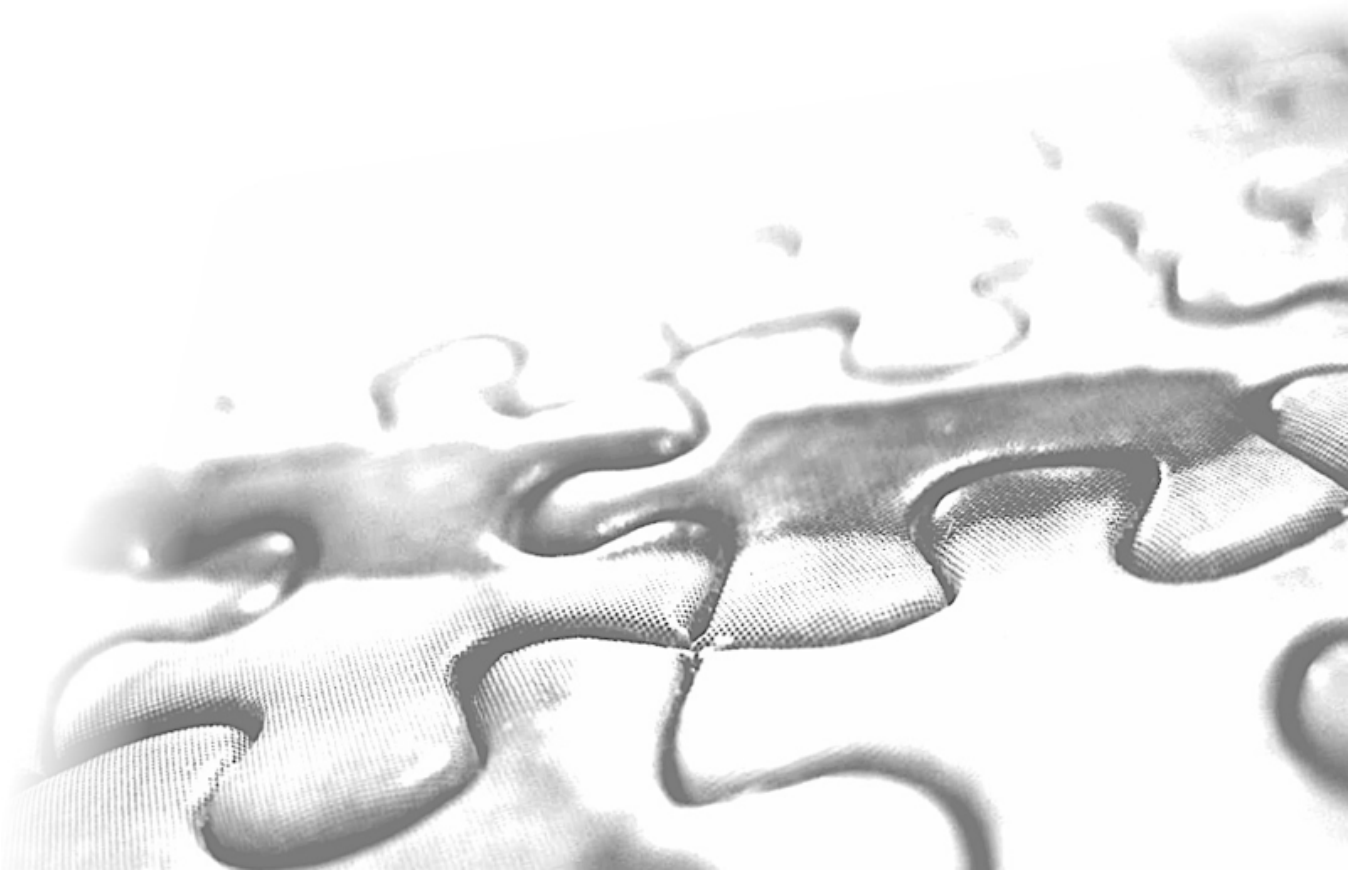
Genos Emotional Intelligence Inventory

Technical Manual (2nd Edition)

Gilles E. Gignac, Ph.D.



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About the Author

Dr. Gilles Gignac was awarded a PhD (2005) based on a comprehensive factorial analysis investigation of the Swinburne University Emotional Intelligence Test (SUEIT), the predecessor of the Genos EI Inventory (Genos EI). Dr. Gignac's PhD thesis supervisor was Prof. Constantine Stough, who was also supervising the PhD thesis of Dr. Benjamin Palmer at the same time. Dr. Gignac worked at Deakin University and the University of Western Australia as a lecturer, before taking up the role of Director of Research and Development at Genos in January of 2008. Dr. Gignac has published extensively upon the reliability and validity of a number of emotional intelligence measures, in addition to published work in the areas of intellectual intelligence, personality, and applied psychometric and statistical methodology.

Author's Preface to the First Edition

I first learned about emotional intelligence in any appreciable detail when I moved to Melbourne, Australia, to complete a PhD in the area of psychopharmacology and intellectual intelligence under the supervision of Prof. Con Stough at Swinburne University. Prof. Stough was also engaging in research in the area of emotional intelligence, at the time, mostly in collaboration with another PhD student, the now Dr. Ben Palmer. When I arrived in Melbourne, Ben and Con were sitting on a mountain of emotional intelligence data. After a few months, I offered to analyse their emotional intelligence data with a view to getting some publications. I can't say I had any particular interest in emotional intelligence. In fact, my initial reaction to the area of emotional intelligence was not at all positive, as I sided with other commentators that the construct was redundant with other well-known constructs such as intellectual intelligence and personality. The wild claims made by some of the more sensational champions of EI were also off-putting. I can't even say that when I completed my PhD thesis, which was based on a psychometric analysis of the Swinburne University Emotional Intelligence Test, that I had yet formulated an especially positive view of the construct's uniqueness in the area of psychology.

My view of EI changed more decidedly favourably when I started to reconsider my opinion of the supposedly well established constructs and measures with which EI measures have been argued to be redundant, namely comprehensive measures of personality and intellectual intelligence. Based on an thorough review of the literature, as well as several published analyses, I came to the view that popular measures of personality were excessively comprehensive (i.e., over-expansive), which resulted in the disconfirmation of personality models via confirmatory factor analysis, inconsistent or incoherent theoretical guidelines for

the inclusion or exclusion of dimensions within personality models, and, perhaps not coincidently, poor generation of theories to explain individual differences in behaviour. In contrast, EI models have been confirmed via CFA, can be associated with an internally coherent model, and, in my opinion, are more likely to generate theories of behaviour. For these reasons, as an individual differences researcher, I have accepted EI as useful construct in psychology. In particular, I have endorsed the Genos EI model and measure, as I believe it is the most coherent model currently articulated in the published literature, as it does not incorporate dimensions of behaviour that are not directly relevant to the identification, use, or management of emotions. For these reasons, I agreed to write the technical manual for the Genos EI Inventory.

Most psychological researchers and practitioners probably only ever read a technical manual when they have to (e.g., look for a reliability coefficient, learn how to score a subscale, etc.), rather than sit down and read it like they might read a book of non-fiction they purchased at a bookstore. I have no illusions that this technical manual will incite readers to cuddle up on the couch and read it on a slow Friday night. However, I have tried to write a technical manual that is relatively accessible to non-experts of statistics and psychometrics, so as to facilitate a potentially more coherent and meaningful experience for those individuals who choose to look through this document. To this effect, the types of reliability and validity analyses described in this manual are introduced in a relatively non-technical manner. Further, each section is summarized to facilitate an understanding of the principle points associated with the statistical analyses in more layperson terms. It is my hope that both sophisticated and non-sophisticated readers of the area of EI more generally, as well as both users and non-users of Genos EI specifically, derive benefits from the contents of this technical manual.

Finally, I would like to thank Ben Palmer and Richard Harmer for reading a previous draft of this manual. Many errors were uncovered in the process. No doubt, some remain for which I take responsibility.

Gilles E. Gignac

Author's Preface to the Second Edition

The second edition of the Genos EI technical manual represents a relatively minor change from the first edition. Overall, the technical manual consists of the same sections and much of the same content. The largest modifications include a description of the Inflation and Manipulation indices, which have replaced the impression management index, and the

inclusion of some additional validity research. Finally, the section relevant to the South African Genos EI data has been substantially revised.

Gilles E. Gignac

The outline of the technical manual

There are a total of nine chapters in this technical manual. The manual begins (Chapter 1: Introduction) with a general introduction to emotional intelligence, although a review of the EI construct and corresponding EI literature is not provided, as other published sources can be found for such purposes. Instead, the introduction focuses upon introducing the principle topic of this manual: Genos EI. Chapter 2 (Framework, Model and History) is a more theoretical discussion about the framework within which the Genos EI Inventory is embedded and the seven-factor model that it measures. Some history of the Genos EI inventory is also provided. Chapter 3 (Administering and Scoring) provides elements for consideration when determining whether Genos EI is appropriate for administration. Chapter 4 (Interpreting Genos EI Scores) includes a detailed discussion relevant to the interpretation of the Genos EI inventory scores. Chapter 5 (Normative Sample) describes in substantial detail the nature and descriptive statistical qualities associated with the Genos EI normative sample. Chapter 6 (Reliability) reports the internal consistency reliability and test-retest reliability associated with the Genos EI scale scores. Chapter 7 (Validity) reports an array of validity evidence in favour of the Genos EI Inventory scores. Chapter 8: (Nation Specific Norms and Analyses) provides norms and some basic psychometric support (i.e., reliability and factorial validity) for the use of the Genos EI Inventory in three countries: America, Asia, and South Africa. Chapter 9: (Concluding Comments) provides an overall summary of the technical manual and ends with a conclusion that the Genos EI Inventory provides scores that are both reliable and valid indicators of emotional intelligence. Finally, the 70 items within the Genos EI Inventory are listed in Appendix A. Appendix B includes a detailed discussion on the nature of the validity indices (Inconsistency, Inflation, and Deflation Indices), as well as some of their psychometric properties.

Foreword by Dr. Ben Palmer

Anyone who knows me personally knows that I am an emotional and passionate person, someone who is openly and outwardly moved by events I perceive as significant. I first sat down to read this technical manual on a Qantas flight from Sydney to New York and was

moved to tears from Dr. Gignac's preface. This was going to be an embarrassing flight I thought, given I'd only read the first few pages. I have immense respect for Dr. Gignac as a person and as someone I consider to be one of the best psychometricians in the business. It was very moving for me to have his endorsement of the assessment and to have him eloquently bring together the culmination of 10 years of research work. I thank him for the time and effort he has taken to bring this technical manual together the way he has, something we've been wanting for the assessment for a considerable period of time.

I'd also like to thank Prof. Con Stough for his guidance at the outset of our work on emotional intelligence. He laid the foundations for what has emerged, the rock upon which our approach to emotional intelligence has been built. I'd also like to thank all the wonderful people at Genos and those associated with us, people who give their all day-in-day-out to help make the application of our inventory a meaningful event in the lives of those who complete it. Finally I'd like to thank colleagues who have used the inventory in their research work and who have made their data and findings available for publication in this manual. At the time of printing, this manual contains the most up-to-date information on the psychometric reliability and validity of the Genos EI Inventory. It brings together a wide variety of studies performed by a vast number of people and we are immensely grateful for their efforts. I believe that it can be concluded from this manual that the Genos Emotional Intelligence Inventory is a robust and psychometrically reliable and valid assessment of what it purports to measure; that is, how often individuals are perceived to demonstrate emotionally intelligent workplace behaviour.

The Genos inventories are not perfect and like others never will be. Research with the inventory continues and this manual will need to be updated overtime. Indeed we have taken steps to further encourage independent research with the inventory and continue our own in the area. I hope you find this manual to be a valuable resource in your use of the Genos inventory and hope you find using the inventory a valuable and meaningful experience. Something I always like to remember in my own work with it is that no matter how psychometrically robust, the inventory is only ever the means to the end and not the end in it's self. Assessment administrators and those who debrief results are as you know, integral to providing those who take the inventory with a meaningful experience. On this note I wish you all the best with your own work in the area of emotional intelligence.

Benjamin R Palmer, Chief Executive Officer.

Chapter 1: Introduction

Although several putative measures of emotional intelligence (EI) have been published and marketed for use in workplace settings, few can be said to have been specifically designed to be used by human resource professionals, corporate coaches and industrial/organizational psychologists. The Genos Emotional Intelligence Inventory (Genos EI), in contrast, may be argued to be ideally suited for use in the workplace, as Genos EI and its corresponding support materials have all been created with workplace contexts and professionals in mind.

In general terms, EI may be defined as the ability to purposely adapt, shape, and select environments through the use of emotionally relevant processes (Gignac, 2010, p. 132). As described further in another chapter, Genos EI focuses upon the measurement of the frequency or typicality with which an individual may exhibit EI behaviours. The reason for this focus is due to the belief that organisations are more interested in how an individual typically behaves in the workplace, rather than a one-off demonstration of a maximum capacity.

It will be noted that the area of EI has attracted a non-negligible amount of criticism within academia, much of which may be regarded as a reaction to some of the scientifically unsupported, and arguably outlandish, claims made by several sensational champions of the EI concept. As with many contentious matters in life, the truth likely lies somewhere in between the two extreme schools of thought. That is, EI should not be viewed as capable of singly predicting success in the workplace or any other facet of life, for that matter. Conversely, EI is likely not a totally redundant or illogical construct. Instead, scores derived from a reliable and valid measure of EI may be considered useful in the assessment of an individual, in conjunction with additional sources of information (e.g., intellectual intelligence, employee-motivational fit, structured interviews, etc.). The central purpose of this technical manual is to describe the reliability and validity associated with the scores derivable from the Genos EI Inventory. Additionally, information relevant to the purpose, administration, and interpretation of the Genos EI Inventory scores is also provided.

Description of the Genos EI Inventory

The Genos EI self-report inventory consists of 70 items designed to measure the frequency with which an individual displays emotionally intelligent behaviours across seven dimensions.[1] The items are scored on a five-point Likert scale, from 'Almost Never' to 'Almost Always'. The English reading level of the items has been determined to be associated with a

[1] The Genos EI Selection inventory consists of an additional 12 items for the purposes of measuring socially desirable responding. Additionally, the Genos EI Selection inventory is scored on a 7-point Liker scale, with the extra two points corresponding to 'Never' and 'Always'.

grade level of 7.4, based on Flesch-Kincaid Grade Level analysis (Flesh, 1948). The normative sample consists of individuals ranging in age from 18 to 76. Thus, the Genos EI inventory is considered applicable to adults (18+) in the workplace. The inventory can produce an inconsistency index score, two socially desirable responding scores, a Total EI score, and seven subscale scores. The names of the seven EI subscales are:

1) Emotional Self-Awareness
2) Emotional Expression
3) Emotional Awareness of Others
4) Emotional Reasoning
5) Emotional Self-Management
6) Emotional Management of Others
7) Emotional Self-Control

In the absence of a very detailed knowledge of the statistical properties of the normative sample, raw scores derived from a psychometric inventory are difficult to interpret. Consequently, in professional scenarios (developmental, educational, recruitment, selection), the raw scores derived from the Genos EI subscales are transformed into percentile scores (or ranks) to facilitate interpretation. Percentile scores represent the percentage of respondents within the normative data base that scored lower than a particular raw score (Gregory, 2004). High Genos EI percentile scores represent individuals who engage in EI behaviours on a relatively frequent basis. In contrast, low Genos EI scores represent individuals who engage in emotionally intelligent behaviours relatively infrequently.

