Barrick & Mount, 1991).

Furthermore, studies have also indicated that personality can be strongly linked to performance when personality traits and performance criteria have a common theoretical base (Day & Silverman, 1989). For instance, a personality trait associated with interpersonal relations can be found to predict performance in areas related to customer satisfaction or team management.

An individual's personality has long been a locus of scientific and psychological research, especially pertaining to organizational settings because organizations benefit from leveraging this information for their talent management decisions.

TRAIT-BASED APPROACH TO PERSONALITY ASSESSMENT

Psychologists have often debated the effectiveness of trait-based assessments compared to type-based assessments. Type theory views the characteristics of people as discrete categories whereas trait theory views these same characteristics as part of a continuum.

Research has revealed that variation in human personality occurs along continuous dimensions and not as discrete categories. Viewing personality in this way allows for a more flexible categorization of individuals. Moreover, trait theories tend to effectively demonstrate how individual traits are linked to the individual, by giving a much larger emphasis on the individual rather than the situation. Trait-based assessments use a hierarchy of traits to separate external factors like culture from the individual. As a result, the same standardized trait-based assessment can be used across varying demographics and cultures without confounding results (Walter and Yuichi, 1998; Marsella et al., 2000).

CONCEPTUALIZING 27 ECHO PERSONALITY ASSESSMENT

27 Echo Personality Assessment (27 Echo) was developed using a two-pronged approach:

As the first step, Jombay's organizational psychologists leveraged their experience of working with over 500 organizations spanning various geographies, to analyze the contents of their competency frameworks to identify the recurring dimensions that emerged. Jombay's Organizational Psychologists also did an in-depth analysis of The Great Eight Competency Framework which is widely used in organizational studies.

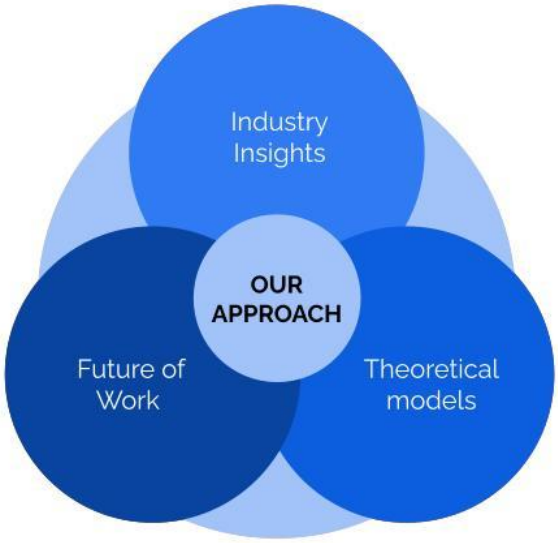
Jombay also conducted focus group discussions and targeted interviews with multiple cohorts of business leaders, CHROs, and HR professionals to understand their expectations of the future of work. The data from these two studies were then analyzed to delineate recurring themes and dimensions coming out of the Business and Industry Insights, resulting in a list of 54 dimensions.

As a next step, Jombay did a thorough review of the existing literature on theories of personality and the dimensions they cover. The exercise highlighted that no single established theory covered the nuances that are expected in the present-day workplace. **Thus, a need for a personality assessment that is based on an integrated theoretical foundation and backed by industry insights and future workplace demands was revealed.**

Such a personality measure would strike a unique balance between the changing landscape of organizational assessment needs and the prominent personality theories. Our goal for the new personality assessment was for it to capture the new age assessment requirements of organizations. **Thus, the 27 Echo Personality Assessment was born.**

Jombay's team comprises of Organizational Psychologists with Master's degrees in Psychology from some of the most reputed global universities, several Organizational Psychologists from our team have more than 10 years of experience in psychometrics and personality assessments. Our team also consists of Data Scientists and Statisticians with more than 7 years of experience in working with psychometric data. In the Development of 27 Echo, we also incorporated inputs from Jombay's talent management consultants and L&D consultants.

Jombay's team pursued the personality lens based on the need for a new personality assessment as highlighted above. Upon conducting an in-depth analysis and reviewing prominent personality theories, Jombay's team distilled the 54 dimensions obtained from our primary research into 27 personality dimensions that are aligned to both the existing theories of personality and the new age work competencies. These 27 personality dimensions form the integrated framework of 27 Echo, having emerged from an amalgamation of personality theories, industry insights, and insights from the future of work.



It is the blended approach of drawing insights from prominent theories and industry leaders that make 27 Echo a tool of such value and interest to Business Leaders, Human Resource Leaders, Consulting Leaders, or any Professional wishing to obtain a holistic assessment of personality. The recommended use cases expand from Selection, Succession Planning, High Potential Identification, and Individual and Team Development (this is further explored in Chapter 02: Applications & Target users).

After finalizing the theoretical framework of 27 Echo, we also defined its target population and purpose. 27 Echo's target population includes working professionals above the age of 18 employed in any private or public sector organization, across industries, functions, and levels.

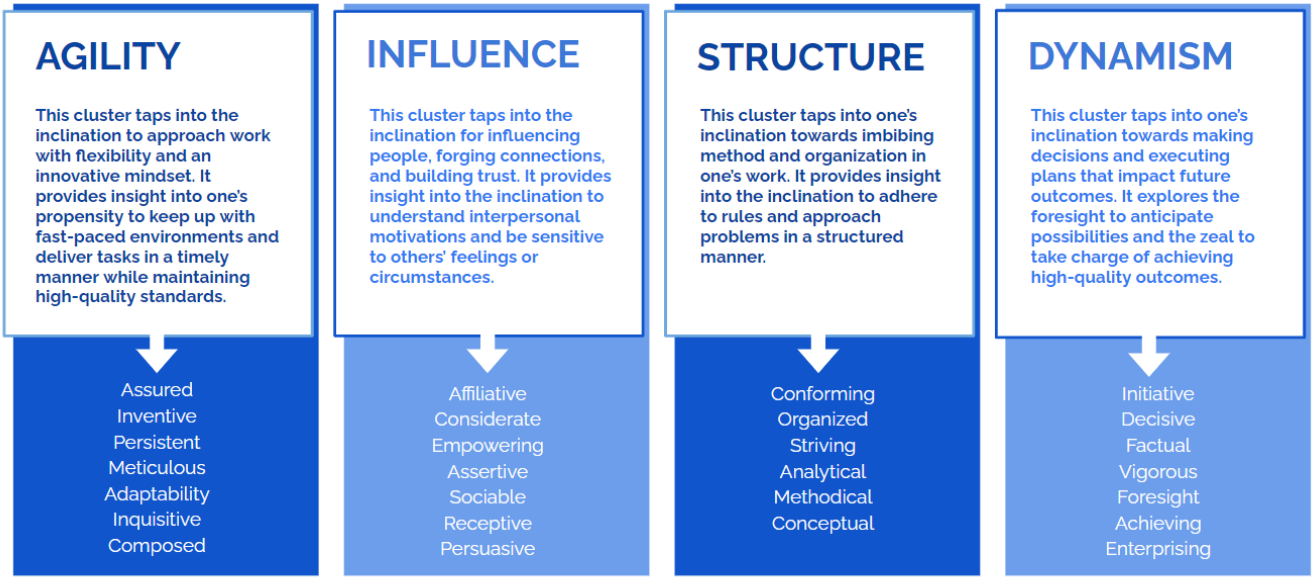
The assessment was aimed to be a self-report measure of personality dimensions that impact workplace behavior. It should be noted that the 27 Echo Personality Assessment does not focus on derailers. Derailers are personality characteristics that are strengths under normal circumstances. However, under stress or pressure, these characteristics can become severe career obstacles. In recent years, with the positive psychology movement gaining momentum, there has been an increased focus on the positive aspects of human behavior and experience. In line with this trend, Jombay has created 27 Echo with the philosophy of focussing only on how personality dimensions can positively impact workplace performance.

Table 1.1: *The 27 Dimensions of 27 Echo*

DIMENSIONS OF 27 ECHO		
Adaptability	Assertive	Organized
Affiliative	Conceptual	Striving
Assured	Considerate	Methodical
Composed	Initiative	Receptive
Enterprising	Foresight	Persuasive
Inquisitive	Conforming	Factual
Inventive	Analytical	Decisive
Meticulous	Sociable	Vigorous
Persistent	Empowering	Achieving

CLUSTERS

A Principal Component Analysis (PCA) was conducted on the 27 dimensions. The scree test revealed a four-factor structure for this data. The four factors were retained and rotated to simple structures via Varimax rotation (Refer to Chapter 04: Scales for detailed information). ***Based on the analysis, we arrived at four clusters, namely: Agility, Influence, Structure, and Dynamism.***



KEY HIGHLIGHTS

INTEGRATED & HOLISTIC

The workplace of today has undergone a rapid transformation. Jombay's extensive experience in facilitating clients with their talent management needs acts as a sturdy foundation for the 27 Echo. This is blended with an extensive study of existing personality theories to provide a rich framework that marries the past, with the present, and especially, the future. While 27 Echo boasts of a rich theoretical backing, what sets it apart is the breadth of knowledge absorbed from Jombay's experience in talent assessments spanning over a decade. 27 Echo is enriched with insights and expertise that go beyond a mere theoretical basis.

HIGH TECH & HIGH TOUCH

Pioneering the digital movement for the talent assessments space, Jombay has championed the online medium since its inception. 27 Echo was developed to be experienced online. Technology is a driving force at Jombay, allowing us to truly focus on the assessment-taker by providing a seamless administration process. Technology helps us simplify, scale, and synergize the integrated model that constitutes 27 Echo's core. To deliver on our High Touch promise, 27 Echo is designed to be flexible for distinct organizational contexts and their specific use cases, or even to cater to Selection, Succession Planning, Individual, and Team Development strategies.

CURRENT & FUTURE WORKPLACE REALITIES

In many respects, the future of work is already here. With technology and unprecedented events dynamically shaping work trends, it is a given that the landscape of work can no longer be seen as static. New competencies permeate into the context of work whereas other competencies may be pushed to the brink of extinction in terms of relevance. The landscape is dynamic as it is fertile. Keeping this in mind, Jombay has developed 27 Echo to represent both current and future realities. Technology will continue to bring further shifts. Jombay's future-focused approach safeguards the relevance of the 27 Echo Personality Assessment and lends a significant advantage to itself in the market.

NORMS, RELIABILITY, & VALIDITY

Evidence across studies conducted to examine the reliability (refer to Chapter 05: Reliability) and validity (refer to Chapter 06: Validity) of 27 Echo highlights that each dimension measures every facet of the underlying personality trait adequately and consistently.

27 Echo offers a varied choice in terms of norm groups such as global norms, regional norms, individual contributor group norms, manager group norms, and senior managers & leaders group norms. The user can select the reference group that is most representative of the group being assessed (see Chapter 07: Norms).

SUMMARY

- ***Foundation of 27 Echo*** *hinges on Jombay's vast experience of industry and market knowledge and an integrated model of multiple theories.*
- ***Reliability studies*** *with respect to Internal Consistency Reliability of 27 Echo range from .62 to .89 with median reliability of .76. This indicates that most of the dimensions of the 27 Echo have good internal homogeneity. Test-retest reliability over 14 days, 6-month, and 18-month intervals range from .62 to .91. Correlation coefficients in this range indicate that the 27 Echo dimensions have fairly high temporal stability.*
- ***Validity studies*** *with multiple groups across industries and levels reveal expected patterns of correlations between 27 Echo dimensions and related performance ratings or competencies. Construct validity is measured by correlations between 27 Echo and 16PF Questionnaire, Emotional Intelligence Scale, and HOGAN Personality Inventory among others. The dimensions show numerous notable correlations, denoting that the 27 Echo constructs are highly valid.*
- ***Fairness studies*** *from a gender, language, and region standpoint suggest that 27 Echo exhibits minimal evidence of psychometric bias across these groups.*
- *The 27 Echo Personality Assessment reports have been designed to be simple enough to ensure the assessment-taker has a basic understanding of their personality profile. However, for a deeper dive into the intercorrelation of the dimensions and the implications of the report on their performance at work, an accreditation in 27 Echo would be necessary.* ***Jombay offers a 1.5-day accreditation program to equip practitioners in the interpretation and feedback process for 27 Echo.***
- *This technical manual is for experienced users in the field of psychometrics, personality assessment, or behavioral assessment.*

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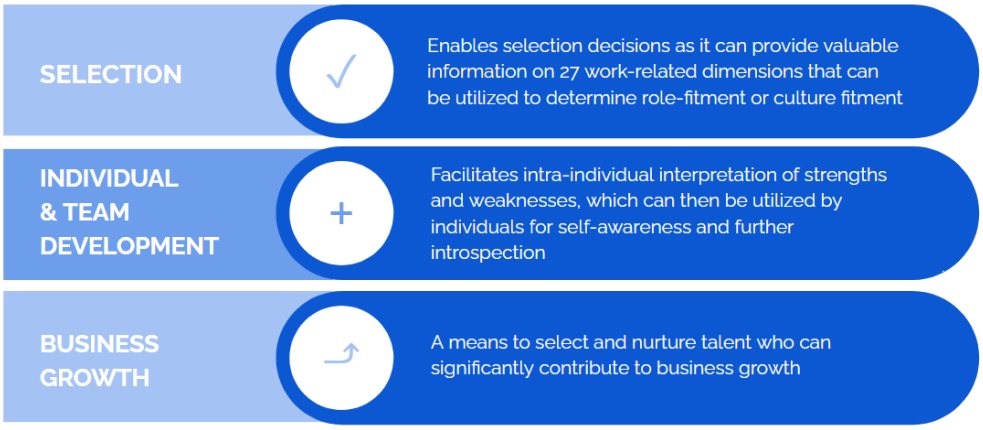
02/APPLICATIONS & TARGET USERS

APPLICATIONS OF 27 ECHO

27 Echo has been designed for use cases that are specific to the workplace. The assessment is designed such that it is relevant throughout an employee's life cycle. 27 Echo can be used in conjunction with other assessments that evaluate the knowledge, skills, and abilities of the individual to get a holistic picture of their potential. Jombay recommends that users of this assessment understand the below applications of 27 Echo in that light:



SELECTION

27 Echo serves as an essential source of information when making selection decisions. 27 Echo provides deep insights in less time and can be used prior to the interview stage in the hiring lifecycle. 27 Echo enables selection decisions as it can provide valuable information on 27 work-related dimensions that can be utilized to determine role fitment or culture fitment, equipping hiring managers to quickly screen the candidates whose personalities align with the requirements of the position. While 27 Echo provides key insights into some aspects of individuals that are being evaluated, it is recommended to refrain from relying solely on one tool for any selection decision.

INDIVIDUAL AND TEAM DEVELOPMENT

27 Echo provides indicators of an individual's inclinations and dispositions on 27 dimensions relevant to the workplace. The assessment report facilitates intra-individual interpretation of strengths and weaknesses, which can then be utilized by individuals for self-awareness and further introspection. 27 Echo reports help in facilitating development-review conversations.

BUSINESS GROWTH

27 Echo offers a means to select and nurture talent who can significantly contribute to business growth. Identification of high potentials and supporting them in their areas of development can aid their retention, making it profitable for organizations in the long run.

MISUSE OF 27 ECHO

27 Echo offers a plethora of information that has a wide range of applications. However, there are certain scenarios where the usage of the 27 Echo is not appropriate. These have been outlined below:

- Using 27 Echo for downsizing, termination, or layoffs is against ethical practices and considerations of using personality assessment and workplace measurement tools. Using 27 Echo to determine a pass/fail approach to firing employees is inappropriate.

- 27 Echo is not designed to measure cognitive ability or aptitude. It is designed to measure inclinations and dispositions related to work-relevant dimensions.

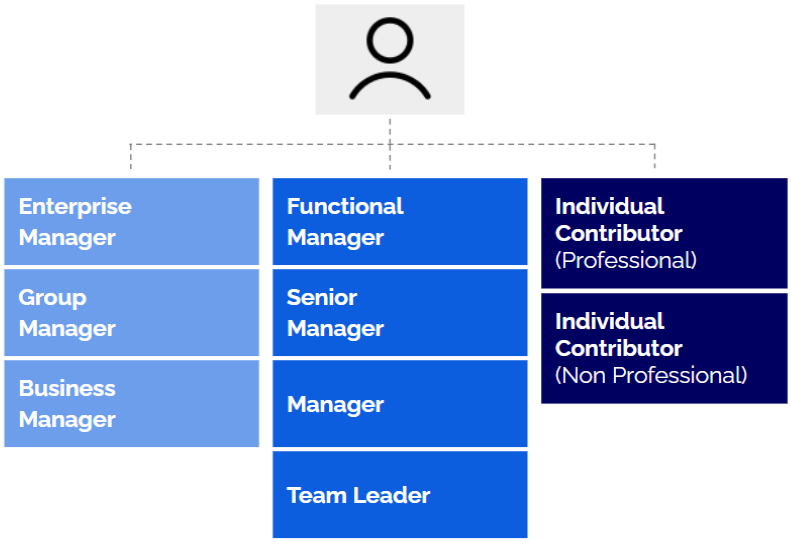
- 27 Echo has not been designed to measure children's qualifications and eligibility for attending educational institutions.

- 27 Echo has not been designed for assessing partner compatibility for people who are dating, who are married, or in any other relationships beyond the workplace.

- 27 Echo is not designed as a diagnostic tool for mental health disorders. It shouldn't be used to treat substance abuse, eating disorders, physiological disorders, or assess psychological stability.

TARGET USERS OF 27 ECHO

27 Echo was developed to assess the personality dimensions of working professionals, 18 years of age or more, across different roles, levels, and industries. Target users of 27 Echo include but are not limited to:



- **Enterprise/Corporate Manager**- Board member of large, multinational enterprise, e.g., Chairperson, CEO, COO of a multinational company.
- **Group Manager**- Regional Managing Director or President/Vice President with a portfolio of businesses/geographies/product lines, e.g., Managing Director of Middle East Operation of an FMCG brand.
- **Business Manager**- Managing Director of a product line or owner of any small to mid-size organization.
- **Functional Manager**- Manages a business function such as finance or sales.
- **Senior Manager**- Manages a number of business units or sub-functions, e.g., Regional Sales Director.
- **Manager**- Manages a business unit, e.g., Bank Branch Manager, Store Manager, Product Manager, etc.
- **Team Leader**- Manages a small team of individual contributors, e.g., Team Supervisor, Project Head, etc.
- **Individual Contributor (Professional)** - Manages work associated with the necessary professional qualification, e.g., Engineer, Legal Advisor, Financial Analyst, etc.
- **Individual Contributor (Non-Professional)** - Manages work without an associated necessary professional qualification, e.g., Sales Associate, Retail Worker, Customer Care Representative, etc.

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03/CONSTRUCTION

CONCEPTUALIZING 27 ECHO

With the talent management sphere becoming more diversified in recent years, newer competencies are becoming increasingly important for organizations across the globe. Understanding this changing need, Jombay conducted several studies to identify the future-oriented workplace themes that have the most potential to influence newer capabilities across organizations.

PRIMARY RESEARCH

Two studies were conducted to meet this objective:

- Jombay's Organizational Psychologists leveraged their experience of working with over 500 organizations spanning various geographies, to analyze the contents of their competency frameworks to identify the recurring dimensions that emerged. Jombay's Organizational Psychologists also did an in-depth analysis of The Great Eight Competency Framework which is widely used in organizational studies.
- Jombay conducted focus group discussions and targeted interviews with multiple cohorts of business leaders, CHROs, and HR professionals to understand their expectations of the future of work.

The data from these two studies were then analyzed to delineate recurring themes and dimensions coming out of the Business and Industry Insights, resulting in a list of 54 dimensions presented in Table 3.1.

Table 3.1: *Prominent Dimensions Impacting Workplace Performance that Emerged from Jombay's Studies*

Adaptability	Agility	Balancing Biases
Agreeableness	Compliance	Customer Service Orientation
Assertiveness	Considerateness	Delegation
Bias for Action	Big Picture Thinking	Result Orientation
Emotional Control	Helpfulness	Humility
Desire for Perfection	Dependability	Guilt Consciousness
Flexibility	Collaborative Learning	Stress Tolerance
Digital Dexterity	Curiosity	Data Mindset
Monotony Tolerance	People Understanding	Process Orientation
Initiative	Mentoring	Networking
Resilience	Empathy	Risk Taking
Managing Ambiguity	Frugal Mindset	Pragmatic Orientation
Growth Mindset	Impactful Communication	Innovation
Planning and Prioritization	Persistence	Responsibility of Outcomes
Self Awareness	Practical	Multitasking
Cultivating Partnerships	Developing Self	Contingency Management
Openness to Ideas	Problem Solving	Remote Leadership
Target Orientation	Social Intent	Team Player

SECONDARY RESEARCH

As a next step, Jombay's Organizational Psychologists did a thorough review of the literature on the existing Personality, Emotional Intelligence, and Organizational Behavior Theories. While there were several theories that came up in our research, four prominent theories stood out and were observed to cover factors from most other theories. These four theories were studied in detail: Cattel's 16PF, Costa and McCrae's Big 5 Models of Personality, Goleman's Emotional Intelligence Theory, and Organ's Organizational Citizenship Behavior Theory.

The Big-Five Factors

The acronym OCEAN is often used to refer to the Big Five personality traits: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. The five super traits were definitively crystallized by Costa and McCrae in 1985 along with the assessment tool and are widely used in studies of organizational outcomes (McCrae & Costa, 2008). Since then a vast amount of scientific research has come forward, both in support and in critical examinations of the 5-factor model, especially with the model being applied to different settings across populations and cultures. The significance of the Big Five model lies in the fact that it is the widely accepted trait approach to personality.

Cattell's 16 Personality Factors

16 Personality Factor Personality Questionnaire is an assessment tool originally developed by Cattell (1949) from 16 unique dispositions he identified from a pool of source traits and surface traits - ones that are often not distinct from other people based on the first impressions, and appear to underlie several behavioral dispositions that influence the individual's actions (Cattell & Mead, 2001). 16 PF forms the foundation for developing newer assessment tools as well as scientific research into talent management.

Goleman's Emotional Intelligence Theory

Emotional Intelligence (EI) can be described as the ability to comprehend, reflect upon, monitor, and control one's own emotions, to have a healthy cognizance of other people's emotions, to be able to differentiate between different feelings and categorize them appropriately, and use different emotional cues to guide one's thinking and behavior (Srivastava, 2013).

The "ability model" of Emotional Intelligence, proposed by Salovey et al. (1990), refers to an individual's ability to process emotional information and leverage it to navigate their social environment. The "trait model" of Emotional Intelligence which was developed by Konstantin Vasily Petrides (Petrides and Furnham, 2001), is centered on unique behavioral dispositions and self-perceived abilities. The "mixed model" is an integration of both ability and trait models of EI. This model views Emotional Intelligence as an array of skills and characteristics that drives success across positions, as proposed by Goleman (Goleman, 1998).

Specific work-based measures of Emotional Intelligence have also been studied extensively by researchers. These models encompassed different ways in which competencies such as empathy, assertiveness, sociability, learned optimism, emotional agility, composure, and self-control contributed to important outcomes in workplace tasks, teams, interpersonal management, and other organizational scenarios.

Goleman expanded on Mayer's and Salovey's research to include five essential elements in the model of emotional intelligence:

- **Emotional self-awareness**
- **Self-regulation or Self-Management**
- **Motivation**
- **Empathy**
- **Social skills**

Organ's Organizational Citizenship Behavior Theory

Organizational Citizenship Behavior (OCB) by Organ (1988) describes individuals' willingness and volition to do positive and constructive work in support of co-workers and in the benefit of the organization. Individuals who frequently display citizenship behavior in the organization may not always be the top performers, but they are often found to be the people who are known to 'go the extra mile' or beyond the scope of the bare minimum levels of effort required to do a merely satisfactory job. Research has shown that these sets of behaviors are ones that contribute to organizational growth and effectiveness.

Organ's (1988) taxonomy has delineated five facets of citizenship:

- **Altruism**- helping others
- **Conscientiousness**- engaging in role-specific behavior, but doing so beyond the bare minimum levels
- **Sportsmanship**- Refraining from losing one's spirit during challenges or setbacks
- **Courtesy**- providing others with advance notice, reminders, and information; and
- **Civic virtue**- contributing in a responsible fashion to the development and well-being in the organization

THE INTEGRATED THEORETICAL FRAMEWORK OF 27 ECHO

Mapping the 54 dimensions identified from our primary research to prominent personality theories (see Appendix B for more details) highlighted that no single established theory covered the nuances that are expected in the present-day workplace. **Thus, a need for a personality assessment that is based on an integrated theoretical foundation and backed by industry insights and future workplace demands was revealed.**

Such a personality measure would strike a unique balance between the changing landscape of new-age organizational competencies and the prominent personality theories. Our goal for the new personality assessment was for it to have a higher propensity to capture the new age competencies and assessment requirements of organizations. **Thus, the 27 Echo Personality Assessment was born.**

Jombay's team pursued the personality lens based on the need for a new personality assessment as highlighted above. Upon conducting in-depth analyses and reviewing prominent personality theories, Jombay's team distilled the 54 dimensions obtained from our primary research into 27 personality dimensions that are aligned to both the existing theories of personality and the new age work competencies. These 27 personality dimensions form the integrated framework of 27 Echo, having emerged from an amalgamation of personality theories, industry insights, and insights from the future of work.

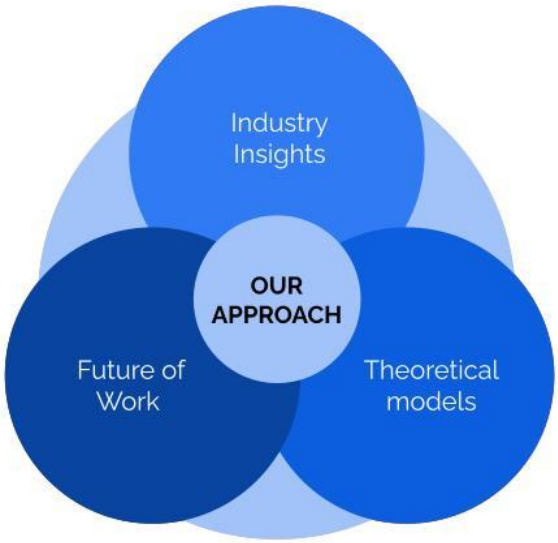


Table 3.2: *The 27 Dimensions of 27 Echo*

DIMENSIONS OF 27 ECHO		
Adaptability	Assertive	Organized
Affiliative	Conceptual	Striving
Assured	Considerate	Methodical
Composed	Initiative	Receptive
Enterprising	Foresight	Persuasive
Inquisitive	Conforming	Factual
Inventive	Analytical	Decisive
Meticulous	Sociable	Vigorous
Persistent	Empowering	Achieving

It is the blended approach of drawing insights from prominent theories and industry experts and leaders that make 27 Echo a tool of such value and interest to Business Leaders, Human Resource Leaders, Consulting Leaders, or any Professional wishing to obtain a holistic assessment of personality. The recommended use cases expand from Selection, Succession Planning, Business Growth, and Individual and Team Development (this is further explored in Chapter 02: Applications & Target Users).

ITEM WRITING AND REVIEW

Clear guidelines regarding item writing were established by Jombay's team of organizational psychologists. An initial item pool was constructed that consisted of 15-20 items for each dimension. The following item writing guidelines and review criteria were followed:

- ***An equal number of items in each dimension were created to tap into distinct aspects defined in the definition.*** For example, the definition of Achieving is *"Sets high standards of excellence for self and others. Thrives on competition."* Item writers were instructed to create as many items tapping into the dispositions and inclinations associated with *"Setting high standards for self and others"* as for the second aspect of *"thriving on competition".*

- ***A clear objective while writing and reviewing the items was to refer to what high scores in that dimension looked like.*** To meet this objective, item writers were instructed to keep in mind exemplars of individuals who they would consider as being high on that dimension. Furthermore, in order to validate the items, the item reviewers were instructed to refer to individuals whom they had observed behaviorally to be lower on this trait to check if these individuals would not positively endorse the statement.

- ***The use of long sentences, complex words, and technical jargon was consciously avoided as these items tend to have lower readability.*** At the same time, one-word items or extremely short items that fail to convey with precision the meaning of the item were also avoided.

- ***Writers were instructed to use simple English used in everyday conversations, for the assessment items to be understood and interpreted by a wide spectrum of the target audience.*** The item reviewers ensured that the items were as simple and targeted as possible, and further simplified any items that had the scope for simplification while retaining the essence of the statement.

- ***Each item measured only one dimension and conjunctions such as "and", "or" or "but" were avoided.*** Item reviewers were instructed to consciously avoid **double-barrelled items**. For example, *"I believe in working hard and being on time".* This statement taps into two separate elements, and combining them in one item can lead to faulty results. Thus the statement can be broken into *"I believe in working hard"* and *"Being on time is important to me"*.

- ***The use of double negatives in the items was avoided as these can be prone to respondent response errors due to misreading.*** For example, *"I never avoid initiating conversations with people".* The use of "never" along with "avoid" can make the statement confusing and lead to erroneous responses.

- ***It was ensured that the items created are self-referent.*** Items that ask for opinions or attitudes about others were avoided. The items were worded such that they focused specifically on the respondent's own dispositions and inclinations.

- ***Item reviewers and writers were instructed to avoid items that might focus on specific knowledge or experience that a minority group may have limited access to.*** Items were thoroughly reviewed to ensure that they were not biased towards any culture, country of origin, ethnicity, age, gender, sexual orientation, and religious belief.

- ***While writing the items, care was taken by writers to not include statements that contain peculiarity, are controversial, or are sensational.*** Once an initial item pool had been generated, the items were reviewed by a group of 4 trained item writers and 3 subject matter experts. The items were either modified or eliminated according to the review guidelines. This process was repeated iteratively till a satisfactory consensus was achieved, and there were a minimum of 15 items per dimension.

After the items for the pilot test were finalized, they were assembled into an online test form.

ITEM TRIALING

Pilot tests were a critical aspect of developing 27 Echo. Through the pilot assessment process, items were administered to a sample population of 300 working professionals representative of the target group for the assessment. The sample was recruited through convenience sampling technique using an online link to the assessment.

The specific goals of the pilot assessments were to:

(a) evaluate the feasibility and challenges in delivering the assessments online.
(b) evaluate the statistical characteristics of items.
(c) filter and select only specific, high-quality items for operational use.

Demographic Data Breakup for the sample in Pilot 1 (n=300)

GENDER	%
Males	56
Females	44

AGE	%
Below 20	2
20-29	26
30-39	35
40-49	32
50-59	4
60 +	< 1

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	45
Master's Degree	32
Doctorate Degree	2
Professional Qualifications	15
Diploma/Workplace Training	6

ITEM SELECTION STRATEGY

Statistical analyses were conducted using R software. Items were selected for inclusion in the final assessment only if they met the following criteria:

1. Less desirable items: The response frequency for each of the options in an item was observed. The items that had skewed response distribution (where more than 50% of the sample selected a single option) were eliminated. This response frequency pattern is either indicative of a desirable item or an item that may fail to adequately measure individual differences within that dimension.

2. Homogeneous sets: Only items that have corrected item-scale correlations exceeding 0.3 were retained.

3. High Internal consistency: Items that, if dropped, would improve the overall reliability of the dimension were eliminated. This was repeated until there was no item left in the set that reduced the dimension's Alpha coefficient.

4. Item limit: When more than 6 items met the above criteria, those with the lowest item-scale correlations were removed from the item set on an iterative basis.

The items that did not meet the aforementioned criteria were eliminated from the item pool. If any of the dimensions contained less than 3 items that were retained after this process, new items were constructed (according to the specified guidelines). Items that did not have a satisfactory response frequency distribution but had a high contribution to the dimension's internal consistency were inspected for any form of bias and modified accordingly.