In research scenarios, Genos EI raw scores are analysed, as percentile scores have unattractive properties with respect to statistical analyses (Nunnally & Bernstein, 1994). The statistical analyses reported in this technical manual have all been based on the Genos EI raw scores.

Unique Elements of Genos EI

First and foremost, the Genos EI inventory was specifically designed to be implemented within workplace settings. Consequently, the items within the Genos EI inventory and the corresponding reports have all been designed to have workplace relevance. This not only helps with the 'face validity' of the inventory, it also helps with specifying a context for respondents to complete the inventory.

The Genos EI inventory may be argued to be more coherent than other self-described measures of EI. That is, only dimensions obviously associated with EI have been included within the Genos model of EI. In contrast, other measures may be said to incorporate dimensions of personality or common competencies (e.g., optimism and customer service). Consequently, the number of dimensions associated with the Genos EI inventory (i.e., seven) is somewhat smaller than other putative measures of EI.

It may also be argued that seven dimensions is close to ideally manageable for human resource professionals and general employees to digest when implementing strategies designed to enhance the EI of an organization's employees. Thus, in conjunction with the theoretical and empirical research presented below to support a seven-factor model of EI, there is also some practical benefits to including seven dimensions.

Additional sources of uniqueness include a workplace specific international normative data base, relative brevity (20 minutes to complete, on average), easy to use and informative reports based on percentile scores, reports which can be complimented by rater-reports (i.e., 360 feedback) and ideal EI profiles, as well as corresponding abridged versions of the full version (for research purposes), a model of EI that has been confirmed statistically, in conjunction with extensive reliability and validity (as reported in this technical manual).

Genos EI Related Products

Although the information provided in this technical manual is relevant specifically to the Genos EI self-report inventory, there are a number of support and ancillary products that may be of some relevance to the application of the Genos EI inventory in practice. A list and brief description of the Genos EI family of products is provided here:

Genos EI- Selection Standard Report

Standard candidate recommendation report, including:

- candidate Genos EI Self-Assessment Results, and
- candidate EI Impression Management Index.

Candidate's areas of relative EI strength and weakness are presented.

Genos EI Development Report

Individual assessment report based on an individual's self-only assessed Emotional Intelligence. For each of the seven skills of Emotional Intelligence, the report presents an individual's:

- assessment results according to a normative benchmark
- relative EI strengths
- relative EI development opportunities, and
- development strategies specifically targeted to address deficits in the individual's self-assessed EI.

The Genos EI Development Report is used for group debriefing of Genos EI assessment results.

Genos EI Assessment Report and Workbook

Individual assessment report based on an individual's self-only assessed Emotional Intelligence. For each of the seven skills of Emotional Intelligence, the report presents an individual's:

- assessment results according to a normative benchmark
- relative EI strengths, and
- relative EI development opportunities.

The associated Assessment Workbook presents targeted development strategies targeted to address deficiencies in the individual's self-assessed EI.

The Genos EI Assessment Report and Workbook is used for one-on-one debriefing of Genos EI assessment results.

Genos EI Multi-Rater (360-degree) Assessment Report and Workbook

Individual multi-rater (360-degree) assessment report based on an individual's self-other assessed Emotional Intelligence. For each of the seven skills of Emotional Intelligence, the report presents an individual's:

- assessment results according to a normative benchmark
- relative EI strengths
- relative EI development opportunities, and
- rater-specific assessment results.

The associated Assessment Workbook presents targeted development strategies targeted to address deficiencies in the individual's self-other assessed EI.

The Genos EI Assessment Report and Workbook is used for one-on-one debriefing of Genos EI assessment results.

Genos Emotionally Intelligent Leader Report

Multi-rater (360-degree) assessment report based on an individual's self-other assessed Emotional Intelligence that describes results in the context of leadership. For each of the seven skills of Emotional Intelligence, the report presents an individual's:

- assessment results according to a normative benchmark and how these results underpin effective leadership styles,
- items the individual was scored least frequently on to help guided development, and
- rater-specific assessment results and specific high and low items.

The report also discusses how the development of the seven skills helps leaders in the management of people and presents a smart goal template to aid the articulation of specific development activities. This report is designed specifically for use with middle to senior level leaders.

Genos EI Self-Assessment Group Report

Aggregated assessment report of a group's self-only assessed Emotional Intelligence. For each of the seven skills of Emotional Intelligence, the report presents a group's:

- aggregated assessment results according to a normative benchmark

- within-group variance of assessment scores
- relative EI strengths, and
- relative EI development opportunities.

The Genos EI Assessment Group Report is traditionally used during workshop facilitation to create a common awareness of a group's relative EI strengths and weaknesses.

Genos EI Multi-Rater Assessment Group Report

Aggregated assessment report of a group's self-other assessed Emotional Intelligence. For each of the seven skills of Emotional Intelligence, the report presents a group's:

- aggregated assessment results according to a normative benchmark
- within-group and between-rater category variance of assessment scores
- relative EI strengths
- relative EI development opportunities, and
- rater-specific assessment results.

The Genos EI Multi-Rater Assessment Group Report is traditionally used during workshop facilitation to create a common awareness of a group's relative EI strengths and weaknesses.

Genos EI-Enhancement Module

Suite of ten (10) personalised EI-enhancement modules focused on seven skills of EI. Modules include:

- Understanding Emotional Intelligence
- How to interpret your Genos EI Inventory result
- Enhancing Emotional Self-Awareness
- Enhancing Emotional Expression
- Enhancing Emotional Awareness of Others
- Enhancing Emotional Reasoning
- Enhancing Emotional Self-Management
- Enhancing Emotional Management of Others
- Enhancing Emotional Self-Control
- Creating Sustainable EI Development

Modules are suitable for one-on-one and small group EI coaching, and process facilitation intervention(s). Each module is based in adult learning principles and includes EI-enhancement activities appropriate for all levels of EI.

Genos EI-Enhancement Kit

Comprehensive EI-Enhancement 'Kit' consisting of:

- Genos EI Multi-Rater Assessment Report and Workbook, T1 and T2, and
- all ten Genos EI-enhancement modules

The 'Kit' is personalized to an individual's assessment results and is suitable for one-on-one and small group EI coaching, and process facilitation intervention(s). The 'Kit' is fully scalable and able suitable for one individual or entire organizations.

Genos EI Full Certification

The Genos EI Full Certification Program is conducted via workshop over two-days. The Program covers how to:

- assess workplace Emotional Intelligence
- develop individual, team and organisational Emotional Intelligence, and
- sell Emotional Intelligence to and within any organisational context.

Specific topics covered during the three-days include:

- the history and value of Emotional Intelligence in the workplace
- what Emotional Intelligence is
- the psychometric properties of the Genos EI Inventory
- techniques for effectively debriefing an individual's Genos Emotional Intelligence results
- applications of the Genos EI workplace Product Range, and
- the Genos EI-Enhancement Methodology – a robust and proven method for enhancing individual and team Emotional Intelligence

Genos EI- Selection Certification

The Genos EI- Selection Certification Program is one-day workshop. The program is hands-on and covers:

- how to conduct an Emotional Intelligence behavioural interview
- Emotional Intelligence based role-play simulation techniques, and
- applications of the Genos EI- Selection Report

Completion of the Genos EI- Selection Standard Report is a pre-requisite for attending this program. Comprehensive participant materials are provided.

Genos EI Inventory Full Version

The Genos EI Inventory consists of 70-items designed to measure a total EI score as well as seven subscale scores. It takes approximately 20 minutes to complete. The Genos EI Inventory Technical Manual discusses the reliability and validity associated with this flagship Genos EI product.

Genos EI Inventory Concise Version

This version of the Genos EI inventory consists of 31 items designed to measure a total EI score, as well as the seven subscale scores. It takes approximately 10 minutes to complete. In addition to being shorter, the primary difference between the Genos EI Concise Version and the Genos EI Full version is that the Genos EI Concise version has subscale score reliability levels that meet only the minimum standards for research. Thus, the Genos EI Concise version is only applicable for research scenarios and possibly educational scenarios. A rater version of the inventory is also available.

Genos EI Inventory Short Version

This version of the Genos EI inventory consists of 14 items designed to measure a single, total EI score. It takes approximately 5 minutes to complete. The Genos EI Short version was designed strictly for research purposes, particularly those cases where there are very severe time constraints, or where EI may only be of secondary interest to the researcher. A rater version of the inventory is also available.

Genos EI Technical Manual

The Genos EI technical manual documents the nature, history, administrative procedures, reliability and validity associated with the Genos EI Inventory (self-report). The technical manual has been written in relatively accessible way, so as to be of benefit to both researchers and practitioners.

Qualifications Required for Genos EI

The Genos EI inventory was not designed to measure psychopathology. Consequently, the suggestion that an individual may possess poor mental health, based solely upon Genos EI scores, is totally inappropriate. Instead, Genos EI was designed to be implemented in

workplace settings with individuals who are presently employed or potentially employable. As a general statement, users of Genos EI would not necessarily be expected to be registered clinical psychologists. Instead, when applied in professional contexts (e.g., coaching, developmental, educational, recruitment, selection), user's must be certified by completing successfully the Genos EI accreditation program (for more information go to www.genosinternational.com. ***Importantly, however, prospective users of Genos EI should be familiar with their own country's legal requirements regarding the use of psychological tests, prior to using Genos EI in an applied context.***

In cases where the Genos EI inventory is used for research purposes, users do not have to be accredited to use Genos EI, if the research participants are not going to be debriefed of their results. Thus, in those cases where the scores derived from the Genos EI inventory are simply going to be aggregated for group-level analyses, a user would be expected to posses some formal background in psychology (or related field), or be supervised by an individual with such a background, as well as to have read the Genos EI Technical manual. To use Genos EI psychometric measures for researcher purposes, potential users must first complete the corresponding research application form. Further details can be found at www.genosinternational.com.

Chapter 2: Framework, Model, and History

In this chapter, the framework within which the Genos EI inventory was developed is described. Further, the seven-factor model of Genos EI is also elucidated. Finally, a relatively brief history of the development of the Genos EI inventory is provided.

In accordance with Gignac (2010), within this technical manual, the word 'perspective' is used to represent the manner in which the construct of interest (i.e., EI) was framed by the test creators during the course of inventory development. In the context of EI, at least two perspectives are possible: maximal EI performance and typical EI performance.

In contrast to a perspective, the plausibility of a model can be tested empirically via statistical techniques such as confirmatory factor analysis (Gignac, 2010). Models describe the number and nature of the dimensions measured by the psychometric inventory. In the case of EI, some models may be described as expansive (perhaps overexpansive), as they incorporate an array of dimensions from several domains of individual differences psychology. Other models may be described as narrow, as they do not fully encompass all of the dimensions associated with a particular construct. Genos believes the Genos EI seven-factor model to be an ideal and empirically justifiable model of EI.

Perspectives of Emotional Intelligence

Strictly speaking, it would be unjustifiable to claim that the Genos EI inventory measures EI, as conceived as some sort of cognitive capacity relevant to the identification, use and management of emotions. Rather, the Genos EI inventory provides scores that are representations of the relative frequency with which an individual engages in EI behaviours. Consequently, the theoretical perspective within which the Genos EI inventory is embedded may be described as 'typical EI performance' as distinct from 'maximal EI performance'. Maximal EI performance represents the highest level of ability that can be manifested by an individual at a particular time. In contrast, typical EI performance represents the level of EI an individual manifests on a regular basis. This 'maximal' versus 'typical' distinction with respect to EI described here is borrowed from the broader maximal/typical performance I/O literature first discussed by Sackett, Zedeck, and Fogli (1988). For further details, see Gignac (2010). The Genos EI inventory is perhaps the only EI relevant inventory to be explicitly formulated within the context of typical EI performance, which does make the inventory unique in that respect.

The primary reason the Genos EI inventory was constructed within a typical EI performance perspective was because such a measure was considered more valuable to industry, as performance indicators frequently applied in industry are also typical rather

maximal in nature (e.g., average monthly sales, in contrast to maximal sales at one point in time). Consequently, the Genos EI inventory, which emphasizes typical EI performance, was considered more congruent with the needs of industry.

Model of Emotional Intelligence

Although Genos EI is underpinned by a typical EI performance perspective it would be inaccurate to categorize the Genos EI inventory as a mixed-model measure of EI, as the Bar-On EQ-*i* (Bar-On, 1997) has been, for example (see Mayer, Salovey, & Caruso, 2000). A mixed-model of EI is traditionally conceived as a measure that explicitly amalgamates a combination of EI dimensions and non-EI dimensions (e.g., personality dimensions or competencies). For example, the BarOn EQ-*i* incorporates a dimension called 'reality testing', which is relevant to "the ability to assess the correspondence between what is experienced and what objectively exists" (Bar-On,1997, p.19). Such a dimension may be regarded as more closely aligned with a psychopathological condition known as psychoticism, as opposed to EI. Another example of a mixed-model measure of EI is the Emotional Competence Inventory (ECI). The ECI includes a dimension called 'conscientiousness', which has been defined as, "Taking responsibility for personal performance" (Sala, 2002, p.2). Conscientiousness has long been considered a dimension of personality (e.g., Costa & McCrae, 1992).

Individual difference dimensions such as reality testing and conscientiousness may be legitimate psychological variables to measure; however, Genos has taken the view that they are best not incorporated into a model of EI. Instead, a model of EI should incorporate psychological attributes that have direct relevance to the identification, utilisation and/or management of emotions. Thus, from this perspective, the Genos EI model of EI is purely relevant to the demonstration of EI skills across the following seven individual differences dimensions:

Emotional Self-Awareness (ESA)

Emotional Self-Awareness measures the relative frequency with which an individual consciously identifies their emotions at work. It also represents the frequency with which an individual is aware that their emotions may motivate or affect their thoughts and behaviours at work. The subscale does not emphasize either negative or positive emotions. Rather, the subscale incorporates a balance of both positive and negative affect states.

Emotional Expression (EE)

Emotional Expression measures the relative frequency with which an individual expresses their emotions in an appropriate way at work. Appropriate, in this context, implies the right way, at the right time, and to the right people. The subscale incorporates a balance of items relevant to positive and negative emotions, such as positive feedback and anger, for example. The subscale does not explicitly specify any method of emotional expression, as the appropriate expression of an emotion may be verbal or non-verbal in nature (or a combination of the two).

Emotional Awareness of Others (EAO)

Emotional Awareness of Others measures the relative frequency with which an individual identifies the emotions expressed by others in the workplace. The emphasis is on the awareness of both verbal and non-verbal expressions of emotions by others. Further, there is also an emphasis on understanding the nature of the emotions that may motivate or affect the behaviours of others at work.

Emotional Reasoning (ER)

Emotional Reasoning measures the relative frequency with which an individual incorporates emotionally relevant information in the process of decision making or problem solving at work. It should be noted that the Emotional Reasoning subscale does not represent an anti-rationality disposition. Instead, the subscale was designed to measure a balanced approach to problem solving that incorporates some consideration of one's own emotions and the emotions of others when making decisions at work. There is also an emphasis on the use of emotions for the successful engagement of others.

Emotional Self-Management (ESM)

Emotional Self-Management measures the relative frequency with which an individual manages their own emotions at work, successfully. A substantial emphasis is placed upon the successful adjustment to negative emotional states at work, although there is some focus relevant to the engagement in activities to maintain a positive emotional state while at work. Emotional Self-Management often involves moving on from an emotional set-back, rather than dwelling or ruminating over the situation.

Emotional Management of Others (EMO)

Emotional Management of Others measures the relative frequency with which an individual manages the emotions of others at work, successfully. Actions taken to motivate colleagues or subordinates are included within this subscale, as are demonstrations of modifying the emotions of others for their own personal betterment at work. Emotional Management of Others involves creating a positive working environment for others, or specifically helping an individual resolve an issue that is causing them distress.

Emotional Self-Control (ESC)

Emotional Self-Control measures the relative frequency with which an individual controls their strong emotions appropriately in the workplace. A substantial focus is placed on the demonstrable maintenance of focus or concentration on the task at hand in the face of emotional adversity. Although similar to Emotional Self-Management, Emotional Self-Control incorporates an additional focus on the behavioural demonstration of controlling intense reactive emotions at work, such as anger or jubilation. In this sense, Emotional Self-Control is more reactive, while Emotional Self-Management is more proactive.

Genos Total EI

The Total EI score (reported only in the Genos EI Selection report) is based on an equally weighted composite of the seven Genos EI dimensions defined above. Thus, the Total EI score represents the frequency with which an individual engages in a diverse variety of EI behaviours relevant to the identification of emotions (of the self and others), the reasoning with emotions, and the general management of emotions (self, others, and emotional control).

History

The Genos EI 70-item inventory was preceded by a 64-item self-report measure referred to as the Swinburne Emotional Intelligence Test (SUEIT) created by Ben Palmer and Con Stough (Palmer & Stough, 2001). The number and nature of the dimensions within the SUEIT were based on preliminary factor analysis of a large number of dimensions found within a number of common measures of EI. The preliminary results of the factor analysis served to help define the SUEIT model of EI. The final results of these analyses were published in a series of publications (Gignac, Palmer, Bates, & Stough, 2006; Gignac, Palmer, Manocha, & Stough, 2005; Gignac, Palmer, & Stough, 2007; Palmer, 2003; Palmer, Gignac, Manocha & Stough, 2003; Palmer,

Manocha, Gignac, & Stough, 2003; Palmer, Gignac, Manocha, & Stough, 2005; Palmer, Gignac, Ekermans, & Stough, 2008). Based on the preliminary analyses, it was determined that there were five common dimensions of EI: Emotional Recognition and Expression, Understanding Emotions External, Emotions Direct Cognition, Emotional Management and Emotional Control. After pilot testing, a total of 64 items were selected to measure the five dimensions of EI. Several investigations based on the SUEIT have been published (e.g., Downey, Papageorgiou, & Stough, 2006; Gardner & Stough, 2002; Harmer & Lutton, 2007; Jennings & Palmer, 2007).

Gignac (2005) examined the factor structure associated with the SUEIT in an extensive CFA investigation and concluded that the SUEIT measured a total of 9 dimensions, seven of which were substantively relevant to EI. The seven substantive dimensions identified by Gignac (2005) were: Emotional Recognition, Personal Expression, Understanding Emotions External, Affirmation of Emotions, Emotional Management of the Self, Emotional Management of Others, and Emotional Control.

Based on the information reported in Gignac (2005), it was clear that a revision of the SUEIT was needed. However, rather than build a revision of the SUEIT based exclusively upon the information reported in Gignac (2005), members of Genos conducted focus groups with human resource professionals to ascertain their views on what would constitute an ideal measure of EI for application in industry. Some of the key themes that emerged from the focus groups included: an inventory that measured a simple model (i.e., not a lot of dimensions), an inventory that took less than 15 minutes to complete, and a developmental focus within the accompanying EI reports (see Palmer, Stough, Harmer, & Gignac, 2009, for further details).

Thus, based on the quantitative information reported in Gignac (2005), and the qualitative information derived from the HR focus groups, a revised version of the SUEIT was developed in late 2006. The revised psychometric measure is known as the Genos EI inventory. The Genos EI inventory (or, simply, Genos EI) consists of 70-items designed to measure seven EI dimensions: Emotional Self-Awareness, Emotional Expression, Emotional Awareness of Others, Emotional Reasoning, Emotional Self-Management, Emotional Management of Others, and Emotional Self-Control. The evolutionary correspondence between the SUEIT dimensions and the Genos EI dimensions is depicted in Figure 1.

Summary

Scores derived from the Genos EI inventory are not IQ scores, either directly or indirectly. Consequently, Genos EI scores are not transformed into standardized scores with a mean of 100 and a standard deviation of 15, as is the case with the well-known Wechsler

Adult Intelligence Scales. Instead, percentile scores are used for the purposes of interpretation for several reasons (see Chapter 4). In research contexts, the Genos EI raw scores should always be analysed, not the percentile scores. The percentile scores derived from the Genos EI inventory represent the relative frequency with which an individual believes themselves to engage in EI behaviours across seven individual differences dimensions. The 70-item Genos EI Inventory in use today was preceded by a 64-item measure known as the Swinburne University Emotional Intelligence Test (SUEIT).

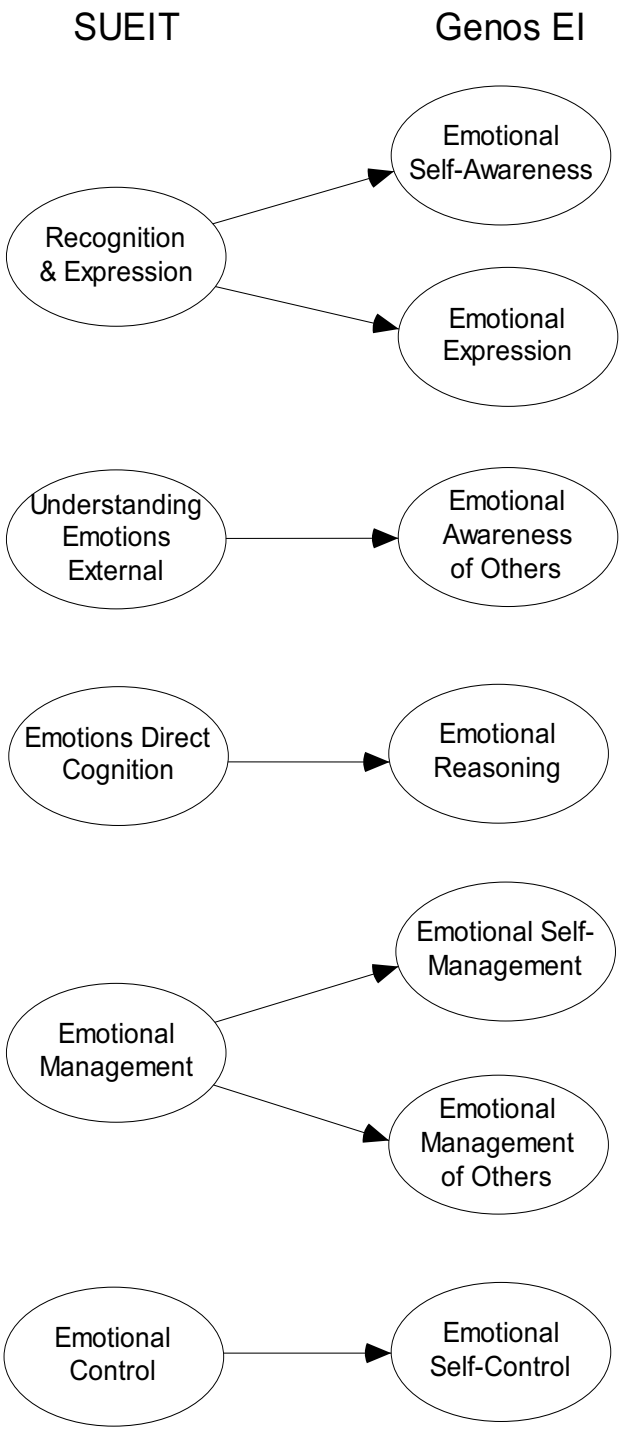


Figure 1: Depiction of the evolution of the dimensions from the SUEIT to the Genos EI Inventory

Chapter 3: Administration and Scoring

The Genos EI inventory would be expected to be administered within two broad scenarios: (1) professional and (2) research. Common professional contexts include recruitment, selection, and development. In order to administer the Genos EI inventory within a professional context, the person administering and debriefing the Genos EI inventory and report would be expected to be formally accredited through the completion of the Genos EI Certification Program, which is a three day training course managed by Genos (see www.genosinternational.com for further details).

In professional scenarios, the administration of the Genos EI inventory is always completed via the Genos on-line system. Thus, individuals respond to the items on-line while sitting at a computer, and the on-line system scores the item responses and calculates the corresponding raw and percentile scores. Consequently, the person administering the Genos EI inventory does not need to score the questionnaire. However, for the purposes of thoroughness, several characteristics associated with the scoring process are described here. First, the 20 items within the Genos EI Inventory that are negatively keyed are reverse coded (i.e., 5=1, 4=2, 3=3, 2=4, 1=5). Next, the 10 items associated with each of the seven subscales are summed (thus, all items carry an equal weighting in the scoring). Then, each subscale sum score is benchmarked against a percentile map which has been developed based on the relevant normative sample.

In contrast to professional scenarios, common research contexts include a paid academic engaging in research relevant to EI, or, alternatively, a student engaged in research to achieve a higher degree while being supervised by a paid academic. In the research context, the Genos EI inventory is sometimes administered in a paper based format, as the creation of individual reports is not necessary, and/or the availability of computers is not feasible. Genos does not provide researchers with a scoring key. Instead, researchers are required to enter the item responses into an electronic spreadsheet, which is then sent electronically to Genos for scoring and reliability analysis. Further details relevant to the use of Genos EI for research purposes can be found at: www.genosinternational.com.

Suitable Ages and Residents

The Genos EI inventory was designed to be administered to males and females capable of participating in the general workforce, as the items were written with a workplace context. The normative group associated with the Genos EI inventory range in age from 18-76, which would likely be comprehensive enough to represent the age range within most workplaces.

Thus, the Genos EI inventory should be considered suitable for administration to adults who are in a country's workforce. Adolescents and children should not be administered the Genos EI inventory, as the inventory was not designed for such purposes, nor do the norms include such members of the population. It is likely the case that an individual slightly younger than 18 could complete the inventory without any difficulties and that the results would not deviate substantially from the norms. However, any individual less than 17 years should not be administered the Genos EI inventory.

The Genos EI inventory has been administered to English speaking residents of several developed countries. Psychometric analyses have been performed on several country specific samples, including Australia, the United States of America, South Africa, England, New Zealand, Hong Kong, and Singapore. In all countries, the psychometric qualities of the data were found to be acceptable, as reported in this technical manual. Thus, the Genos EI inventory should be considered suitable for administration to English speaking adults within the above named countries.

Readability of Genos EI

All other things equal, a self-report inventory should be based on items written in as simple language as possible. The Genos EI inventory was developed with such an intention in mind, in spite of the fact that the inventory was specifically developed for adults, rather than adolescents or children.

To assess the readability of the Genos EI self-report inventory, the 70 items were subjected to a Flesch Reading Ease analysis and a Flesch-Kincaid Grade Level analysis. According to Kaufman, Tarnowski, Simonian & Graves (1991), the lowest Flesch Reading Ease score of 0 corresponds to text that is effectively unreadable, while a maximum score of 100 should be easy to read for any literate person. A Flesch-Kincaid Grade Level score is relatively easy to interpret, as it represents the grade level required to understand the vast majority of the written material.

The readability analyses were performed within the MS Word 'Spelling and Grammar' utility. Based on the simultaneous analysis of all the Geno EI Inventory 70 items, a score of 60.6% was obtained for Flesch Reading Ease. Further, the Flesch-Kincaid Grade Level was estimated at 7.4, which corresponds to an age of 11-12 years. Consequently, the readability of the Genos EI self-report inventory was considered to be acceptably readable, particularly considering that inventory should be administered to adults only (18+ years).

Time to Complete

To 70-item Genos EI inventory takes approximately 20 minutes to complete when administered on-line. In paper based format, it may take approximately 25 minutes to complete. There are no time restrictions to completing the Genos EI inventory. Consequently, respondents should not feel time-pressured to complete the inventory. However, respondents should nonetheless be encouraged to complete each item at a constant pace and in the absence of excessive rumination. Instances where time to completion is less than 5 minutes or in excessive of 45 minutes (on-line) may be cause for concern. In the former case, the respondent may not be taking the testing seriously. In the later case, the respondent may be having difficulties understanding the items because their proficiency in English is insufficient.

Conditions Under Which to Administer the Genos EI

First, the individual administering the Genos EI inventory must be sufficiently familiar with the inventory and corresponding reports. Such familiarity can be gained by completing the Genos EI Certification Program. Thus, for the most part, individuals who wish to administer Genos EI to members of the public must first complete the Genos EI Certification Program. In cases where the Genos EI Inventory is administered within a purely research context (and no reports are provided to the respondents), the individual managing the project may not be necessarily formerly accredited by Genos EI. However, the individual managing the project would be expected to posses a higher-degree by research in the area of psychology (or related field). The Genos EI inventory is available for research purposes. However, a request form must be completed and evaluated by Genos prior to gaining permission to use it. Further details can be found at www.genosinternational.com.

As the Genos EI inventory may be expected to be employed in a variety of contexts, it would be expected that the inventory would be administered within a relatively wide range of times throughout the day. However, some issues must be considered in determining whether the inventory should be administered at a particular time, which centre primarily upon considerations relevant to the individual identified to complete the inventory.

First, the individual must be alert and non-anxious. Although, strictly speaking, there are no “right” or “wrong” answers to the items within the Genos EI inventory, respondents must be alert and sufficiently motivated to engage in the introspection required to respond to the items informatively. In recruitment contexts, respondents may be put at ease by informing them that the information from the Genos EI inventory will not be the sole basis for any personnel selection decisions, as other sources of information will be consulted. In research

contexts, respondents may be put at ease by informing them that the information will only be used at the group-level, and that individual responses will not be analysed or reported.

The purpose of the testing must be made clear to respondents, as well as the fact that they are free not to not participate in the testing (i.e., informed consent).

Genos EI may be expected to be administered on repeated occasions in some circumstances, such as those that include an intervention expected to affect EI scores. Consequently, in such cases, Genos EI should be administered once prior to the application of the intervention and at least once after the intervention has had sufficient time to effect a change in EI scores.

Specific recommendations for administering the Genos EI inventory (research; paper-based)

Have the respondent seated comfortably at a desk in a room that is quiet. In non-technical terms, inform the respondent why they have been asked to complete the Genos EI inventory. If the study is being carried out within a university, or any organisation that has a formally recognised governing ethics committee, provide the respondent with the relevant informed consent form (which has been approved by the ethics appropriate committee) and have him or her sign it. Remind the respondent that participation is voluntary, and that they can terminate their participation at any point without punishment.