The second item pool was finalized, and these items were administered to a representative sample (N= 296 working professionals) using the convenience sampling technique. The psychometric properties of the items were analyzed again and items were eliminated according to the above-mentioned criteria. These steps were repeated iteratively until a minimum of 3 items that met the criteria outlined above were obtained for each of the 27 dimensions. The final 27 Echo assessment consists of a total of 111 items including a combination of positively and negatively worded statements.

Demographic Data Breakup for the sample in Pilot 2 (n=296)

GENDER	%
Males	56
Females	44

AGE	%
Below 20	2
20-29	21
30-39	39
40-49	34
50-59	3
60 +	< 1

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	46
Master's Degree	37
Doctorate Degree	2
Professional Qualifications	12
Diploma/Workplace Training	6

The development of 27 Echo was based on the Classical Test Theory, which assumes that an individual's true score on an assessment is their observed score minus the error score. Classical test theory recognizes the existence of errors during measurement, and the following chapters focus on establishing the Reliability of 27 Echo Assessment, to be able to place error bands around an individual assessment-taker's observed scores.

CLUSTERING OF DIMENSIONS

A Principal Component Analysis (*PCA)* was conducted on these 27 dimensions to reduce them to overarching clusters that would facilitate a broad view interpretation of the assessment-taker's personality profile. Principal Component Analysis is a dimensionality reduction method that was chosen because it enables reducing dimensions into components that explain the maximal amount of variance within the dimensions. The scree test revealed a four-factor structure for this data, and the four components were retained and rotated to simple structures via Varimax rotation. The Rotated Component Matrix (Table 3.3) presents the dimension loadings for each dimension falling under the four components.

***Table 3.3**: Rotated Component Matrix for PCA of the 27 Dimensions*

	AGILITY	INFLUENCE	STRUCTURE	DYNAMISM
Organized	0.08	0.14	0.71	-0.18
Striving	0.11	-0.05	0.62	0.16
Methodical	-0.16	0.03	0.51	-0.18
Conforming	-0.11	-0.09	0.71	0.16
Analytical	-0.14	-0.03	0.68	-0.02
Sociable	-0.13	0.61	-0.06	-0.21
Empowering	-0.04	0.65	0.13	0.05
Considerate	0.07	0.68	0.06	0.26
Decisive	-0.08	0.21	-0.13	0.59
Vigorous	0.13	0.03	-0.17	0.56
Achieving	0.05	0.13	0.13	0.66
Initiative	-0.08	0.21	0.1	0.43
Receptive	-0.03	0.59	-0.04	0.29
Persuasive	-0.06	0.69	-0.01	0.33
Foresight	0.11	0.26	-0.05	0.51
Affiliative	0.16	0.66	0.11	0.15
Assertive	-0.15	0.56	0.01	0.32
Meticulous	0.66	-0.03	0.13	0.26
Persistent	0.8	-0.01	-0.17	0
Factual	0.12	0	0.02	0.44
Conceptual	-0.01	-0.16	0.70	-0.03
Inquisitive	0.76	0.06	-0.02	-0.05
Composed	0.72	0.06	-0.07	0.1
Assured	0.77	0.2	-0.05	-0.11
Inventive	0.66	-0.3	-0.1	0.24
Enterprising	0.06	-0.18	-0.15	0.69
Adaptability	0.5	0.38	-0.05	-0.12

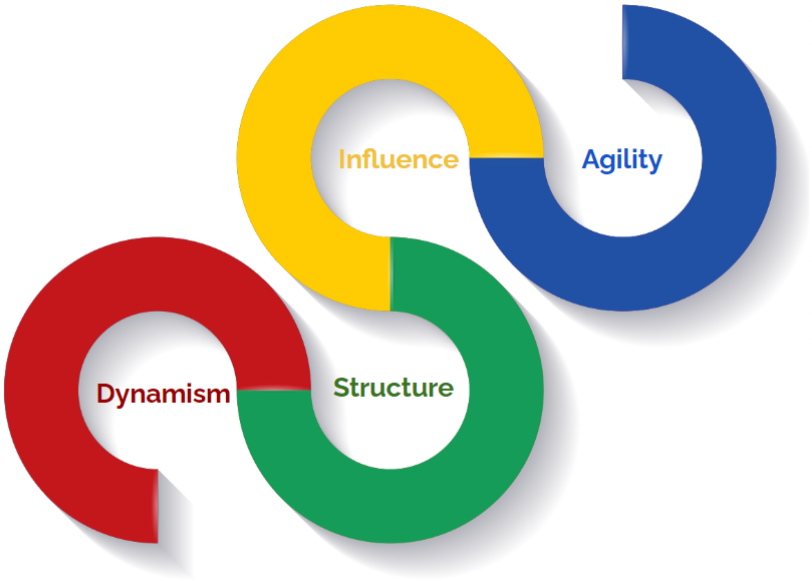
From Table 3.3, it can be seen that the dimensions Organized, Striving, Methodical, Conforming, Conceptual, and Analytical loaded onto one component. The factor loadings ranging from .51 to .71 indicate that these dimensions have a common underlying theme. Upon further examination, this underlying component was recognized and named **"STRUCTURE".**

Furthermore, the dimensions Assured, Meticulous, Inventive, Persistent, Inquisitive, Adaptability, and Composed had high factor loadings on component 2 ranging from .50 to .80. This component was named **"AGILITY"**, taking into account the underlying aspects of flexibility that each dimension under this cluster covers.

The dimensions that loaded onto the third component included Affiliative, Considerate, Assertive, Persuasive, Receptive, Empowering, and Sociable. The factor loadings ranged from .51 to .70 and this component was named **"INFLUENCE"**.

The fourth component comprised dimensions of Decisive, Vigorous, Foresight Initiative, Enterprising, Factual, and Achieving. The factor loadings ranged from .54 to .69. This component was named **"DYNAMISM"**, taking into account the underlying aspect of drive to achieve that fuels its constituent dimensions.

Thus, 27 dimensions of 27 Echo can be categorized into four clusters:



The clusters Agility, Influence, Structure, and Dynamism, each cover four distinct areas of an individual's personality profile in the workplace context. These clusters were also found to align with the great 8 competency framework that is widely used in organizational studies. Since 27 Echo has been designed to predict workplace performance, such an alignment with the 8 competencies that assess the work performance domains, proves its relevance. Table 3.4 lists the 4 clusters of 27 Echo, their definitions, and their alignment with the Great 8 Competencies.

Table 3.4: *Alignment of the Great Eight Competencies with the 27 Echo Clusters and Dimensions*

CLUSTERS	CLUSTER DEFINITIONS	DIMENSIONS	THE GREAT 8 COMPETENCIES
STRUCTURE	This cluster taps into one's inclination towards imbibing method and organization in one's work. It provides insight into the inclination to adhere to rules and approach problems in a structured manner.	Organized Methodical Conforming	Organizing and Executing
		Conceptual Analytical Striving	Analyzing and Interpreting
AGILITY	This cluster taps into the inclination to approach work with flexibility and an innovative mindset. It provides insight into one's propensity to keep up with fast-paced environments and deliver tasks in a timely manner while maintaining high-quality standards.	Assured Persistent Composed Adaptability	Adapting and Coping
		Inventive Meticulous Inquisitive	Creating and Conceptualizing
INFLUENCE	This cluster taps into the inclination for influencing people, forging connections, and building trust. It provides insight into the inclination to understand interpersonal motivations and be sensitive to others' feelings or circumstances.	Persuasive Sociable Assertive	Interacting and Presenting
		Affiliative Considerate Empowering Receptive	Supporting and Cooperating
DYNAMISM	This cluster taps into one's inclination towards making decisions and executing plans that impact future outcomes. It explores the foresight to anticipate possibilities and the zeal to take charge of achieving high-quality outcomes.	Foresight Initiative Decisive Factual	Leading and Deciding
		Enterprising Vigorous Achieving	Enterprising and Performing

From Table 3.4 it can be seen that these 4 clusters and the 27 dimensions that we arrived at by amalgamating industry insights about the present and future assessment demands as well as prominent theoretical models of personality, cover all relevant facets of an individual's personality relevant to predicting workplace behaviors.

RESPONSE AUDIT SCALES

When interpreting scores of any personality assessment, the tendency of an assessment-taker to fake their responses to present a favorable picture of themself should be taken into consideration. Several studies have explored the implications of faking or impression management on personality assessment, the extent to which it occurs, or whether it is even a problem. Irrespective of this, several scales have been developed to diagnose faking when it occurs. Studies by Ones & Viswesvaran (1998) provide conclusive evidence for the merit of using social desirability scales to detect response distortion attempts. Hence the use of response audit scales along with other scales in an assessment can be useful in flagging assessment-takers who are likely to fake, either in a socially desirable or socially undesirable direction (Ones & Viswesvaran, 1998).

There are several response tendencies that can influence the interpretation of scores of 27 Echo. These can be conscious or subconscious, systematic or non-systematic. Socially desirable responses are an example of systematic conscious response tendency. On the other hand, inconsistent or random responding is another prevalent response tendency. To detect the propensity to respond in a socially desirable direction, or in a random manner, two response audit scales were also built into 27 Echo.

IMPRESSION MANAGEMENT SCALE

When personality assessments are used in occupational settings to inform high-stakes decisions such as selection or promotion, the propensity of the assessment-taker to fake responses on the dimensions that are particularly job-relevant increases. A 10-item Impression Management Scale was built to assess an assessment-taker's inclination to present an ideal or unrealistically positive image of themselves to others. The scores on The Impression Management Scale can then be used to understand the motivation of the assessment-taker while attempting 27 Echo.

The Impression Management Scale consists of 10 items with a 4-point response scale ranging from "Completely True" to "Completely False". Selecting an unrealistically positive option is indicative of Social Desirability. One of the options is assigned a score of 1 while all others are scored 0. For example, the item "I'm always courteous even to people who are disagreeable" has four options ranging from "Completely False", "False", "True" and "Completely True".

The option “Completely True” is associated with a score of one as it is indicative of an absolutely positive and desirable image. The other options are scored zero.

The sum of the scores on each item within the scale forms the raw score for the assessment-taker. The minimum raw score that can be obtained on the scale is 0 and the maximum score is 10. The raw scores are then converted into percentages using the following formula:

Impression Management Score = (Raw score/Total number of items attempted)* 100

RESPONSE CONSISTENCY SCALE (RCS)

Infrequent or random response tendency can also lead to an erroneous interpretation of an assessment-taker's personality profile. Occasionally the assessment-takers may not respond with due consideration and thought, may lack a full understanding of the assessment's instructions, or may not understand the language of the items leading to random response patterns.

A response consistency scale was built to detect random response patterns of assessment-takers, by comparing responses to items under the same dimensions. Responding to items under the same dimensions differently can be assumed as indicative of an attempt to respond inauthentically to items by either choosing random answers, disobeying assessment guidelines, or answering dishonestly.

Calculation of response consistency scores can be outlined as follows:

- *For every dimension, the frequency of endorsing each response option across different items is counted.*

SCORE	LABEL	FREQUENCY
0	a	freq(a)
1	b	freq(b)
2	c	freq(c)
3	d	freq(d)

- *Frequency of endorsing the upper half of the score range (X) and the lower half of the score range (Y) is calculated as per the following formula:*
  X = freq(a) + freq(b)
  Y = freq(c)+freq(d)
- *Absolute Difference Score (ADS) is calculated using the formula:*
  ADS = |X - Y|
- *Consistency Score is calculated by dividing the Absolute Difference Score (ADS) with the total number of items in that dimension.*
  Consistency score for a dimension = ADS / Total number of items
- *An average of the Consistency scores for all dimensions forms the Overall consistency score of the assessment-taker.*
- The dimension scores are then interpreted along with the consistency scores to make informed inferences from the assessment scores.

Below is an illustrated example of how the response consistency scores are calculated by the system. Please consider the below table which indicates the responses given by the candidate on the items of a dimension. "Selected" indicates the option selected by the candidate for that item.

ITEMS	OPTION 1 WITH SCORE 0	OPTION 2 WITH SCORE 1	OPTION 3 WITH SCORE 2	OPTION 4 WITH SCORE 3
Item 1	Selected			
Item 2		Selected		
Item 3	Selected			
Item 4				Selected

X = Number of times Option 1 with score 0 was selected + Number of times Option 2 with Score 1 was selected

X = freq(a) + freq(b)

X = 2+ 1

X=3

Y = Number of times Option 3 with score 2 was selected + Number of times Option 4 with Score 3 was selected

Y = freq(c) + freq(d)

Y = 0+ 1

Y= 1

ADS Difference = |X - Y|

ADS Difference = (3-1)

ADS Difference = 2

Consistency Score = (ADS Difference)/ Total number of items

Consistency Score = 2/4

Consistency Score = 0.5

Assuming there are 3 dimensions in the assessment each with a consistency score of 0.2, 0.4 and 0.5

Overall Consistency Score = (0.2 + 0.4 +0.5) /3 * 100

= 36.67%

SCORING

At the final stages of development, different scoring methods were investigated. After reviewing each method, a simple scoring logic was established, which is outlined below. The scoring of the 27 Echo Personality Assessment dimensions and response audit scales is done by the system according to predefined steps.

❖ DIMENSION SCORES

The scoring system of 27 Echo dimensions calculates sten scores by the following three steps, namely, raw scores, numerical scores, and then sten scores.

STEP 1: RAW SCORES

Each dimension has a set of 3 to 6 items. Each item has a series of answer options that are given a score ranging from 0 to 3. Hence, the lowest score a user can get on an item is 0 and the highest one can get is 3. The sum of scores obtained on each item within a dimension gives us the dimension score.

Example: *The dimension 'Methodical' has four items. Person A's responses for items mapped to the dimension 'Methodical' are illustrated below. Table 3.5 shows the items, their scores and Person A's answers (highlighted in dark) for items mapped to Methodical.*

Table 3.5: *Person A's Scores on Items for Methodical*

ITEM	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Item 1	0	1	2	3
Item 2	3	2	1	0
Item 3	3	2	1	0
Item 4	0	1	2	3

Raw scores are obtained on a 100 point scale (percentages) using the following formula:
Raw Score = (Sum of scores for individual items within a dimension / Highest possible score achievable for that dimension) * 100

Example: Using the example above, the sum of scores for individual items = 0 + 1 + 2 + 3 = 6

*Highest possible score achievable for the dimension = 3 * 4 = 12*
*Raw Score (%) = 6/12 * 100 = 50*

STEP 2: STEN SCORES

Finally, raw scores are converted into standardized 10-point scores called sten scores. To convert numerical scores to Sten scores, they are first transformed to standard scores (z-scores)
Z-score = (Raw Score- Sample Mean) / Standard Deviation (SD)

The system then converts z-scores into sten scores using the following formula:
STEN *= z(SD)+ Mean*

*The **Mean** for Sten scores is **5.5** and the Standard Deviation is **2**.*

❖ CLUSTER SCORES

Cluster scores are calculated using the same process as dimension scores.

Cluster Score = Sum of sten scores on its underlying dimensions/total number of dimensions under that cluster

REPORTS

Keeping in mind the purpose of the 27 Echo and the end-user experience, reports were built-in systematically. They were designed to contain all the requisite information about the assessment-taker's responses on 27 Echo (refer to Chapter 10: Reports for further details).

STANDARDIZATION

The questionnaire was standardized on a group of 856 participants representative of the target users (refer to Chapter 05: Reliability and Chapter 06: Validity). The distribution of the sample with respect to key demographic variables was ensured to be as close to the demographic distribution in our target population as possible. The standardization sample was recruited through several digital channels (campaigns on social media platforms such as LinkedIn, email campaigns etc.) and through a form available on Jombay's website, to ensure access to diverse populations and get a representative sample.

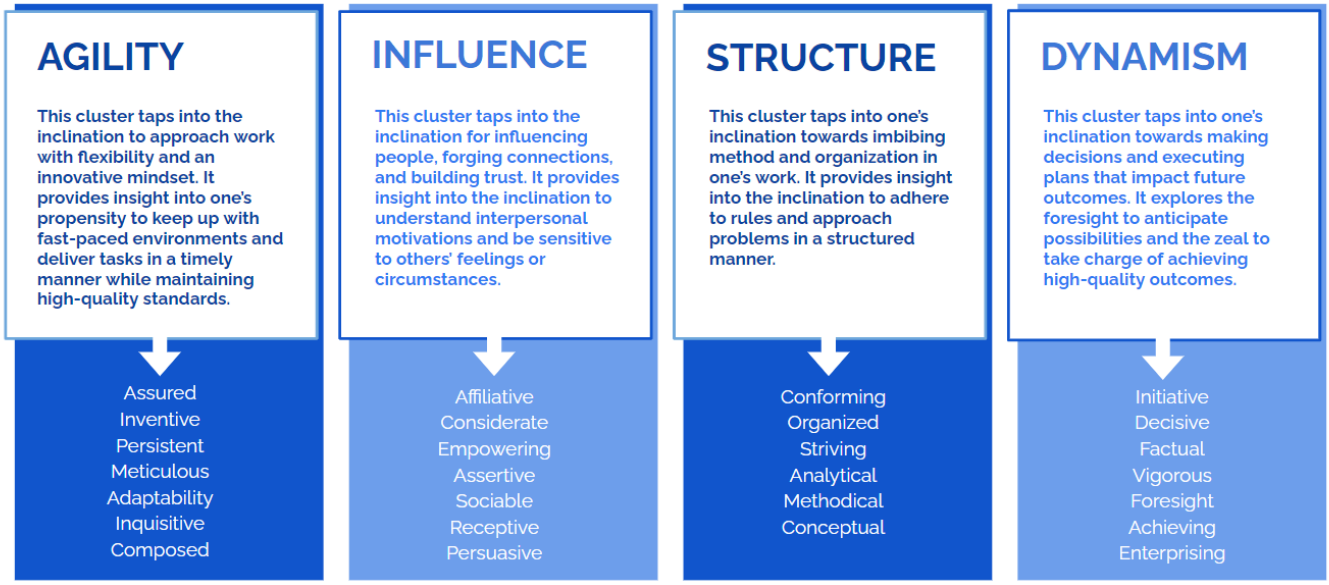
Analysis was also conducted on the responses of the standardization sample (n= 856) to ensure the fairness of the items. Group trends in the item scores were examined from a gender, language, and regional lens. Test-Retest Reliability of the scores on 27 Echo was examined for three different time periods (14 days, 6 months, and 18 months). Several validation studies were then conducted over the years to establish the face validity, criterion validity, and construct validity of 27 Echo .

27ECHO

04/SCALES

SCALES OF 27 ECHO PERSONALITY ASSESSMENT

Following are the final clusters of 27 ECHO after the Principle Component Analysis (PCA) and their underlying dimensions.



The following section details each of the 27 dimensions along with their definition, correlations with other dimensions in 27 Echo, and the performance areas (competencies) that the dimensions were found to be associated with in organizational settings. The dimensions are arranged as per clusters.

The descriptors for High Scores and Low Scores elaborate on the inclinations and dispositions assessment-takers may commonly possess with the scores. The correlations of the 27 dimensions with performance areas (competencies) have been obtained from the Criterion Validity Studies (refer to Chapter 06: Validity) of 27 Echo conducted on cohorts across levels, functions, and industries such as FMCG, BFSI, IT/ITES, and Manufacturing. The dimension intercorrelations were calculated on the data from the standardization sample (n=856) used for 27 Echo (refer to Appendix C for the entire table of dimension intercorrelations). An in-depth understanding of the implications of these inter-correlations is covered in the 1.5-day accreditation program offered by Jombay. A detailed guide on how to interpret the dimension scores and the intercorrelations between them has been provided in Chapter 11: Feedback.

CLUSTER: AGILITY

ASSURED

Definition: *Exhibits confidence in managing challenges. Believes in and trusts one's capabilities.*

High Scorer:	Low Scorer:
Exhibits confidence in one's own capabilities. Trusts one's own judgment in challenging situations. Demonstrates a strong sense of worth. Tends to be comfortable in one's own skin.	Takes time to believe in one's own capabilities. Tends to be motivated by external validation. Likely to regularly evaluate one's own worth and talent in comparison to others.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ASSURED:		
Very likely to be high on: Persistent r= .51 Inquisitive r= .50 Composed r= .48 Adaptability r= .48 Inventive r= .44 Meticulous r= .44 Enterprising r= .40	**Moderately likely to be high on:** None	**Fairly likely to be high on:** Affiliative r= .24
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Coaching & Mentoring	r= .18	Impactful Communication	r= .36
Abstract Thinking	r= .22	Customer Centricity	r= .28
Process Orientation	r= .35	Stakeholder Management	r= .40
Planning & Organizing	r= .42	Driving Business Results	r= .16
Impact & Influence	r= .27	Operational Excellence	r= .14

INVENTIVE

Definition: *Generates creative ideas and solutions to problems. Thinks out of the box.*

High Scorer:	Low Scorer:
Challenges the status quo frequently. Seeks creative methods to add value to current systems. Gets stimulated by creative discussions about new ways of dealing with situations. Proactively proposes innovative, unconventional ideas and solutions.	Refrains from questioning the status quo. Follows conventional methods and solutions. Less likely to look beyond traditional boundaries. Seldom comes up with creative ideas.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON INVENTIVE:		
Very likely to be high on: Enterprising r= .52 Meticulous r= .51 Composed r= .44 Assured r= .44	**Moderately likely to be high on:** Persistent r= .37 Inquisitive r= .31	**Fairly likely to be high on:** Adaptability r= .21
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Adaptability	r= .17
Leading the Industry	r= .25

PERSISTENT

Definition: *Stays focused on completion of tasks. Accomplishes goals despite setbacks and obstacles.*

High Scorer:	Low Scorer:
Determined to pursue tasks to successful completion. Accomplishes the required results even in the face of adversity. Acts decisively when the progress is stalling. Takes ongoing, repeated action to overcome obstacles faced.	Feels stifled and demotivated when faced with obstacles. Prefers goals that one is certain of attaining. May lose motivation to continue pursuing goals when faced with setbacks.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON PERSISTENT:		
Very likely to be high on: Inquisitive r= .53 Composed r= .52 Assured r= .51 Enterprising r= .53 Meticulous r= .47	**Moderately likely to be high on:** Inventive r= .37 Adaptability r= .31	**Fairly likely to be high on:** None
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** Analytical r= .28 Sociable r= .21

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Coaching & Mentoring	r= .17
Process Orientation	r= .33
Planning & Organizing	r= .27
Impact & Influence	r= .25

METICULOUS

Definition: *Focuses on details and is exacting in one's work. Pays attention to accuracy and quality results.*

High Scorer:	Low Scorer:
Demonstrates a high level of accuracy in all the tasks. Keeps pursuing a task until it is executed according to to set quality standards. Proactively checks for errors in one's work. Takes essential steps to ensure that minute details are not overlooked.	Prefers to focus more on speed than accuracy. Finds it overwhelming to go over minute details. Not inclined to always scrutinize work before finalizing it. Overlooks minor errors at times.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON METICULOUS:		
Very likely to be high on: Inventive r= .51 Persistent r= .47 Assured r= .47 Composed r= .41	**Moderately likely to be high on:** Inquisitive r= .35 Enterprising r= .33	**Fairly likely to be high on:** Adaptability r= .20 Vigorous r= .22
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Process Orientation r= .26

ADAPTABILITY

Definition: *Receptive to new experiences and change. Accepts feedback constructively.*

High Scorer:	Low Scorer:
Quickly adapts to changes. Possesses the confidence to tackle unfamiliar situations. Modifies approach in accordance with the changing conditions. Does not take criticism personally. Proactively seeks suggestions and feedback to improve.	Shows little enthusiasm about a potential change. Needs strong external influences to adapt to changes. Attempts to be agreeable towards constructive feedback, but may not always see the benefit in accommodating inputs.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ADAPTABILITY:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Assured r= .48	Composed r= .37 Inquisitive r= .36 Persistent r= .31	Conceptual r= .22 Inventive r= .21 Enterprising r= .20 Meticulous r= .20
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Adaptability r= .28

INQUISITIVE

Definition: *Enjoys learning and is eager to acquire new skills. Stays informed and updated about trends and developments.*

High Scorer:	Low Scorer:
Tends to be a voracious learner. Develops and fine-tunes learning strategies. Capitalizes on available opportunities to learn. Proactively seeks resources that facilitate learning across domains.	Content with existing knowledge and skills. May not proactively stay updated about trends and developments. Tends to be more comfortable with improving existing skills than acquiring new ones.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON INQUISITIVE:

Very likely to be high on:	Moderately likely to be high on:	Fairly likely to be high on:
Persistent r= .53 Enterprising r= .53 Assured r= .50 Composed r= .48	Adaptability r= .36 Meticulous r= .35 Inventive r= .31	None
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	Inventive r= .32	Enterprising r= .20 Receptive r= .20

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Leading the Industry	r= .37
People Focus	r= .32

COMPOSED

Definition: *Handles demanding situations calmly. Bounces back from and withstands difficult situations.*

High Scorer:	Low Scorer:
Remains calm and optimistic during demanding situations. Quickly recovers when working under pressure. Focuses on effectively addressing issues and bottlenecks. Demonstrates a solution mindset even during stressful situations.	Likely to be easily agitated during stressful situations. Likely to feel stuck when faced with a crisis. Takes longer to bounce back from difficult situations.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON COMPOSED:		
Very likely to be high on: Persistent r= .52 Enterprising r= .53 Assured r= .50 Inquisitive r= .48 Meticulous r= .41	**Moderately likely to be high on:** Enterprising r= .38 Adaptability r= .37	**Fairly likely to be high on:** Vigorous r= .21
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Problem Solving	r= .21
Negotiation Skills	r= .22

CLUSTER: INFLUENCE

AFFILIATIVE

Definition: *Collaborates with people to manage tasks. Creates personal connections with others to build trust.*

High Scorer:	Low Scorer:
Comes across as cooperative and helpful. Focuses on shared results. Inclined to celebrate success as well as commiserate failures together.	Prefers to work independently than with others. Inclined to focus on individual results. Refrains from creating personal connections beyond the ambit of work.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON AFFILIATIVE:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Considerate r= .41	Assertive r= .34 Initiative r= .34 Foresight r= .33 Conceptual r= .31	Persuasive r= .29 Receptive r= .26 Assured r= .24 Achieving r= .22
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Team Management	r= .19
Stakeholder Management	r= .51
Customer Centricity	r= .48

CONSIDERATE

Definition: *Respects others' feelings and viewpoints. Acknowledges people's perspectives and opinions.*

High Scorer:	Low Scorer:
Values everyone's viewpoints. Tends to be comfortable with opinions that are different from one's own. Understands the concerns and sentiments of others. Effectively takes those into consideration.	Takes significant time and effort to tilt a situation in one's favor. Less likely to express one's viewpoints in a structured and logical manner. Seldom manages to bring others in agreement with one's stance.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON CONSIDERATE:		
Very likely to be high on: Foresight r= .52 Persuasive r= .44 Conceptual r= .43 Affiliative r= .41	**Moderately likely to be high on:** Initiative r= .32 Receptive r= .30	**Fairly likely to be high on:** Assertive r= .26 Achieving r= .23 Decisive r= .20
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Team Management	r= .32
People Focus	r= .23

EMPOWERING

Definition: *Identifies people's strengths. Provides guidance and motivates people to help them capitalize on these strengths.*

High Scorer:	Low Scorer:
Understands others' strengths, aspirations, and development needs. Aims to utilize the available talent potential effectively. Proactively sets time aside to guide others.	Emphasizes learning through experience rather than hand-holding. Spends limited time understanding others' strengths, aspirations, and development needs. Takes time out to guide others only if required.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON EMPOWERING:		
Very likely to be high on: Conforming r= .46 Analytical r= .44	**Moderately likely to be high on:** Organized r= .34	**Fairly likely to be high on:** Sociable r= .26 Methodical r= .24 Striving r= .21
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Team Management	r= .16
Coaching and Mentoring	r= .46
Stakeholder Management	r= .16
Operational Excellence	r= .44
Impact and Influence	r= .18

ASSERTIVE

Definition: *Expresses opinions firmly and voices disagreements. Communicates messages that may be difficult or controversial.*

High Scorer:	Low Scorer:
Comfortable taking and backing unpopular positions. Communicates disagreements without hesitation. Ensures that one's point of view is heard. Effortlessly communicates difficult or controversial messages.	Gives more importance to others' opinions. Agrees with others frequently. Tends to avoid confrontations. Prefers to refrain from communicating messages that are difficult or controversial.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ASSERTIVE:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
None	Persuasive r= .39 Receptive r= .35 Affiliative r= .34 Foresight r= .31 Decisive r= .30	Initiative r= .28 Achieving r= .28 Considerate r= .26 Conceptual r= .25
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	Inventive r= .32	None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Impact and Influence	r= .27
Negotiation Skills	r= .19

SOCIABLE

Definition: *Enjoys others' company and thrives around people. Initiates conversations.*

High Scorer:	Low Scorer:
Enjoys social interactions. Tends to be outgoing. Thrives off being around other people. Initiates conversations and tends to be enthusiastic about socializing.	Likely to be reserved. May not prefer initiating conversations. Prefers minimally stimulating external environments. May be uncomfortable in large groups.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON SOCIABLE:		
Very likely to be high on: Organized r= .47 Analytical r= .41	**Moderately likely to be high on:** Striving r= .35	**Fairly likely to be high on:** Conforming r= .29 Empowering r= .26
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** Persistent r= .21

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Coaching & Mentoring	r= .18
Impact & Influence	r= .42
Leading the Industry	r= .49

RECEPTIVE

Definition: *Understands people's emotions, thoughts, and circumstances. Affirms and validates others' feelings.*

High Scorer:	Low Scorer:
Easily understands others' emotions, thoughts, and circumstances. Establishes rapport quickly. Creates strong relationships based on trust, exchange, and mutual interest.	Feels uncomfortable during emotionally charged situations. Shows minimal inclination to interpret others' thoughts and emotions accurately. Takes a considerable amount of time to establish rapport and connect with others.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON RECEPTIVE:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Persuasive r= .54	Assertive r= .35 Foresight r= .32 Considerate r= .30 Decisive r= .30 Vigorous r= .30	Achieving r= .28 Affiliative r= .26 Factual r= .22
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	Methodical r= .20

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Effective Communication	r= .28
Stakeholder Management	r= .16
Customer Centricity	r= .38
People Focus	r= .18
Effective Team Building	r= .27

PERSUASIVE

Definition: *Influences people's decisions and viewpoints. Puts across one's perspective convincingly.*

High Scorer:	Low Scorer:
Adopts a structured and logical way of communication. Finds it easy to tilt situations in one's favor. Manages to garner support for one's stance with ease.	Takes significant time and effort to tilt a situation in one's favor. Less likely to express one's viewpoints in a structured and logical manner. Seldom manages to bring others in agreement with one's stance.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON PERSUASIVE:

Very likely to be high on:		Moderately likely to be high on:		Fairly likely to be high on:	
Receptive	r= .54	Assertive	r= .39	Affiliative	r= .29
Foresight	r= .45	Conceptual	r= .32	Initiative	r= .27
Considerate	r= .44			Factual	r= .25
Achieving	r= .44				
Decisive	r= .41				
Vigorous	r= .40				
Very likely to be low on:		**Moderately likely to be low on:**		**Fairly likely to be low on:**	
None		None		None	

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Negotiation Skills	r= .21
Stakeholder Management	r= .14
Impactful Communication	r= .30
Customer Centricity	r= .23

CLUSTER: STRUCTURE

CONFORMING

Definition: *Adheres to rules and regulations. Follows guidelines and conventions.*

High Scorer:	Low Scorer:
Takes accountability to abide by rules and regulations. Prefers to do things by the book. Rarely challenges policies, rules, and regulations. Tends to follow all standard guidelines and conventions conscientiously.	Tends to be flexible about rules and regulations. Prefers to adhere to only those rules where the purpose is clear. Questions policies, rules, and regulations at times.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON CONFORMING:		
Very likely to be high on: Empowering r= .46 Methodical r= .45 Analytical r= .41	**Moderately likely to be high on:** Organized r= .35 Striving r= .32	**Fairly likely to be high on:** Sociable r= .29
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Planning & Organizing	r= .17
Compliance	r= .24