Be sure to include the demographics page included within the Genos EI inventory. A de-identified ID code may be added to the demographics page to facilitate correspondence with the informed consent sheet, and for eventual de-identified statistical analyses.

Observe the participant to determine whether or not he or she is relaxed. If the participant appears anxious, remind him or her that his or her scores will remain confidential and that the data will only be analysed at the group level. If the Genos EI inventory is being administered for recruitment purposes, be sure to inform the participant that the scores from the Genos EI inventory will not be the sole basis for evaluating their suitability for a particular job.

Once the administrator is satisfied that the participant is participating voluntarily and is comfortable, encourage the participant to respond as honestly as possible, and to answer all of the items, even if he or she is not totally sure which alternative is the best response, or if the item does not seem applicable to him or her. It may be useful to specifically inform the participant that each item can only be associated with a single response, particularly if the participant has never completed a psychometric inventory before.

Participants may occasionally ask questions about particular items. Usually, the question pertains to a simple clarification that can be addressed with a simple sentence or two. On other occasions, a respondent may ask a more complicated or conceptual question. In this case, acknowledge the importance or interest of the question, but defer a discussion of the topic until after the participant has completed the entire inventory.

Once the participant has indicated to have completed the inventory, scan the inventory for missing responses (if the Genos EI Inventory has been administered in paper-based format). If one or more missing responses are identified, encourage the participant to answer the item(s) to the best of their ability. If the administrator is satisfied that the inventory has been completed in a valid way, a discussion about the participant's experience and thoughts about the inventory may be initiated. In many cases, individuals participating in a research study may not have any interest in discussing the testing experience in any depth. In this case, thank the participant for participating in the study and provide them with a debriefing sheet that describes the purpose of the study (non-technically), and where they may find the results of the study once it is completed. In other cases, participants may wish to engage in a more detailed discussion about the topic, and may also wish to know how they scored. In such cases, the participant should be referred to a Genos EI certified practitioner for a more detailed follow-up and debriefing session.

Ethical Considerations

In both professional and research scenarios, Genos recommends that the administration of Genos EI be under the explicit pretence of voluntary participation by all respondents. Respondents should be provided with a brief description of the nature of the Genos EI inventory, as well as why the participant has been asked to complete it. What will be done with the respondent's scores should also be discussed. Genos does not recommend that professionals use Genos EI scores as the sole basis for making a workplace relevant decision. Rather, additional sources of information should be obtained, such as those from other recognized psychometric inventories, structured interviews, and referees, for example.

In research scenarios, Genos endorses the American Psychological Associations (APA) guidelines for conducting ethical research. Such guidelines include obtaining informed consent from participants, not coercing respondents to participate in any study, and debriefing, for example. Further details may be found at www.apa.org.

Chapter 4: Interpreting Genos EI Scores

In order to administer and interpret the Genos EI inventory, an individual must first attend a three-day training course and then complete a case study assignment successfully (i.e., based on the evaluation of a Genos EI master trainer). Consequently, the information provided in this section of the manual should not be viewed as a substitute to the formally recognized training process. Instead, it should be viewed as informative and possibly supplementary.

Raw Scores versus Percentile Scores

Few, if any, psychometric inventories used in clinical or industrial/organizational settings rely upon raw scores for interpretation. Instead, the raw scores are transformed into some sort of standardized score that facilitates interpretation. It may be argued that percentile scores (or ranks) are perhaps the most intuitive score to interpret for professionals and non-professionals alike. Consequently, the Genos EI inventory emphasizes the use of percentile scores for interpretation in practice. A percentile score represents the percentage of individuals within a normative data based that have scored below a particular raw score. Thus, an individual who achieves a percentile score of 50 may be said to have achieved a raw score higher than 50% of the normative sample. In statistical terms, the 50^{th} percentile corresponds to a measure of central tendency known as the median.

Percentile scores do carry a limitation in interpretation, or more accurately, the possibility of erroneous interpretation. If the raw score distribution of scores is normal or approximately normal, as is usually the case, it would be very erroneous to believe that an equal difference in percentile scores would necessarily correspond to an equal difference in raw scores (Gregory, 2004) . Consider, for example, two individuals who achieved percentile scores of 50 and 55, in comparison to two other individuals who achieved percentile scores of 80 and 85. Although the difference in percentile scores is equal to 5 in both cases, the magnitude of the raw score difference between the two scenarios would be expected to be substantial. Specifically, a substantially higher raw score would be expected to be obtained in order to progress from the 80^{th} percentile to the 85^{th} percentile. By contrast, the 55^{th} percentile may be achieved by scoring only a relatively small number of additional raw score units above the corresponding 50^{th} percentile raw score. With this understanding in mind, percentile scores may be argued to be a relatively accessible method to describing how someone has scored relative to others in the population. For this reason, Genos EI individual results are reported in percentile scores. It should be noted, however, percentile scores are not appropriate for

statistical analysis purposes. Consequently, the reliability and validity results reported in this technical manual were derived from analyses based on Genos EI raw scores.

The corresponding percentile ranges, categorisations, and interpretive guidelines associated with the Genos EI Inventory are provided in Table 1.

Table 1: Interpretive guidelines for Genos EI Inventory percentile scores

Percentile Range	Categorisation	Interpretative Guideline
80-99	Very High	Very high level of frequency in exhibiting EI behaviours.
61-79	High	High level of frequency in exhibiting EI behaviours.
41-60	Average	Average frequency in exhibiting EI behaviours.
21-40	Low	Low level of frequency in exhibiting EI behaviours.
1-20	Very Low	Very low level of frequency in exhibiting EI behaviours.

Genos EI and psychopathology

Although scoring at the extremely low end of the percentile range (i.e., 1st percentile) is a necessary possibility, it should be emphasized that such a low percentile score does not necessarily imply that an individual is suffering from pathologically low levels of emotional intelligence (assuming such a notion is justifiable) or any other psychological construct for that matter. There are two primary reasons for such an assertion.

First, percentiles are simply relative scores with no absolute meaning. Thus, any suggestions of correspondence between a percentile score and a particular psychological condition is unwarranted, in the absence of any research specifically delineating such a correspondence. Secondly, there has not been any research relevant to psychopathology and the Genos EI inventory, as the inventory was not developed for such purposes. Thus, although particular percentile scores may be indicative of the possibility for relative improvement, they may not be justifiably construed as formal psychological deficit or disorder or any sort.

Steps in Interpreting Genos EI Scores

Although the exact steps involved in interpreting the scores within a Genos EI report may be deviate somewhat from context to context, the general steps would be expected to be consistent with the following 7-step procedure: (1) understand the context of the assessment; (2) evaluate the validity scale scores; (3) interpret the subscale scale scores; (4) consider

additional sources of information; (5) debrief the respondent; (6) consider possibilities for improvement if the context is appropriate; (7) if training has been implemented re-test the respondent's EI. Further details associated with each step are provided below.

It should be emphasized that the information provided in this section of the technical manual should not be used as a substitute for the completion of the Genos EI Certification Program, where the steps involved with Genos EI administration, debriefing, and training are discussed in greater detail. Instead, the information presented here should be viewed as illustrative.

Step 1: Understand the Context of the Assessment.

Prior to interpreting the scores associated with a Genos EI inventory, an individual should take into consideration the context within which the individual completed the inventory. Perhaps the two most common situational contexts include development and recruitment.

Step 2: Evaluate the Validity Scales Scores.

Genos EI (Selection) has three validity indices to help evaluate the quality of the responses a given respondent provided: an Inconsistency index, an Inflation index and a Manipulation index. The Genos system adjusts scores based on the Inflation and Manipulation indices. Additionally, the Genos EI Selection report provides some general guidelines for interpreting the three validity scales. Thus, those administering and interpreting Genos EI scores are encouraged to consult the validity scale indices as supplementary sources of information. Further details relevant to the validity indices are provided below.

Inconsistency Index

A total of seven item pairs within the Genos EI inventory were selected to form the basis of the Inconsistency Index. The items were chosen on the basis that they were very similar to each other. Thus, appreciably different responses to the items by a respondent would suggest a suspect response pattern.

For the purposes of evaluating the validity of a Genos EI self-assessment report, it is suggested that an Inconsistency Index score greater than 1.00 should be cause for some concern, as only 1.63% of the normative sample exhibited such a level of inconsistency (See Appendix B for further details on the Inconsistency Index). Furthermore, there is some

meaningfulness associated with an Inconsistency Index score of 1.0, as it represents the difference of one anchor point within the 1-5 Likert scale that forms the basis of the scoring of the Genos EI inventory.

For the purposes of report interpretation, the Inconsistency Index percentile map has been devised such that an Inconsistency Index score equal to or greater than 1.0 would correspond to a 'high' categorization of the score (see Table 2 for full details). An Inconsistency Index score in the 'high' range should be cause for concern with the respect to the valid interpretation of the corresponding Genos EI report.

There are a number of possible reasons why an individual may have responded inconsistently on the Genos EI inventory. It is possible that the respondent failed to understand the instructions or responded to the items too quickly. It is also possible that the respondent did not take the completion of the inventory seriously, or has very poor insight into the meanings of the item content in relation to their own behavioural functioning. Consequently, when an Inconsistency Index score in the 'high' range is observed, the administrator should pose some questions to the respondent to determine if the validity of the assessment should be dismissed.

Table 2: Genos inconsistency index scores, percentile ranges, categories, and interpretive guidelines

Percentile Range	Score Range	Categorisation	Interpretative Guideline
98.4 - 99.9	1.01+	High	Suggests a high level of inconsistency. Interpret the Genos EI profile with great caution. Ask the respondent if he or she understood the instructions, and/or ask the respondent what they thought of the inventory items.
44.6 - 96.0	.251– 1.00	Average	Suggests an average level of inconsistency. The applicant likely read and understood the meaning of the items and responded relatively thoughtfully.
1 - 25.1	0 -.25	Low	Suggests a low level of inconsistency in responses. The applicant likely read and understood the meaning of the items and responded thoughtfully.

NB: Score ranges are rounded to the nearest quarter.

Socially Desirable Responding: Inflation and Manipulation Indices

The possible problem of socially desirable responding (SDR) in the self-assessment of EI has been noted (e.g., Downey, Godfrey, Hansen, & Stough, 2006). SDR may be more popularly known as 'faking good', which consists of simulating responses to items in order to present a misleadingly positive view of oneself (Paulhus, 1991). In light of the problem of SDR in self-report measurement,, the Genos EI self-report inventory can be complimented by two indices relevant to the measurement of socially desirable responding: Inflation and Manipulation.[2]

The Inflation index represents the degree of excessive self-belief that an individual possesses relevant to their abilities at work. By contrast, the Manipulation index was designed to measure the cognitive process whereby an individual may be consciously motivated to increase their scores during an assessment, independently of any genuine belief of their unjustifiable 'superior' abilities.

Although the Inflation and Manipulation items are scored differently, the respondents results are reported in the same format along the following continuum: 'very low', 'low', 'average', 'high', and 'very high'. Both quantitative and qualitative considerations were used in determining the interpretative demarcation points for the Inflation and Manipulation indices. Although some attention should be paid to the Inflation and Manipulation indices, it should be noted that Genos EI reports that include the Inflation and Manipulation indices yield Genos EI scores that are adjusted based on the respondent's Inflation and Manipulation scores. Thus, it is not necessary for practitioner to make a decision on the validity of the Genos EI scores, based on the Inflation and Manipulation index results.

Step 3: Interpret the Subscale Scores.

Once the situational context of the assessment is understood and the validity scores have been examined, interpretation of the Genos EI subscale scores may be completed. As can be seen in Table 3, brief interpretations of high scores on each of the seven Genos EI subscales are provided. It should be noted that these interpretative descriptions are not comprehensive. Further details are provided during the completion of the Genos EI Certification Program.

[2] See Appendix B for a full technical description of the Inflation and Manipulation Indices.

Table 3: Brief subscale high score interpretations

Subscale	Interpretation
Emotional Self-Awareness	High scores indicate a frequent awareness of ones emotions at work, their causes, as well as the impacts of emotions on one's thoughts, decisions and behaviour at work.
Emotional Expression	High scores indicate a frequent demonstration of effective emotional expression at work, such as feelings of happiness, frustration, as well as feedback to colleagues.
Emotional Awareness of Others	High scores indicate a frequent and accurate identification of the emotions of others at work, as well as their causes.
Emotional Reasoning	High scores indicate a frequent consideration of one's own and others' emotions when making decisions at work, as well as expressing that such consideration has taken place.
Emotional Self-Management	High scores indicate a frequent engagement of activities that facilitate the positive development of emotions in oneself, as well as a relative absence of dwelling on negative emotions.
Emotional Management of Others	High scores indicate a frequent engagement in the creation of emotionally positive work environments for others, as well as effectively helping colleagues resolve issues that may be affecting their performance adversely.
Emotional Self-Control	High scores indicate a frequently demonstrated capacity to remain focused when anxious or disappointed at work, as well as the demonstrated ability to not loose one's temper.

Step 4: Consider Additional Sources of Information.

The Genos EI self-report inventory should not be considered an exhaustive assessment of a person's psychological profile. Consequently, supplementary information may facilitate the interpretation of a Genos EI self-assessment report. One particularly useful source of information to complement a Genos EI self inventory report is a rater-report. That is, individuals who work with the respondent may be asked to complete a third-person version of the self-report Genos EI inventory. Such information may be suggested to provide a more well-rounded assessment of the frequency with which an individual engages in emotionally intelligent behaviours.

In addition to a rater-report, additional workplace relevant psychological information might include scores from an employee-motivational fit inventory, intellectual intelligence, and personality, for example.

Step 5: Debrief the Respondent.

Simply providing a respondent with his or her Genos EI report should not be viewed as an acceptable method of debriefing a respondent. In fact, such an action may be considered unethical, if the respondent misinterprets the meaning of the scores. Instead, a proper debriefing session would consist of a conversation between the administrator and the respondent. The nature and context of the conversation may vary from setting to setting. In some cases a relatively formal manner may be appropriate, while in others, a relatively informal group setting may be considered appropriate (assuming the respondents have voluntarily agreed to take part in such a setting).

Regardless of the setting, emphasis should always be placed on the fact the scores within the report are percentiles and do not have a meaning in any absolute sense. Thus, an individual who may score 'low' within a EI dimension does not necessarily imply that that individual does not have any capacity in displaying a particularly type of emotionally intelligent behaviour. Instead, a low score may be interpreted to suggest that, relative to other individuals within the normative sample, the individual respondent does not display a particular set of emotionally intelligent behaviour as frequently as others. Some discussion relevant to asking the respondent why he or she may have achieved such a score may prove beneficial to both the administrator and the respondent. In some cases, the respondent may disagree with the percentile score, which can also prompt an insightful conversation (taking into consideration the validity scores associated with report). For example, the respondent may be asked to provide an example of an individual at work who they think has high EI and what

characteristics they exhibit to justify such an assessment. Those characteristics may be discussed in light of the Genos model of EI (i.e., whether they are consistent or inconsistent with the model).

In addition to the above, a respondent's relative strengths and opportunities for development should be pointed out and discussed by the administrator. Those areas of relative strength may potentially be used to build upon those areas of relative weakness. Furthermore, some discussion relevant to how effective the respondent might be expected to function in their job role should be discussed, based on their Genos EI report scores.

If, at the end of the debriefing session, neither the administrator nor the respondent is satisfied with the outcome of the debriefing session, the administrator should actively consider sourcing additional information. For example, the administrator may suggest the administration of other reliable and valid psychometric measures of EI, such as a multi-rater EI assessment, a structured EI interview, or a simulation EI exercise, for example.

Step 6: Consider possibilities for improvement if the context is appropriate.

Once a thorough summary of the respondent's scores has been provided, which would include a discussion relevant to the respondent's relative strengths and weaknesses, the possibility of implementing an EI training program may be discussed. Those areas of relative weakness may be highlighted as particularly good opportunities for improvement. Based on the respondent's scores and the respondent's willingness, a suitable EI training or EI enhancement program may be suggested to the respondent.

Step 7: If training has been implemented re-test the respondent's EI.

Evaluating the progress or benefits of an EI enhancement program should be considered incomplete, unless the respondent's EI has been re-measured some time into the future. In some cases, it may prove beneficial to re-measure a respondent's EI at some point during the training program to determine whether the intervention is exhibiting any initial beneficial effects.

Case Study

In this section, a fictional case study and Genos EI self-report will be described and briefly interpreted. Several other case studies are described and interpreted in greater detail

within the Genos EI accreditation program. Two additional examples of Genos EI reports are provided in the Appendices of this technical manual.

Paul Example

Paul Example is a 38-year-old man who currently works as a project officer within a medium sized organization. Paul's manager requested that all employees within the implementation unit undergo emotional intelligence self-assessments for the purposes of possibly identify developmental opportunities.

As can be seen in Figure 2 [3], the validity index scores associated with the respondent's report suggested that he responded in a consistent manner, as the Inconsistency Index score is in the 'very low' range, which implies an Inconsistency Index score of less than 1.0. Further, the respondent did not appear to have engaged in an appreciable amount of socially desirable responding, as the Inflation and Manipulation index scores are also in the 'very low' range.

In light of the acceptable validity index scores, an examination and interpretation of the content indices was undertaken. As can be seen in Figure 2, the respondent scored within the average range across the first four Genos EI subscale scores: Emotional Self-Awareness, Emotional Expression, Emotional-Awareness of Others, and Emotional Reasoning. Comparatively, however, the respondent scored within the low range on the management related subscales: Emotional Self-Management, Emotional Management of Others, and Emotional Self-Control.

Theoretically, the observation of progressively lower levels of EI across the seven ordered Genos EI dimensions is plausible, as the emotional management related dimensions are considered higher-order functioning components of EI. For example, it is unreasonable that an individual could manage the emotions of others successfully, in the absence of first identifying the emotions of others.

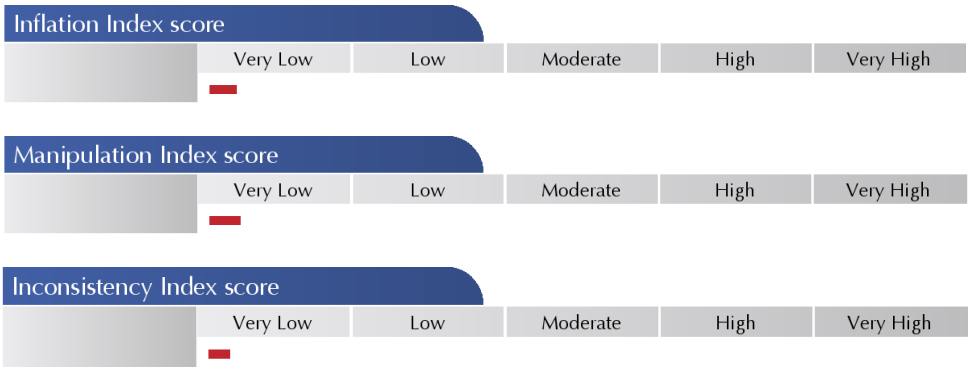
The result of the respondent's employee-motivation fit (EMF) profile (completed a year ago when the respondent applied for the job) confirms a profile consistent with less desire for the management of others. Specifically, the EMF profile suggested that the employee was more motivated to working in an independent manner, rather than in teams or in a management role.

[3] The report depicted in Figure 2 is a brief, modified version of a complete report that was generated for the purposes of this technical manual. Note, also, that the Inflation and Manipulation indices appear only in the Genos EI Selection report.

Paul's manager respects him as an employee, as she considers his dependability and problem solving skills to be particularly high. She also thinks that Paul could, with some training relevant to the management of emotions, potentially become a valuable coordinator or manager within the unit. Consequently, with Paul's permission and interest, an EI training program tailored to Paul's needs was initiated by an external professional with the appropriate accreditation.

Genos EI Report Indices

Validity Indices



Content Indices

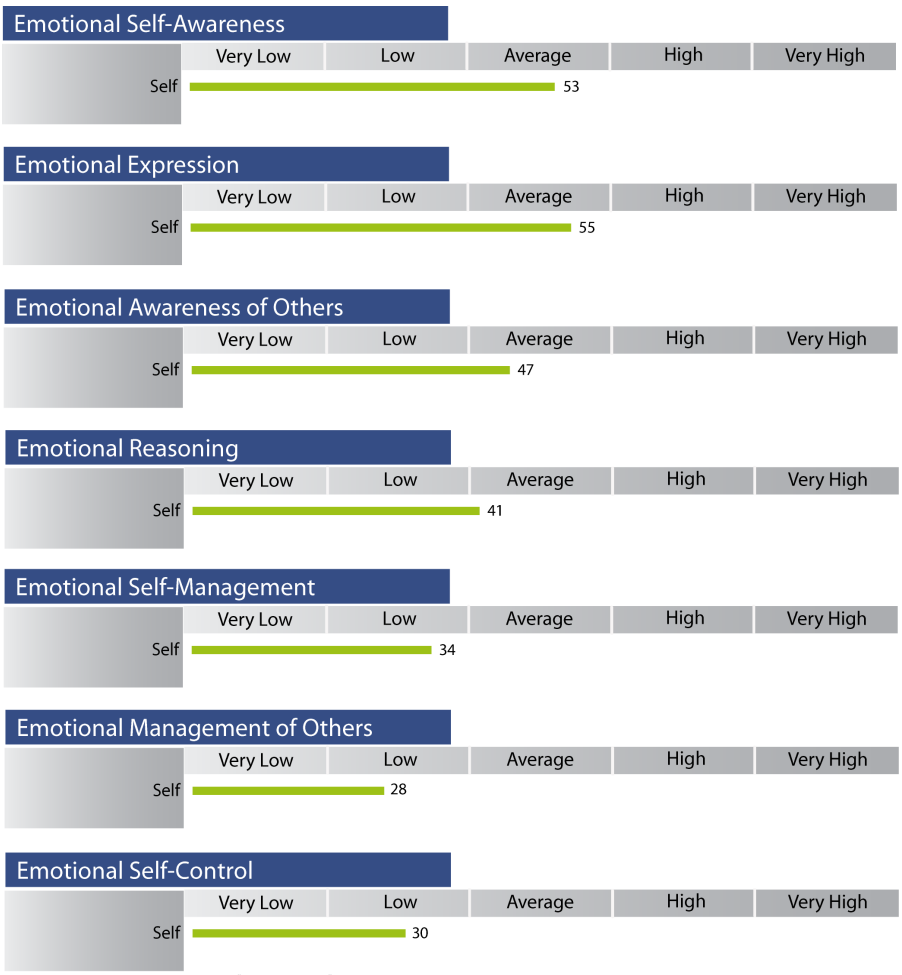


Figure 2: Case Study Results

Chapter 5: General Normative Sample

The normative sample upon which scores from an inventory are interpreted should be both large and representative of the population of interest. In the context of the Genos EI inventory, the population of interest is an adult, English speaking, working population with at least a high school education. The Genos EI 70-item self-report inventory was administered across a number of research, workshop, and professional (e.g., HR, executive coaching, etc.) over the course of approximately 6-months during 2007, which resulted in an original sample of 4803 individuals, which was reduced to 4775 after the removal of 28 multivariate outliers (see section on Factorial Validity for further details).

In this section of the manual, the nature of the normative sample (*N*=4775) will be described by providing descriptive statistics relevant to age, gender, education, occupation, role-level, industry.

Age

The normative sample consists exclusively of adults, ranging in age from 18 to 76, with a mean of 41.5 (SD=9.62). The absolute skew and kurtosis levels associated with age distributions were equal to .25 and -.55, respectively, which is suggestive of an approximately normal distribution. As can be seen in Table 4, the normative sample consisted of adult individuals across the adult age spectrum of individuals likely to be found in the workplace.

Table 4: Frequency distribution of age groups that comprise the Genos EI normative sample

Age	Percentage	*N*
18-23	1.0%	49
24-28	6.5%	310
29-33	11.8%	564
34-38	17.2%	820
39-43	16.2%	772
44-48	12.8%	609
49-53	11.1%	530
54-58	7.1%	338
59-63	3.1%	150
64+	.8%	37
Missing	12.5%	596
Total	100.0%	4775

Gender

The gender breakdown of the normal sample was close to 50/50 with slightly more females (52.9%) than males (47.1%), which is largely consistent with the known populations of many industrialized countries.

Education

As can be seen in Table 5, the normative sample is relatively well educated, although there are respectable numbers (100+) across all education groups.

Table 5: Frequency distribution of education levels that comprise the Genos EI normative sample

Age	Percentage	*N*
Doctoral Degree	2.5%	120
Masters Degree	21.2%	1011
Graduate Diploma	8.5%	406
Graduate Certificate	2.5%	120
Bachelor Degree	33.7%	1609
Advanced Diploma	4.0%	190
Diploma	7.4%	355
Certificate	4.9%	236
Senior Secondary	3.8%	180
Grade 12	5.1%	244
Grade 11 or below	2.1%	100
Missing	4.3%	204
Total	100%	4775

Occupation

The breakdown of the normative sample based on occupation was relatively heterogeneous amongst a number of educated occupational groups. The occupations listed in Table 6 represent the intended primary target occupational populations to which the Genos EI Inventory would be expected to be applied.

Table 6: Occupational breakdown associated with the Genos EI normative sample

Occupation	Percentage	*N*
Administration	8.4%	401
Development	6.2%	296
Financial	7.3%	349
Management	36.7%	1752
Operations	3.4%	162
Sales/Marketing	10.9%	521
Support Services	4.6%	220
Technical	4.5%	214
Other	18.0%	860
Total	100.0	4775

Role-Level

The self-nominated individual role-levels within the normative sample was relatively diverse (i.e., from 'employee with no direct reports' to 'CEO'), with some concentration at the mid-level management role (see Table 7).

Table 7: Role-level breakdown associated with the Genos EI normative sample

Occupation	Percentage	*N*
CEO/Executive Board Member	6.1%	291
CIO/CFO/CTO	2.3%	112
Division Leader	14.2%	676
Manager/Foreman/Team Leader	34.6%	1653
Project/Services Mgr.	9.4%	451
Employee	17.7%	844
Other	6.8%	326
Missing	8.8%	422
Total	100.0%	4775

Industry

As can be seen in Table 8, the normative sample consisted of individuals across a range of industries. The modal self-nominated industry of employment was sales; however, there are several industries with percentages in excess of 5% of the normative sample.

Table 8: Industry breakdown associated with the Genos EI normative sample

Occupation	Percentage	*N*
Accounting/Audit	2.0	95
HR/Recruitment	.9	43
Internet/Ecommerce/IT	1.8	86
Legal	.7	33
Logistics & Transportation	1.1	52
Manufacturing/Production	3.7	178
Media/Entertainment	.3	14
Non-Profit Charity	.5	25
Property/Real Estate	6.8	324
Retail/Consumer Products	.5	23
Sales	10.0	476
Science/Research	1.8	86
Sports/Recreation	5.8	277
Trade Services	.4	20
Hospitality/Tourism/Travel	9.7	461
Healthcare/Medical/Personal Care	5.0	241
Government/Public Sector	2.2	104
Administration/Support	5.6	266
Advertising/Marketing/PR	6.5	310
Agriculture/Forestry/Fisheries	.6	29
Architecture/Design	1.7	82
Banking	4.2	201
Biotech/Pharmaceuticals	.9	44
Childcare/Teaching	2.8	132
Construction/Mining	5.9	284
Consulting/Professional Services	1.0	46
Defence Force/Police/Security	2.7	128
Education/Training	1.7	82
Engineering	.7	32
Finance	.9	43
Food/Catering	.2	10
Petroleum/Energy	.7	34
Other	2.0	95
Missing	8.8	419
Total	100.0	4775

Country of Residence

The normative sample is heterogeneous with respect to the country of residence of the respondents. As can be seen in Table 9, the normative sample is primarily based upon a total of eight industrialized countries. Australia is the single largest contributor to the normative sample, which reflects the fact that the Genos EI inventory was originally developed by a group of investigators based in Australia. However, as many as 419 South Africans, and 374 Americans are also included in the normative sample.

The issue of possible differences in EI based on country of residence is dealt with in detail in the Chapter 8. In summary, with one exception, only trivial mean, factor structure, and differential item functioning effects were observed between nationality groups within the normative sample. The exception was the Asian portion of the normative sample (primarily residents from Hong Kong and Singapore). Based on a comprehensive differential item functioning investigation, it was found that the mean differences were not observed because one or more of the Genos EI inventory items were biased against Asian residents. Instead, the mean differences do appear to be "real". Consequently, when applied to Asian residents, it is recommended that Asian specific norms be used to interpret Genos EI scores obtained from Asian residents. Further details can be found in Chapter 8.

Table 9: Country of residence of the Genos EI normative sample

Country	Percentage	*N*
Australia	60.5%	2890
Hong Kong	4.6%	219
India	3.6%	174
New Zealand	1.8%	84
Singapore	3.9%	187
South Africa	8.8%	419
United Kingdom	2.0%	95
USA	7.8%	374
Other	7.0%	333
Total	100%	4775

Genos EI: Descriptive Statistics and Analyses

The means, standard deviations, skew and kurtosis associated with the distribution of Genos EI scores can be found in Table 10. The Total EI mean of 279.13 is associated with a standard deviation of 27.76. Thus, the coefficient of variation associated with the Genos EI total scores is equal to .10 (27.76 / 279.13), which corresponds closely to the coefficient of variation associated with the Bar-On EQ-*i* normative sample (i.e., .11). Thus, the amount of spread associated with the Genos EI

normative sample is probably acceptable. The standard deviation of 27.76 also implies that approximately 95% of the normative sample scored between 251.37 and 334.65.

A visual depiction of the distribution of Genos Total EI scores is presented within Figure 3. It can be observed that the distribution is relatively normal and symmetric. The national specific descriptive statistics associated with several nationalities are provided in Chapter 8.

Table 10: Descriptive statistics associated with the Genos EI self-report scales

Scale	Mean	SD	$S.E._{Mean}$	Skew	Kurtosis
Total EI	279.13	27.76	.40	-.32	.13
ESA	41.94	4.56	.07	-.40	.05
EE	39.53	4.85	.07	-.28	-.02
EAO	40.22	4.79	.07	-.32	.15
ER	39.29	4.44	.06	-.31	.05
ESM	38.36	4.72	.07	-.29	.36
EMO	40.29	4.89	.07	-.37	.20
ESC	39.51	4.80	.07	-.61	.53

Note. *N*=4775; ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control.