ORGANIZED

Definition: *Plans and organizes tasks. Structures work by weighing the relative importance of tasks.*

High Scorer:	Low Scorer:
Gives importance to task planning. Chalks out detailed action plans. Prioritizes tasks according to their urgency and/or importance. Readily re-adjusts priorities to respond to changing demands	Prefers to play it by ear. Enjoys spontaneity in approaching work. Comfortable working on unstructured tasks. May refrain from planning in advance.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ORGANIZED:		
Very likely to be high on: Methodical r= .47	**Moderately likely to be high on:** Sociable r= .39 Conforming r= .35 Analytical r= .35 Empowering r= .34 Striving r= .32	**Fairly likely to be high on:** None
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Planning & Organizing r= .31

STRIVING

Definition: *Follows a goal-directed approach. Strives to execute and realize preset goals and targets.*

High Scorer:	Low Scorer:
Establishes well-defined, realistic goals. Devises strategies for goal achievement. Consistently monitors progress to revise action plans and ensure timely accomplishment. Preempts potential challenges that impede goal achievement.	Less inclined follow a goal-directed approach to task accomplishment. Less likely to be comfortable working with deadlines. Likely to be distracted by diversions when striving to achieve goals.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON STRIVING:		
Very likely to be high on: None	**Moderately likely to be high on:** Analytical r= .36 Sociable r= .35 Conforming r= .32 Organized r= .32	**Fairly likely to be high on:** Methodical r= .21 Empowering r= .21
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Delivering Results	r= .37
Operational Excellence	r= .46
Driving Business Results	r= .43

ANALYTICAL

Definition: *Identifies and defines problems. Extracts key information to generate practical solutions to problems.*

High Scorer:	Low Scorer:
Resolves complex problems that require substantial in-depth analysis. Organizes information to identify root causes of problems. Recognizes assumptions, and evaluates arguments to propose realistic and practical solutions.	Solves problems at the surface level. Less inclined to look beyond symptoms to uncover root causes of problems. Takes information at face value.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ANALYTICAL:		
Very likely to be high on: Empowering r= .44 Sociable r= .41 Conforming r= .41	**Moderately likely to be high on:** Striving r= .36 Organized r= .35	**Fairly likely to be high on:** None
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** Persistent r= .28 Vigorous r= .26

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Abstract Thinking	r= .18
Problem Solving	r= .16
Business and Data Mindset	r= .35
Process Orientation	r= .26
Operational Excellence	r= .18

METHODICAL

Definition: *Follows set processes and procedures. Adheres to prescribed steps in accomplishing tasks.*

High Scorer:	Low Scorer:
Diligently follows the defined sequence of steps for a task. Adheres to established work processes. Promptly detects deviations from the prescribed steps.	Feels constrained by established work processes and procedures. Less likely to enjoy following a set of prescribed steps in accomplishing tasks.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON METHODICAL:		
Very likely to be high on: Conforming r= .45	**Moderately likely to be high on:** Organized r= .39	**Fairly likely to be high on:** Empowering r= .24 Striving r= .21
Very likely to be low on: None	**Moderately likely to be low on:** Inventive r= .32	**Fairly likely to be low on:** Enterprising r= .20 Receptive r= .20

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Compliance	r= .27
Planning & Organizing	r= .29
Operational Excellence	r= .45

CONCEPTUAL

Definition: *Enjoys discussing abstract concepts. Derives insights by identifying underlying patterns or connections.*

High Scorer:	Low Scorer:
Applies abstract concepts to fully comprehend situations. Detects patterns, relationships, and connections between seemingly unrelated phenomena. Assembles ideas and observations into cohesive propositions.	Prefers working with concrete ideas. Identifies obvious relationships, connections, and trends. Places less emphasis on deducing conclusions from seemingly unrelated phenomena.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON CONCEPTUAL:		
Very likely to be high on: Considerate r= .43	**Moderately likely to be high on:** Persuasive r= .32 Foresight r= .32 Affiliative r= .31	**Fairly likely to be high on:** Assertive r= .25 Decisive r= .24 Adaptability r= .22
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Abstract Thinking	r= .39
Leading the Industry	r= .16
Driving Business Results	r=.35

CLUSTER: DYNAMISM

INITIATIVE

Definition: *Shows willingness and readiness to pursue tasks voluntarily. Enjoys taking charge of situations.*

High Scorer:	Low Scorer:
Seeks additional responsibilities beyond one's existing tasks. Voluntarily contributes ideas and suggestions at the workplace. Promptly recognizes and capitalizes on opportunities to contribute.	Less inclined to take up additional tasks that are not formally delegated. Contributes ideas and suggestions at work on a need basis. Would rather adjust to a situation than take charge of it. data points during decision-making.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON INITIATIVE:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
None	Affiliative r= .34 Considerate r= .32 Foresight r= .30	Assertive r= .28 Persuasive r= .27 Vigorous r= .23 Achieving r= .23
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Effective Communication	r= .16	Leading the Industry	r= .37
Driving Business Results	r= .17	People Focus	r= .35

DECISIVE

Definition: *Makes decisions regarding aspects of one's life. Stands by own decisions.*

High Scorer:	Low Scorer:
Considers others' inputs but does not hesitate to take decisions independently. Takes personal responsibility for outcomes of decisions. Doesn't hesitate to make fast and timely decisions.	Less inclined to make decisions independently. Prefers to wait for consensus to make decisions. Prefers to take time in decision-making.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON DECISIVE:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Persuasive r= .41	Foresight r= .34 Achieving r= .31 Receptive r= .30 Assertive r= .30	Vigorous r= .29 Conceptual r= .24 Considerate r= .20
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Planning & Organizing	r= .46
Strategic Thinking	r= .18
Driving Business Results	r= .19

FACTUAL

Definition: *Seeks relevant information before making decisions. Bases decisions on facts and figures.*

High Scorer:	Low Scorer:
Seeks data to ascertain available facts. Uses personal judgment backed by data, expertise, and experience in making decisions. Deploys an integrated approach of data and intuition.	Places more emphasis on intuition and experience to make decisions. Demonstrates a low preference for seeking relevant data and facts to arrive at an informed decision. May miss out on critical data points during decision-making.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON FACTUAL:		
Very likely to be high on: None	**Moderately likely to be high on:** None	**Fairly likely to be high on:** Persuasive r= .25 Receptive r= .22 Achieving r= .21 Foresight r= .20
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Plans Effectively	r= .18
Business & Data Mindset	r= .38.

VIGOROUS

Definition: *Thrives on activity. Likes to stay occupied and enjoys multitasking.*

High Scorer:	Low Scorer:
Handles high workloads and competing demands with poise and ease. Prefers variety in their tasks. Comfortable working on multiple tasks simultaneously. Likes to work at a fast pace.	Likes to take up one task at a time. Works best when the workload is manageable. Prefers to take a slow, deliberate approach to tasks. Prefers routine over variety and novelty in tasks.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON VIGOROUS:		
Very likely to be high on: Persuasive r= .40	**Moderately likely to be high on:** Receptive r= .30	**Fairly likely to be high on:** Decisive r= .29 Achieving r= .24 Initiative r= .23 Foresight r= .23 Meticulous r= .22 Composed r= .21
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** Analytical r= .26

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Impact & Influence	r= .35
Process Orientation	r= .35
Delivering Results	r= .29

FORESIGHT

Definition: *Understands the impact of one's actions on future outcomes. Anticipates long-term implications and prepares possible alternatives.*

High Scorer:	Low Scorer:
Takes into consideration long-term goals while interpreting short-term results. Thinks beyond the here-and-now. Takes corrective actions for anticipated problems. Builds in contingency plans.	Focuses more on short-term outcomes. Rarely looks beyond immediate requirements. Less likely to recognize the long-term implications of decisions and actions taken. Faces unanticipated obstacles at work frequently.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON FORESIGHT:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Considerate r= .52	Persuasive r= .34	Vigorous r= .23
Decisive r= .45	Achieving r= .34	Factual r= .20
	Receptive r= .32	
	Affiliative r= .33	
	Conceptual r= .32	
	Assertive r= .31	
	Initiative r= .32	
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Driving Business Results	r= .26
Leading the Industry	r= .32

ACHIEVING

Definition: *Sets high standards of excellence for self and others. Thrives on competition.*

High Scorer:	Low Scorer:
Sets high standards of personal excellence. Proactively seeks new challenges. Constantly pushes the envelope. Driven by healthy competition.	Prefers to take up tasks that are less challenging. Sets performance standards that can be easily achieved. Finds competition exhausting. Uncomfortable taking up challenges that are out of their comfort zone.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ACHIEVING:		
Very likely to be high on:	**Moderately likely to be high on:**	**Fairly likely to be high on:**
Persuasive r= .44	Foresight r= .34 Decisive r= .31	Receptive r= .28 Assertive r= .28 Vigorous r= .24 Considerate r= .23 Initiative r= .23 Affiliative r= .22 Factual r= .21
Very likely to be low on:	**Moderately likely to be low on:**	**Fairly likely to be low on:**
None	None	None

Note: *All correlations are significant at p < 0.05*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Stakeholder Management	r= .31
Delivering Results	r= .18
Operational Excellence	r= .32

ENTERPRISING

Definition: *Displays openness to take risks. Willing to experiment and test out new ideas despite uncertain outcomes.*

High Scorer:	Low Scorer:
Optimistic about risk-taking despite difficulties faced in the past. Comfortable experimenting with new ideas and methods. Stays committed to action despite uncertain outcomes.	Prefers to be cautious. Often avoids taking risks. Depends on tried and tested approaches. Prefers definitive outcomes over experimenting.

CORRELATIONS WITH OTHER DIMENSIONS:

IF HIGH ON ENTERPRISING:		
Very likely to be high on: Persistent r= .53 Inquisitive r= .53 Inventive r= .52 Assured r= .40	**Moderately likely to be high on:** Composed r= .38 Meticulous r= .33	**Fairly likely to be high on:** Adaptability r= .20
Very likely to be low on: None	**Moderately likely to be low on:** None	**Fairly likely to be low on:** Methodical r= .20

Note: *All correlations are significant at $p < 0.05$*

COMPETENCIES PREDICTED BY THIS DIMENSION:

Operational Excellence	r= .17
Adaptability	r= .24
Leading the Industry	r= .31

27TECH

05/RELIABILITY

To predict important criteria relevant to work performance from an assessment, it is essential that the assessment measures its constructs reliably. Reliability as described by Anastasi (1976) refers to consistency within an assessment in terms of the scores obtained on it (Anastasi, 1976).

The reliability of an assessment is an index of its degree of accuracy, or how error-free it is in measuring the desired constructs. The higher the reliability, the lesser the measurement error, and the more likely the observed scores are an accurate reflection of the assessment-taker's true scores. An assessment's reliability ultimately affects the generalizability or dependability of the scores or the consistency of classifications of assessment-takers based on these scores.

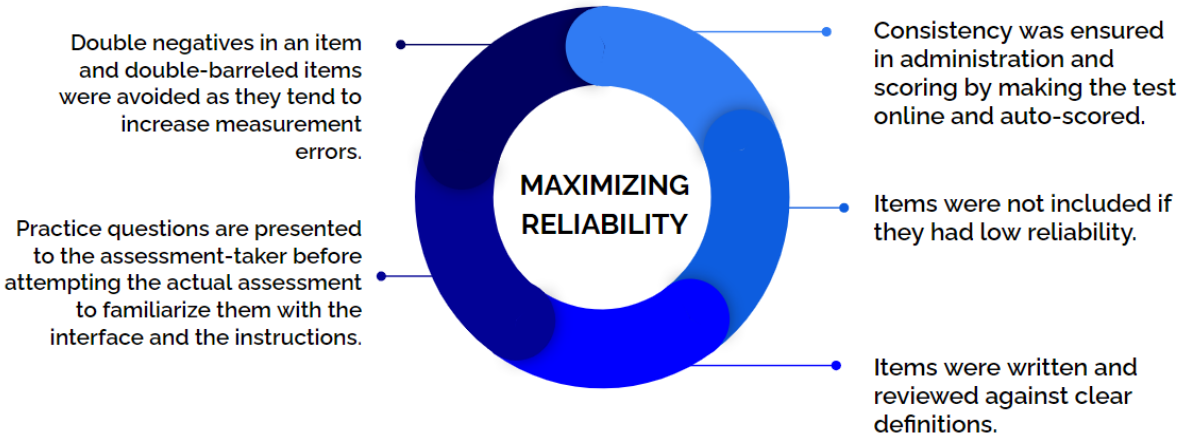
Reliability estimates have implications for the validity of the assessment as well. An assessment must be a reliable measure of the constructs of interest, for it to go on to be a valid indicator from which appropriate inferences can be drawn and accurate decisions made. Furthermore, if an assessment lacks reliability, it is not possible for it to be valid. On the other hand, an assessment can be reliable but may lack validity.

MAXIMIZING RELIABILITY

Several measurement errors can influence the raw scores, these include:

- **Item wording:** Items, where two negative elements are used to produce the positive force (Double Negatives) or items tapping into more than one idea in a single item (Double-barrelled), tend to confuse the assessment-taker and can increase measurement error.
- **Subjective state:** The mood, temperament, motivation, and well-being of the assessment-taker at the time of the assessment can be sources of measurement error.
- **External Environmental Conditions:** Aspects in the assessment-taking environment such as noise, temperature, and presence of others during the assessment administration can contribute to measurement error.
- **Administration Process:** If standard administration procedure is not followed, it can increase measurement errors.
- **Scoring:** The accuracy of the scoring key and scoring process can influence the degree of measurement error.

MINIMIZING MEASUREMENT ERRORS AND MAXIMIZING RELIABILITY:



27 ECHO RELIABILITY STUDIES

INTERNAL CONSISTENCY RELIABILITY

Internal consistency measures of reliability (also known as scale homogeneity) are an index of the extent to which all of the items within a dimension or scale are measuring the same underlying construct. Higher the correlations between these items, the higher the internal consistency of the dimension. Cronbach's alpha was used to estimate the internal consistency of the 27 dimensions of 27 Echo.

While different reports exist in the academic literature, there's a general consensus that alpha values ranging from 0.6 to 0.9 are acceptable. As the value of alpha is also affected by the length of the test, alpha values tend to increase when more items are added to each dimension. Therefore, a high alpha coefficient (> 0.9) does not completely guarantee a high degree of internal consistency. However, it can result in the problem of 'Bloated Specifics' where the scale can have repetitive item content but lack the breadth of measurement. In the development of items for 27 Echo, this problem was avoided by ensuring that each dimension is measured by only 3 to 5 items drawing on a clearly defined definition.

Table 5.1 provides the Internal Consistency Reliability values (Cronbach's Alpha) of the dimensions of 27 Echo. As can be seen in Table 5.1, all dimensions demonstrate acceptable Internal Consistency Reliability with coefficients ranging from .62 (Analytical) to .89 (Striving) with median reliability of .76. This indicates that most of the dimensions of the 27 Echo have good internal homogeneity. The dimension Conceptual was found to be outside this range, with an alpha of .54. However, the dimension Conceptual has a highly acceptable Test-Retest Reliability estimate (r= .85).

Inspection of Table 5.1 also reveals that none of the dimensions have an alpha value that is too high (more than .90). This indicates that while the dimensions of 27 Echo have high internal reliability, they also cover the construct of each underlying dimension adequately.

Demographic Data of the Sample for Internal Consistency Study (n=856)

GENDER	%
Males	51
Females	49

AGE	%
Below 20	1
20-29	34
30-39	37
40-49	19
50-59	7
60 +	1

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	44
Master's Degree	33
Doctorate Degree	1
Professional Qualifications	12
Diploma/Workplace Training	10

REGIONS	%
The United States of America (USA)	23
The United Kingdom (UK)	27
India	27
The United Arab Emirates (UAE)	12
Singapore	12

Table 5.1 *: Internal Consistency (Cronbach's Alpha) Values for Each Dimension*

DIMENSIONS	CRONBACH'S ALPHA	SeM	DIMENSIONS	CRONBACH'S ALPHA	SeM
Assured	.87	0.72	*Conforming*	.68	1.13
Inventive	.76	0.98	*Analytical*	.62	1.23
Enterprising	.84	0.80	*Sociable*	.79	0.92
Adaptability	.65	1.18	*Empowering*	.83	0.82
Meticulous	.74	1.02	*Organized*	.72	1.06
Persistent	.75	1.00	*Striving*	.89	0.66
Inquisitive	.80	0.89	*Methodical*	.73	1.04
Composed	.71	1.08	*Receptive*	.79	0.92
Affiliative	.63	1.22	*Persuasive*	.76	0.98
Assertive	.69	1.11	*Factual*	.81	0.87
Conceptual	.54	1.36	*Decisive*	.72	1.06
Considerate	.74	1.02	*Vigorous*	.79	0.92
Initiative	.82	0.85	*Achieving*	.78	0.94
Foresight	.76	0.98			

TEST-RETEST RELIABILITY

Test-Retest Reliability (Coefficient of Stability) is an index of the extent to which an assessment produces consistent scores when used on two different occasions. Higher the correlation coefficient between the group scores on the two different occasions, the higher the Test-Retest Reliability of that assessment.

Many reports outline the minimum acceptable value for a Test-Retest Reliability estimate. However, it depends on the purpose of the assessment, besides, factors, such as the time between assessments and the types of samples also affect the reliability estimate (Crocker & Algina, 1986). As a general consensus, a Test-Retest Reliability coefficient of 0.7 and above is considered very good, and between 0.6 - 0.7 is considered acceptable.

Demographic Data of the Sample for 14 days Test-Retest Study (n=256)

GENDER	%
Males	55
Females	45

AGE	%
Below 20	2
20-29	46
30-39	36
40-49	9
50-59	5
60 +	2

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	44
Master's Degree	29
Doctorate Degree	1
Professional Qualifications	21
Diploma/Workplace Training	5

REGIONS	%
The United States of America (USA)	24
The United Kingdom (UK)	32
India	30
The United Arab Emirates (UAE)	8
Singapore	6

To examine the temporal stability of 27 Echo, both short and long-term Test-Retest Reliability studies were conducted. The short-term study took place over a 14-day time period, followed by a study after a 6-month interval, and a long-term study over a time period of 18 months.

27 Echo was administered twice to a sample of 256 working professionals across different industries at a 14-day interval. Table 5.2 presents the correlation coefficients of scores on each dimension of 27 Echo across the two administrations. Inspection of this table reveals that all dimensions have acceptable Test-Retest Reliability, ranging from .75 (Composed) to .92 (Achieving) with median reliability of .83. The high correlations (> .75) provide strong evidence for the temporal stability of 27 Echo dimensions.

Furthermore, Table 5.3 provides correlation coefficients of all dimensions of 27 Echo administered twice at a 6-month interval on a sample population of 248 working professionals. Inspection of this table reveals that all dimensions have high Test-Retest Reliability, ranging from .72 (Affiliative) to .91 (Achieving) with median reliability of .80. Correlation coefficients in this range indicate that the 27 Echo dimensions have high temporal stability, even after a duration of 6 months.

***Table 5.2**: Test-Retest Reliability Values (14 Days Interval) for Each Dimension*

DIMENSIONS	CORRELATION (*r*)	SeM	DIMENSIONS	CORRELATION (*r*)	SeM
Assured	.77	0.96	*Conforming*	.78	0.94
Inventive	.83	0.82	*Analytical*	.84	0.80
Enterprising	.85	0.77	*Sociable*	.82	0.85
Adaptability	.79	0.92	*Empowering*	.89	0.66
Meticulous	.89	0.66	*Organized*	.87	0.72
Persistent	.84	0.80	*Striving*	.90	0.63
Inquisitive	.85	0.77	*Methodical*	.80	0.89
Composed	.75	1.00	*Receptive*	.77	0.96
Affiliative	.77	0.96	*Persuasive*	.84	0.80
Assertive	.81	0.87	*Factual*	.77	0.96
Conceptual	.82	0.85	*Decisive*	.82	0.85
Considerate	.87	0.72	*Vigorous*	.87	0.72
Initiative	.81	0.87	*Achieving*	.92	0.57
Foresight	.84	0.80			

***Note:** All correlations are significant at p<0.05*

Demographic Data of the Sample for 6-month Test-Retest Study (n=248)

GENDER	%
Males	49
Females	51

AGE	%
Below 20	1
20-29	39
30-39	44
40-49	10
50-59	4
60 +	2

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	50
Master's Degree	35
Doctorate Degree	2
Professional Qualifications	10
Diploma/Workplace Training	4

REGIONS	%
The United States of America (USA)	21
The United Kingdom (UK)	27
India	25
The United Arab Emirates (UAE)	18
Singapore	8

Table 5.3 *: Test-Retest Reliability Values (6 Months Interval) for Each Dimension*

DIMENSIONS	CORRELATION (*r*)	SeM	DIMENSIONS	CORRELATION (*r*)	SeM
Assured	.74	1.02	*Conforming*	.76	0.98
Inventive	.80	0.89	*Analytical*	.80	0.89
Enterprising	.81	0.87	*Sociable*	.79	0.92
Adaptability	.80	0.89	*Empowering*	.83	0.82
Meticulous	.87	0.72	*Organized*	.83	0.82
Persistent	.79	0.92	*Striving*	.89	0.66
Inquisitive	.86	0.75	*Methodical*	.78	0.94
Composed	.73	1.04	*Receptive*	.79	0.92
Affiliative	.72	1.06	*Persuasive*	.84	0.80
Assertive	.79	0.92	*Factual*	.76	0.98
Conceptual	.79	0.92	*Decisive*	.77	0.96
Considerate	.84	0.80	*Vigorous*	.87	0.72
Initiative	.80	0.89	*Achieving*	.91	0.60
Foresight	.86	0.75	*Conforming*	.76	0.98

Note: *All correlations are significant at p<0.05*

Demographic Data of the Sample for 18-month Test-Retest Study (n=227)

GENDER	%
Males	48
Females	52

AGE	%
Below 20	2
20-29	44
30-39	39
40-49	8
50-59	4
60 +	2

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	46
Master's Degree	27
Doctorate Degree	1
Professional Qualifications	21
Diploma/Workplace Training	5

REGIONS	%
The United States of America (USA)	19
The United Kingdom (UK)	30
India	26
The United Arab Emirates (UAE)	15
Singapore	13

Lastly, Table 5.4 presents the correlation coefficients of all dimensions of 27 Echo administered twice at an 18 months interval on a sample population of 227 working professionals. Inspection of this table reveals that all dimensions have acceptable Test-Retest Reliability, ranging from .68 (Assured) to .89 (Achieving) with median reliability of .78. This provides additional evidence of the temporal stability of the dimensions of 27 Echo even after a longer time duration of 18 months.

Table 5.4 *: Test-Retest Reliability Values (18 Months Interval) for Each Dimension*

DIMENSIONS	CORRELATION (*r*)	SeM	DIMENSIONS	CORRELATION (*r*)	SeM
Assured	.68	1.13	*Conforming*	.76	0.98
Inventive	.79	0.92	*Analytical*	.79	0.92
Enterprising	.80	0.89	*Sociable*	.75	1.00
Adaptability	.75	1.00	*Empowering*	.85	0.77
Meticulous	.83	0.82	*Organized*	.82	0.85
Persistent	.77	0.96	*Striving*	.87	0.72
Inquisitive	.78	0.94	*Methodical*	.71	1.08
Composed	.71	1.08	*Receptive*	.69	1.11
Affiliative	.74	1.02	*Persuasive*	.80	0.89
Assertive	.79	0.92	*Factual*	.71	1.08
Conceptual	.76	0.98	*Decisive*	.78	0.94
Considerate	.86	0.75	*Vigorous*	.84	0.80
Initiative	.77	0.96	*Achieving*	.89	0.66
Foresight	.81	0.87			

Note: *All correlations are significant at p<0.05*

Table 5.5: *Test-Retest Reliability Values for Response Audit Scales at a 14 days, 6 months and 18 months interval*

RESPONSE AUDIT SCALES	14 DAYS INTERVAL	6 MONTHS INTERVAL	18 MONTHS INTERVAL
IMPRESSION MANAGEMENT SCALE	.76	.73	.71
RESPONSE CONSISTENCY SCALE	.68	.70	.69

Note: *All correlations are significant at p<0.05*

ALTERNATE FORMS RELIABILITY

Alternate Forms Reliability is calculated between two or more versions of an assessment developed by the same developers. The purpose of establishing the reliability of the alternate forms of the assessment is to infer with some level of confidence that an assessment-taker would achieve a similar score irrespective of the version of the assessment used.

A representative sample is asked to take both versions of the assessment and a correlation coefficient is calculated. Higher the correlation between the scores of the same assessment-takers on both the forms of the assessment, the higher the Alternate Forms Reliability. Since there is no alternate form of 27 Echo that exists, this reliability has not been computed.

STANDARD ERROR OF MEASUREMENT (SeM)

While the reliability coefficient of an assessment provides an index of how error-free it is, it is also useful to get an estimate of the amount of error present in an individual assessment score.

The standard error of measurement (SeM) can be calculated for each dimension to determine the effect of measurement error on individual results. Using SeM values one can calculate with a certain level of confidence the band of error around the score and know how likely it is to contain the assessment-taker's true score.

The standard error of measurement (SeM) is a function of the reliability of an assessment as well as the standard deviation of the observed scores. The higher the reliability of the assessment, the lower would be the standard error of measurement. For instance, a band of 1 SeM on either side of an individual's score results in a 68% probability that this band contains the true score for the individual. The thumb rule is presented below:

68%CI = Score ±SeM **95%CI = Score ±(1.96*SeM)** **99%CI = Score ±(2.58*SeM)**

**The confidence interval (CI) is an estimate of the amount of uncertainty associated with a sample, computed from the statistics of the observed data.*

For example, if the SeM for a dimension is 0.92 and an assessment-taker's obtained score on that dimension is a sten of 6, then it can be concluded with 68% confidence that their true score would lie within the range 5.08-6.92
For the above reliability statistics, the SeMs ranged from a minimum of 0.57 to a maximum of 1.36 (at 68% confidence level). These are modest values that provide evidence of the fact that the dimensions of 27 Echo are reasonably accurate in assessing the true scores of the assessment-taker.

27ECHO
06/VALIDITY

Apart from the reliability of an assessment, validity is an important criterion for psychometrically sound instruments. As defined by Kline (1999), the validity of an assessment is an index of the degree to which it measures what it was designed to measure (Kline, 1999). This chapter begins with a general discussion of important considerations about the validity and proceeds to cite the various studies conducted by the developers to establish the validity of 27 Echo.

CONTENT VALIDITY

According to Creswell (2016), Content Validity is the extent to which the items in an assessment represent all possible items that could be asked about the construct of interest (Creswell, 2016). For 27 Echo, content validity studies were conducted to ensure that the items within each dimension are valid and adequately cover every aspect of the dimension. Typically, content validity is assessed by carefully checking items against the conceptual definition of the construct by a group of subject matter experts.

To establish the content validity of 27 Echo, the method outlined by Lawshe (1975) was used. 15 subject matter experts from academia and industry with extensive experience in personality assessment and test construction were contacted for this study. These subject matter experts did not have any prior affiliations with Jombay. Every expert rated each item in terms of whether the skills or inclinations it taps into are “essential,” “useful, but not essential,” or “not necessary” for adequately measuring the underlying construct of the dimension.

The Content Validity Ratio (CVR) for each item was calculated using the formula presented below. The average of the CVR across all items was taken as a measure of the overall content validity of the dimension. The dimension-wise Content Validity Ratios are presented in Table 6.1 for each of the 27 dimensions.

$$CVR = \frac{n_e - N/2}{N/2}$$

Where : n_e equals the number of SMEs rating an item as "essential" and N equals the total number of SMEs providing ratings.

When interpreting a CVR for any given item, a reference can be taken from the Table of CVRcritical by Lawshe and Schippe, where CVRcritical is the lowest level of CVR such that the level of the agreement exceeds that of chance for a given item, for a given alpha. For a panel size of 15, a minimum CVR of 0.6 is deemed to be acceptable (Ayre & Scally, 2014). As can be seen in Table 6.1, all dimensions of 27 Echo have high Content Validity Ratios.

FACE VALIDITY

While content validity examines the importance of each item for the measurement of the dimension, face validity pertains to whether the test "looks valid" to the assessment-takers, the practitioners and personnel who decide on its use, and other technically untrained individuals and observers (Anastasi, 1976). Since 27 Echo has applications for various use cases in the workplace context, high face validity is desirable, especially because it is an adult assessment-taking environment (Anastasi, 1976).

Quantitative assessment of face validity is conducted by having assessment-takers and other psychometrically unsophisticated interested people rate the suitability of an assessment for its intended use and rate individual test items. For the 27 Echo Personality Assessment, two face-to-face studies were conducted using a derivative of this method.

During the first study, 25 mid-level managers from various functions and industries participated in an exercise to determine the relevance of the assessment items with respect to the dimension they were designed to measure. The facilitator of the workshop distributed two sets of cards from a deck. One set of cards listed the assessment items and the other set listed 27 Echo's dimensions. The participants were instructed to group the items that they think are the most relevant to measure each dimension. Once this step was completed, the facilitator began the discussion to understand the alignment amongst the participants and understand their rationale.

For 22 out of 27 traits, 92% of the participants grouped the items for a dimension similar to the grouping that was done by experts during the content validation study. For the remaining 5 dimensions (Adaptability, Conceptual, Abstract, Factual, and Methodical), the consensus amongst the participants varied from 76% to 85%. However, as can be seen from Table 6.1, these five dimensions have high Content Validity. According to Fink (1995), if the assessment is known to have content validity, face validity can be assumed, but face validity does not ensure content validity (Fink, 1995). Therefore, even though a few dimensions did not show very high face validity, their high content validity ensures the logical validity of the items.

While the first study was conducted with mid-level managers, a second study was conducted with a more representative sample**. The second study** was conducted with 57 participants from different experience levels and functions, employed in organizations from diverse industries. The participants went through an exercise similar to the above-mentioned exercise. For 24 out of 27 dimensions, 88.23% of the participants grouped the items for a dimension similar to the grouping that was done by experts. For the remaining 3 dimensions (Adaptability, Conceptual, and Vigorous), the consensus amongst the participants varied from 84% to 92%. However, for these dimensions, Content Validity Ratios (CVR) were significantly high.

Although Face Validity is not one of the strongest forms of Validity, it is an essential component for enlisting the motivation of the assessment-takers to take the assessment and their inclination to accept the output. These two studies provide conclusive evidence for the face validity of 27 Echo.

Table 6.1: *Dimension-Wise Content Validity Ratios for 27 Echo (n=15)*

DIMENSIONS	CONTENT VALIDITY RATIO (CVR)
Achieving	0.73
Adaptability	0.70
Affiliative	0.78
Analytical	0.87
Assertive	0.73
Assured	0.76
Composed	0.81
Conceptual	0.73
Conforming	0.77
Considerate	0.63
Decisive	0.77
Empowering	0.67
Enterprising	0.73
Factual	0.82
Foresight	0.67
Initiative	0.65
Inquisitive	0.60
Inventive	0.63
Methodical	0.73
Meticulous	0.69
Organized	0.78
Persistent	0.70
Persuasive	0.67
Receptive	0.73
Sociable	0.76
Striving	0.83
Vigorous	0.80

CRITERION VALIDITY

Criterion Validity of an assessment involves demonstrating that the assessment meaningfully predicts criteria of interest. It tests how the dimensions differentiate individuals on a criterion they are expected to predict. There are two types of criterion validity – predictive validity and concurrent validity.

Concurrent Criterion Validity - Concurrent validity is the degree to which the scores on an assessment correlate to the scores on other standardized assessments that measure the same construct, or to some other valid criterion available at the same time (Mohajan, 2017).