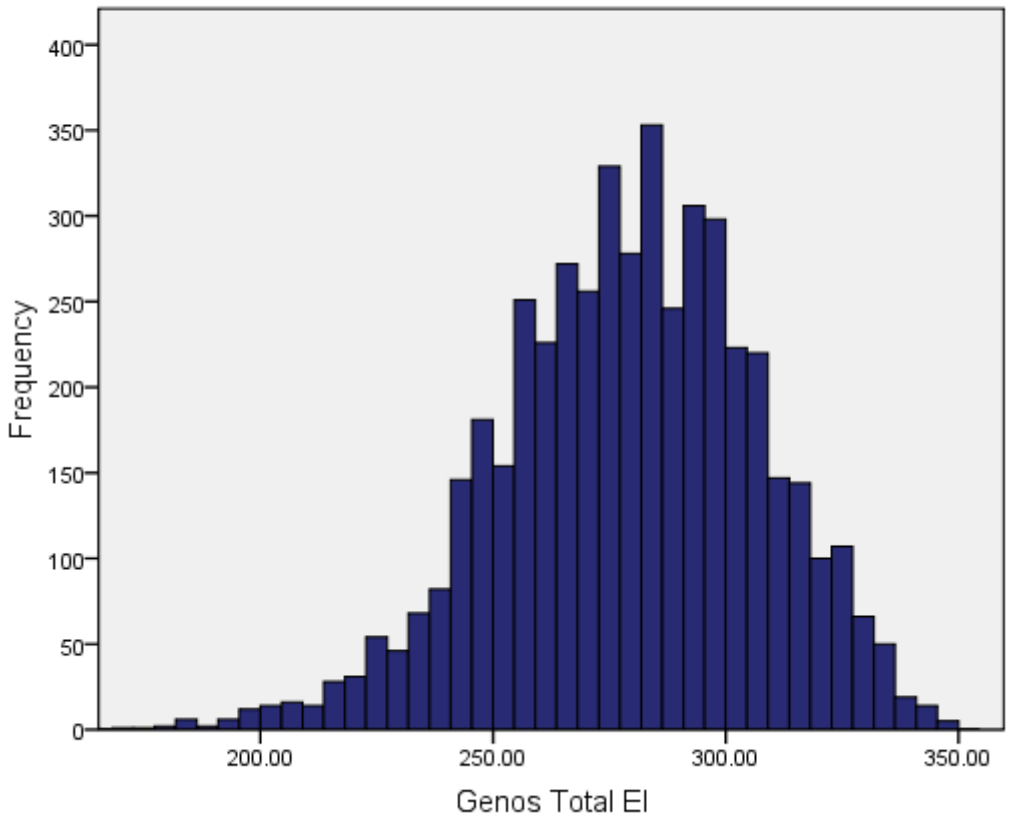


Figure 3: Frequency distribution of Genos Total EI scores

Age Effects and Genos EI

It was considered important to assess the possibility that different age groups may be associated with meaningfully different levels of EI. Such an observation would have potential theoretical and practical implications, particularly with respect to possibly using age appropriate norms. To examine this issue, a multi-analytical approach was undertaken. Specifically, the bi-variate correlation between age and EI was calculated across the Total EI score and the seven subscale scores. As can be seen in Table 11, the linear correlations were statistically significant across most subscales, however, the non-linear correlations were not statistically significant for any of the subscales. This result implies that EI appears to increase with age; however, the age effect accounts for such a small percentage of the individual variability in the population as to be of no practical importance.

To further appreciate the effect of age on EI, a visual depiction of the means and standard deviations ("error bars" are standard deviations, not standard errors) are displayed within Figure 4. It can be observed that there is a linear trend across age such that older participants tend to report higher levels of EI than younger participants. However, the standard deviations are so large relative to

any mean differences that any predictions of an individual EI based on his or her age would be very poor.

Table 11: The effects of Age on Genos EI: Pearson correlations (linear), partial correlations (non-linear), and age group mean differences (ANOVA linear and non-linear)

	Total	ESA	EE	EAO	ER	ESM	EMO	ESC
Self-Report Genos EI								
r_{linear}	.09*	.04	.07*	.07*	.13*	.05*	.09*	.07*
$r_{quadratic}$	.02	.005	.009	.02	-.003	.04	.02	.02
F_{linear}	12.90*	2.08	8.93*	6.91*	30.57*	4.52*	14.56*	7.15*
η^2_{linear}	.003	<.001	.002	.002	.007	.002	.004	.002
$F_{quadratic}$	.09	.57	.10	.34	.01	5.19*	.28	.41
$\eta^2_{quadratic}$	<.001	<.001	<.001	<.001	<.001	.001	<.001	<.001

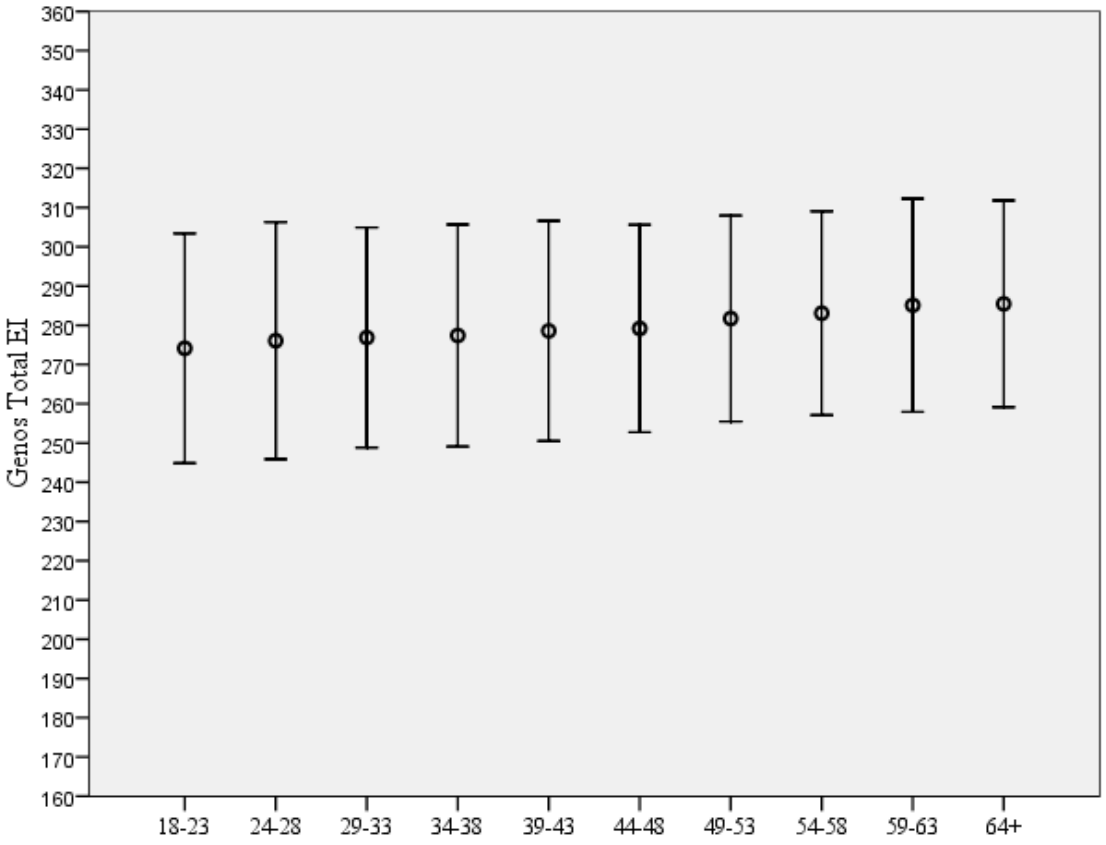


Figure 4: Means and standard deviations associated with Genos Total EI across age groups

Age and Genos EI Summary

Although a statistically significant linear effect was observed between age and EI across all of Genos EI's scales with the exception of the Emotional Self-Awareness subscale, the observed effects were so small from an effect size perspective as to be inconsequential for normative sample purposes.

Gender and Genos EI

Several investigations have reported that females have higher EI than males. To examine this issue, a series of ANOVAs were performed on the Total EI and the seven subscales within the Genos EI inventory. The means, standard deviations, *F* values and effect sizes are reported in Table 12. It can be observed that while there were several statistically significant effects in favour of the females, the magnitude of the effects were very small (i.e., less than 1% of the variance accounted for by gender). Given that the effect sizes were so small, it was not considered necessary to employ gender specific norms in the scoring of the Genos EI inventory. Further analyses relevant to differential item functioning and gender are provided in the Appendices.

Table 12: Male and female means on Genos EI subscales

	Male		Female			
Scale	Mean	SD	Mean	SD	*F*	η^2
Total EI	278.00	26.90	280.14	28.48	7.12*	.001
ESA	41.42	4.62	42.40	4.46	55.57*	.012
EE	39.26	4.73	39.76	4.94	12.91*	.003
EAO	39.85	4.73	40.54	4.81	25.12*	.005
ER	39.19	4.36	39.38	4.50	2.27	<.001
ESM	38.41	4.61	38.31	4.82	.60	<.001
EMO	40.10	4.69	40.45	5.06	6.24*	.001
ESC	39.76	4.63	39.28	4.94	11.54*	.002

Gender and Genos EI Summary

Although statistically significant effects were observed in favour of females across all Genos EI subscales except Emotional Reasoning and Emotional Self-Management, the effects that were observed were so small from an effect size perspective as to be inconsequential for normative sample purposes.

Genos EI Normative Sample: Overall Summary and Limitations

The Genos EI normative sample is very large, representative of both males and females in approximate equal numbers, representative of the wide age spectrum typically encountered in workplace settings, as well as representative of several industries and westernized/industrialized countries. Thus, from this perspective, the Genos EI normative sample may be regarded as acceptable.

However, there are some limitations associated with the Genos EI normative sample which limits its justifiable applicability in some cases. First, the Genos EI inventory should not be regarded as a "general" inventory to be applied in "general" contexts. The Genos EI inventory (and normative sample) is workplace specific. Although this may be viewed as strength from one perspective, it is also a limitation. An alternative Genos EI inventory is currently being developed to be applied within general contexts, which is expected to be predicated upon general population norms. It should also be noted that the Genos EI inventory was developed to be administered to adults (18+), not children or adolescents (17 or younger), which is consistent with the observed age range within the Genos EI inventory norms. Readers are referred to Chapter 8 for further analyses relevant to nation specific data.

Chapter 6: Reliability

The Genos EI inventory was developed primarily using the 'method of rational scaling', which, in effect, is based on the observation of two phenomena: (1) all items within a particular scale (or subscale) will correlate positively with each other, and (2) all items will correlate positively with the total score of the scale (or subscale). Effectively, the method of rational scaling is a method that is based on internal consistency reliability (Gregory, 2004), an analysis which forms a significant portion of this chapter.

Psychometric reliability is concerned with the estimation of two primary sources of variance: (1) error variance, and (2) true score variance (Lord & Novick, 1968). Error is that portion of variance that is random in nature, and, consequently, unpredictable and incoherent. Typically, test creators wish to minimize the amount of error variance associated with psychometric scores, although the notion of excessively high levels of internal consistency reliability has been articulated (i.e., the 'bloated specific' as discussed by Cattell, 1978). In contrast, true score variance represents that source of variance that is predictable and coherent.

In its simplest form, the observation of adequate levels of reliability helps justify the selection of items used to create a composite score, as well as the potentially justifiable interpretation of those scores as a possibly valid indicator of a particular construct (Gignac, 2009). In the absence of reliable scores, there is no possibility of the valid interpretation of the scores as an indicator of a particular construct.

There are two primary types of reliability that are typically reported for the scores of a scale or inventory: (1) internal consistency reliability, and (2) test-retest reliability. In this chapter, internal consistency reliability and test-retest reliability estimates are provided for the Genos EI inventory scores.

Internal Consistency Reliability

From a more academic perspective, internal consistency reliability represents the ratio of true score variance to total variance (Lord & Novick, 1968). Internal consistency reliability (as estimated by a formula known as Cronbach's alpha) is not an estimate of unidimensionality (which is more appropriately tested with a technique known as factor analysis). Rather, internal consistency represents the percentage of variance within a group of scores that is reliable variance, in contrast to error variance. Cronbach's alpha estimates almost always range from .00 to 1.0, although in particularly poorly assembled scales, the estimate may be negative. Thus, a Cronbach's alpha estimate of .50 would indicate that fifty percent of the variance associated with the scores of a scale is reliable. In practical terms, internal consistency reliability, in conjunction with factorial validity, helps justify the summation of selected item scores. Typically, estimates of .70 are considered acceptably

high (Peterson, 1994), although levels closer to .80 have also been recommended (Clark & Watson, 1995).

The Genos EI internal consistency reliability estimates (Cronbach's α) are provided for the Total EI scale and the seven subscales across five nationalities: American, Asian, Australian, Indian, and South African. As can be seen in Table 13, it can be observed that the Genos Total EI scale scores were associated with very high levels of internal consistency reliability (i.e., >.90) across all nationalities. Overwhelmingly, the subscale scores were also associated with respectable levels of internal consistency reliability. Specifically, as can be seen in the far right column of Table 13, the mean subscale reliabilities were all above .70, ranging from .71 to .85.

Overall, the internal consistency reliability estimates associated with the Genos EI Inventory scales may be regarded favourably along side other self-report measures of EI (e.g., Bar-On EQ-*i*, ECI).

Table 13: Internal consistency reliability estimates (Cronbach's α) associated with the Genos EI scales in American, Asian, Australian, Indian, and South African samples

	American	Asian	Australian	Indian	South African	Mean
Total EI	.97	.96	.96	.95	.94	.96
ESA	.83	.82	.83	.84	.77	.81
EE	.83	.77	.81	.67	.75	.77
EAO	.88	.87	.87	.83	.81	.85
ER	.76	.79	.74	.60	.67	.71
ESM	.83	.80	.79	.72	.73	.77
EMO	.87	.87	.86	.80	.83	.85
ESC	.80	.82	.78	.76	.73	.78

Note. American *N*=374; Asian *N*=450; Australian *N*=4775; Indian *N*=174; South African *N*=1023; ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control.

A supplementary piece of information frequently included in a reliability analysis is the corrected item-total correlation (Nunnally & Bernstein, 1994). The corrected item-total correlation represents the degree of association between a given item and the total subscale score that item was designed to measure (where the total or subscale score has been 'corrected' by excluding the given item being analysed from the subscale scores). As can be seen in Table 14, the Genos EI subscales were associated with mean corrected item-total correlations which ranged from .42 (ER) to .58 (ESM), which is larger than the arguably acceptable minimum criterion of .30. The only item not to exhibit a

corrected item-total correlation in excess of .30 was item 10 within the ER subscale[4]. This item is discussed in further detail within the factorial validity section. Overall, however, it may be contended that the results associated with the internal consistency reliability analysis of the Genos EI inventory are very respectable.