Predictive Criterion Validity - Predictive validity assesses the ability of the assessment to differentiate among individuals with reference to a future criterion. It is the degree to which the scores on an assessment correlate to the scores on some other valid criterion available in the future.

PREDICTING BEHAVIORS OF REGIONAL MANAGERS IN A MEDTECH COMPANY

A global MedTech company administered 27 Echo to a group of 143 Regional Managers, who were also rated on related behaviors by independent assessors as part of Behavioral Event Interviews. In this sample 46.9% were male and 53.1% were female. 2.8% of the sample ranged between 20-29 years of age, 56.6% ranged between 30-39, 39.2% between 40-49, and 1.4% between 50-59 years of age.

Modest but psychologically meaningful correlations were observed between the scores on 27 Echo dimensions and the behavioral ratings provided by the assessors, which are presented in Table 6.2. As can be seen in Table 6.2, the managers who were rated high in 'Impact and Influence' also scored high on the dimensions 'Sociable', 'Assured', 'Analytical', 'Persistent', and 'Vigorous'. Furthermore, it can be seen that scores on the dimensions 'Sociable', 'Persistent', and 'Assured' were associated with the inclination to mentor others and provide guidance and support when needed.

The ratings related to effective planning and organization were found to correlate with the scores obtained on the dimensions 'Decisive', 'Methodical', 'Persistent', and 'Assured'. The ratings on 'Process Orientation' were found to be correlated with the scores on the dimensions of 'Analytical, 'Vigorous', 'Persistent' as well as 'Assured'.

Not surprisingly, those managers who were rated high on 'Abstract Thinking' skills scored higher on the dimension of 'Analytical' than those who were rated low. Moreover, scores on the dimension of 'Methodical' which assesses the tendency to adhere to set processes and procedures, were found to be significantly correlated with the ratings on the behavior 'Compliance'. Furthermore, the dimension 'Assured' that assesses self-awareness and self-confidence, was found to be linked to high scores on several behaviors. These correlations provide evidence for the criterion validity of 27 Echo dimensions.

Table 6.2: *Statistically Significant Correlations between Scores on 27 Echo Dimensions and Assessor Ratings for Regional Managers in a MedTech Company (n= 143)*

	COACHING & MENTORING	ABSTRACT THINKING	PROCESS ORIENTATION	COMPLIANCE	PLANNING & ORGANIZING	IMPACT & INFLUENCE
Analytical	-	.18	.26	-	-	-
Conceptual	-	.39	-	-	-	-
Conforming	-	-	-	.24	-	-
Decisive	-	-	-	-	.46	-
Organized	-	-	-	-	.31	-
Methodical	-	-	-	.27	.19	-
Vigorous	-	-	.35	-	-	.35
Meticulous	-	-	.26	-	-	-
Assertive	-	-	-	-	-	.27
Persistent	.17	-	.33	-	.27	.25
Assured	.18	.22	.35	-	.42	.27
Empowering	.46	-	-	-	-	.18
Sociable	.18	-	-	-	-	.42

Note: *Any r > .14 is statistically significant at p<0.05 level*

PREDICTING BEHAVIORS OF MID-LEVEL MANAGERS IN AN FMCG COMPANY

A group of 120 mid-level managers across various functions was administered 27 Echo in a global Foods and Beverages company. In this sample 48.3% were male and 51.7% were female. 5% of the sample ranged between 20-29 years of age, 59.2% ranged between 30-39, 35.% between 40-49, and 0.8% between 50-59 years of age. The managers also received behavioral ratings on the criteria listed in Table 6.3 by trained assessors as part of a development center exercise. Significant correlations were found between the behavioral ratings and the scores on several dimensions of 27 Echo as presented in Table 6.3.

Inspection of Table 6.3 reveals that ratings on the ability to 'Plan Effectively' in managers were significantly correlated with the scores on the dimensions 'Organized', 'Striving', and 'Factual'. The dimension 'Organized' is defined in 27 Echo as the ability to plan and organize tasks by weighing their relative importance. Thus, a significant correlation between the two provides strong criterion validity evidence for the dimension. While 'Striving' assesses the inclination for goal-setting, the dimension 'Factual' assesses data-centric approach, both of which are central to the ability of managers to plan and delegate tasks effectively. Furthermore, the scores on the dimensions 'Factual' and 'Organized' were also found to be correlated with the ratings on 'Business and Data mindset', providing additional evidence for its criterion validity.

It can also be seen from Table 6.3 that high scores on the dimensions 'Initiative' and 'Receptive' were associated with the ability to 'Communicate Effectively' and 'Build Effective Teams'. Besides, managers high on 'Persuasive' were also high on the ability to 'Communicate Effectively', indicating predictive validity for the dimension. These meaningful patterns of statistically significant correlations provide further support for the criterion validity of 27 Echo dimensions.

Table 6.3: *Statistically Significant Correlations between 27 Echo Dimensions and Assessor Ratings for Managers in an FMCG Company (n=120)*

	PLANS EFFECTIVELY	COMMUNICATES EFFECTIVELY	BUSINESS & DATA MINDSET	BUILDS EFFECTIVE TEAMS
Striving	.17	-	-	-
Initiative	-	.16	-	.30
Organized	.17	-	.19	-
Methodical	-	-	-	-
Persuasive	-	.29	-	-
Receptive	-	.28	-	.27
Factual	.18	-	.38	-
Analytical	-	-	.35	-

Note: *Any r > .15 is statistically significant at p<0.05 level*

PREDICTING PERFORMANCE OF CHANNEL MANAGERS IN A MANUFACTURING COMPANY

27 Echo was administered in a global Industrial Goods Manufacturing Company to 154 Channel Managers. These Channel managers were also going through a Development Center exercise on six competencies. The sample comprised 57.8% males and 42.2% females. 38.4% of the sample ranged between 30-39 years of age, 61% between 40-49, and 0.6% were between 50-59 years of age. Moderate but statistically significant correlations were found between the scores on the dimensions of 27 Echo and scores on the six competencies, which are presented in Table 6.4.

As can be seen in Table 6.4, the dimension 'Persuasive' was found to correlate with the scores on the competencies 'Impactful Communication', 'Customer Centricity', and 'Stakeholder Management. Each of these competencies has an underlying element of putting across one's perspective convincingly to impact others' stance, which the dimension of 'Persuasive' captures.

Table 6.4: *Statistically Significant Correlations between the Scores on 27 Echo Dimensions and Competency Scores for Channel Managers in a Manufacturing Firm (n=154)*

	IMPACTFUL COMMUNICATION	CUSTOMER CENTRICITY	STAKEHOLDER MANAGEMENT	DELIVERING RESULTS	OPERATIONAL EXCELLENCE	BUSINESS UNDERSTANDING
Persuasive	.30	.23	.14	-	-	-
Receptive	-	.38	.16	-	-	-
Affiliative	-	.48	.51	-	-	-
Striving	-	-	-	.37	.46	.43
Vigorous	-	-	-	.29	-	-
Achieving	-	-	.31	.18	.32	-
Methodical	-	-	-	-	.45	-
Analytical	-	-	-	-	.18	-
Empowering	-	-	.16	-	.44	-
Assured	.36	.28	.40	.16	.14	.17
Enterprising	-	-	-	-	.17	-

Note: *Any r > .13 is statistically significant at p<0.05 level*

Furthermore, the scores on the dimensions 'Striving' and 'Achieving' were found to correlate with scores on 'Delivering Results' and 'Business Understanding'. In addition, scores on 'Operational Excellence' were found to significantly correlate with the scores on the dimensions 'Methodical', 'Analytical', 'Empowering', and 'Enterprising'. The ability to manage stakeholders (Stakeholder Management) was also correlated with the dimensions 'Persuasive', 'Achieving', and 'Empowering'.

Finally, the scores on 'Customer Centricity' and 'Stakeholder Management' were also found to significantly correlate with the scores on the dimensions 'Persuasive', 'Receptive', and 'Affiliative' from 27 Echo. Not surprisingly, the dimension 'Assured' was found to be correlated with all the competencies measured. These results establish strong support for the criterion validity of 27 Echo.

PERSONALITY AS A PREDICTOR OF PERFORMANCE CRITERIA

Studies have shown that personality seems to be correlated with contextual performance more than task performance in the workplace (Touzé, 2005). Contextual performance includes peripheral activities that maintain the social and psychological environment in which the task performance takes place. This includes job engagement, initiative, cooperation at work, organizational citizenship behaviors, team-oriented behaviors, punctuality, and client centricity among others (Touzé, 2005; Cortina et al., 1992; Judge et al., 1997; Barrick & Mount, 1991).

Furthermore, studies have also indicated that personality can be strongly linked to performance when personality traits and performance criteria have a common theoretical base (Day & Silverman, 1989). For instance, a personality trait associated with interpersonal relations can be found to predict performance in areas related to customer satisfaction or team management.

Hence, to establish predictive criterion validity of 27 Echo, Jombay conducted studies with working professionals, linking scores on dimensions of 27 Echo to their manager's ratings of their performance in areas that are theoretically linked to the personality dimension.

PREDICTING PERFORMANCE CRITERIA IN AN INFORMATION TECHNOLOGY-ENABLED SERVICES (ITES) COMPANY

A group of 125 working professionals in a global Information Technology Enabled Services company completed the 27 Echo Personality Assessment as part of a development center exercise. In this sample 60.8% were male and 39.2% were female. 4% of the sample ranged below 20 years of age, 46.4 % were between 20-29 years, 27.2% ranged between 30-39, and 27.4% were between 40-49 years.

The managers of these employees rated their performance in five areas relevant to their roles namely- Team Management, Adaptability, Planning and Organization, Negotiation Skills, and Strategic Thinking. Statistically significant correlations were found between the scores on dimensions of 27 Echo and the manager ratings on five performance areas, which are summarized in Table 6.5.

Inspection of Table 6.5 reveals a number of modest, but psychologically meaningful correlations between the 27 Echo dimensions and the manager's performance ratings. Most notably, high scores on the dimension 'Empowering' was found to be associated with high performance when it comes to driving the team toward common goals (Team Management). Moreover, the high scores in the dimensions 'Assertive', 'Composed', and 'Persuasive' were found to be correlated with high performance in areas that required Negotiation Skills.

Performance ratings in areas related to 'Adaptability' were found to be correlated with the 27 Echo dimensions of 'Adaptability', 'Inventive', and 'Enterprising'. Finally, higher ratings in performance areas related to 'Strategic Thinking' were found to be correlated with high scores on the dimensions 'Decisive' and 'Analytical'. These correlations provide evidence for the criterion validity of various dimensions of 27 Echo.

***Table 6.5**: Statistically Significant Correlations between 27 Echo Dimensions and Manager's Performance Ratings in Five Performance Areas (n=125)*

DIMENSIONS	PERFORMANCE AREA	CORRELATION (r)
Empowering	Team Management	.16
Considerate	Team Management	.32
Affiliative	Team Management	.19
Adaptability	Adaptability	.28
Enterprising	Adaptability	.24
Inventive	Adaptability	.17
Conforming	Planning and Organizing	.17
Organized	Planning and Organizing	.34
Methodical	Planning and Organizing	.37
Assertive	Negotiation Skills	.19
Composed	Negotiation Skills	.22
Persuasive	Negotiation Skills	.21
Decisive	Strategic Thinking	.18
Analytical	Strategic Thinking	.16

***Note:** Any r > .15 is statistically significant at p<0.05 level*

PREDICTING PERFORMANCE CRITERIA IN AN INSURANCE COMPANY

27 Echo was administered to a group of 118 employees in a Global Insurance firm. The sample consisted of 48.3% males and 51.7% females. 9.3% of the sample ranged between 20-29 years of age, 67.8% ranged between 30-39, 20.3% between 40-49, 0.9% between 50-59, and 1.7% between 60-69 years of age.

The managers of the employees rated their performance in three areas relevant to success in their organization - Leading the Industry, Driving Business Results, and People Focus. These ratings were part of the cohort's annual appraisal form. Statistically significant correlations were found between dimensions of 27 Echo and scores on the three performance areas, which are summarized in Table 6.6.

As can be seen from Table 6.6, the performance ratings on 'Driving Business Results' were significantly correlated with the scores on the dimensions 'Organized', 'Striving', 'Decisive', 'Initiative', and 'Meticulous' among others. Furthermore, significant correlations were observed between the dimensions of 'Inventive', 'Enterprising', 'Inquisitive', 'Persistent', and 'Vigorous' with the performance ratings on 'Leading the Industry'. High scores on the dimensions 'Sociable' and 'Receptive' were also correlated with high ratings on 'Leading the Industry'.

Not surprisingly, the interpersonal dimensions 'Inquisitive', 'Considerate', 'Receptive', and 'Affiliative' were found to significantly correlate with the performance rating on 'People Focus', providing strong validity evidence for predicting successful performance through 27 Echo dimensions.

The inclination to work with abstract concepts and quickly detect patterns within data which is assessed by the 27 Echo dimension 'Conceptual' was found to be significantly correlated with all three areas. These psychologically meaningful patterns of correlations provide additional evidence for the criterion validity of 27 Echo.

Table 6.6: *Statistically Significant Correlations between 27 Echo Dimensions and Manager's Performance Ratings on Three Performance Areas in an Insurance Company (n=118)*

	DRIVING BUSINESS RESULTS	LEADING THE INDUSTRY	PEOPLE FOCUS
Striving	.43	-	-
Vigorous	-	.31	-
Meticulous	.38	-	-
Persistent	-	.41	-
Organized	.43	-	-
Conceptual	.35	.16	.16
Decisive	.19	-	-
Inventive	-	.25	-
Enterprising	-	.31	-
Initiative	.17	.37	.35
Inquisitive	-	.40	.32 **
Sociable	.38	.49	-
Considerate	-	-	.23
Receptive	-	.38	.18
Foresight	.26	.32	-
Empowering		-	.26

Note: *Any r > .15 is statistically significant at p<0.05 level*

PREDICTING PERFORMANCE OF CANDIDATES HIRED USING 27 ECHO

To establish the predictive validity of 27 Echo in the context of selection, Jombay conducted a study with working professionals. The aim of the study was to determine if candidates selected using the 27 Echo Personality Assessment performed well at their job. The study was conducted at a multinational firm in the Banking Sector in two phases:

Phase I of the study entailed administering 27 Echo to a pool of 562 candidates applying for different roles in the organization throughout the year. During Phase I, 27 Echo was part of an assessment matrix used to identify the suitability of the candidates to the role offered by the organization. To determine the suitability of the candidates for the respective roles, their overall score on 27 Echo's dimensions relevant to that role was taken into consideration. As such, high suitability candidates had higher overall scores on 27 Echo (on dimensions relevant to the role). 226 candidates with High and Above Average suitability were then hired by the organization at various levels and for different functions.

In Phase II of the study, performance ratings of candidates that were hired based on their 27 Echo scores were obtained. The managers of the employees rated their performance in areas relevant to success in their organization. These ratings were part of the cohort's annual appraisal form. The results showed that 62% of the candidates who scored high on 27 Echo during the hiring process were also high performers in the organization after a period of one year. Also, 28% of those who were in the High suitability group had an 'Above Average' performance rating. Out of the candidates who were in the Above Average suitability group, 42% were found to be high performers, and 37% had an 'Above Average' performance rating.

CONSTRUCT VALIDITY

Construct validity is an index of a dimension's psychological meaningfulness and consistency with its construct definition. Demonstrating that an assessment is positively correlated with similar dimensions and constructs measured by other standardized assessments would be good evidence of the former's construct validity. This is also referred to as the assessment's **convergent validity**. Similarly, if the dimensions in an assessment are uncorrelated with similar but distinct dimensions from other standardized assessments, it is also a good indicator of a high construct validity on the former. This is also known as the assessment's **discriminant or divergent validity.**

Thus, if an assessment that measures Adaptability is shown to be strongly correlated with an alternative measure of Adaptability, than it is with a measure of Persuasiveness, that would provide key evidence in favor of the assessment's construct validity. Thus construct validity can be said to be a judgment based on the examination and conduction of studies on multiple sources of related literature that are similar to an assessment, and thereafter, cross-checking the degree of consistency between equivalent dimensions from numerous studies. For 27 Echo, the studies are presented below.

CORRELATIONS BETWEEN 27 ECHO AND 16PF QUESTIONNAIRE

The 16PF was developed by Cattell (1949) as a self-report inventory to assess personality traits relevant to clinical and counseling contexts. These may include an individual's ability in developing insight, self-esteem, cognitive patterns of thinking and processing, capacity to cope with setbacks, openness to new experiences and changing situations, inclination to be empathetic or feel empathy, interpersonal needs, capacity to trust, and attitude toward authority figures and power structures. At the primary level, the 16PF measures 16 primary trait constructs, and at the secondary level, an iteration of the secondary Big Five traits. The 16PF questionnaire (1993) has been used for this study.

A group of 225 working professionals across industries, functions, and levels was administered 27 Echo and the 16PF Questionnaire as part of an ongoing research program. In this sample 47.6% were male and 52.4% were female. 5.7% of the sample ranged between 20-29 years of age, 58.1% ranged between 30-39, 33.8% between 40-49, and 2.4% between 50-59 years of age. To examine the validity of the 27 Echo Personality Assessment, each of its dimensions was correlated with only their equivalent factors on the 16 PF Questionnaire. Table 6.7 summarizes only those correlations that were found to be statistically significant.

The 27 Echo dimension of 'Inventive' was found to positively correlate with the 16 PF dimension of 'Abstractedness'. However, 'Abstractedness' was found to negatively correlate with the 27 Echo dimension 'Analytical' which assesses inclination toward a practical, solution-oriented approach to problem-solving. The 27 Echo dimensions 'Enterprising' and 'Adaptability' were both found to be positively correlated with 'Openness to Change', as these dimensions both measure aspects of managing new experiences, taking risks, and adjusting to new approaches to accomplishing tasks. 'Organized' and 'Meticulous' both were positively correlated with the 16PF dimension 'Perfectionism'.

The 27 Echo dimension 'Affiliative', however, was negatively correlated with the 16PF dimension 'Self-Reliant' as the former measures the tendency to form collaborations and work together in team settings. The dimension 'Assured' which measures the tendency to be confident and sure-footed in one's abilities was found to be negatively correlated with 'Apprehension'. These results provide evidence for the construct validity of many dimensions of 27 Echo.

***Table 6.7**: Statistically Significant Correlations between 27 Echo Dimensions and the Corresponding 16 PF Factors (n=225)*

27 ECHO DIMENSIONS	16 PF FACTORS	CORRELATION (r)
Assured	Apprehension	- .49
Inventive	Abstractedness	.56
Enterprising	Openness to change	.32
Adaptability	Openness to change	.45
Meticulous	Perfectionism	.51
Composed	Emotional stability	.53
Affiliative	Self-reliant	-.31
Assertive	Social boldness	.21
Conceptual	Reasoning	.26
Considerate	Sensitivity	.37
Conforming	Rule-consciousness	.43
Analytical	Abstractedness	-.25
Sociable	Warmth	.46
Organized	Perfectionism	.73
Methodical	Rule-consciousness	.57
Receptive	Warmth	.45
Persuasive	Social boldness	.37
Factual	Reasoning	-.13
Decisive	Self-reliance	.23
Vigorous	Liveliness	.59
Achieving	Perfectionism	.14

***Note:** Any r > .13 is statistically significant at p<0.05*

CORRELATIONS BETWEEN 27 ECHO AND EMOTIONAL INTELLIGENCE SCALE (EIS)

The Emotional Intelligence Scale (EIS) was created by Hyde, Pethe, and Dhar in 2001 to identify different components of emotional intelligence in an individual such as the capacity for self-awareness, the ability to feel and develop empathy, the capacity to motivate oneself in response to situations, managing emotional stability, navigating relationships, sustaining one's integrity, and the capacity to drive: self-development, value orientation, commitment, and altruistic behavior. The EIS scales were developed based on Daniel Goleman's model of Emotional Intelligence (1998).

To examine the Validity of 27 Echo, each of its dimensions was correlated with their equivalent factors on the EIS. A sample of 234 employees in a multinational IT firm completed 27 Echo as well as Emotional Intelligence Scale as part of a Development Center Exercise. In this sample, 53.8% were male and 46.2% were female. 28.8% of the sample ranged between 20-29 years of age, 47.2% ranged between 30-39, and 24% ranged between 40-49 years of age. Table 6.8 summarizes only those correlations that were found to be statistically significant.

The 27 Echo dimension 'Receptive' was found to positively correlate with the EIS dimension 'Empathy'. Even at a moderately high correlation value, this signifies that 'Receptive' as a dimension has underlying aspects that are consistent with underlying nuances in 'Empathy' which include the aspects of understanding people's emotions and being responsive towards them. Furthermore, 'Composed' was found to have a notably significant positive correlation with the EIS dimension 'Emotional Stability', as was expected since the former dimension is described as the disposition to maintain one's calm under stressful situations and during challenges.

The 27 Echo dimensions 'Enterprising' and 'Adaptability' were both found to positively correlate with 'Survival', as these dimensions both measure aspects of managing new experiences, taking risks, and adjusting to less favorable situations. Additionally, it can be seen that 'Adaptability' has a notable correlation with 'Survival' than 'Enterprising' does because 'Adaptability' includes greater aspects of adjustment and coping with unfamiliar or challenging situations whereas 'Enterprising' is centered more on new approaches from a task and decision perspective. Thus, these patterns of statistically significant correlations establish the construct validity of 27 Echo dimensions.

Table 6.8: *Statistically Significant Correlations between 27 Echo Dimensions and EIS Factors (n=234)*

27 ECHO DIMENSIONS	EIS FACTORS	CORRELATION (r)
Assured	Self-Confidence and Analytic	.47
Enterprising	Survival	.32
Adaptability	Survival	.55
Persistent	Integrity and Commitment	.34
Composed	Emotional Stability	.56
Assertive	Enthusiasm and Firmness	.13
Analytical	Self-Confidence and Analytic	.46
Empowering	Self-Awareness and Development	.19
Striving	Integrity and Commitment	.15
Receptive	Empathy	.61
Factual	Self-Confidence and Analytic	.26
Decisive	Enthusiasm and Firmness	.28
Vigorous	Enthusiasm and Firmness	.52
Achieving	Integrity and Commitment	.29

Note: *Any r > .13 is statistically significant at p<0.05 level*

CORRELATIONS BETWEEN 27 ECHO AND NEO PI-R

The Revised NEO Personality Inventory (NEO PI-R) is a Personality Inventory developed by Costa and McCrae (1978) that assesses an individual on five dimensions of personality, also widely known as the Big Five personality traits. These traits are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. In addition, the NEO PI-R reports on six subcategories of each of the Big Five Personality Traits.

As part of a research project, 217 management trainees were administered both assessments. In this sample 54.9% were male and 45.1% were female. 1.8% of the sample was below 20 years of age, 12.1% of the sample ranged between 20-29 years of age, 46.8% ranged between 30-39, 39.3% between 40-49, 3.8% between 50-59, and 0.6% ranged between 60-69 years of age. Each of the 27 Echo dimensions was then correlated with only their equivalent factors on the NEO PI-R scale, the results of which are presented in Table 6.9. Table 6.9 summarizes only those correlations that were found to be statistically significant.

As can be seen in Table 6.9, many significant and psychologically meaningful correlations were observed between the dimensions of the two assessments. Most notably, the 27 Echo dimension 'Assertive' was found to have a positive correlation with the NEO PI-R dimension 'Assertiveness' as the definitions of these dimensions are consistent with each of their underlying aspects. Furthermore, the 27 Echo dimension 'Organized' has also shown a high correlation with 'Orderliness'. This is not surprising as 'Organized' has been defined in 27 Echo in a manner consistent with the aspects present in 'Orderliness'. 'Inventive' in 27 Echo has been shown to have a high correlation with 'Ideas' in NEO PI-R. This high correlation is owing to the fact that 'Inventive' as a dimension is described as the inclination toward generating creative ideas and thinking outside the box. Since the dimensions of 27 Echo show numerous notable correlations with those of NEO PI-R, the former's constructs can be said to be highly valid.

***Table 6.9**: Statistically Significant Correlations between 27 Echo Dimensions and Neo PI-R Factors (n=217)*

27 ECHO DIMENSIONS	NEO PI-R FACTORS	CORRELATION (r)
Inventive	Ideas	.66
Adaptability	Ideas	.35
Meticulous	Dutifulness	.31
Persistent	Self-Discipline	.26
Affiliative	Gregariousness	.36
Assertive	Assertiveness	.71
Considerate	Tender-mindedness	.43
Conforming	Self-Discipline	.26
Sociable	Gregariousness	.31
Organized	Orderliness	.70
Striving	Achievement Striving	.36
Methodical	Orderliness	.57
Receptive	Warmth	.26
Vigorous	Action	.37
Achieving	Achievement Striving	.46

***Note:** Any r > .14 is statistically significant at p<0.05 level*

CORRELATIONS BETWEEN 27 ECHO AND HOGAN PERSONALITY INVENTORY

Hogan Personality Inventory (HPI) is an assessment that was developed in the 1980s inspired from the Five-Factor Model of Personality. The HPI measures the normal or "bright side" of personality. Hogan's Motives, Values, Preferences Inventory (MVPI) measures the constructs that describe the core goals, values, drivers, and interests of individuals. Hogan Development Survey (HDS) measures the constructs that describe the "dark side of personality" or derailers.

A group of 238 working professionals across industries, functions, and levels was administered both 27 Echo and HPI and correlation coefficients were calculated between the dimensions of the two assessments. In this sample 48.3% were male and 51.4% were female. 13.9% of the sample ranged between 20-29 years of age, 35.9% ranged between 30-39, 45.2% between 40-49, 3.3% between 50-59, and 1.7% ranged between 60-69 years of age. Table 6.10 summarizes only those correlations that were found to be statistically significant.

As can be seen in Table 6.10, many significant and psychologically meaningful correlations were observed. The 27 Echo dimension 'Inquisitive' - which assesses one's inclination towards consistently learning and acquiring new skills, shows a high positive correlation with 'Inquisitive' on HPI, as both of these dimensions are highly consistent in their definitions. Not surprisingly, the dimension 'Sociable' in 27 Echo - which taps into one's inclination to enjoy social interactions and enjoy lively conversations, was positively correlated with 'Sociability' from HPI, establishing its construct validity. The dimensions 'Empowering' and 'Receptive' in 27 Echo - that assess one's tendency to understand others' emotions and thoughts, and help, guide, and motivate people by identifying their strengths and weaknesses, were found to be positively correlated with 'Interpersonal Sensitivity'. Similarly, 'Decisive' and 'Achieving' in 27 Echo - which assess one's tendency to take firm decisions as well as actions with the aim of accomplishing high-quality outcomes and meeting excellent standards, were both positively correlated with 'Ambition' in HPI.

Table 6.10: *Statistically Significant Correlations between 27 Echo Dimensions and HPI Factors (n=238)*

27 ECHO DIMENSIONS	HPI FACTORS	CORRELATION (r)
Assured	Ambition	.54
Inventive	Inquisitive	.51
Adaptability	Adjustment	.33
Inquisitive	Inquisitive	.63
Composed	Adjustment	.24
Assertive	Ambition	.23
Considerate	Interpersonal Sensitivity	.37
Conforming	Prudence	.49
Analytical	Inquisitive	.18
Sociable	Sociability	.62
Empowering	Interpersonal Sensitivity	.19
Receptive	Interpersonal Sensitivity	.39
Factual	Inquisitive	.22
Decisive	Ambition	.31
Achieving	Ambition	.56

Note: *Any $r > .13$ is statistically significant at $p<0.05$ level*

The results of a correlational analysis between 27 Echo dimensions and the factors of MVPI are presented in Table 6.11. It can be observed from Table 6.11, that the dimensions of 27 Echo meant to measure facets of one's personality do not measure facets of one's motives, values, and preference, as highlighted by the low correlations between them. Similarly, the results of a correlational analysis between dimensions of 27 Echo and HDS Factors are presented in Table 6.12 and provide strong discriminant validity evidence for 27 Echo dimensions.

Table 6.11: *Correlations between 27 Echo Dimensions and MVPI Factors (n=238)*

27 ECHO DIMENSIONS	MVPI FACTORS	CORRELATION (r)
Assured	Security	-.09
Inventive	Tradition	.00
Enterprising	Tradition	.00
Adaptability	Security	-.01
Meticulous	Altruistic	.002
Persistent	Hedonism	.01
Inquisitive	Tradition	-.07
Composed	Commerce	.01
Affiliative	Commerce	-.12
Assertive	Altruistic	-.09
Conceptual	Science	-.04
Considerate	Commerce	.02
Initiative	Aesthetics	.00
Foresight	Hedonism	-.03
Conforming	Power	.00
Analytical	Aesthetics	-.10
Sociable	Power	.00
Empowering	Power	-.04
Organized	Altruistic	-.06
Striving	Aesthetics	.01
Methodical	Affiliation	-.05
Receptive	Science	-.04
Persuasive	Tradition	.02
Factual	Aesthetics	-.03
Decisive	Recognition	.00
Vigorous	Aesthetics	-.01
Achieving	Security	-.10

Note: *Any r > .13 is statistically significant at p<0.05 level*

Table 6.12: *Correlations Between 27 Echo Dimensions and HDS Factors (n=238)*

27 ECHO DIMENSIONS	HDS FACTORS	CORRELATION (r)
Assured	Skeptical	-.08
Inventive	Cautious	-.11
Enterprising	Leisurely	-.10
Adaptability	Reserved	.01
Meticulous	Colorful	.003
Persistent	Leisurely	-.09
Inquisitive	Cautious	-.02
Composed	Excitable	.00
Affiliative	Skeptical	-.11
Assertive	Colorful	.00
Conceptual	Bold	.00
Considerate	Leisurely	-.08
Initiative	Dutiful	-.09
Foresight	Skeptical	.02
Conforming	Bold	-.03
Analytical	Cautious	.06
Sociable	Reserved	-.02
Empowering	Reserved	-.11
Organized	Colorful	-.10
Striving	Leisurely	-.009
Methodical	Bold	.00
Receptive	Diligent	-.01
Persuasive	Diligent	-.07
Factual	Imaginative	.04

Note: *Any r > .13 is statistically significant at p<0.05 level*

CORRELATIONS BETWEEN 27 ECHO AND SOSIE PERSONALITY ASSESSMENT (SOSIE)

SOSIE Personality Assessment (1991) integrates personality assessments with those of personal and interpersonal values. SOSIE integrates three classic tests produced by the eminent American psychologist Leonard V. Gordon: The Gordon Personal Profile Inventory (GPPI, 1978), The Survey of Personal Values (SPV, 1967), and, The Survey of Interpersonal Values (SIV, 1975).

200 working professionals took 27 Echo and SOSIE both as part of various assessment & development centers run by Jombay. In this sample 53% were male and 47% were female. 1.3% of the sample was below 20 years of age, 18.8% of the sample ranged between 20-29 years of age, 29.7% ranged between 30-39, 37.1% between 40-49, 2.3% between 50-59, and 0.8% ranged between 60-69 years of age. To examine the validity of 27 Echo, each dimension was also correlated with their equivalent factors on the SOSIE Personality Inventory. Table 6.13 summarizes the correlations between dimensions of 27 echo and their equivalent factors on the Sosie Personality Inventory.

Table 6.13: *Statistically Significant Correlations between Dimensions of 27 Echo and their Equivalent Factors on the SOSIE Personality Inventory (n=200)*

	DOMINANCE	RESPONSIBILITY	STRESS RESISTANCE	SOCIABILITY	CAUTIOUSNESS	ORIGINAL THINKING	PERSONAL RELATIONS	VIGOR
Adaptability	.25	.47	.65	.30	-.21	.41	.75	.60
Assertive	.82	.42	.42	.32	.30	.28	-.01	.33
Conforming	.19	.49	.18	.34	.60	0.00	.22	-.32
Considerate	-.31	.20	.55	.22	.18	.16	.62	-.10
Persuasive	.75	.35	.53	.32	-.02	-.20	.25	.28
Factual	.30	.08	.39	.20	.46	-.17	-.10	-.18
Decisive	.16	-.04	.35	.12	-.23	.25	.25	.40
Meticulous	0.00	.67	.45	-.19	.43	.04	.18	-.01
Foresight	0.00	-.08	-.08	.25	-.01	.61	-.10	-.24
Initiative	.25	.65**	.23	.20	-.21	.30	.30	.37
Sociable	.47	.19	.34	.76	0.00	.12	.30	.25
Inquisitive	0.00	-.03	-.19	.04	.18	.51	-.12	.05
Empowering	-.55	-.02	.15	.31	.08	.29	.64	-.30
Receptive	0.00	.03	.19	.04	.18	.12	.05	.12
Persistent	.07	.42	.34	.07	.12	.23	.25	.02
Organized	0	.37	.35	.19	.33	.04	.18	-.01
Methodical	0.00	.47	.45	.19	.33	.04	.18	-.01
Enterprising	.08	.01	.12	.01	.03	0.00	.07	.20

Note: *Any r > .14 is statistically significant at p<0.05 level*

Inspection of Table 6.13 reveals that the 27 Echo dimension 'Adaptability' is positively correlated with SOSIE's personality traits of 'Responsibility', 'Stress Resistance', 'Original Thinking', 'Personal Relations', and 'Vigor', establishing strong convergent validity for the dimension. Furthermore, the dimension 'Assertive' of 27 Echo is positively correlated with 'Dominance' and 'Sociability' traits of SOSIE personality assessment.

It can be noted that the dimension 'Conforming' from 27 Echo is positively correlated with 'Responsibility' and 'Cautiousness' of SOSIE. Furthermore, the dimension 'Considerate' is positively correlated with 'Personal Relations' 'Stress Resistance', and negatively correlated with 'Dominance'. These correlations provide additional evidence for the construct validity of 27 Echo dimensions.

Since 27 Echo is not a measure of individuals' motivations, for the purpose of establishing discriminant validity, only the *'Interpersonal and Personal Values' (IPV and PV)* dimensions from SOSIE Personality Assessment were considered. Table 6.14 presents correlations between 27 Echo and SOSIE's 12 'Interpersonal and Personal Values' dimensions. As can be seen in Table 6.14, the dimensions of 27 Echo show divergence from SOSIE Interpersonal and Personal Values Factors.

Table 6.14: *Correlations between 27 Echo Dimensions and SOSIE Interpersonal and Personal Values Factors (n=200)*

DIMENSIONS	SOSIE IPV & PV FACTORS	CORRELATION (r)
Assured	Materialism	-.03
Inventive	Conformity	.00
Enterprising	Power	-.01
Adaptability	Conformity	-.01
Meticulous	Benevolence	-.09
Persistent	Independence	.00
Inquisitive	Orderliness	.00
Composed	Recognition	.009
Affiliative	Independence	-.09
Assertive	Benevolence	-.12
Conceptual	Support	-.06
Considerate	Achievement	.02
Initiative	Conformity	.01
Foresight	Recognition	-.10
Conforming	Independence	-.01
Analytical	Support	-.08
Sociable	Materialism	.02
Empowering	Power	-.03
Organized	Variety	.014
Striving	Conformity	.00
Methodical	Variety	.00
Receptive	Materialism	.003
Persuasive	Power	-.09
Factual	Benevolence	-.11
Decisive	Conformity	.07
Vigorous	Power	.08
Achieving	Recognition	-.006

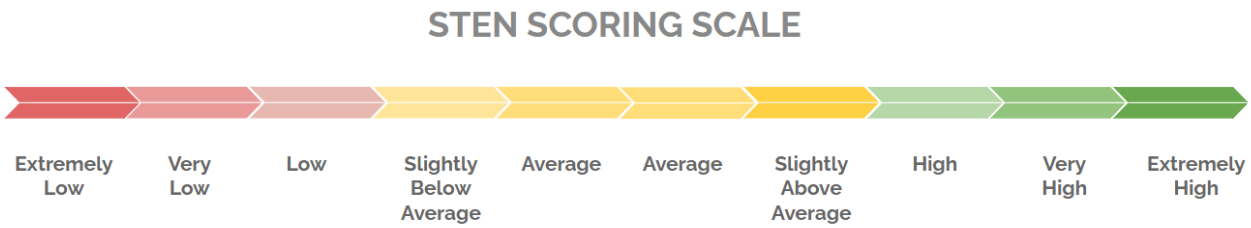
Note: *Any r > .18 is statistically significant at p<0.05 level*

27ECHO

07/NORMS

To draw meaningful conclusions about an assessment-taker's personality from their obtained scores on an assessment, their scores are compared to an appropriate norm group*. Norms provide a frame of reference for interpreting the raw scores by comparing each assessment-taker's score with the mean scores of a defined reference group.

**Norm group and reference group has been used interchangeably across the guide.*



Scoring 27 Echo involves converting the raw scores for each dimension to standardized scores i.e. Sten scores using the norms lookup table. These scores are calculated automatically by the predefined algorithms on the Jombay system. Sten scores have a range of 1 to 10, a mean of 5.5, and a standard deviation of 2. The sten range describes the strength of disposition and the degree of inclination indicated by the candidate's responses compared to the norm group. The higher or lower the Sten score, the stronger the tendency expressed towards the corresponding side of the scale.

THE STEN SCORES CAN BE INTERPRETED ACCORDING TO THE FOLLOWING:

STEN SCORE	SCORING SCALE	DESCRIPTION
1	Extremely Low	Significantly lower than the norm group
2	Very Low	Significantly lower than the norm group
3	Low	Slightly lower than the norm group
4	Slightly Below Average	Scored as most people in the norm group
5	Average	Scored as most people in the norm group
6	Average	Scored as most people in the norm group
7	Slightly Above Average	Scored as most people in the norm group
8	High	Slightly higher than the norm group
9	Very High	Significantly higher than the norm group
10	Extremely High	Significantly higher than the norm group

NORM GROUPS

Jombay offers various norm group options to its users to facilitate appropriate interpretation of the assessment scores by comparing them with the reference group that is most representative of the target group. Norms groups available at Jombay include Global Norms (for the International population), Regional Norms (for populations in the US, UK, India, UAE, and Singapore), and User Norms (for Individual contributors, Managers, and Leaders).

The data for the norms were collected from actual administrations of 27 Echo in client projects, thus being representative of the populations it is intended to be used for. We collect demographic information from the respondents with respect to their age, gender (along with the option "prefer not to say"), ethnicity, highest educational qualification, country of work, and work experience in years. However, not all of this information could be collected for all projects, owing to privacy issues and other diversity and inclusion concerns around the collection of sensitive data. Among others, ethnicity data was found to be very challenging to collect as the organizations have been reluctant to allow the collection of this information.

The Norm groups that Jombay offers include:

- **Global Norms -** Global Norms for 27 Echo were calculated based on responses from working professionals across regions, managerial levels, functions, and industries. These norms are generally used when a user does not want to apply a specific group's norms.

- **Regional Norms -** Jombay offers local Norms for 5 regions namely, The United States of America (US), The United Kingdom (UK), India, The United Arab Emirates (UAE), and Singapore. For regions other than the ones listed above, users and researchers are free to conduct local norming studies.

- **User Norms** - For cases where global norms or regional norms may not be the most appropriate for a group of assessment-takers, Jombay offers user norms that account for the seniority and position of the assessment-taker. User norms are based on the managerial level of the respondent (Leaders & Senior Manager, Managers and Individual Contributors), and offer additional choice to the users of the assessment to choose a norm group that is based on their level of responsibility.

27 ECHO GLOBAL NORMS

27 Echo Global norms include data from working professionals across regions, industries, functions, and levels. These norms can be applied when any of the regional or user-specific norms do not fit as an appropriate reference group. Users may want to reflect on the composition of these norms to decide whether they are appropriate for the target assessment group.

The data was sourced from Jombay's platform, consisting of data from different assessment projects and research studies. This sample consisted of 11,514 participants, employed in a range of job functions across a wide range of sectors. The Global Norms are presented in Table 7.1

Demographic Data Breakup for Global Norm Group (n=11,514)

GENDER	%
Males	52
Females	48

AGE	%
Below 20	2
20-29	40
30-39	39
40-49	17
50-59	2
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	41
Master's Degree	32
Doctorate Degree	2
Professional Qualifications	18
Diploma/Workplace Training	7

REGIONS	%
The United States of America (US)	19
The United Kingdom (UK)	21
India	26
United Arab Emirates (UAE)	16
Singapore	18

Table 7.1: *27 Echo Global Norms (n=11,514)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	53.13	19.36	*Persistent*	76.6	12.6
Assertive	71.97	15.5	*Organized*	76.19	15.17
Conforming	75.18	14.11	*Methodical*	60.93	20.7
Considerate	77	13.73	*Enterprising*	69.73	14.57
Persuasive	65.86	13.38	*Composed*	69.61	15.07
Factual	62.84	14.88	*Striving*	66.42	15.44
Decisive	70.52	11.75	*Affiliative*	81.75	12.7
Meticulous	76.86	15.83	*Conceptual*	62.13	14.6
Foresight	78.83	14.01	*Inventive*	76.48	14.97
Initiative	71.58	17.27	*Achieving*	77.54	16.01
Sociable	66.04	20	*Analytical*	76.34	12.65
Inquisitive	78.07	16.1	*Vigorous*	66.49	19.92
Empowering	86.5	12.85	*Assured*	76.31	13.2
Receptive	63.55	14.6			

27 ECHO REGIONAL NORMS

The purpose of providing regional norms for 27 Echo was to make an option available to the users to choose a local reference group that matches the target assessment group. The Global Norm group was divided further according to the participant's country as indicated by them. Basis this categorization, regional norms were calculated for 5 regions: The United States of America, The United Kingdom, The United Arab Emirates, India, and Singapore. Local norming studies can be undertaken to calculate norms for any other region.

Following are the 5 regional norms provided by Jombay:

THE US NORMS

These norms were calculated on the responses of 2,156 individuals, from across managerial levels, functions, and industries, based out of The United States of America (US). The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and work experience has been presented below. Table 7.2 presents the US Group Norms for each of the dimensions of 27 Echo.

Demographic Data Breakup for US Norm Group (n=2,156)

GENDER	%
Males	49
Females	51

AGE	%
Below 20	3
20-29	47
30-39	34
40-49	16
50-59	1
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	42
Master's Degree	36
Doctorate Degree	3
Professional Qualifications	13
Diploma/Workplace Training	5

WORK EXPERIENCE	%
Less than 5 years	13
5 to 10 years	29
11 to 20 years	34
20 to 30 years	23
More than 30 years	1

Table 7.2: *27 Echo US Norms (n=2,156)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	57.14	19.79	*Persistent*	76.58	14.71
Assertive	71.69	15.18	*Organized*	75.4	13.09
Conforming	72.19	14.3	*Methodical*	62.78	21.8
Considerate	75.81	14.76	*Enterprising*	68.91	15.68
Persuasive	60.24	13.09	*Composed*	64.57	13.85
Factual	61.03	14.26	*Striving*	61.48	14.84
Decisive	72.17	11.23	*Affiliative*	80.29	12.11
Meticulous	78.66	16.1	*Conceptual*	58.76	21.38
Foresight	80.17	13.63	*Inventive*	79.25	13.32
Initiative	76.98	16.02	*Achieving*	75.83	16.57
Sociable	64.6	21.11	*Analytical*	79.52	13.24
Inquisitive	78.81	14.97	*Vigorous*	61.94	18.87
Empowering	84.79	11.9	*Assured*	76.51	12.79
Receptive	62.72	14.13			

THE UK NORMS

These norms were calculated on the responses of 2,675 individuals, from across managerial levels, functions, and industries, based out of The United Kingdom (UK). The demographic data break up of the sample with respect to gender, age, highest educational qualifications, and work experience has been presented below. The group norms for the UK population have been presented in Table 7.3.

Demographic Data Breakup for UK Norm Group (n=2,675)

GENDER	%
Males	47
Females	53

AGE	%
Below 20	3
20-29	37
30-39	40
40-49	17
50-59	4
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	42
Master's Degree	34
Doctorate Degree	2
Professional Qualifications	16
Diploma/Workplace Training	7

WORK EXPERIENCE	%
Less than 5 years	14
5 to 10 years	25
11 to 20 years	37
20 to 30 years	20
More than 30 years	4

Table 7.3: *27 Echo UK Norms (n=2,675)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	55.86	19.36	*Persistent*	79.76	14.45
Assertive	70.28	15.12	*Organized*	73.22	13.41
Conforming	75.61	14.12	*Methodical*	64.42	21.33
Considerate	71.82	13.69	*Enterprising*	71.69	15.07
Persuasive	65.82	14.23	*Composed*	71.7	14.59
Factual	67.11	15.92	*Striving*	64.21	15.83
Decisive	70.29	10.96	*Affiliative*	76.72	12.79
Meticulous	74.28	15.12	*Conceptual*	62.9	20.19
Foresight	79.37	13.54	*Inventive*	73.6	14.31
Initiative	71.33	15.85	*Achieving*	83.22	15.48
Sociable	68.12	21.49	*Analytical*	80.63	12.8
Inquisitive	74.37	16.11	*Vigorous*	68.29	19.59
Empowering	86.25	12.01	*Assured*	77.54	13.75
Receptive	63.11	14.79			

INDIA NORMS

These norms were calculated on the responses of 2,694 individuals, from across managerial levels, functions, and industries, based out of India. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and work experience has been presented below. The group norms for the Indian population have been presented in Table 7.4.

GENDER	%
Males	57
Females	43

AGE	%
Below 20	3
20-29	38
30-39	38
40-49	19
50-59	2
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	40
Master's Degree	29
Doctorate Degree	1
Professional Qualifications	22
Diploma/Workplace Training	8

WORK EXPERIENCE	%
Less than 5 years	13
5 to 10 years	36
11 to 20 years	27
20 to 30 years	22
More than 30 years	2

Table 7.4: *27 Echo India Norms (n=2,694)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	55.39	19.52	*Persistent*	76.96	15.24
Assertive	73.53	15.69	*Organized*	72.48	12.83
Conforming	70.10	13.63	*Methodical*	59.09	20.74
Considerate	78.71	13.40	*Enterprising*	70.15	15.14
Persuasive	63.22	13.59	*Composed*	68.79	13.87
Factual	62.86	15.80	*Striving*	63.59	14.88
Decisive	69.14	10.48	*Affiliative*	82.97	13.59
Meticulous	71.59	16.03	*Conceptual*	62.81	21.26
Foresight	83.65	14.77	*Inventive*	79.03	15.51
Initiative	77.44	15.20	*Achieving*	76.21	15.04
Sociable	67.16	20.82	*Analytical*	80.44	13.55
Inquisitive	73.49	16.07	*Vigorous*	61.66	19.27
Empowering	83.30	13.16	*Assured*	77.13	13.08
Receptive	65.19	15.02			

SINGAPORE NORMS

These norms were calculated on the responses of 1,874 individuals, from across managerial levels, functions, and industries, based out of Singapore. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and work experience has been presented below. The group norms for the Singaporean population have been presented in Table 7.5.

Demographic Data Breakup for India Norm Group (n=1,874)

GENDER	%
Males	58
Females	42

AGE	%
Below 20	1
20-29	46
30-39	39
40-49	12
50-59	3
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	39
Master's Degree	34
Doctorate Degree	1
Professional Qualifications	16
Diploma/Workplace Training	10

WORK EXPERIENCE	%
Less than 5 years	14
5 to 10 years	27
11 to 20 years	34
20 to 30 years	22
More than 30 years	3

Table 7.5: *27 Echo Singapore Norms (n=1,874)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	52.18	19.14	*Persistent*	72.80	14.66
Assertive	73.48	15.74	*Organized*	73.18	13.51
Conforming	73.39	14.09	*Methodical*	61.49	21.56
Considerate	74.94	13.84	*Enterprising*	68.93	14.24
Persuasive	68.13	14.47	*Composed*	68.26	15.33
Factual	66.41	14.63	*Striving*	67.11	14.57
Decisive	73.47	11.28	*Affiliative*	80.47	12.32
Meticulous	72.49	15.80	*Conceptual*	57.92	19.42
Foresight	77.21	14.22	*Inventive*	75.17	14.72
Initiative	79.91	14.70	*Achieving*	71.02	14.70
Sociable	71.70	19.74	*Analytical*	77.06	12.45
Inquisitive	75.10	15.42	*Vigorous*	63.28	21.34
Empowering	89.55	12.09	*Assured*	79.81	13.28
Receptive	59.16	14.93			

THE UAE NORMS

These norms were calculated on the responses of 2,115 individuals, from across managerial levels, functions, and industries, based out of UAE. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and work experience has been presented below. The group norms for the population of UAE have been presented in Table 7.6.

Demographic Data Breakup for UAE Norm Group (n=2,115)

GENDER	%
Males	51
Females	49

AGE	%
Below 20	0
20-29	33
30-39	46
40-49	18
50-59	3
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	43
Master's Degree	28
Doctorate Degree	1
Professional Qualifications	23
Diploma/Workplace Training	5

WORK EXPERIENCE	%
Less than 5 years	13
5 to 10 years	26
11 to 20 years	35
20 to 30 years	23
More than 30 years	3

Table 7.6: *27 Echo UAE Norms (n=2,115)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	52.27	18.89	*Persistent*	75.29	14.98
Assertive	68.44	14.75	*Organized*	76.64	12.95
Conforming	70.22	14.93	*Methodical*	61.85	20.97
Considerate	71.42	13.79	*Enterprising*	69.01	15.74
Persuasive	61.45	12.87	*Composed*	70.29	14.02
Factual	65.31	14.29	*Striving*	63.28	15.14
Decisive	68.56	11.45	*Affiliative*	82.15	13.01
Meticulous	71.78	16.22	*Conceptual*	61.66	21.89
Foresight	75.97	15.06	*Inventive*	76.29	13.76
Initiative	76.10	14.76	*Achieving*	75.44	16.29
Sociable	61.32	18.21	*Analytical*	74.71	13.07
Inquisitive	73.01	15.55	*Vigorous*	64.45	20.18
Empowering	81.17	12.36	*Assured*	73.03	12.85
Receptive	62.09	12.82			

27 ECHO USER NORMS

The purpose of these norm groups was to provide the user with an option to choose the norms of the group that is most representative of the target audience. Therefore, the data was taken from the dataset used to calculate Global Norms. The 'Job Designation' information provided by the assessment-takers was used to categorize users according to levels of management responsibility into the following norm groups:

LEADER AND SENIOR MANAGER NORMS

These norms were calculated on the responses from 3,725 individuals describing their management level as Executive or Senior Manager, from across sectors and geographies. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and the region has been presented below. The group norms for Leaders and Senior Managers have been presented in Table 7.7.

Demographic Data Breakup for Leader & Senior Manager Norm Group (n=3,725)

GENDER	%
Males	53
Females	47

AGE	%
Below 20	0
20-29	0
30-39	60
40-49	34
50-59	6
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	44
Master's Degree	31
Doctorate Degree	2
Professional Qualifications	17
Diploma/Workplace Training	6

REGIONS	%
The United States of America (US)	21
The United Kingdom (UK)	26
India	27
United Arab Emirates (UAE)	15
Singapore	12

Table 7.7: *27 Echo Leader and Senior Manager Norms (n=3,725)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	50.09	18.38	*Persistent*	74.55	13.40
Assertive	67.45	17.31	*Organized*	76.10	15.01
Conforming	75.89	13.66	*Methodical*	58.86	20.30
Considerate	74.94	13.84	*Enterprising*	67.33	15.16
Persuasive	63.76	13.07	*Composed*	68.08	14.94
Factual	61.46	14.93	*Striving*	65.50	14.89
Decisive	70.19	11.18	*Affiliative*	81.62	13.03
Meticulous	74.49	15.05	*Conceptual*	57.39	14.13
Foresight	78.65	13.45	*Inventive*	73.71	15.16
Initiative	71.75	19.83	*Achieving*	69.18	14.04
Sociable	62.06	18.67	*Analytical*	76.01	11.91
Inquisitive	75.27	17.05	*Vigorous*	64.85	18.95
Empowering	86.27	12.55	*Assured*	75.05	12.94
Receptive	62.19	13.62			

MANAGER NORMS

These norms were calculated on the responses from 4,331 individuals from across sectors and geographies, describing their management level as Manager, Team Leader, and Specialist. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and the region has been presented below. The group norms for Managers are presented in Table 7.8.

Demographic Data Breakup for Manager Norm Group (n=4,331)

GENDER	%
Males	53
Females	47

AGE	%
Below 20	0
20-29	59
30-39	31
40-49	10
50-59	1
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	40
Master's Degree	35
Doctorate Degree	2
Professional Qualifications	18
Diploma/Workplace Training	5

REGIONS	%
The United States of America (US)	19
The United Kingdom (UK)	26
India	29
United Arab Emirates (UAE)	15
Singapore	11

Table 7.8: *27 Echo Manager Norms (n= 4,331)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	52.18	19.92	*Persistent*	78.40	11.90
Assertive	74.51	15.71	*Organized*	76.49	16.06
Conforming	78.66	13.33	*Methodical*	63.87	21.28
Considerate	78.71	13.40	*Enterprising*	70.23	15.01
Persuasive	67.80	14.42	*Composed*	70.59	15.15
Factual	64.98	15.30	*Striving*	66.11	15.91
Decisive	73.10	11.47	*Affiliative*	82.27	12.56
Meticulous	78.96	15.53	*Conceptual*	62.64	15.13
Foresight	80.42	13.76	*Inventive*	78.08	14.91
Initiative	72.79	16.81	*Achieving*	81.57	15.42
Sociable	65.75	21.96	*Analytical*	77.18	12.62
Inquisitive	78.69	16.24	*Vigorous*	68.71	19.55
Empowering	87.93	12.64	*Assured*	77.48	12.75
Receptive	63.61	15.14			

INDIVIDUAL CONTRIBUTOR NORMS

These norms were calculated on the responses from 3,458 individuals from different sectors and geographies who described their work responsibilities as individual contributors. The demographic data break up of the norm group with respect to gender, age, highest educational qualification, and the region has been presented below. The norms for the Individual Contributor group have been presented in Table 7.9.

Demographic Data Breakup for Individual Contributor Norm Group (n=3,458)

GENDER	%
Males	48
Females	52

AGE	%
Below 20	7
20-29	59
30-39	28
40-49	6
50-59	0
60 +	0

HIGHEST EDUCATIONAL QUALIFICATION	%
Bachelor's Degree	41
Master's Degree	29
Doctorate Degree	0
Professional Qualifications	20
Diploma/Workplace Training	10

REGIONS	%
The United States of America (US)	19
The United Kingdom (UK)	24
India	25
United Arab Emirates (UAE)	15
Singapore	17

Table 7.9: *27 Echo Individual Contributor Norms (n= 3,458)*

DIMENSIONS	MEAN	SD	DIMENSIONS	MEAN	SD
Adaptability	57.12	19.19	*Persistent*	76.32	12.35
Assertive	70.39	14.65	*Organized*	76.01	14.55
Conforming	72.07	14.50	*Methodical*	60.14	20.35
Considerate	77.23	13.79	*Enterprising*	71.40	13.03
Persuasive	65.45	12.20	*Composed*	70.01	15.11
Factual	61.30	13.91	*Striving*	67.89	15.42
Decisive	67.13	11.95	*Affiliative*	81.13	12.59
Meticulous	75.92	16.64	*Conceptual*	66.09	12.95
Foresight	77.08	14.71	*Inventive*	77.29	14.57
Initiative	70.16	16.71	*Achieving*	74.14	15.75
Sociable	70.26	18.52	*Analytical*	75.48	13.52
Inquisitive	79.42	15.21	*Vigorous*	64.89	21.06
Empowering	84.79	13.31	*Assured*	76.03	13.85
Receptive	65.03	14.85			

27ECHO

08/FAIRNESS

This chapter focuses on the issue of fairness in the use of 27 Echo. The data presented in this chapter explores the possibility of differences in accordance with gender, language, and region of administration.

In addition to the analysis of data for the aforementioned groups, the following steps were undertaken to ensure fairness in the development of 27 Echo:

ITEM WRITING AND REVIEW

The items were written within stringent guidelines (see Chapter 03: Construction). The review process aimed to be sensitive to culture, country of origin, ethnicity, age, gender, sexual orientation, and religious beliefs.

SUPERVISION & ITERATIONS

An ongoing, iterative process of supervising differences in data accrued in the administration of 27 Echo to different groups and populations was followed.

CRITERION VALIDITY

27 Echo was developed to measure workplace-centric dimensions. The results of the Criterion Validity studies clearly establish the utility of 27 Echo as a reliable predictor of workplace performance (see Chapter 06: Validity). This approach is aimed at enhanced transparency and ensures that external factors have minimal impact on the end result of the assessment.

GROUP TRENDS

To examine group trends in the scores of 27 Echo, differences between the mean group scores with respect to gender, language proficiency, and regions were analyzed. The differences between the group scores were subjected to a t-test or a one-way ANOVA to determine if they are statistically significant. For dimensions where a statistically significant difference was detected, the size of the difference becomes the next important consideration, which was calculated using Cohen's d, where an effect size of d= .20 equals a small difference, of d = 0.50 equals a medium difference and d = 0.80 equals a large difference (Cohen, 1988).

In each case, whether the differences between the groups are attributable to differences in the population means of these groups or are reflective of other variables is not readily discernible. The differences between the group means, whether small, moderate, or large, do not by default indicate the presence of a bias in the measurement of that dimension. It certainly does not conclude that individuals from the minority group are being treated less favorably than the majority group.

Such differences in scores on the dimensions of 27 Echo may or may not be reflected in workplace performance (performance on a competency or overall job performance). To ascertain the effects on the performance of the assessment-taker, the differences in performance scores on the criterion variable also need to be taken into consideration. However, such data is difficult to accumulate and in the absence of it, the standardized mean differences (Cohen's d) in the scores on each dimension and the direction of those differences become a useful source of information.

GROUP TRENDS - GENDER

The responses from the standardization sample of 27 Echo (n = 856) were further analyzed to examine the trend of the scores on each dimension across gender. To investigate the differences in scores on each of the 27 Echo dimensions with respect to gender, the difference between the group means of the obtained scores of male (n = 434) and female (n= 422) assessment-takers were examined. An independent samples t-test (Welch t-test) was conducted to examine if the differences were statistically significant.

From Table 8.1, it can be seen that 23 out of 27 dimensions display no significant differences in the mean scores of the two groups. However, the dimensions Adaptability, Empowering, Methodical, and Achieving display statistically significant differences ($p < 0.01$) in the means of the two groups, wherein mean group scores for males were significantly higher than for females. To further examine the size of the difference, Cohen's d was calculated for each of these dimensions.

The effect sizes (Cohen's d) for the four dimensions ranged from small to medium (Adaptability = 0.29, Empowering = 0.33, Methodical = 0.36, and Achieving = 0.42). The differences can be attributed to differences in the population itself. Significant differences between males and females for four dimensions exist, though the effect size of the differences was found to be fairly small. However, when debriefing the report or utilizing the report to inform decisions, such differences should be taken into account.

GROUP TRENDS - ENGLISH LANGUAGE PROFICIENCY

To investigate the differences in groups with respect to culture, a linguistic lens was deployed to measure whether differences exist in the experience of the 27 Echo. For this study, mean scores on 27 dimensions for Native English speakers (n = 445) and individuals with English as a second language (n = 411) were computed. An independent samples t-test (Welch t-test) was conducted to examine if the differences between these means were statistically significant.

From Table 8.2, it can be seen that all of the 27 dimensions display no significant differences in the group means. This provides evidence that the 27 Echo Personality Assessment does not have any adverse effect on individuals that do not have English as their first language. This establishes 27 Echo as a global tool for bias-free assessment of personality.

GROUP TRENDS - REGION

While we tried to collect and analyze ethnicity data for all assessment-takers, this data was challenging to accumulate as most organizations tend to be reluctant to allow ethnicity information to be gathered owing to the sensitivity of the data. Therefore, to investigate the differences in groups with respect to culture, a regional lens was deployed to determine if differences exist in the experience of the 27 Echo. An analysis of the group trends in the scores on the 27 dimensions for the following 5 geographical regions was conducted: The United States of America (n = 193), The United Kingdom (n = 227), India (n = 231), The United Arab Emirates (n = 104), and Singapore (n = 101). A one-way ANOVA was conducted to examine if the differences between the mean group scores for these 5 regions were statistically significant.

As can be seen in Table 8.3, all of the 27 dimensions display no significant differences in the means of the 5 groups. The findings provide evidence for the fact that 27 Echo provides consistent results irrespective of the region of the assessment-taker. This establishes 27 Echo as a global tool for bias-free assessment of personality.

Table 8.1: *Summary Table of Independent Samples t-test for the Differences in the Mean Scores of Males and Females for 27 Echo dimensions*

	FEMALES	MALES	t-Stat	df	p-values
Adaptability	49.05	54.68	-2.75	217	0.006
Assertive	72.07	71.94	0.07	125	0.946
Conforming	73.65	75.76	-1.34	196	0.182
Considerate	75.58	77.47	-1.31	204	0.192
Persuasive	68.09	65.30	1.79	136	0.075
Factual	61.75	63.18	-0.95	207	0.345
Decisive	69.90	70.70	-0.62	184	0.538
Meticulous	75.78	77.21	-0.86	199	0.391
Foresight	77.79	79.19	-0.97	217	0.333
Initiative	70.76	71.93	-0.56	183	0.574
Sociable	65.58	66.21	-0.28	188	0.783
Inquisitive	76.22	78.99	-1.47	211	0.143
Empowering	83.25	87.50	-2.87	169	0.005
Receptive	65.79	62.86	1.88	192	0.061
Persistent	75.41	76.97	-1.15	191	0.250
Organized	73.91	76.96	-1.79	180	0.075
Methodical	55.35	62.81	-3.28	184	0.001
Enterprising	66.47	70.78	-2.57	174	0.011
Composed	68.82	69.82	-0.48	112	0.632
Striving	65.54	66.69	-0.70	192	0.482
Affiliative	80.51	82.13	-1.21	195	0.228
Conceptual	60.97	62.50	-0.95	186	0.343
Inventive	75.29	76.89	-0.95	185	0.343
Achieving	72.31	78.99	-3.12	113	0.002
Analytical	73.77	77.14	-2.45	186	0.015
Vigorous	66.69	66.42	0.12	181	0.905
Assured	74.28	76.83	-1.50	121	0.137

Table 8.2: *Summary Table of Independent Samples t-test for the Differences in the Mean Scores of Groups with Different English Language Proficiency for 27 Echo Dimensions*

	ENGLISH AS SECOND LANGUAGE	NATIVE ENGLISH SPEAKERS	t-Stat	df	p-values
Adaptability	53.37	51.62	0.64	77	0.523
Assertive	72.34	67.28	1.37	24	0.182
Conforming	75.15	75.56	-0.19	45	0.853
Considerate	76.52	79.42	-1.71	113	0.089
Persuasive	66.95	64.41	1.81	144	0.0964
Factual	63.15	61.16	1.09	110	0.278
Decisive	70.50	70.64	-0.11	123	0.912
Meticulous	76.79	77.56	-0.28	51	0.780
Foresight	78.81	78.92	-0.06	83	0.951
Initiative	71.50	74.50	-0.67	10	0.520
Sociable	67.73	65.59	1.05	74	0.312
Inquisitive	78.21	77.40	0.32	78	0.748
Empowering	86.17	88.59	-1.72	104	0.089
Receptive	63.55	63.54	0.01	109	0.994
Persistent	76.81	75.47	0.87	111	0.387
Organized	75.76	80.81	-2.06	43	0.045
Methodical	61.52	54.61	1.95	42	0.058
Enterprising	69.63	70.48	-0.43	75	0.671
Composed	70.11	67.76	1.42	154	0.158
Striving	66.21	67.77	-0.83	94	0.408
Affiliative	81.89	80.99	0.56	109	0.575
Conceptual	62.47	59.61	1.39	74	0.169
Inventive	76.74	74.72	0.91	73	0.366
Achieving	78.69	76.64	1.76	59	0.091
Analytical	75.98	78.27	-1.68	125	0.096
Vigorous	67.14	57.64	2.69	36	0.011
Assured	76.95	73.67	2.00	120	0.048

***Table 8.3**: Summary Table of Analysis of Variance (ANOVA) of the Five Group Means for Regions*

DIMENSIONS	US	UK	INDIA	UAE	SINGAPORE	F VALUE	PR(>F)
Adaptability	51.83	54.50	51.63	56.02	52.91	0.76	0.552
Assertive	72.67	71.34	72.42	72.13	70.58	0.65	0.42
Conforming	74.84	73.33	74.29	77.04	76.82	0.841	0.5
Considerate	76.55	77.37	79.02	77.51	75.03	0.942	0.439
Persuasive	66.19	66.55	65.09	65.08	66.06	0.183	0.947
Factual	64.03	63.87	62.72	61.63	60.77	0.935	0.443
Decisive	69.80	70.47	70.22	72.03	70.80	0.543	0.704
Meticulous	75.29	79.32	75.14	79.17	76.95	1.545	0.188
Foresight	78.66	79.66	78.55	79.93	77.48	0.374	0.827
Initiative	70.50	73.35	71.11	74.33	69.64	0.245	0.712
Sociable	66.28	64.53	64.20	68.08	66.87	0.468	0.759
Inquisitive	78.56	79.85	76.43	77.77	77.19	0.325	0.564
Empowering	86.39	85.82	87.85	87.19	85.34	0.523	0.719
Receptive	62.90	63.18	64.65	64.10	63.56	0.25	0.909
Persistent	76.81	77.52	76.27	77.75	74.42	0.966	0.426
Organized	76.50	77.19	72.83	75.86	78.28	1.274	0.28
Methodical	60.95	60.56	60.38	63.45	59.27	0.381	0.822
Enterprising	68.41	71.59	69.32	70.39	70.24	0.758	0.553
Composed	66.77	71.18	70.37	72.47	70.16	1.931	0.105
Striving	66.27	66.76	65.08	66.57	67.57	0.29	0.885
Affiliative	82.29	80.07	80.93	82.56	82.34	0.672	0.611
Conceptual	61.34	63.45	61.79	62.95	61.89	0.373	0.828
Inventive	76.21	79.56	75.23	76.53	75.12	1.119	0.347
Achieving	77.07	76.41	76.83	81.38	76.53	1.624	0.46
Analytical	76.51	77.36	76.12	76.58	74.96	0.416	0.797
Vigorous	65.24	66.40	63.67	70.09	68.27	1.341	0.254
Assured	76.65	76.52	75.17	75.49	77.39	0.333	0.856

27ECHO
09/ADMINISTRATION

ADMINISTRATION OPTIONS

27 Echo is exclusively administered through an online platform powered by Jombay. The assessment is *not* available as an offline paper-pencil test or on any other platform.