Table 14: Corrected item-total correlations associated with Genos EI subscales

Item	ESA	EE	EAO	ER	ESM	ESM	ESC
1	.35	.55	.56	.48	.39	.54	.38
2	.40	.34	.57	.49	.41	.46	.44
3	.58	.32	.54	.35	.38	.59	.54
4	.53	.56	.65	.31	.61	.47	.33
5	.60	.44	.57	.44	.52	.66	.52
6	.54	.47	.44	.50	.52	.64	.49
7	.60	.57	.57	.52	.46	.56	.37
8	.60	.54	.66	.50	.57	.65	.34
9	.53	.56	.66	.44	.57	.55	.51
10	.53	.60	.61	.14	.32	.55	.56
$\overline{X}$	.53	.50	.58	.42	.48	.57	.45

N=4775; ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO= Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control.

Test-Retest Reliability

Test-retest reliability represents the degree of stability in the scores derived from a scale or inventory (Gregory, 2004). There has been some debate as to whether test-retest reliability is a true form of reliability, as the observation of instability in the scores across time may in fact reflect true changes in the construct of interest, rather than measurement error issue associated the scores. Notwithstanding this argument, it will nonetheless be argued, here, that some degree of stability must be observed (both in the scores and, by implication, the construct of interest), in order to justifiably use and interpret the scores derived from an inventory relevant to EI.

The test-retest reliability of the Genos EI inventory scores have been examined in two samples across two different time periods. As can be seen in Table 15, the Genos Total EI scores were associated with a test-retest reliability coefficient of .83 (2-months) and .72 (8-months), indicating a respectable amount of stability in Genos Total EI scores over time. At the subscale level, the average

[4] To help protect the intellectual property (IP) of the Genos EI Inventory, the item numbers listed in Table 19 do not actually correspond to the item numbers within the Genos EI inventory.

subscale test-retest coefficient was calculated to at .77 (2-months) and .66 (8-months), which, again, was indicative of an appreciable amount of stability in the Genos EI subscale scores at both time intervals. As would be expected, the stability of the scores was relatively weaker at eight months, as a larger number of factors would be expected to arise across time to affect an individual's level of EI.

Table 15: Test-Retest correlations associated with Genos EI at 2-months and 8-month time intervals

	2-months	8-months
Total EI	.83	.72
ESA	.81	.69
EE	.67	.33
EAO	.82	.72
ER	.92	.48
ESM	.85	.90
EMO	.82	.75
ESC	.51	.73

Note. ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control; 2-month *N*=11; 8-months *N*=10

Reliability: Summary

Overall, the scores derived from the Genos EI inventory may be said to be associated with respectable levels of internal consistency reliability across several samples of individuals associated with different nationalities. More specifically, at the total scale level, the reliability estimates exceeded .90, while at the subscale level the estimates exceeded .70. From a test-retest perspective, the Genos EI Inventory scores also exhibited respectable levels of reliability (or stability), with total scale correlations of .83 and .72 at 2-month and 8-month intervals, respectively.

Chapter 7: Validity

Validity has been argued to be the single most important property of the scores derivable from a psychometric inventory (Nunnally & Bernstein, 1994). A rigorous definition emphasizes validity as more directly relevant to the justification of an inference made between scores derived from an inventory and the particular construct of interest (Sireci, 1998). Thus, if an individual makes the inference that a group of scores derived from an inventory is an accurate representation of the construct of emotional intelligence, for example, then the inference must be justified based several instances of validity research. Less rigorously, validity is frequently defined as something related to answering the question, 'Does the inventory measure what it was designed to measure?' Within the context of EI, validity in effect addresses the issue of justifying the contention that the scores from an EI measure are in fact indicative of an individual's level of EI.

The most common types of empirically oriented validity research may be suggested to include: factorial validity, concurrent validity, discriminant validity, and predictive validity. Non-empirical methods of evaluating psychometric validity include face validity and content validity. Collectively, the synthesized information derived from all the above types of validity represent construct validity. In psychology, a construct may be defined as an unobservable theoretical attribute of behaviour or cognition which is associated with individual differences (Messick, 1995). Within the context of Genos EI, emotional intelligence has been operationalised as consistent with seven dimensions of behaviour related to the identification, use, and management of emotions. In this chapter, a comprehensive review of the validity associated with the scores (i.e., the total scores and the seven subscale scores) from the Genos EI inventory will be provided.

Face Validity

Face validity is perhaps the least sophisticated and valued form of validity. It is based on whether the items of an inventory measure the attribute of interest "on the face of it" (de Vet, Terwee, & Bouter, 2003). Despite its relative lack of arguable significance in the assessment of a psychometric measure, face validity can nonetheless be considered crucial in applied contexts, if the motivation of the respondent is important (Kaplan & Saccuzzo, 2005). That is, respondents may not be very pleased if they believe the items within a test have nothing to do with the purpose at hand).

Face validity may be assessed in a superficial manner by surveying the content of the items (Kaplan & Saccuzzo, 2005). As mentioned in a previous section of this technical manual, the Genos EI Inventory was developed to measure the frequency with which individuals engage in emotionally intelligent behaviours in the workplace. Consequently, if the Genos EI inventory were to be associated with a high level of face validity, the items would need to be associated with emotionally relevant content in the exhibition of skills or behaviours manifested within the context of the workplace. An examination of the items (see Appendix A) will reveal that all of the Genos EI items

have a workplace context and are relevant to the identification, use, or management of emotions. Thus, on this basis, it may be judged that the Genos EI inventory is associated with high face validity.

Content Validity

Content validity is relevant to the determination of whether the items and subscales within an inventory adequately represent the breadth of the construct of interest (Kaplan & Saccuzzo, 2005). As is the case with face validity, content validity is not commonly assessed quantitatively. Content validity is typically assessed on logical or theoretical grounds. In some areas of psychology, content validity is relatively straightforward to address. For example, the evaluation of a test designed to measure students' mastery of the facts and principles associated with the content of a particular academic unit. In this case, items could easily be drawn relatively evenly across the content sections covered over the course of the unit. For example, the instructor might generate five questions relevant to each of the 12 weeks of the unit.

A construct such as emotional intelligence is somewhat more difficult to evaluate with the respect to content validity, as there are no firm boundaries to demarcate content from non-content (unlike a 12-week unit). Consequently, the content validity of an emotional intelligence measure can probably only be evaluated in relation to the framework and model specified to underpin the measure. In the case of Genos EI, the framework has been articulated as consistent with typical EI performance across a model comprised of seven emotionally intelligent relevant dimensions. Each of the seven dimensions within the Genos EI model is measured by 10 unique items within the Genos EI inventory. Thus, from this perspective, the Genos EI inventory may be suggested to adequately cover the content, and, consequently, may be argued to be associated with content validity.

A more difficult debate may emerge, however, as to whether the Genos EI model is adequately expansive, or, perhaps, is over-expansive. As discussed in a previous chapter, the Genos EI inventory emerged, in part, based on a comprehensive analysis intended to uncover the common dimensions across several commonly used measures of EI. Thus, the Genos EI model may be described as sufficiently comprehensive from this perspective, as a large number of potential EI dimensions were considered for inclusion. It will be further noted that the Genos EI model was formulated to explicitly not encompass personality related dimensions or common work-based competencies such as customer service, for example. Instead, the Genos EI model was formulated to represent a relatively "pure" and coherent model of EI dimensions. Stated alternatively, the Genos EI model excludes dimensions of behaviour that may simply be correlated with the EI (e.g., customer service, optimism), but are not considered to be prototypic of the emotional intelligence construct (see Smith & McCarthy, 1995, for a discussion on prototypic constructs). A survey of the dimension

names and the items within the Genos EI inventory is argued here to adequately represent the content associated with a theoretical construct of EI.

In summary, the Genos EI inventory contains several items designed to measure all seven dimensions of the Genos EI model. Further, the Genos EI model emerged through a comprehensive analysis of several other putative measures of EI, as well as theoretical considerations to restrict the model from not incorporating obvious personality dimensions and/or competencies. For these reasons, it is believed that the Genos EI inventory is associated with a respectable level of content validity.

Factorial Validity

Factorial validity is relevant to establishing the dimensional nature of the scores derived from an inventory (Nunnally & Bernstein, 1994). Stated alternatively, factorial validity helps determine the number and nature of the dimensions measured by a psychometric inventory. From a practical perspective, if factorial validity evidence were to support the model of EI upon which the Genos EI inventory is based, then the manner in which the Genos EI inventory is scored would be justified. Thus, in the absence of factorial validity of a model posited to underpin an inventory, interpretations of the subscale scores may not be appropriate (Gignac, 2009). Typically, factorial validity is tested with exploratory factor analysis (EFA) or confirmatory factor analysis (CFA). The Genos EI inventory has been examined extensively with CFA and a review of the results are presented in this chapter. A more detailed description of the methods and results associated with the CFA of the Genos EI inventory can be found in Gignac, (in press).

As described in detail in a previous chapter of this technical manual, the Genos EI model of EI consists of seven positively inter-correlated dimensions: Emotional Self-Awareness, Emotional Expression, Emotional Awareness of Others, Emotional Reasoning, Emotional Self-Management, Emotional Management of Others, and Emotional Self-Control. Because the Genos EI inventory was predicated upon a non-negligible amount of theory and past empirical research, a confirmatory factor analytic (CFA) approach was undertaken to examine the factorial validity associated with the Genos EI inventory. To this effect, a partial disaggregation modeling approach (Baggozi & Heatherton, 1994) was employed such that each of the seven factors were measured by three indicator parcels, each defined by the sum of 3-4 similarly keyed items designed to measure that particular factor (see Gignac, in press).

As CFA has been argued to be used most informatively by comparing various competing models, rather than testing and possibly "confirming" a single model (Joreskog, 1993), a series of increasingly more complex models was tested (i.e., models with a larger number of dimensions). As described by Gignac (in press),, the models consisted of: (1) a general factor model; (2) a general factor model with a nested negatively keyed item factor; (3) a five-factor higher-order model; (4) a

seven-factor higher-order model, and (5) a corresponding seven-factor direct hierarchical model. It will be noted that Model 3 was the model of EI that underpinned the psychometric measure that preceded Genos EI (i.e., the SUEIT), while Model 4 was the revised model of EI that guided the development of the current Genos EI inventory.

Based on the Genos EI normative sample (*N*=4775), Gignac (in press) reported that the Genos EI seven-factor model was statistically significantly and practically better fitting than all of the other competing models. In particular, Model 5 was found to be associated with the following fit indices: CFI=.948, RMSEA=.066, SRMR=.037 and TLI=.932, which is considered satisfactory based on Hu and Bentler's (1999) guidelines for close-fit evaluation. That is, incremental close-fit index (e.g., CFI and TLI) values of approximately .95 or larger are considered acceptably well-fitting, while absolute close-fit index values (RMSEA and SRMR) of approximately .06 or less are considered well-fitting (Hu & Bentler, 1999). A graphical depiction of the seven-factor direct hierarchical model solution is presented as Figure 5 (NB: the nested negatively keyed item factor was omitted to enhance clarity). More complete details can be found in Gignac (in press).

It will be noted that all of the factor loadings associated with all of the latent variables were positive and statistically significant ($p<.05$). Although the factor loadings associated with the nested factors appear to be relatively low, loadings of this magnitude are typically observed within direct hierarchical model solutions, which tend to be much stricter tests of the validity of narrow factors, in comparison to oblique and higher-order models (see Gignac, 2007, for a non-technical discussion of direct hierarchical models).

As the average reader may be more familiar with the traditional higher-order modeling strategy, the results associated the Genos EI second-order factor model are briefly reviewed, as well. The more traditional higher-order model solution was associated with an average first-order factor loading of .73 and an average second-order factor loading of .90. Importantly, the residual variances associated with the first-order factor loadings were all positive and statistically significant, an important characteristic to observe when evaluating the plausibility of a higher-order model (Gignac, 2007). The close-fit index values were CFI =.940, RMSEA=.067, SRMR=.041 and TLI=.928, also suggesting a well-fitting model from a close-fit perspective (Hu & Bentler, 1999). A graphical depiction of the traditional higher-order model and the corresponding completely standardized solution is depicted in Figure 6.

Summary

The seven-factor model upon which the Genos EI inventory is based was supported based on both the strict direct hierarchical modeling strategy, as well as the more traditional higher-order modeling strategy. Thus, the seven-factor model of EI endorsed by Genos and measured by the 70-

item Genos EI inventory may be argued to be plausible. From a more practical perspective, the implication of the CFA results is that the manner in which the Genos EI inventory is scored and interpreted (i.e., Total EI score and seven subscale scores) is justifiable.

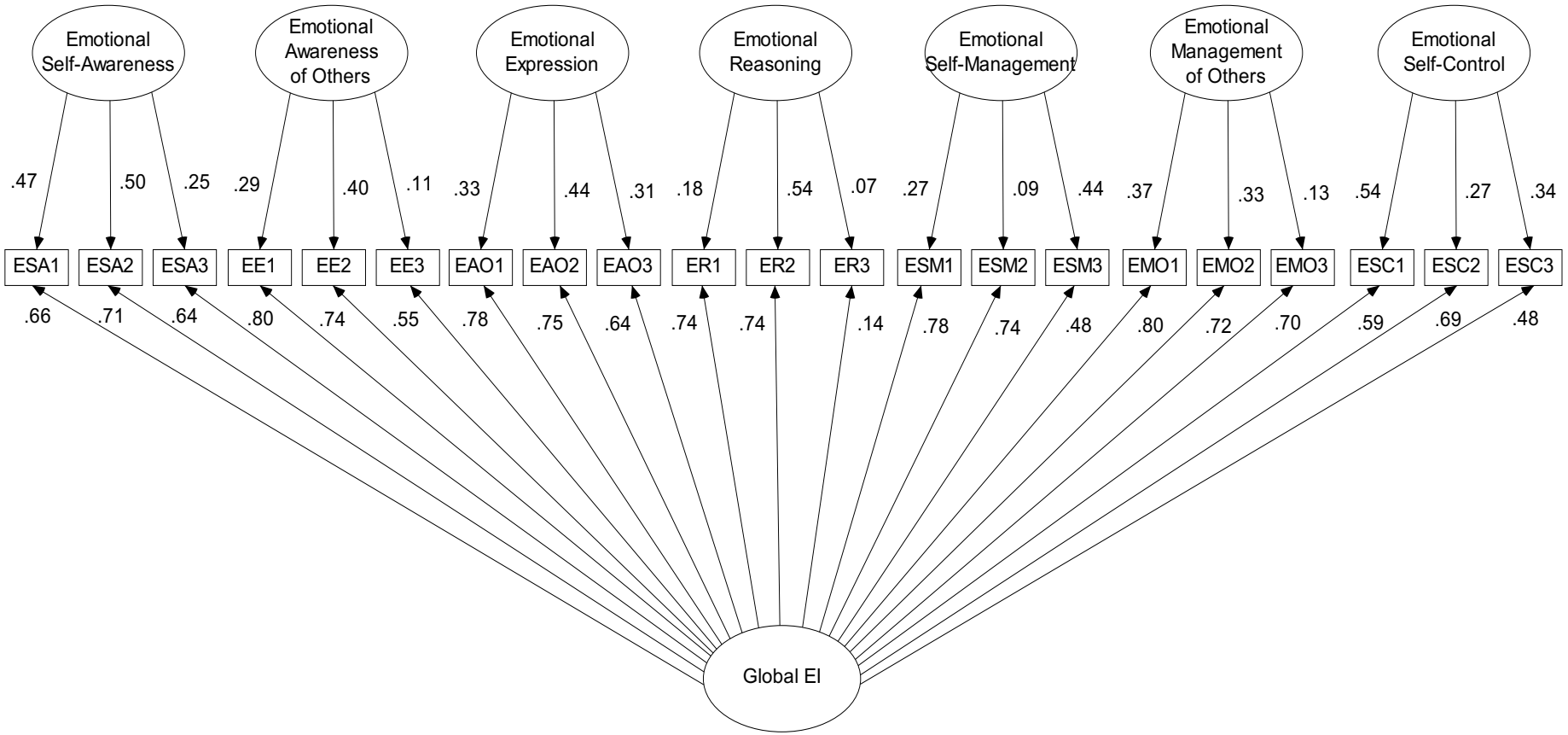


Figure 5: Genos EI direct hierarchical factor model: one global EI factor, seven nested subscale factors, and one nested negatively keyed item factor (omitted for clarity; adapted from Table 3, Gignac, in press).