INVITED ACCESS

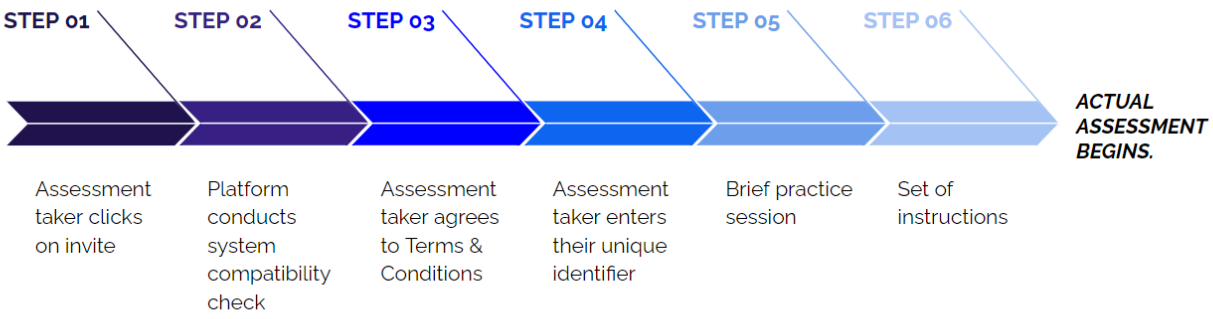
Invited Access is a mode of assessment where an assessment-taker has been prequalified to be assessed. This prequalification could take place through multiple avenues. For example, it may be that the assessment-taker is an existing employee attending an internal development event of an organization or a prospective candidate having passed previous qualification stages of a selection procedure. In Invited Access mode, the assessment-takers receive a unique link (specific to them) to their email address and then proceed to complete 27 Echo online. Supervision is optional and contingent on the organization's preference.

SUPERVISED ACCESS THROUGH PROCTORING

Supervised Access mode is a relatively more secure form of administration enabled via an online proctoring feature. The assessment-taker is supervised through their device cameras. The administration remains the same as the Invited Access mode, with the added layer of an online proctoring feature. When proctoring is enabled, the camera captures pictures of the assessment-taker at various intervals during the assessment. The system also captures the number of tab switches that are done while taking the assessment. This information is recorded and presented in the final report.

Supervised administration offers greater safeguards over identity deception i.e., getting someone else to complete the assessment rather than the designated assessment-taker. However, in a personality assessment, there are no correct or incorrect answers. Hence, the risk of referring to other tabs and searching for answers via unscrupulous means is minimal. However, if the output does report frequent tab switches, the possibility of the assessment-taker being less attentive during the administration of the assessment can be explored.

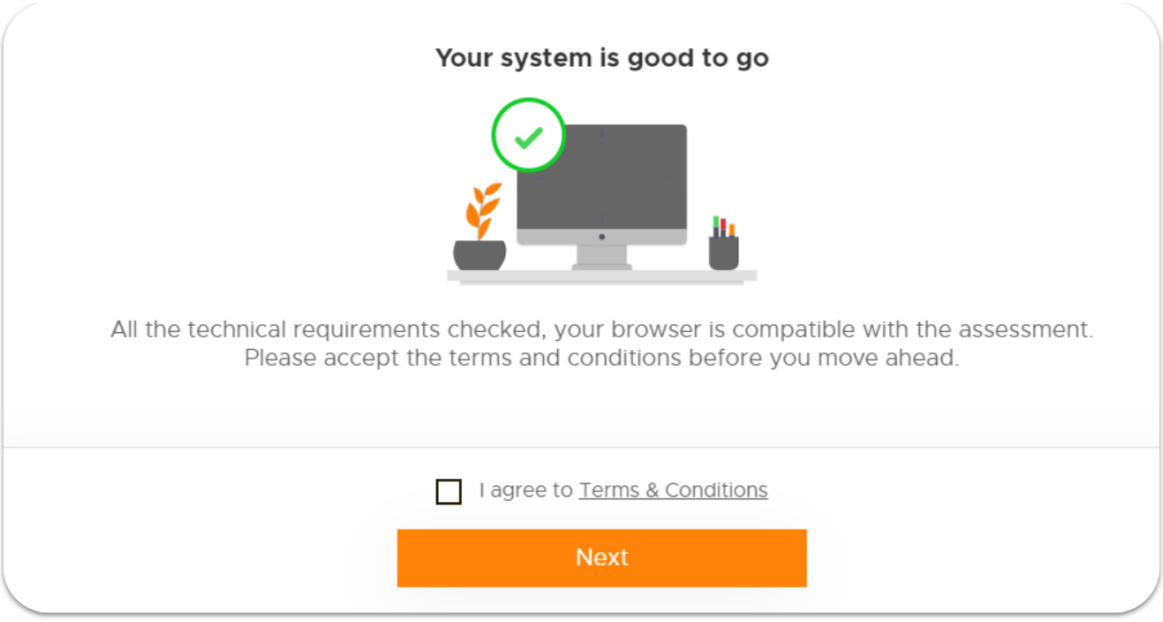
ONLINE ADMINISTRATION PROCESS



- **Step 1:** The assessment-taker clicks on the invited access link to take the assessment.

- **Step 2:** The platform conducts a quick system compatibility check (refer to Figure 9.1), ensuring that the assessment-taker's device fulfills the system requirements for hassle-free completion of the assessment.

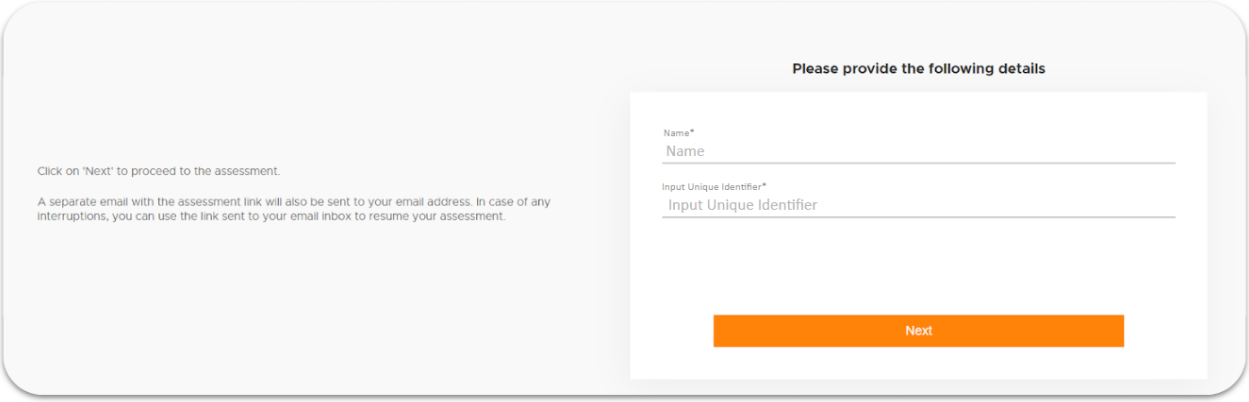
Figure 9.1: *The System Compatibility Check as appearing in 27 Echo*



- **Step 3:** The assessment-taker reads and agrees to the Terms and Conditions for the 27 Echo in order for it to be administered.

- **Step 4:** The assessment-taker is asked to enter their unique identifier (refer to Figure 9.2) and other details to accurately store the assessment data.

Figure 9.2: *Overview of the Page to Input Unique Identifier*



- **Step 5:** The assessment-taker is logged in to the assessment and is provided with a brief practice session (refer to Figure 9.3 and Figure 9.4).

  This brief practice session is provided to orient them to the user interface and the expected nature of the items. The practice session poses sample items that are in the same format as the actual assessment. The assessment-taker is made aware that it is a practice session, and the responses to those items do not reflect in the final scores on their 27 Echo Report.

Figure 9.3: *The Orientation to the Practice Session as appearing on the System*

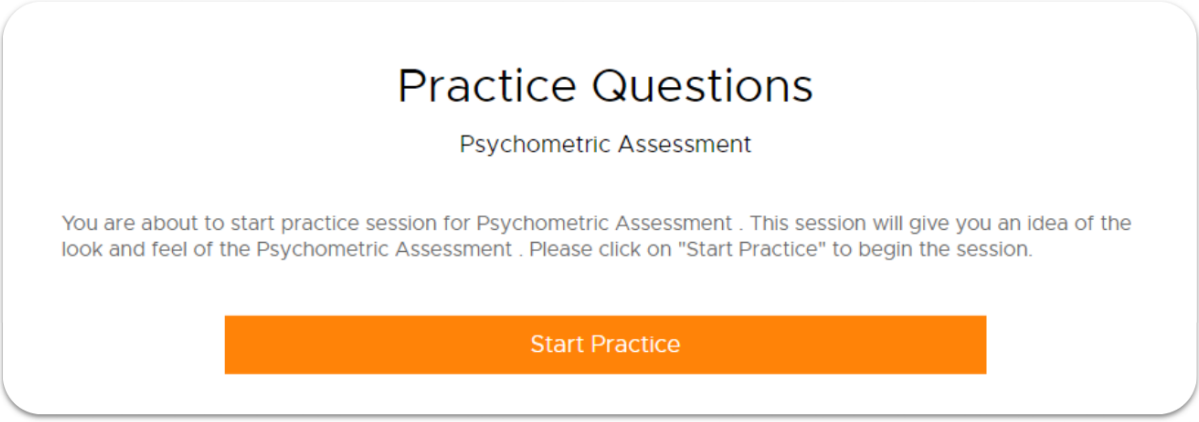
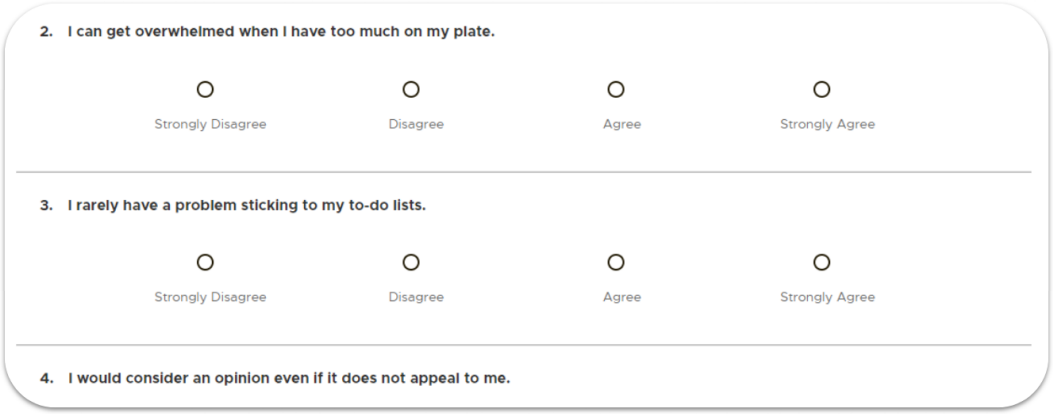
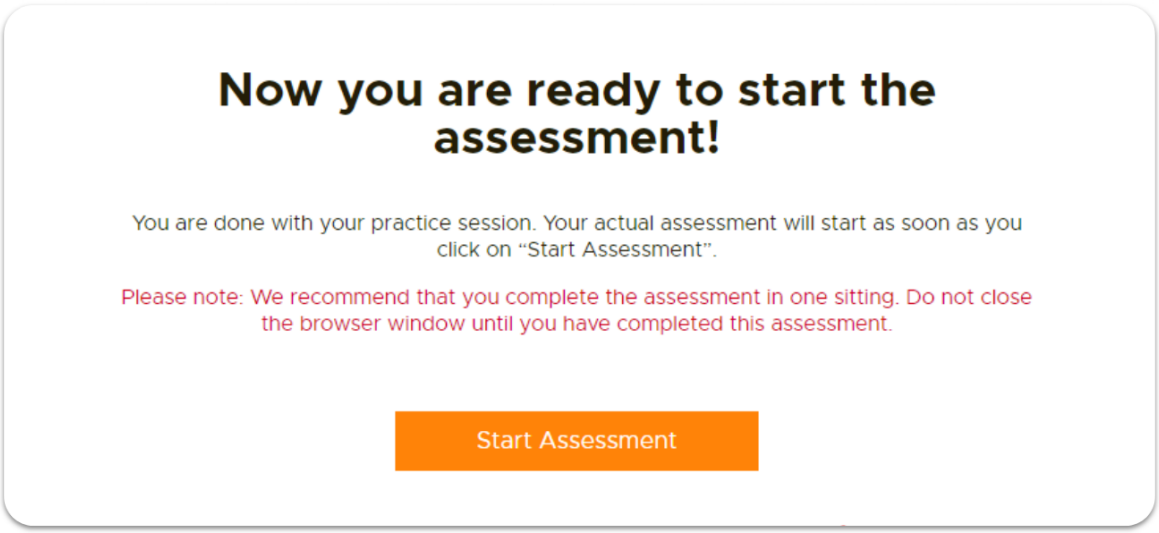


Figure 9.4: *The Overview of the Practice Session*



- **Step 6:** The assessment-taker is given a brief set of instructions before commencing the actual assessment (refer to Figure 9.5).

Figure 9.5: *Brief Set of Instructions Provided to the Assessment-Taker before the Actual Assessment Begins*



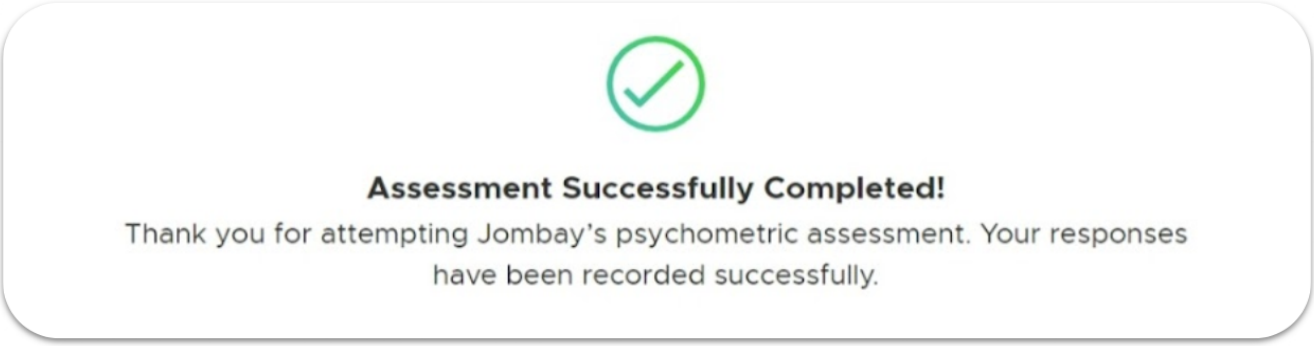
COMPLETION TIME

27 Echo is not a timed assessment. It consists of 111 items. A total completion time of 25 minutes to 30 minutes is recommended (including the preparation time, starting from the system check to the completion of the practice session). The time approximation is made based on the average time that cohorts took to complete the assessment (n=856, mean sample time= 20.56 minutes) in one sitting. While it is assumed that the cohort represents different levels of comprehension, processing time, and technological prowess, this completion time does not account for outliers in these areas.

POST-COMPLETION

When the assessment has been completed and submitted by the assessment-taker, the assessment platform displays a completion page with a "Thank You" message to the assessment-taker, signifying the successful completion of the 27 Echo. The completion page also asks the assessment-taker to rate the user experience while attempting the assessment, in order to capture their feedback with respect to the assessment platform (Refer to Figure 9.6).

Figure 9.6: *The Assessment Completion Page as appearing in 27 Echo*



27ECHO
10/REPORTS

27 Echo Reports are designed to facilitate interpretation with ease and clarity. The report provides insights both at the cluster and dimension levels. It provides a lucid narrative for users, as well as assessment-takers. The insights on clusters and dimensions are to be interpreted in the light of the assessment-takers' specific context as well as the purpose of the assessment.

Jombay provides two kinds of reports based on the use cases for which they have been employed: a **Hiring Report** that provides dimension-wise Interview Questions along with the personality profile of the assessment-taker; and a **Development Report** that provides dimension-wise development guides along with the personality profile of the assessment-taker.

The differentiating element between these two kinds of reports is the additional resource section provided at the end of each report. The *Hiring Report* contains a set of dimension-wise Interview Questions which may be used to further probe into the specific inclinations and dispositions of the candidate to thoroughly gauge their suitability to the role or profile being offered by the organization. The *Development Report* contains a dimension-wise development guide, which assessment-takers may apply to develop tangible practices that aid their development in the particular dimensions that are relevant to their organizational context, operating environment, performance areas, and their job roles.

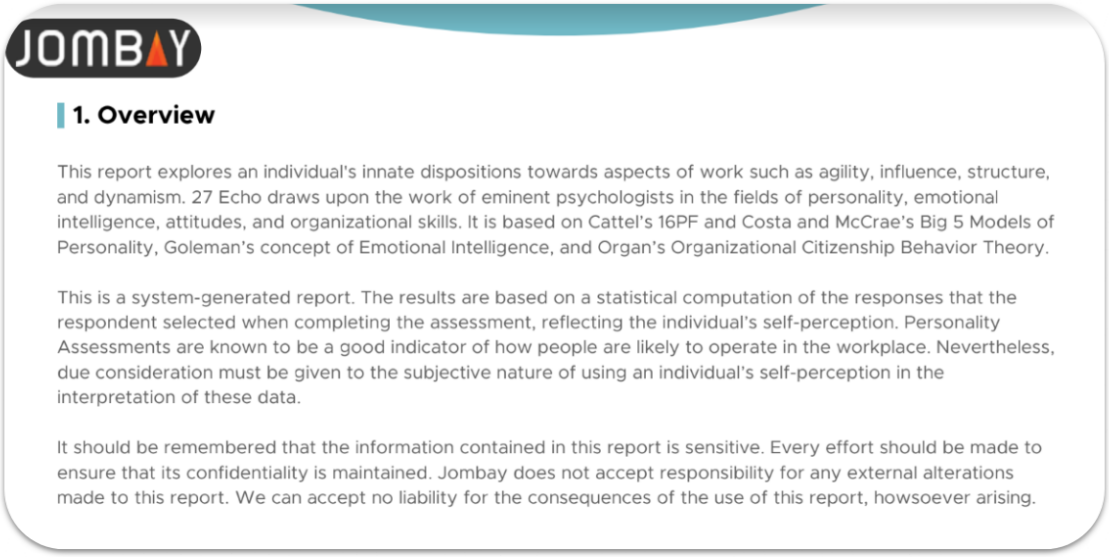
It should be noted that Jombay does not recommend filtering potential candidates solely based on their personality, however, the personality assessment can be used as a tool to identify a candidate's inclinations and dispositions in the context of the role they are being considered for. Refer to Chapter 11: Feedback for more details on these specific use-cases for which 27 Echo may be administered.

The language and the structure of the reports have been designed to be simple to understand so that an assessment-taker can form a basic understanding of their personality profile. *However, for a deeper dive into the intercorrelation of the dimensions and the implications of the report on their performance at work, an accreditation in 27 Echo would be necessary. Jombay offers a 1.5-day accreditation program to equip practitioners in the interpretation and feedback process for 27 Echo.*

User experience and ease of understanding are critical attributes that the authors of this assessment bear in mind. For this purpose, the report has been divided into different sections.

1. **Overview of the Report:**
   This section introduces the report to the assessment-takers and users and outlines what to expect from the report. It also highlights important disclaimers regarding the applicability and confidentiality of the report (refer to Image 1).

Image 1: *Overview page as appearing on the 27 Echo Report*



JOMBAY

1. Overview

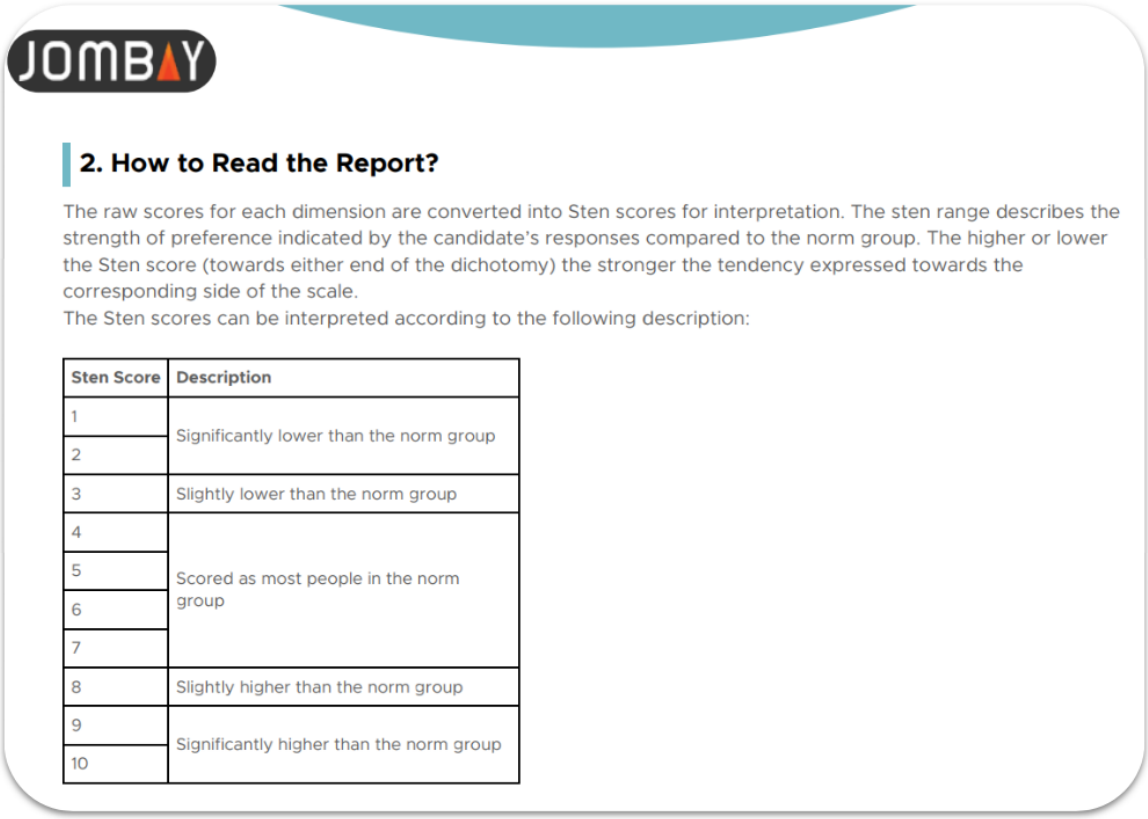
This report explores an individual's innate dispositions towards aspects of work such as agility, influence, structure, and dynamism. 27 Echo draws upon the work of eminent psychologists in the fields of personality, emotional intelligence, attitudes, and organizational skills. It is based on Cattel's 16PF and Costa and McCrae's Big 5 Models of Personality, Goleman's concept of Emotional Intelligence, and Organ's Organizational Citizenship Behavior Theory.

This is a system-generated report. The results are based on a statistical computation of the responses that the respondent selected when completing the assessment, reflecting the individual's self-perception. Personality Assessments are known to be a good indicator of how people are likely to operate in the workplace. Nevertheless, due consideration must be given to the subjective nature of using an individual's self-perception in the interpretation of these data.

It should be remembered that the information contained in this report is sensitive. Every effort should be made to ensure that its confidentiality is maintained. Jombay does not accept responsibility for any external alterations made to this report. We can accept no liability for the consequences of the use of this report, howsoever arising.

2. **How to read the Report:**
   This section debriefs the assessment-taker/user on how to read and comprehend the report (refer to Image 2). The purpose of this section is to dispel ambiguity and provide additional clarity to the assessment-takers and readers who may not be acquainted with the technicalities of 27 Echo.

Image 2: *'How to Read the Report?' section as appearing on the 27 Echo Report*



JOMBAY

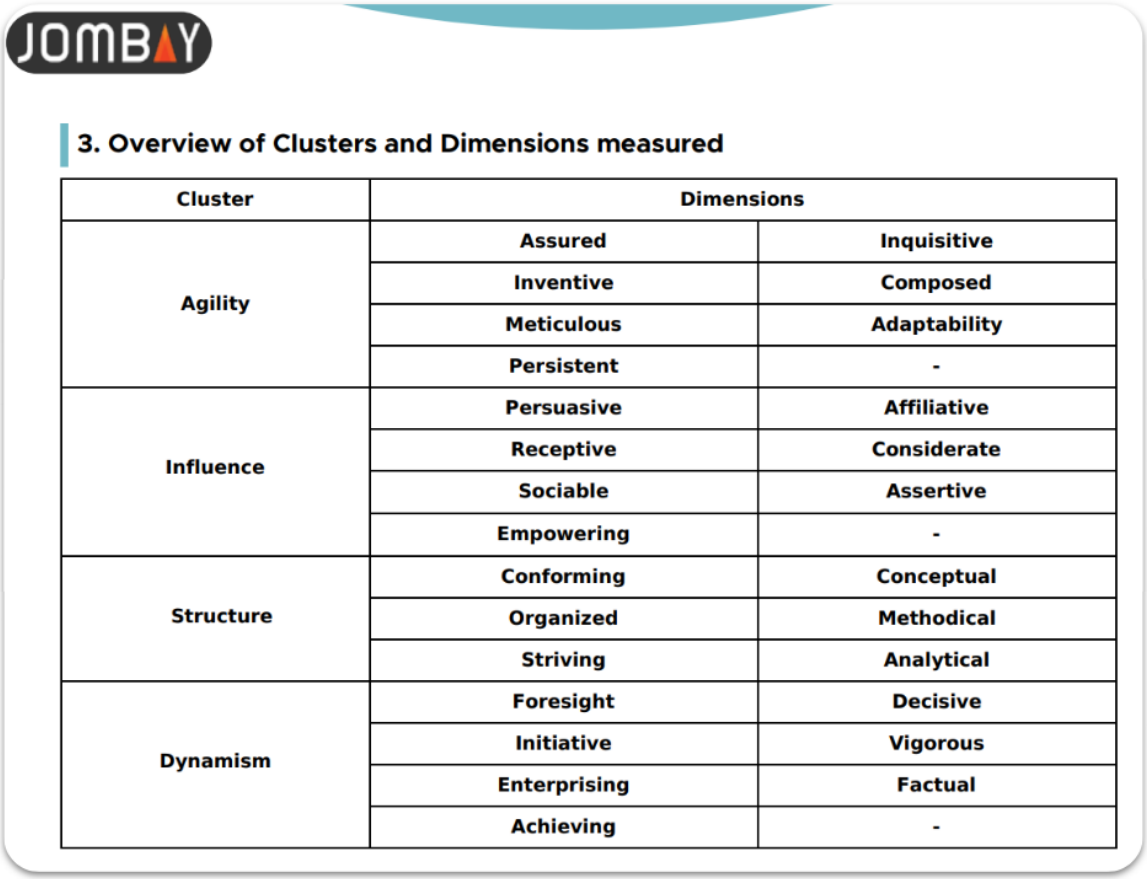
2. How to Read the Report?

The raw scores for each dimension are converted into Sten scores for interpretation. The sten range describes the strength of preference indicated by the candidate's responses compared to the norm group. The higher or lower the Sten score (towards either end of the dichotomy) the stronger the tendency expressed towards the corresponding side of the scale.
The Sten scores can be interpreted according to the following description:

Sten Score	Description
1	Significantly lower than the norm group
2	
3	Slightly lower than the norm group
4	Scored as most people in the norm group
5	
6	
7	
8	Slightly higher than the norm group
9	Significantly higher than the norm group
10	

3. **Overview of Clusters and Dimensions measured:**
   This section provides a lucid overview of the Clusters measured by 27 Echo and the underlying dimensions for each of them (refer to Image 3).

   Image 3: *'Overview of Clusters and Dimensions measured' section as appearing on the 27 Echo Report*



JOMBAY

3. Overview of Clusters and Dimensions measured

Cluster	Dimensions	
Agility	Assured	Inquisitive
	Inventive	Composed
	Meticulous	Adaptability
	Persistent	-
Influence	Persuasive	Affiliative
	Receptive	Considerate
	Sociable	Assertive
	Empowering	-
Structure	Conforming	Conceptual
	Organized	Methodical
	Striving	Analytical
Dynamism	Foresight	Decisive
	Initiative	Vigorous
	Enterprising	Factual
	Achieving	-

4. **Cluster and Dimension Definitions:**
   This section serves as a lexicon for the definitions of each Cluster and its underlying dimensions (refer to Image 4). This aids in the assessment-taker's/ user's interpretation by providing the precise aspects and underlying dispositions each of these clusters and dimensions seek to measure.

Image 4: *'Cluster and Dimension Definitions' section as appearing on the 27 Echo Report*

4. Cluster and Dimension Definitions

1. **Agility**: This cluster taps into the inclination to approach work with flexibility and an innovative mindset. It provides insight into one's propensity to keep up with fast-paced environments and deliver tasks in a timely manner while maintaining high-quality standards.

- Assured: Exhibits confidence in managing challenges. Believes in and trusts one's capabilities.
- Inventive: Generates creative ideas and solutions to problems. Thinks out of the box.
- Meticulous: Focuses on details and is exacting in one's work. Pays attention to accuracy and quality results.
- Persistent: Stays focused on completion of tasks. Accomplishes goals despite setbacks and obstacles.
- Inquisitive: Enjoys learning and is eager to acquire new skills. Stays informed and updated about trends and developments.
- Composed: Handles demanding situations calmly. Bounces back from and withstands difficult situations.
- Adaptability: Receptive to new experiences and change. Accepts feedback constructively.

2. **Influence**: This cluster taps into the inclination for influencing people, forging connections, and building trust. It provides insight into the inclination to understand interpersonal motivations and be sensitive to others' feelings or circumstances.

- Persuasive: Influences people's decisions and viewpoints. Puts across one's perspective convincingly.
- Receptive: Understands people's emotions, thoughts, and circumstances. Affirms and validates others'

JOMBAY

feelings.

- Sociable: Enjoys others' company and thrives around people. Initiates conversations.
- Affiliative: Collaborates with people to manage tasks. Creates personal connections with others to build trust.
- Considerate: Respects others' feelings and viewpoints. Acknowledges people's perspectives and opinions.
- Assertive: Expresses opinions firmly and voices disagreements. Communicates messages that may be difficult or controversial.
- Empowering: Identifies people's strengths. Provides guidance and motivates people to help them capitalize on these strengths.

3. **Structure**: This cluster taps into one's inclination towards imbibing method and organization in one's work. It provides insight into the inclination to adhere to rules and approach problems in a structured manner.

- Confirming: Adheres to rules and regulations. Follows guidelines and conventions.
- Organized: Plans and organizes tasks. Structures work by weighing the relative importance of tasks.
- Striving: Follows a goal-directed approach. Strives to execute and realize preset goals and targets.
- Conceptual: Enjoys discussing abstract concepts. Derives insights by identifying underlying patterns or connections.
- Methodical: Follows set processes and procedures. Adheres to prescribed steps in accomplishing tasks.
- Analytical: Identifies and defines problems. Extracts key information to generate practical solutions to problems.

4. **Dynamism:** This cluster taps into one's inclination towards making decisions and executing plans that impact future outcomes. It explores the foresight to anticipate possibilities and the zeal to take charge of achieving high-quality outcomes.

- Foresight: Understands the impact of one's actions on future outcomes. Anticipates long-term implications and prepares possible alternatives.
- Initiative: Shows willingness and readiness to pursue tasks voluntarily. Enjoys taking charge of situations.
- Enterprising: Displays openness to take risks. Willing to experiment and test out new ideas despite uncertain outcomes.
- Decisive: Makes decisions regarding aspects of one's life. Stands by own decisions.
- Vigorous: Thrives on activity. Likes to stay occupied and enjoys multitasking.
- Factual: Seeks relevant information before making decisions. Bases decisions on facts and figures.
- Achieving: Sets high standards of excellence for self and others. Thrives on competition.

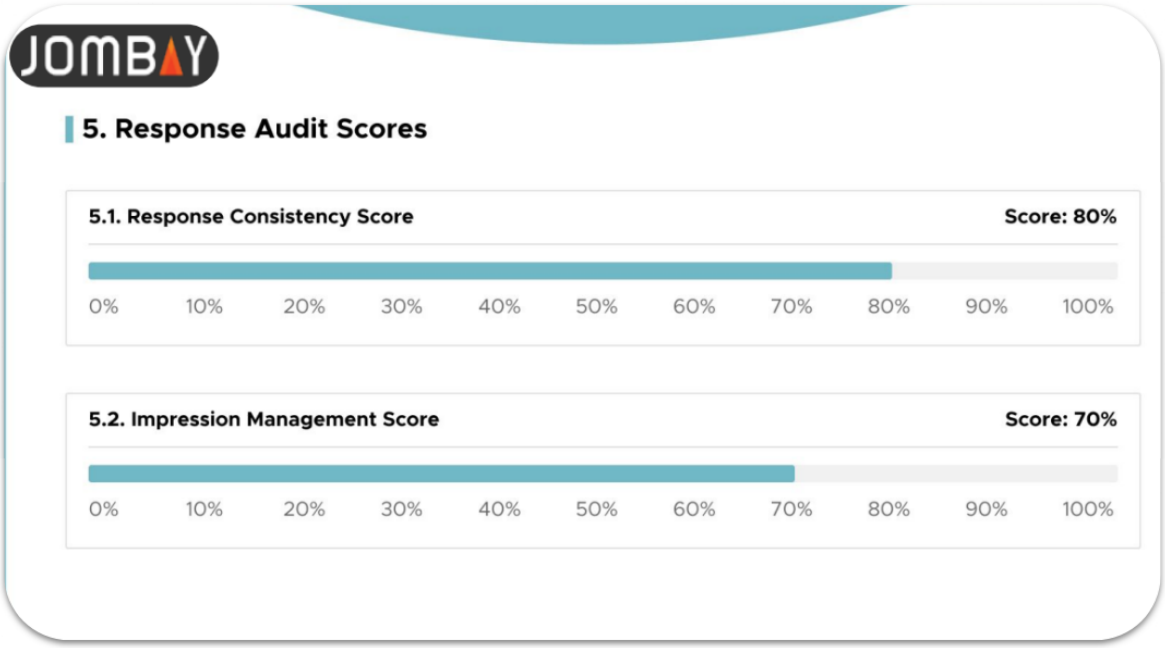
5. Response Audit Scores:

This section dives into the scores obtained by the assessment-taker on Response Consistency and Impression Management scales (refer to Image 5). The Impression Management Scale on the report of an individual reflects their Social Desirability Score, which can range from 0 to 100%. This scale assesses the extent to which an assessment-taker has presented a markedly positive self-image.

The Response Consistency Scale on the report of an individual reflects the degree of consistency in the item responses within a dimension. This scale assesses the extent to which an assessment-taker has responded without giving due consideration to the items. The report of an individual reflects their Response Consistency Score, which can range from 0 to 100%. The response consistency score should be utilized to give context to the dimension and cluster scores.

A detailed guideline on how these scores should be interpreted is provided in Chapter 11: Feedback.

Image 5: *'Response Audit Scores' section as appearing on the 27 Echo Report*

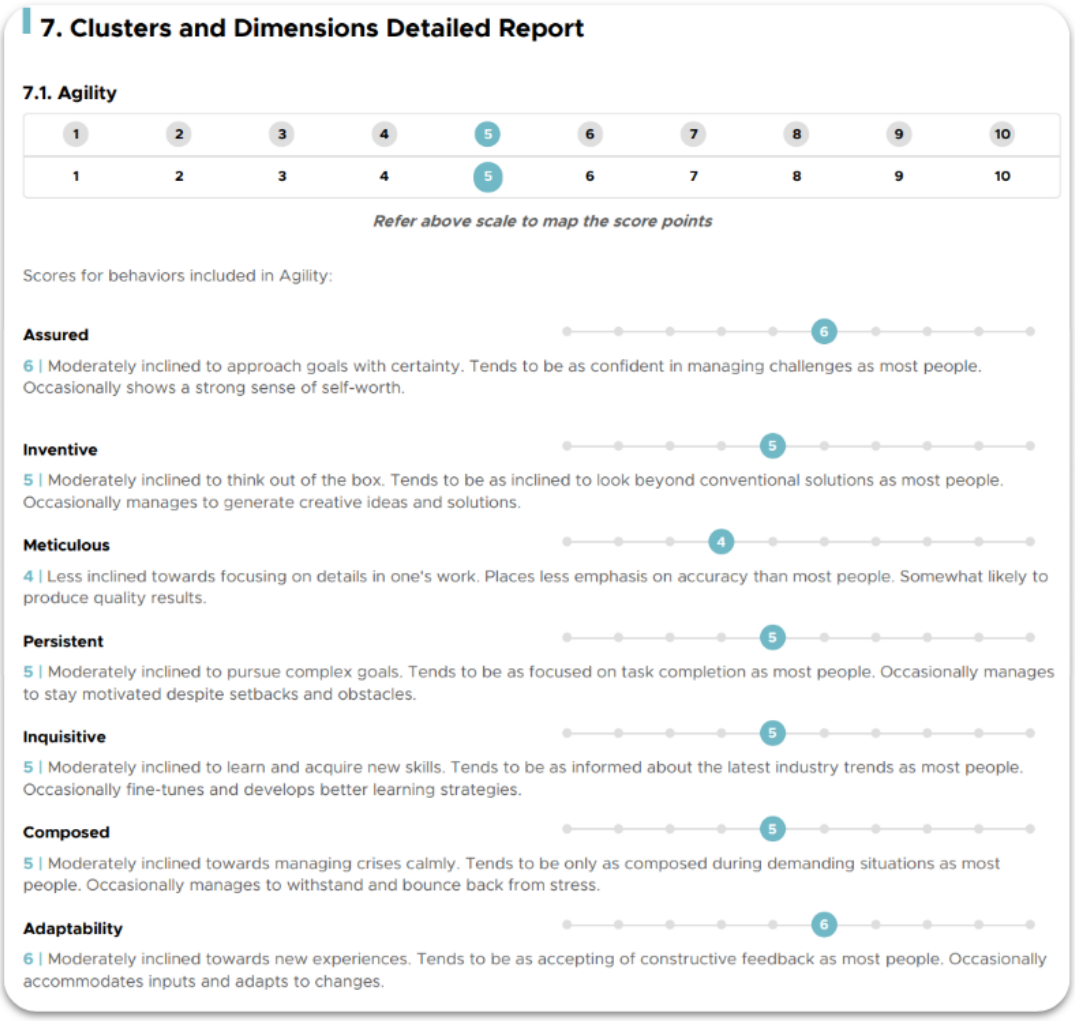


6. **Clusters and Dimensions Scores Overview:**
   This section dives into the scores obtained by the assessment-taker for each cluster and underlying dimensions. The scores provide a quantitative picture of how the assessment-taker has scored on the different scales of 27 Echo (refer to Image 6). A detailed guideline on how these scores should be interpreted is provided (refer to Chapter 11: Feedback).

   Image 6: *'Clusters and Dimensions Scores Overview' section as appearing on the 27 Echo Report*

7. **Clusters and Dimensions Detailed Report:**
This section elucidates the scores received by the assessment-taker in the previous section and describes what a score on a particular dimension means. This is done with the help of Score Descriptors that are associated with each dimension (refer to Image 7).

Image 7: *'Clusters and Dimensions Detailed Report' section as appearing on the 27 Echo Report*



8. **Interview Questions and Development Guide:**
This section provides some additional resources to aid organizations in the Hiring or Development Context. The Hiring Report consists of probing questions tagged to each dimension (refer to Image 8). These questions help to probe the candidate deeper into the context in which their unique inclinations and dispositions may be interpreted and leveraged in organizational settings. The Development Report consists of a Development Guide (refer to Image 9) for assessment-takers to develop useful practices specific to dimensions that are relevant in the context of their organizational requirements (the use of probing questions for talent identification and selection use cases, and the use of Development guides for feedback and development can be referred to in Chapter 11: Feedback).

It is to be noted that feedback during the Hiring and Development Context is an important element of the report interpretation, and must be conducted by trained feedback-givers who understand the nuances of probing questions and development interventions related to 27 Echo.

Image 8: *'Interview Questions' section as appearing on the 27 Echo Hiring Report*

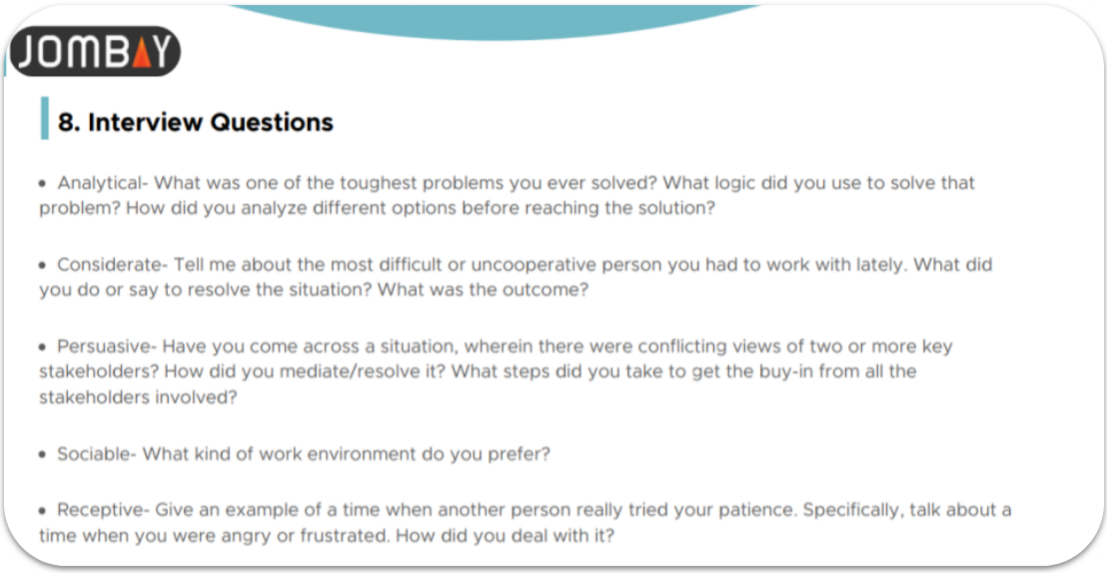
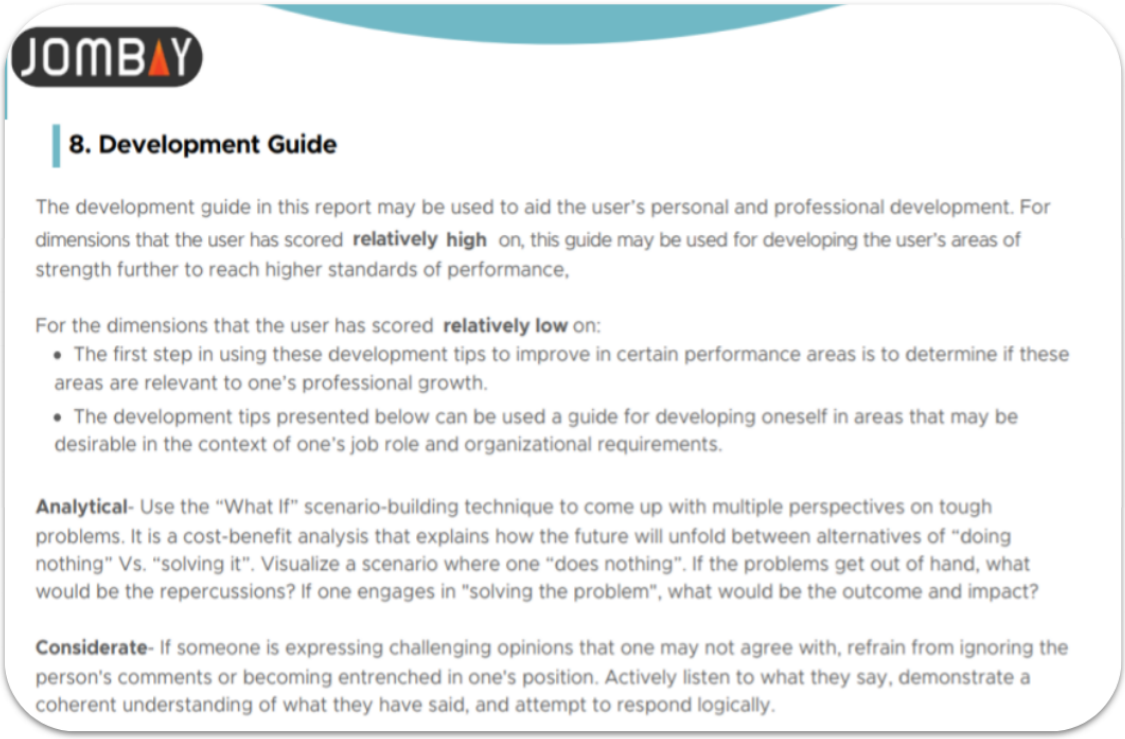


Image 9: *'Development Guide' section as appearing on the 27 Echo Development Report*



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8. Development Guide

The development guide in this report may be used to aid the user's personal and professional development. For dimensions that the user has scored **relatively high** on, this guide may be used for developing the user's areas of strength further to reach higher standards of performance,

For the dimensions that the user has scored **relatively low** on:

- The first step in using these development tips to improve in certain performance areas is to determine if these areas are relevant to one's professional growth.
- The development tips presented below can be used a guide for developing oneself in areas that may be desirable in the context of one's job role and organizational requirements.

Analytical- Use the "What If" scenario-building technique to come up with multiple perspectives on tough problems. It is a cost-benefit analysis that explains how the future will unfold between alternatives of "doing nothing" Vs. "solving it". Visualize a scenario where one "does nothing". If the problems get out of hand, what would be the repercussions? If one engages in "solving the problem", what would be the outcome and impact?

Considerate- If someone is expressing challenging opinions that one may not agree with, refrain from ignoring the person's comments or becoming entrenched in one's position. Actively listen to what they say, demonstrate a coherent understanding of what they have said, and attempt to respond logically.

27ECHO
11/FEEDBACK

27 Echo can be used in a variety of occupational settings throughout an employee's lifecycle. It is deployed for individual and team development, business growth, talent selection, and identification of high potentials.

Interpreting 27 Echo reports in the relevant context ensures informed decision-making based on the information presented in the report. Along with the overview of the scores, a narrative description of the assessment-taker's standing on the 27 personality dimensions has been presented to make the assessment output meaningful. ***This Chapter presents a guideline for interpreting 27 Echo Reports and outlines the feedback process. However, a 1.5-day accreditation program is offered by Jombay to further equip practitioners in the interpretation and feedback process for 27 Echo.***

THE FEEDBACK PROCESS

1. For individual feedback, ensure that the feedback is given to the assessment-taker in a secluded, comfortable environment without distractions. Before beginning the feedback process, clarify the purpose of the feedback. Explain the reasons for conducting the assessment and for delivering the feedback.
2. Understand the current role of the assessment-taker, their expectations, their view of their strengths, and some of the challenges faced. Identify the dimensions that would be critical for success in the current role, team, and organizational culture. Explicitly state that 27 Echo is not being used as the sole consideration when making crucial talent decisions.
3. Review and discuss the implications of the Impression Management and Response Consistency Scores to establish the credibility of the results.
4. Review and explain the cluster scores to get an overview of the assessment-taker's personality profile. Evaluate the results alongside the assessment-taker's personal experiences.

5. Deep Dive into the Cluster and Dimensions Scores. Explore the assessment-taker's areas of strengths and limitations. Take into consideration the assessment objective, the assessment-taker's role, and the organizational culture when discussing the scores. Explore any discrepancies that may emerge from the discussion.

6. Towards the end of the session, let the assessment-taker summarize their key takeaways. Open the discussion for queries, doubts, requests, and suggestions. Ensure that the assessment-taker is clear about the feedback, their areas of strengths and limitations, the reasons for the feedback, and the outcome of the feedback.

7. Discuss the next steps with respect to the purpose of the assessment. For example, if the purpose of the assessment was High Potential Identification and Development, the next steps would be to chart out an Individual Development Plan and discuss the availability of aid and resources to work towards the feedback.

INTERPRETING RESPONSE AUDIT SCORES

INTERPRETING IMPRESSION MANAGEMENT SCORES

To tackle the issue of socially desirable responses by assessment-takers, an Impression Management Scale was built into 27 Echo (for further details, refer to Chapter 03: Construction).

This scale assesses the extent to which an assessment-taker has presented a self-image that is markedly positive. The report of an individual reflects their Impression Management Score, which can range from 0 to 100%. Generally, impression management scores tend to be higher when the assessment is used for selection as opposed to development. Likewise, impression management efforts could be higher for dimensions that the assessment-taker assumes to have a negative impact on their personality profile.

A score of 80% and above on this scale is considered to be high. High scorers may have a desire to present an unrealistically positive image of themselves to others and tend to deny the presence of evident shortfalls.

Impression Management is different from self-deception in that it pertains to the *conscious* dissimulation of responses designed to create a favorable impression of oneself. In contrast, the term self-deception refers to any positively biased response that the assessment-taker actually believes to be true. Since impression management is conscious, it increases the possibility of the assessment-taker distorting the responses to the interview questions that follow as well.

It is imperative to consider the assessment-taker's motivation for responding in a socially desirable manner. Information elicited using probing questions can prove useful in such situations.

INTERPRETING RESPONSE CONSISTENCY SCORES

To tackle the issue of inconsistent responses by assessment-takers, a Response Consistency Scale was built into 27 Echo (for further details about the calculation of Response Consistency Scores, refer to Chapter 03: Construction).

This scale assesses the extent to which an assessment-taker has responded without giving due consideration to the items. The report of an individual reflects their Response Consistency Score, which can range from 0 to 100%. The Response Consistency Score should be utilized to give context to the dimension and cluster scores. Extremely High (above 90%) and Extremely Low (below 10%) Response Consistency Scores indicate that the dimension and cluster scores should be interpreted with caution.

Extremely Low (Below 10%) Response Consistency Scores can be indicative of inconsistent response patterns which could be due to a lack of motivation, lack of self-awareness, or lack of understanding of the instructions or the items. The assessment-taker's responses can be examined in detail to uncover any particular response pattern. For example, Figure 11.1 illustrates a response pattern that can result in low response consistency scores. In such a scenario, it would be beneficial to ask probing questions to understand the motivation of the assessment-taker while responding to 27 Echo.

The probing questions can take the following form:

- *How was your experience of completing the assessment?*
  - to explore the motivation of the test-taker

- *Were there any parts that you wanted more clarification on?*
  - to explore gaps in understanding of the items or the instruction
- *How long did it take you to complete the assessment?*
  - to explore the motivation of the test-taker, gaps in understanding, or other environmental distractions if the time to complete was unusually long.

Figure 11.1: *An illustration of a Response Pattern that can result in a Low Response Consistency Score*

ITEMS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Item 1	Selected			
Item 2		Selected		
Item 3			Selected	
Item 4				Selected

Extremely High (Above 90%) Response Consistency Scores can be a result of the assessment-taker consistently selecting the extreme response options. The assessment-taker's response pattern can be examined in detail to uncover any *response acquiescence* (the tendency to endorse all given statements on the scale in a similar manner). Figures 11.2 and 11.3 provide an example of a response pattern where the assessment-taker has only selected the extreme options.

In such scenarios, the feedback discussion should focus on behavioral examples from the assessment-takers' experiences that can provide corroborative evidence for extremely high or extremely low scores in all dimensions. However, if the feedback discussion does not provide corroborative evidence, the motivation of the assessment-taker while responding to 27 Echo should be the focus of the subsequent discussion.

Figure 11.2: *An Illustration of a Response Pattern where the Assessment-Taker has only Selected the Extreme Options*

ITEMS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Item 1	Selected			
Item 2	Selected			
Item 3	Selected			
Item 4	Selected			

Figure 11.3: *An Illustration of a Response Pattern where the Assessment-Taker has only Selected the Extreme Options*

ITEMS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Item 1				Selected
Item 2				Selected
Item 3				Selected
Item 4				Selected

INTERPRETING CLUSTER SCORES

When interpreting the assessment-taker's 27 Echo report, the scores on the four clusters can be utilized to arrive at a broad view of the assessment-taker's personality profile. The four clusters cover four distinct areas that are relevant when assessing an individual's personality in the context of work.

The scores on the cluster STRUCTURE provide an overview of the assessment taker's approach to tasks, processes, and rules at their workplace. The scores on INFLUENCE provide useful information about how an individual relates to their co-workers and stakeholders. The cluster AGILITY highlights the extent to which the assessment-taker is inclined towards adapting, innovating, and keeping up with the fast-changing business landscape.

The cluster DYNAMISM provides an overview of the test taker's drive to take control, be decisive, and have a future-focused outlook.

At this stage of the Feedback discussion, it can be beneficial to ask the assessment-taker about the extent to which they agree with the result of the assessment. During the discussion, if there is a cluster where the assessment-taker's view of themself does not align with their score, that cluster should be highlighted for a deeper analysis of the underlying dimensions.

INTERPRETING SCORE DESCRIPTORS

The sten scores on each dimension are associated with a narrative description of what the score means for the assessment-taker. The following guidelines help clarify the language of the score descriptors and how they should be interpreted.

A descriptor that reads "Extremely Inclined", "Much more/More than most people", and "Consistently/Frequently" should be interpreted as a relatively high score as compared to the reference group* on that dimension and can be interpreted as the ***assessment-taker's strength areas.***

A descriptor that reads "Somewhat Inclined", "As much as most people", and "Occasionally/at times" should be interpreted as a relatively average score as compared to the reference group on that dimension.

A descriptor that reads "Less Inclined/Displays minimal inclination", "Much less/Less than most people", and "Somewhat likely/Rarely likely" should be interpreted as a relatively low score as compared to the reference group on that dimension and can be interpreted as the ***assessment-taker's limitations.***

**Norm Group and Reference Group have been used interchangeably across this guide.*

INTERPRETING DIMENSION SCORES

When interpreting the 27 Echo report, it is imperative to read the scores in the context of the role of the candidate, the organizational culture, and the purpose of the assessment. To illustrate how the interpretation of the 27 Echo report varies according to the assessment objective, two common applications of the assessment have been discussed below.

HIRING AND SELECTION

Although it is not advised to use a personality test as the sole basis for selection decisions, the scores on relevant personality dimensions along with scores on other cognitive ability and aptitude tests can be utilized in tandem to enhance the accuracy of selection decisions. When 27 Echo is administered for selection purposes, the report is utilized to gauge ***the fitment of the candidate to the role under consideration and the organization's culture.*** Therefore, *the* feedback process should ideally focus on only those dimensions that are relevant to the role and the organizational culture.

For instance, while being 'Inventive' is a largely desirable quality that reflects one's ingenuity, creativity, and innovation, a role that is administration-focused may not emphasize it as a crucial dimension. On the other hand, a role that is heavy on strategizing and creative problem-solving may consider the dimension 'Inventive' as critical for success in the role.

In the context of using 27 Echo for selection, scoring high on some dimensions becomes an essential part of the selection process, which can be used for screening a large number of candidates. For instance, candidates being considered for the role of sales executive can be screened according to the scores on the dimension 'Sociable' or 'Persuasive'. After narrowing down the candidate pool, exploring other dimensions, and keeping the role and organization's culture in mind, can aid in final selections.

With reference to the dimensions relevant to the role and the organizational culture, it is important to examine the strengths as well as the limitations of the candidate. The interview questions that are provided in the hiring report can then be utilized for Behavioral Event Interviews.

The candidate's strengths in relation to the role as highlighted in the 27 Echo report can be verified and the impact of their limitations on performance can be examined.

For instance, if the candidate is being interviewed for the role of sales executive, the dimensions that are integral to successful performance in this role need to be the center of feedback discussions. Furthermore, it is important to identify some of the dimensions from the aforementioned list that the candidate has scored high on. These dimensions could be their strength, however, such a conclusion should only be made by eliciting corroborative accounts from the selection interview. Jombay provides a list of interview questions in the 'Hiring Report' to facilitate the interview.

It is also important to identify low-scoring dimensions from the list of dimensions that are considered integral to the role or the culture. These dimensions can be the candidate's limitations, however, such a conclusion should only be made by eliciting corroborative accounts from the selection interview. The Interview questions provided in the Hiring Report can be utilized to clarify the impact of the candidate's limitations on performance and make an informed selection decision.

SELF-AWARENESS AND DEVELOPMENT

When 27 Echo is used as a self-reflection tool, it is important to have detailed feedback on the assessment-taker's standing on all the 27 dimensions of the Assessment.

While providing feedback in the development context, identifying and discussing the assessment taker's areas of strength is the first step. Discussion of their areas of strength should include:

- How the assessment-taker can capitalize on these strengths (e.g., taking up more responsibilities that align with their strengths).
- How the assessment-taker can avoid the potential pitfalls associated with extremely high scores in their areas of strength (e.g., Exploring the unwanted consequences of extremely high risk-taking).

This should be followed by identifying and discussing the possible limitations and areas of development for the assessment-taker. Discussion of their areas of limitation should include:

- Whether these areas of limitations should be, and realistically can be, developed or simply managed. For dimensions that are not very critical for success in the current role, the discussion should focus on managing these limitations (e.g., by taking up different responsibilities).
- After determining the dimensions that are critical for success and outlining the gap between the current and the expected level on the dimension, a development plan can be charted with the help of their managers.
- The assessment-taker can choose to utilize the development tips in the Development Report to take ownership of enhancing their strength in areas that could influence their core personal objectives (e.g., receiving a promotion).

INTERPRETING DISCREPANCIES

A deeper dive into the dimension scores helps in moving away from the broad view of an individual's personality and delving deeper into the contextual interpretation of how their personality translates to behaviors at the workplace.

Assessment-takers can score low on some dimensions while scoring relatively higher on the other dimensions within the same cluster. A deeper dive into how each dimension relates to the other can facilitate a nuanced interpretation of the report. For example, an assessment-taker can get a sten score of 5 on the cluster 'DYNAMISM'. However, on further inspection of the dimension scores, they can get a sten score of 4 on the dimension 'Factual' while getting a sten score of 7 on 'Decisive' and 'Foresight'. To interpret this pattern of scores, the debriefer should probe into behavioral manifestations of the dimension 'Decisive' or 'Foresight'. Such a discussion may reveal that the assessment-taker, though very decisive and far-sighted, tends to rely less than most people, on relevant factual data to inform their decisions or plans. Such a conclusion can be drawn only after garnering corroborative evidence from the responses to probing questions during the feedback discussion. It is also important to explore the impact this may have on current performance and if this can be an area of development.
Furthermore, a discrepancy can arise when the feedback discussion highlights certain dimensions where the assessment-taker's view of themself does not align with their scores on 27 Echo.

Probing questions can be utilized at this stage to uncover any contextual information that may provide further insight into the discrepancy.

Probing Questions can be utilized to:

- Ask for examples of when they've demonstrated a behavior relating to the dimension.
- Estimate the frequency of displaying the same or similar behaviors underlying the dimension, at work.
- Explore whether they have the motive to demonstrate behavior underlying a dimension but are being constrained due to extraneous factors.
- Explore whether they have the motive to demonstrate behavior underlying a dimension but lack the capability or the confidence to act on it.
- Explore the possibility of potential exaggeration or distortion in some dimensions.

INTERVIEW QUESTIONS

To cater to different use cases, Jombay provides its clients with two types of reports, consisting of different elements suiting the use cases. The first is a **Hiring Report** that provides the user with ***Interview Questions*** that can be used to probe further into the candidate's areas of strength or limitations that are relevant for success in the role under consideration. Table 11.1 presents the Interview Questions for all the 27 dimensions as they appear on the report.

Table 11.1: *The Interview Questions for all the 27 Dimensions as they appear on the Hiring Report*

DIMENSIONS	HIRING QUESTION
Analytical	What was one of the toughest problems you ever solved? What logic did you use to solve that problem? How did you analyze different options before reaching the solution?
Considerate	Tell me about the most difficult or uncooperative person you had to work with lately. What did you do or say to resolve the situation? What was the outcome?
Persuasive	Have you come across a situation, wherein there were conflicting views of two or more key stakeholders? How did you mediate/resolve it? What steps did you take to get the buy-in from all the stakeholders involved?
Sociable	What kind of work environment do you prefer?
Receptive	Give an example of a time when another person really tried your patience. Specifically, talk about a time when you were angry or frustrated. How did you deal with it?
Affiliative	Collaboration within the team is critical to a conducive working environment. Describe a scenario where you faced a challenge within your team regarding a collaborative team culture. What steps did you undertake to bring about a positive change in the situation?
Empowering	Describe a time when you or your team were demoralized for some reason. What did you do to raise everyone's spirits?
Inquisitive	Describe how you identify and pursue learning opportunities in new areas. Give an example of a situation when you used your new learning to get additional business/buy-in from stakeholders.
Adaptability	Give an example of a time when there was a department or organization-wide change and how it impacted your work/role. How did you adapt to this change?
Conforming	Share an incident where you had to break a rule. If the situation repeats itself, what would you do? Do you think it's important to adhere to rules and regulations? Why?
Factual	While taking decisions, do you solely rely on facts and figures readily available? What do you think is the role of intuition when it comes to decision-making?
Organized	In the face of numerous commitments that require simultaneous attention, how do you organize your tasks? How do you plan your day? How do you deal with multiple responsibilities?
Striving	Describe a situation where you had to reach stretched targets. What approach did you employ to accomplish these targets?
Methodical	Would you work spontaneously or make a plan of set procedures to reach a goal? Why? Can you give an example of when you had to accomplish a task, what process did you use in that situation?
Vigorous	Describe a situation where you had to deal with multiple tasks simultaneously, how did you deal with the situation? Do you enjoy multitasking or would you rather focus on completing one task at a time?

Decisive	Describe a situation when you had to decide between multiple prospects. What was your decision-making process like? Do you think deciding on one option from multiple alternatives is a time-consuming process?
Foresight	Describe the most complex problem you've recently been asked to solve. What, if any, alternatives did you consider?
Conceptual	Describe a situation where you had to work with abstract concepts. What challenges did you face? Were you able to form connections between seemingly unrelated ideas? Please share your experience.
Enterprising	Can you describe a situation where you took a risk by implementing a new idea in order to solve a problem?
Initiative	Describe a situation in which you recognized a potential problem as an opportunity. What did you do? What was the result?
Inventive	Can you describe a situation where your idea/creative inputs helped your organization create a new product or improve upon existing products/ strategies?
Composed	How do you feel when you are placed in a challenging situation? Can you give an example of a time you had to deal with a demanding situation while maintaining your composure? How did you navigate this situation?
Assertive	Do you tend to speak up in situations where you have a differing opinion from the majority? How do you communicate in such a situation? Do you face any challenges in getting your point across?
Meticulous	Give an example of a scenario where you had to execute a task in a short timeline. How did you ensure that you were not compromising on the quality of the output? Were you able to deliver the task as per recognized standards?
Achieving	Give an example of an important goal that you set in the past. Talk about your success in reaching it.
Assured	Do you feel confident while dealing with critical tasks? Can you describe a challenging situation that you overcame by leveraging your own capabilities?
Persistent	Give me an example of a time when something you tried to accomplish did not turn out according to plan. What did you do to recover from the setback?

DEVELOPMENT TIPS

While a Hiring Report would provide Interview Questions, a **Development Report** consists of ***Development Tips*** that provide the users with cues to develop on dimensions that are critical to their professional growth. With the development guide on this report, the assessment-taker can take ownership of their own professional development. Table 11.2 presents the Development Tips for all the 27 dimensions as they appear in the report.

Table 11.2: *Development Tips for all the 27 Dimensions as they appear on the Development Report*

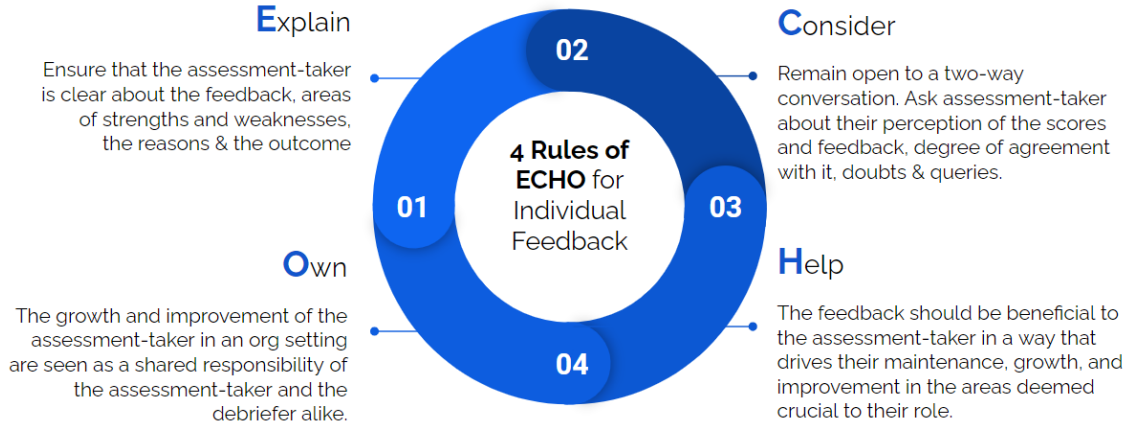
DIMENSIONS	DEVELOPMENT TIP
Conforming	Pick battles wisely. When challenging rules and regulations attempt to be selective of the problems, arguments, and confrontations. A deeper understanding of the purpose behind a policy or guideline can help in getting on board with it. A disposition that tends to question and challenge rules and regulations can be leveraged if a funnel approach is applied to the process.
Factual	It is important to understand the distinction between correlation and causation to make data-driven decisions. "The five whys," which forces an individual to make sure they have gotten to the root cause, and fishbone diagrams, which graphically represent multiple causes, are the best-known methods.
Organized	Assign all the tasks at a priority level at the beginning of each day. Set a priority level of 'Red' for all those things that one absolutely must do, 'Amber' for those things that one should do, and 'Green' for those things that could wait until tomorrow. Almost everything that one plans to do will take more time than anticipated. Always allow extra contingency time, perhaps as much as 30%.
Striving	Apply the Pareto Principle in daily tasks. 20% of the key tasks take up around 80% of the total execution time. Review typical daily tasks. Identify which are the most important. Apply the 80-20 rule and figure out if the most important tasks take up a majority of the time.
Methodical	Think of 2 upcoming projects. Create a rough execution plan, and introspect on questions like, "What are the guidelines and processes I need to follow? How much time should I dedicate to these? What are the consequences of not following them? How do I ensure that guidelines are adhered to?" Modify the execution plan accordingly.
Vigorous	Develop the capacity for multi-tasking as a way to get more done in less time. Choose tasks that are routine, familiar, or easy to multitask. Eliminate unnecessary tasks, work on one thing at a time, but alternate. Start longer or more involved tasks first. Fill in the gaps with shorter, well-defined, or self-contained tasks. Think about whether there are other resources to manage and distribute, other than your time and attention.
Decisive	Any hesitation in making quick decisions is worth reflecting on "why is it this way" and whether a change in approach is needed. Often, people refrain from being decisive because they want to reduce risk and be fairly certain as to what the outcome will be. This strategy is effective if unlimited time is available, but it can sometimes lead to a situation getting steadily worse. If there is a need to be timelier in arriving at decisions, start small with some relatively insignificant decisions, and put more trust in instincts and intuition.
Foresight	Practice big-picture thinking by finding out how one's role and actions impact the overall organization. Study the organization's vision and mission statement. List down three things that can be done daily that will enable the organization to achieve this vision and mission. In the next team meeting, ask, "Why we are doing this, and how does it align with the grand scheme of things?" Hear from each of the team members and work to better align them with the organization's mission.
Conceptual	Investigate key conceptual models and theories that relate to one's concerned business area. For each model or theory, think about how this could be applied to a practical situation. Consider whether the model or theory elicits any new insights or perspectives on the situation.

Analytical	Use the "What If" scenario-building technique to come up with multiple perspectives on tough problems. It is a cost-benefit analysis that explains how the future will unfold between alternatives of "doing nothing" Vs. "solving it". Visualize a scenario where one "does nothing". If the problems get out of hand, what would be the repercussions? If one engages in "solving the problem", what would be the outcome and impact?
Considerate	If someone is expressing challenging opinions that one may not agree with, refrain from ignoring the person's comments or becoming entrenched in one's position. Actively listen to what they say, demonstrate a coherent understanding of what they have said, and attempt to respond logically.
Persuasive	Adapt influencing strategies to the audience. Different people will be open to different approaches. For example, certain people may be more convinced by compelling or emotive language, while others may be more persuaded by hard facts. Think about what has worked in the past with the same individual or group. Use the identified influencing strategies that will be most effective with that audience. Consider what the unique selling point of the idea/issue is for each person, according to their priorities.
Sociable	Strike a conversation with people one may not regularly interact with. Having a few icebreakers on hand can be a great way to boost confidence when approaching others. There's nothing like getting to know those around you to make yourself feel like a part of the community. For one, it gives a sense of belonging. It also allows one to turn acquaintances into long-term mutually beneficial connections.
Receptive	In the next few conversations, actively listen without interrupting others. Don't make assumptions or judgments, but understand the complete story to respond better. Listening to understand and not respond is key to developing a receptive disposition. Consistently practice empathy: When dealing with someone facing a problem, work on putting yourself in their shoes, and view the world from their perspective.
Affiliative	Make opportunities for constructive team interaction by bringing colleagues together and fostering active sharing of information, particularly across functional boundaries. Schedule regular updates on key activities. Brief others on key developments and other relevant information.
Empowering	Empower others by highlighting their strengths and reminding them of their capabilities. Over the next 2 weeks, converse with team members about how their skills, talents, and abilities help the team. By doing this, the team members will be reminded of their value and capability.
Inquisitive	Keep an eye out for learning opportunities that relate to personal development goals. Make time to attend seminars, training courses, and professional conferences on personal areas of interest in order to build knowledge and skills. Identify people that one can learn from. It can be helpful to monitor one's progress against the personal development goals set. Strive to set new goals once the earlier ones are achieved.
Adaptability	often stems from change. Therefore, one can to some extent prepare for it by keeping informed about what is happening within the organization, and the wider market in which it operates. It can sometimes be difficult to let go of a tried and tested approach. However, recognize that it may no longer be the most appropriate for the current situation.
Enterprising	Embrace unconventional thinking and out-of-the-box solutioning. Avoid letting naysayers interrupt and intervene in the journey. Know that risk-taking can be rewarding, but taking informed risks involves an in-depth analysis of information. The execution of the risk is merely the tip of the iceberg. Ensure that all the data is gathered before sudden, knee-jerk risks are taken.

Initiative	Consider ways to work proactively rather than reactively. Look for new ways to contribute to the success of the organization as a whole. Introspecting whether there are things that require improvement and how these can be implemented can help develop the initiative. Put suggestions forward to see if others are in agreement.
Inventive	Challenge accepted wisdom. If a problem requires a creative solution, try to remove any constraints to the process of thinking. This means being willing to question why things are done the way they are, identifying any assumptions that have been made, and challenging them.
Composed	Make a list of the situations that may appear as stressful. Are there any common themes developing? Look at each item on the list, and introspect: "Is this thing really worth getting so anxious about?" When things seem unachievable, ponder over: "What is one thing I know I can accomplish today that will help me move in the direction I want to go in?"
Assertive	Assess the degree of assertiveness deployed. Attempt to gauge if the style of asserting oneself is effective. Over the next couple of occasions, with every situation that requires communication, ask, "What do I want from this situation?" and afterward evaluate if it worked. Make changes and adjustments to the style accordingly.
Meticulous	Make a checklist for common or serious errors. Work systematically through this list when proofing work. When checking work, try using a double-proof strategy. The first check conducted should verify the content of the document; while the second check should oversee peripheral aspects such as spelling, grammar, figures, and charts. Develop and document quality standards where appropriate. This will help to ensure a common standard that everyone can apply.
Achieving	Focus on 2 quality metrics: Quality captures and Quality escapes. Quality captures are mistakes that were internally "captured" by the team such that stakeholders or clients were never aware of them. Quality escapes include issues that "escaped" the team's operation and were discovered by the stakeholder or client. These escaped quality defects are damaging and critical. Determine which bucket each issue falls into. Measuring and classifying these mistakes transparently will bring the team's attention to them. Discuss ways of managing and eliminating them.
Assured	Emphasize on strengths. Recognize personal skills, accomplishments, and key contributions. Celebrate successes and set up rewards for the effort that has gone into the work as well as for the results. Explore strengths and weaknesses. Introspect on questions such as, "How do I act in certain situations?" Seek feedback from trustworthy sources. It may be daunting at first to accept the feedback, especially if it is negative. Reflect on the feedback to enhance self-awareness and identify areas of development.
Persistent	No challenging task will ever go totally according to plan, so be prepared for setbacks. Include contingency plans for things that could go wrong. Rough situations can increase stress and cause frustration. Keep things in perspective and don't lose sight of the bigger picture. Accepting help and support from those who care and listen will help develop greater resilience.

GUIDELINES FOR DEBRIEFING THE REPORT

We encourage the feedback provider/debriefer to keep in mind the four rules of ECHO when providing individual feedback:



E: Explain

Explain the theoretical framework of 27 Echo, the definitions of the clusters and the dimensions, the context of the assessment, the behavioral manifestations of the scores on each dimension, and the implications of those scores. Explain how the scores are calculated with reference to a representative norm group, briefly describe the characteristics of the norm group and clarify the implications of the same.

C: Consider

The feedback provider should remain open to a two-way conversation by involving the assessment-taker in the feedback process. Ask the assessment-taker about their perception of the scores and feedback, their degree of agreement with it, their doubts and queries concerning the feedback, and their objections, if any. Ask open questions, ask probing questions, avoid closed, hypothetical, and multiple questions. Be sensitive, attentive, open, and composed in case of disagreements.

H: Help

The feedback should be beneficial to the assessment-taker in a way that drives development in the areas deemed crucial to their role. In line with this, the feedback provider should help the assessment-taker chart out a plan outlining the next steps and ensure their adherence to it. They should remain open to discussion and follow-up about the next steps after the feedback has been administered.

O: Own

Towards the end of the session, allow the assessment-taker to summarize their own observations and key takeaways based on their report. Open the discussion for queries, doubts, requests, and suggestions. Ensure that the assessment-taker is clear about the feedback, their areas of strengths and opportunities for development, and the outcome of the feedback. While the feedback provider/debriefer owns the process of delivering feedback and driving the conversation toward tangible plans for the next steps, it is also to be made explicit that the assessment-taker should ultimately take ownership of the feedback, designing their growth plan, adhering to it, and monitoring the progress.

27ECHO

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27ECHO

13/APPENDIX AND MATRICES

APPENDIX A - RESPONSE FORMAT

NORMATIVE V/S IPSATIVE RATING SCALES

Rating Scales are the objective response options on which assessment-takers have their attitudes, beliefs, and perceptions recorded on each item. Rating scales are commonly used in psychometric assessments for extracting the underlying characteristic out of an item beyond what would be obtained from a mere "yes/no", "right/wrong" or other dichotomies (Linacre, 2002). Different types of rating scales are used for different purposes (Hicks, 1970). Based on their function, the scoring logic for scales can differ too. The two most prevalent scoring scales used in psychometric assessments are Normative and Ipsative scoring (Boverman, 1962).

Normative scales provide assessment-takers with a statement and several options indicating progressive degrees of agreement with the statement. They allow assessment-takers to quantify their attitudes and perceptions related to the statements. Normative scales produce straightforward data that is a sum of scores on the items belonging to the same dimension. However, complexities are introduced with the inclusion of reverse-scored items on the assessment to reduce the desirability of the items (Kendall & Sheldrick, 2000).

Normative scores allow for inter-individual comparisons, i.e. comparison with a norm group since scores of similar items can be combined into a global score pertaining to a dimension. These obtained scores can then be utilized to statistically determine the mean and standard deviation of each dimension so that standardized norms can be established (Kendall & Sheldrick, 2000).

Ipsative scoring, on the other hand, leverages the forced-choice format. Here, the response options are framed to be equally desirable and the assessment-taker is expected to choose the option that is most appropriate, true, or relevant to them, and the option that is the least appropriate, true, or relevant to them.

Typically, in an ipsative scale, each option is tagged to a separate dimension, and selecting an option would indicate the display of the corresponding personality characteristic. Hence, the scoring on ipsative scales is not as straightforward as that on normative scales. Ipsative scales, however, are not ideal for making norm group comparisons (Baron, 1996). Ipsative scales enable intra-individual comparisons that are most suited for training and development use cases.

In the 27 Echo Personality Assessment, the normative scoring system has been used in order to align with the purpose of the development of the assessment.

LIKERT SCALE

Within normative scales, different forms of scoring scales are prevalent for use. At the simplest level, response options vary in the type of scale they follow, i.e., ordinal versus interval scales.

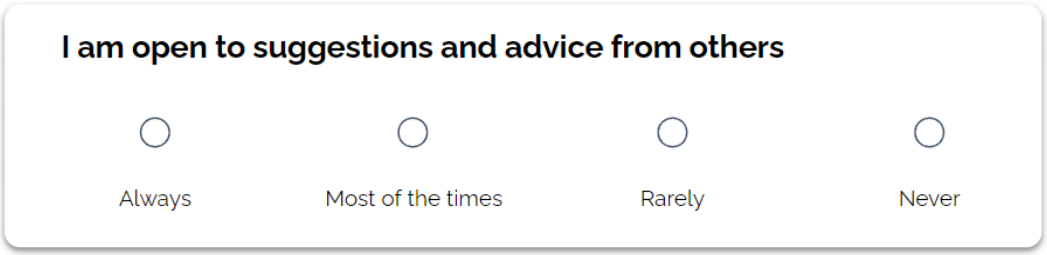
An ordinal scale is one in which the response options are labeled based on their relative difference from the other response options, but the magnitude of their differences is not known. An interval scale, on the other hand, contains response options that are at a determined interval from each other.

A Likert scale is a psychometric scale that assumes behaviors and attitudes can be rated along a linear scoring scale. Typically, a Likert scale follows an odd-pointer, for example, a five or seven-pointer scale (Joshi et al., 2015). However, research over the years indicates that odd-numbered rating scales are more prone to central tendency bias than even-numbered rating scales (Albaum, 1997).

27 Echo consists of 111 item statements, to which one responds on a 4-point Likert Scale. In order to reduce the desirability of items, some items are reverse-scored, such that the highest score on that item would indicate a limited display of that dimension in the individual.

The response options are based on 3 distinct scales, namely:

ALWAYS- NEVER:

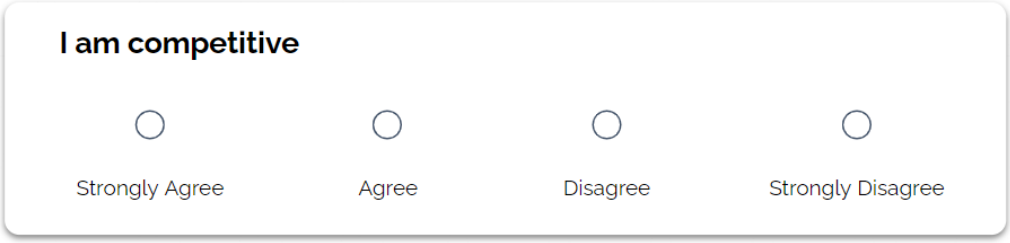


This is a **Frequency Likert Scale** used to report the prevalence of the event occurring for the individual, or the individual's perception of an event's prevalence. For example, "I enjoy researching theories that can be applied to my work" and "I like collaborating with others to accomplish tasks."

Never	Rarely	Most of the time	Always
0	1	2	3

Never	Rarely	Most of the time	Always
3	2	1	0

AGREE- DISAGREE:

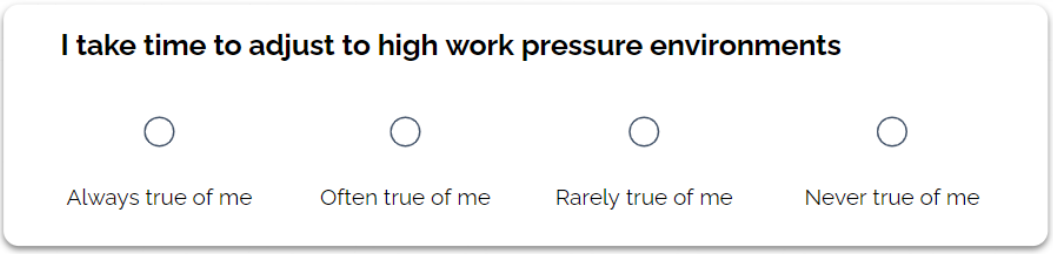


This is an **Agreement Likert Scale** used to report one's degree of concurrence towards a statement. For example, *"My opinions do not always make people change their decisions."* and *"It does not make sense to learn something new that cannot be put to use immediately."*

Strongly Disagree	Disagree	Agree	Strongly Agree
0	1	2	3

Strongly Disagree	Disagree	Agree	Strongly Agree
3	2	1	0

ALWAYS TRUE OF ME - NEVER TRUE OF ME:



This is a **Reflection Likert Scale** used to report one's perception of the extent to which a statement reflects their attitudes, beliefs, and actions. For example, *"I am usually calm in the face of uncertainty."* and *"I like to go about my tasks in a structured manner."*

Never true of me	Rarely true of me	Often true of me	Always true of me
0	1	2	3

Never true of me	Rarely true of me	Often true of me	Always true of me
3	2	1	0

SELF-REPORT

Conventionally, the onus of assessment and feedback lies with entities beyond the individuals themselves. Now, with the advent of a humanistic, self-driven approach to personal growth and development, organizations are choosing to make the assessment journey an engaging and informative affair for the employee, who can own their progress. In line with this, Jombay offers an introspective experience to the assessment-takers by deploying a self-report measure. An individual is best known to self, and leveraging on this, Jombay aims to hand the onus of growth back to the individual.

A self-report is any test, measure, or survey that relies on an individual's own report of their personality. One of the primary advantages of self-report data is that it can be easy to obtain. It can be performed relatively quickly and yet provide accurate results. Self-reports can be made private and can be anonymized to protect sensitive information and promote authentic responses.

When taking self-report assessments, assessment-takers are often either consciously or unconsciously influenced by "social desirability." While constructing the 27 Echo, Jombay paid attention to wording the items in a manner that elicits less desirable responses. Preventive measures such as depersonalizing the items, incorporating reverse-scored items, using frequency scales for scoring, using phrases in the items, etc were used. Moreover, most experts in psychological assessment suggest that self-report data should be interpreted with other information to be able to extract a more global and accurate picture of the assessment-taker's personality (refer to Chapter 03: Construction).

APPENDIX B:

Mapping of the 54 dimensions emerging from primary studies with the prominent personality, emotional intelligence, and organizational behavior theories.

	16PF	THE BIG 5 MODEL	EMOTIONAL INTELLIGENCE THEORY	ORGANIZATIONAL CITIZENSHIP BEHAVIOR THEORY
Adaptability	★	★		
Agreeableness	★			
Assertiveness	★			
Compliance	★			
Considerateness	★			
Customer Service Orientation				
Delegation				
Bias for Action	★			★
Digital Dexterity				
Resilience	★		★	
Managing Ambiguity	★			
Growth Mindset	★			
Cultivating Partnerships	★	★		
Openness to Ideas	★	★		
Agility		★		
Big Picture Thinking				
Collaborative Learning				★
Emotional Control			★	
Desire for Perfection	★		★	
Helpfulness				★
Dependability			★	
Humility				★
Guilt Consciousness			★	★
Monotony Tolerance		★		
Initiative	★			

Curiosity	★	★		
Empathy	★	★	★	★
Frugal Mindset				
Impactful Communication	★	★		
Developing Self	★		★	
Decision Making	★			
Balancing Biases				
People Understanding	★	★		
Mentoring				★
Process Orientation	★			
Networking	★	★		
Planning and Prioritization	★	★		
Self Awareness	★		★	
Result Orientation	★	★		
Stress Tolerance	★	★	★	
Data Mindset				
Risk Taking	★	★		
Pragmatic Orientation	★			
Innovation	★	★		
Target Orientation		★		
Problem Solving				
Social Intent	★			★
Team Player	★	★		
Persistence				
Practical	★	★		
Responsibility of Outcomes	★			
Multitasking	★	★		
Contingency Management				
Remote Leadership	★	★	★	★

APPENDIX C : DIMENSION INTERCORRELATIONS

	Assured	Inventive	Meticulous	Persistent	Inquisitive	Composed	Adaptability
Assured	1	.44	.44	.51	.50	.48	.48
Inventive	.44	1	.51	.37	.31	.44	.21
Meticulous	.44	.51	1	.47	.35	.41	.20
Persistent	.51	.37	.47	1	.53	.52	.31
Inquisitive	.50	.31	.35	.53	1	.48	.36
Composed	.48	.44	.41	.52	.48	1	.37
Adaptability	.48	.21	.20	.31	.36	.37	1
Affiliative	.24	- .09	.09	.16	.15	.06	.11
Considerate	.11	- .01	.16	.02	.08	.16	.07
Assertive	.04	- .32	.04	-.11	-.06	-.05	.19
Receptive	.03	.02	.02	-.05	-.06	.15	.16
Persuasive	-.03	.02	.12	-.10	.01	.06	.14
Empowering	- .05	- .06	.13	-.11	-.12	-.08	.07
Sociable	-.17	-.18	-.12	-.21	-.05	-.19	-.08
Initiative	.02	- .15	-.01	-.13	-.04	-.04	-.03
Foresight	.10	.10	.10	.06	.03	.17	.17
Enterprising	.40	.52	.33	.53	.53	.38	.20
Decisive	-.18	.05	.05	.08	-.01	-.09	.09
Vigorous	.09	.17	.22	.17	.07	.21	-.07
Factual	.02	.12	.19	.12	.04	.09	.06
Achieving	.01	.05	.17	.03	.10	.07	-.05
Conforming	-.12	- .13	.05	-.17	-.06	-.12	-.11
Organized	.06	- .02	.11	-.04	.04	-.01	-.06
Analytical	-.15	- .08	-.07	-.28	-.18	-.05	-.08
Striving	.07	.01	.10	-.03	.05	-.01	.03
Methodical	- .19	- .32	-.04	-.18	-.04	-.13	-.05
Conceptual	.01	- .09	.03	0	-.04	.02	.22

Note: *Any r > .29 between dimensions within the same cluster are highlighted in red and between dimensions that are not within the same clusters are highlighted in blue. All highlighted correlations are significant at 0.05 level.*

	Affiliative	Considerate	Assertive	Receptive	Persuasive	Empowering	Sociable
Assured	.24	.11	.04	.03	-.03	- .05	-.17
Inventive	- .09	- .01	- .32	.02	.02	- .06	-.18
Meticulous	.09	.16	.04	.02	.12	.13	-.12
Persistent	.16	.02	-.11	-.05	-.10	-.11	-.21
Inquisitive	.15	.08	-.06	-.06	.01	-.12	-.05
Composed	.06	.16	-.05	.15	.06	-.08	-.19
Adaptability	.11	.07	.19	.16	.14	.07	-.08
Affiliative	1	.41	.34	.26	.29	.06	.03
Considerate	.41	1	.26	.30	.44	.10	-.12
Assertive	.34	.26	1	.35	.39	.07	-.07
Receptive	.26	.30	.35	1	.54	.08	-.09
Persuasive	.29	.44	.39	.54	1	.17	-.13
Empowering	.06	.10	.07	.08	.17	1	.26
Sociable	.03	-.12	-.07	-.09	-.13	.26	1
Initiative	.34	.32	.28	.06	.27	0	.01
Foresight	.33	.52	.30	.32	.45	.09	-.15
Enterprising	.02	-.15	-.18	-.10	-.12	-.16	-.10
Decisive	.19	.20	.30	.30	.41	-.09	-.12
Vigorous	.18	.16	.12	.30	.40	-.17	-.07
Factual	.15	.14	.16	.22	.25	.11	-.16
Achieving	.22	.23	.28	.28	.44	.11	-.15
Conforming	-.07	-.02	.13	0	.04	.46	.29
Organized	.19	.13	-.06	-.07	-.11	.34	.47
Analytical	.03	.04	.02	-.04	-.02	.44	.41
Striving	.14	.04	-.01	.1	.04	.21	.35
Methodical	-.05	0	-.07	-.20	-.10	.24	.19
Conceptual	.31	.43	.03	-.01	-.01	-.12	.03

Note: *Any r > .29 between dimensions within the same cluster are highlighted in red and between dimensions that are not within the same clusters are highlighted in blue. All highlighted correlations are significant at 0.05 level.*

	Initiative	Foresight	Enterprising	Decisive	Vigorous	Factual	Achieving
Assured	.02	.10	.40	-.18	.09	.02	.01
Inventive	- .15	.10	.52	.05	.17	.12	.05
Meticulous	-.01	.10	.33	.05	.22	.19	.17
Persistent	-.13	.06	.53	.08	.17	.12	.03
Inquisitive	-.04	.03	.53	-.01	.07	.04	.10
Composed	-.04	.17	.38	-.09	.21	.09	.07
Adaptability	-.03	.17	.20	.09	-.07	.06	-.05
Affiliative	.34	.33	.02	.19	.18	.15	.22
Considerate	.32	.52	-.15	.20	.16	.14	.23
Assertive	.28	.30	-.18	.30	.12	.16	.28
Receptive	.06	.32	-.10	.30	.30	.22	.28
Persuasive	.27	.45	-.12	.41	.40	.25	.44
Empowering	0	.09	-.16	-.09	-.17	.11	.11
Sociable	.01	-.15	-.10	-.12	-.07	-.16	-.15
Initiative	1	.30	.03	.17	.23	-.09	.23
Foresight	.30	1	.13	.34	.23	.20	.34
Enterprising	.03	.13	1	0	.07	.04	.07
Decisive	.17	.34	0	1	.29	.13	.31
Vigorous	.23	.23	.07	.29	1	0	.24
Factual	-.09	.20	.04	.13	0	1	.21
Achieving	.23	.34	.07	.31	.24	.21	1
Conforming	.05	.03	-.11	.05	-.07	0	.14
Organized	.05	-.08	-.17	-.14	-.05	-.10	.07
Analytical	.09	.02	-.17	-.15	-.26	.05	-.03
Striving	.13	-.07	.06	.08	-.06	.14	.12
Methodical	.02	-.09	-.20	-.07	-.08	-.07	.01
Conceptual	.04	.20	-.01	.24	-.01	.04	.04

Note: *Any r > .29 between dimensions within the same cluster are highlighted in red and between dimensions that are not within the same clusters are highlighted in blue. All highlighted correlations are significant at p < 0.05 level.*

	Conforming	Organized	Analytical	Striving	Methodical	Conceptual
Assured	-.12	.06	-.15	.07	- .19	.01
Inventive	- .13	- .02	- .08	.01	- .32	- .09
Meticulous	.05	.11	-.07	.10	-.04	.03
Persistent	-.17	-.04	-.28	-.03	-.18	0
Inquisitive	-.06	.04	-.18	.05	-.04	-.04
Composed	-.12	-.01	-.05	-.01	-.13	.02
Adaptability	-.11	-.06	-.08	.03	-.05	.22
Affiliative	-.07	.19	.03	.14	-.05	.31
Considerate	-.02	.13	.04	.04	0	.43
Assertive	.13	-.06	.02	-.01	-.07	.03
Receptive	0	-.07	-.04	.1	-.20	-.01
Persuasive	.04	-.11	-.02	.04	-.10	-.01
Empowering	.46	.34	.44	.21	.24	-.12
Sociable	.29	.47	.41	.35	.19	.03
Initiative	.05	.05	.09	.13	.02	.04
Foresight	.03	-.08	.02	-.07	-.09	.20
Enterprising	-.11	-.17	-.17	.06	-.20	-.01
Decisive	.05	-.14	-.15	.08	-.07	.22
Vigorous	-.07	-.05	-.26	-.06	-.08	.24
Factual	0	-.10	.05	.14	-.07	.25
Achieving	.14	.07	-.03	.12	.01	.04
Conforming	1	.35	.41	.32	.45	.04
Organized	.35	1	.35	.32	.39	-.11
Analytical	.41	.35	1	.36	.11	-.14
Striving	.32	.32	.36	1	.21	-.17
Methodical	.45	.39	.11	.21	1	.05
Conceptual	-.11	.03	-.17	-.12	-.02	1

Note: *Any r > .29 between dimensions within the same cluster are highlighted in red and between dimensions that are not within the same clusters are highlighted in blue. All highlighted correlations are significant at p < 0.05 level.*