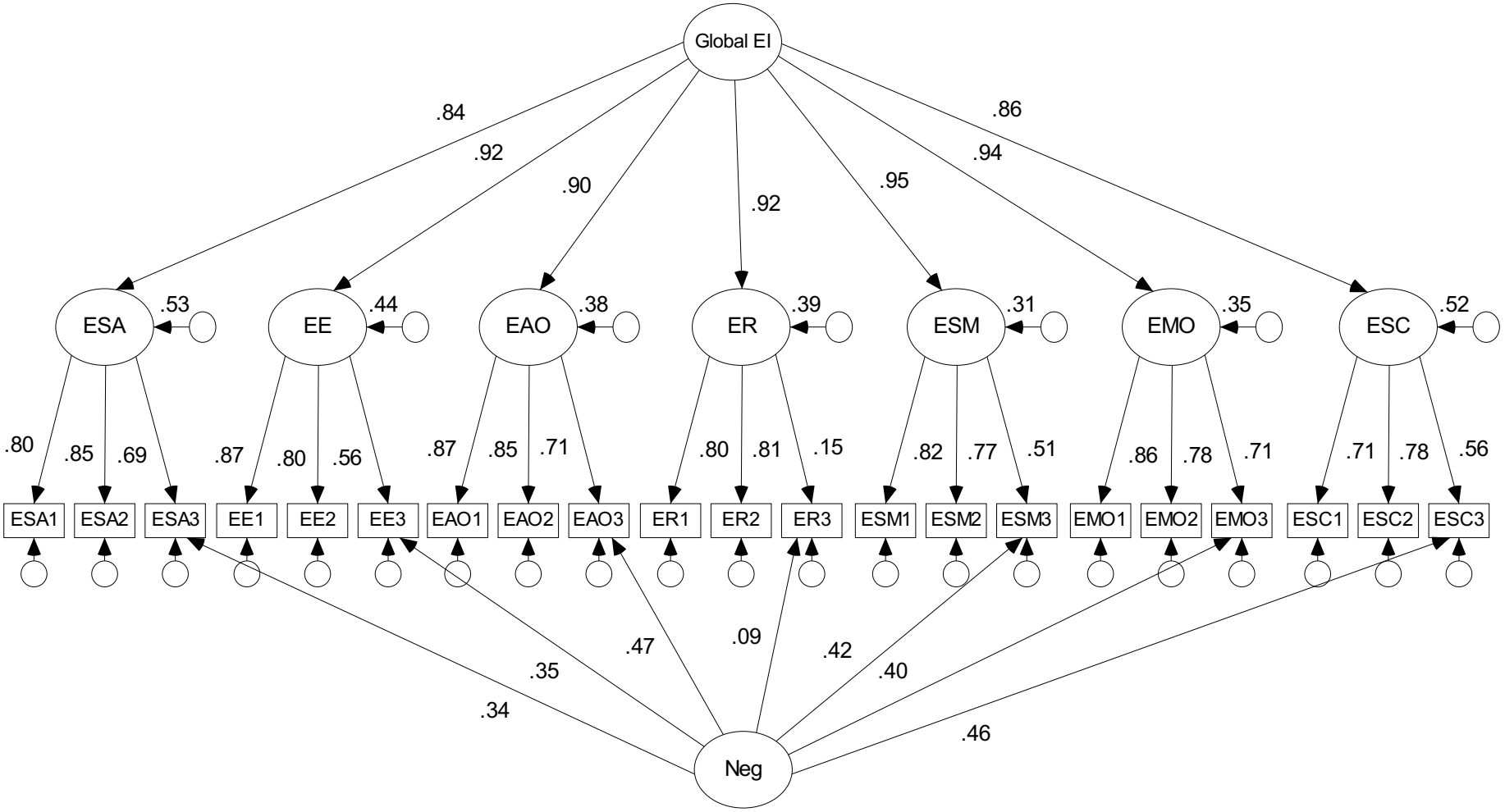


Figure 6: Genos EI higher-order factor model: a second-order global EI factor, seven first-order factors, and one first-order negatively keyed item factor (adapted from Gignac, in press).

Convergent Validity

Convergent validity is relevant to testing for theoretically congruent associations between the scores of the inventory of interest and the scores from previously validated psychometric or non-psychometric measures (Gignac, 2009). It may be contended that there are two primary types of convergent validity: Concurrent validity and predictive validity. The primary characteristic that distinguishes concurrent validity from predictive validity is the time at which the dependent variable is measured (Gignac, 2009). More specifically, when the independent variable and the dependent variable are effectively measured at the same time, the type of validity that is tested in concurrent validity. In contrast, if the dependent variable is measured a meaningful amount of time after the independent variable, the nature of the validity that is tested is predictive validity. The Genos EI inventory has been found to be associated with both concurrent validity and predictive validity.

Concurrent validity: SUEIT and Genos EI

Although the Genos EI inventory is based to a non-negligible degree on the SUEIT (similar subscales, a number of items are the same or nearly the same), it nonetheless remains an empirical question to determine whether the two inventories in fact measure similar constructs. To examine this issue, an oblique factor model was tested within a SEM framework based on a sample of 169 Australian adults (the following results are based on analyses performed on the correlation matrix reported in Reese, 2007). In addition to modeling well-known latent variables within SEM, phantom composites were also included in the SEM model to allow for the estimation of both the disattenuated and attenuated correlations between SUEIT total and Genos EI total (see Gignac, 2007, for a non-technical discussion of this issue).

The model that was tested can be seen in Figure 7 (Model 1a). It can be seen that, in addition to the latent SUEIT and Genos EI latent variables, there are corresponding unit weighted phantom composites. As can be seen in Figure 7 (Model 1b), the disattenuated correlation between the SUEIT and Genos EI was estimated at .93 ($p<.05$), which implied that 86.5% of the reliable variance between the SUEIT and Genos EI could be accounted for by each other. In contrast, the attenuated correlation between the SUEIT and Genos EI was estimated at .78, which implies that 60.8% of the total variance between the SUEIT and Genos EI could be accounted for by each other. Thus, whether based on the disattenuated correlations or the attenuated correlation, it may be concluded that the SUEIT and Genos EI are measuring very similar constructs, but not identical constructs, as the disattenuated correlation between two latent variables did not reach 1.0.

It will be noted that in Model 2, the general factor loading associated with the Emotions Direct Cognition (EDC) was equal to .14, which should be considered problematically small for a subscale factor loading (in contrast to an item factor loading). This result should not be considered anomalous, as Gignac (2005) found that EDC correlated negatively with total SUEIT EI scores. In fact, Gignac (2005) recommended that EDC be substantially revised at the item level to improve its factorial validity. In contrast, the corresponding subscale within Genos EI (Emotional Reasoning), exhibited a general factor loading equal to .73. This finding suggests that the Emotional Reasoning subscale does in fact represent a substantial improvement over its predecessor, the Emotions Direct Cognition subscale. It is probably the case that the most substantive difference between the SUEIT and Genos EI is the manner in which a factor related to emotions and reasoning is measured.

An additional improvement associated with Genos EI over the SUEIT is related to subscale reliability. Consider that based on the results reported by Reese (2007), the mean subscale reliability associated with the SUEIT and Genos EI were .69 and .81, respectively. Of particular note, EDC from the SUEIT was associated with unacceptably low reliability estimate of .63. In contrast, the Emotional Reasoning subscale from the Genos EI inventory exhibited a reliability estimate of .74. Based on the reliability indexes estimated with the phantom composites in Model 1 (i.e., the implied correlation between SUEIT by SUEIT-Ph and Genos EI by Genos EI-Ph; see Figure 7), the internal consistency reliability associated with the total EI SUEIT scores and the total Genos EI scores were, .75 and .92, respectively. Thus, again, the Genos EI inventory exhibited a non-negligibly higher level of internal consistency reliability than its predecessor, the SUEIT.

SUEIT and Genos EI: Summary & Implications

Despite the differences between the two inventories, the SUEIT and Genos EI total scores nonetheless correlated with each positively and substantially, suggesting that they measure similar EI constructs. The correlation is not so high as to suggest, redundancy, however. The most substantial difference between the two measures from a factorial validity perspective is that the Emotions Direct Cognition subscale failed to evidence any appreciable association with the general SUEIT EI factor. In contrast, the Emotional Reasoning subscale within Genos EI (which replaced the Emotions Direct Cognition subscale within the SUEIT) evidenced a respectable factor loading onto the general Genos EI factor. Finally, the reliabilities associated with the subscale and total scores were consistently higher within Genos EI, in comparison to the SUEIT. Thus, from both a reliability and factorial validity perspective, the Genos EI inventory should be considered an improvement over the SUEIT. Consequently,

use of the Genos EI inventory, rather than the SUEIT, in professional and academic settings, is strongly indicated.

Finally, as the Genos EI inventory is a revision of the SUEIT and the two measures share a very substantial amount of variance, it is believed that the validity studies that have supported the use the SUEIT may also be ascribed to the Genos EI inventory (see the end of this Chapter for a review of some SUEIT validity research). Such a notion is similar to the contention that validity research associated with the WAIS-R is also ascribable to its revision (i.e., WAIS-III), for example.

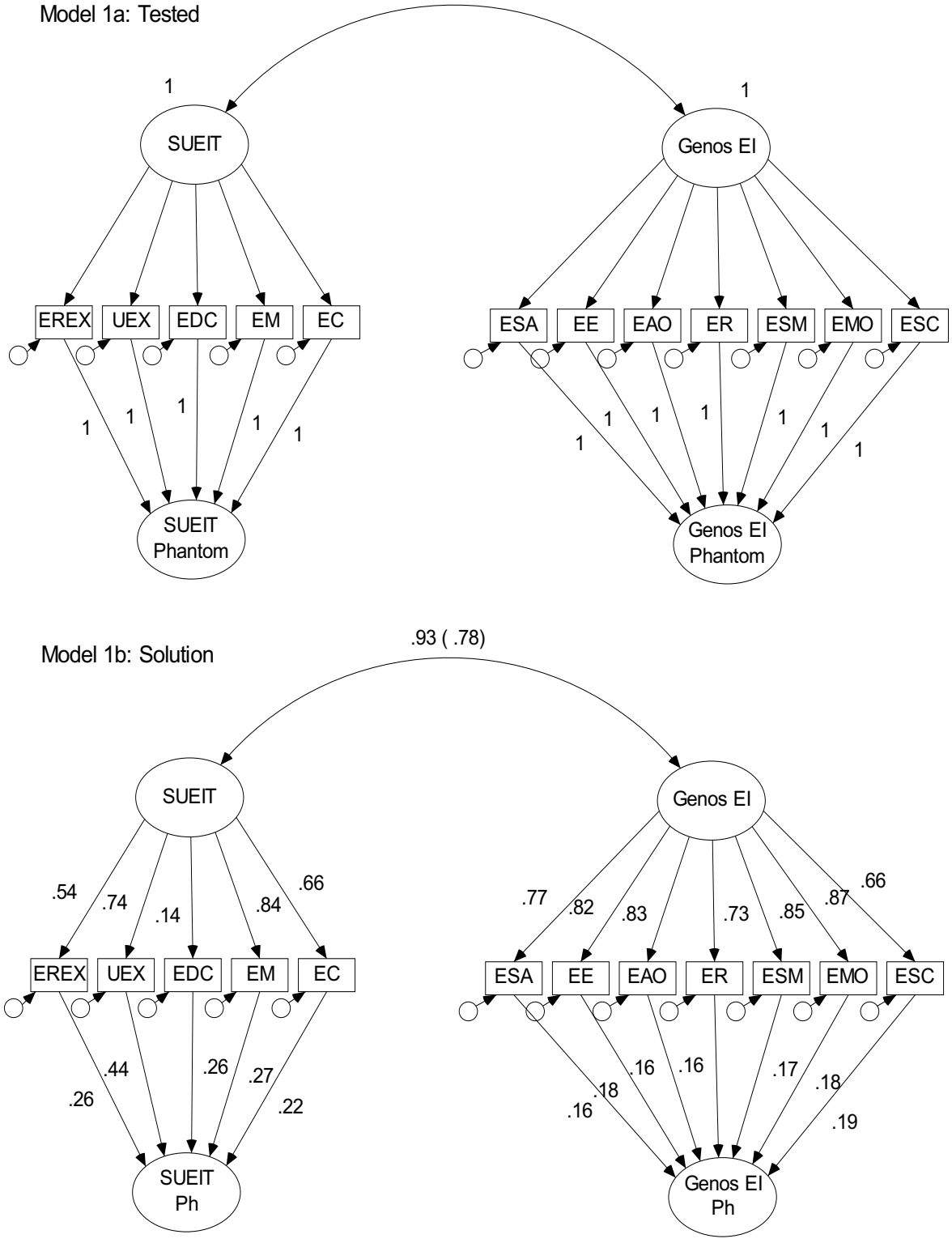


Figure 7: Disattenuated and attenuated (in parentheses) correlations between the SUEIT and Genos EI

Genos EI Recovered

Although there is a substantial correlation between the 5-factor SUEIT inventory and the 7-factor Genos EI inventory, it should be emphasized that the two inventories do not measure exactly the same sub-dimensions of EI. Aside from the fact that Genos EI measures seven factors rather than five, the Emotions Direct Cognition subscale within the SUEIT was substantially modified in the Genos EI inventory.

However, it will be noted that Gignac (2005) effectively uncovered the Genos EI 7-factor model within the SUEIT. The labels used by Gignac (2005) to describe the seven substantive EI factors are somewhat different to the labels currently used to describe the seven factors within the Genos EI model. However, they are effectively the same subscales. The lists of the subscale labels associated with the 7-factor model of EI uncovered within the SUEIT by Gignac (2005) and the labels associated with the 7-factor model of EI within Genos EI are listed in Table 16. It is obvious that there are substantial similarities.

Based on the item-level factor analysis results reported in Gignac (2005), an alternative scoring key has been devised to effectively recover very similar Genos EI subscale scores from the SUEIT. The primary implication of having the capacity to recover Genos EI subscale scores from the SUEIT is that past research that has used the SUEIT can be re-analysed (in those cases where raw data have been made available) to better represent the validity associated with the revised inventory (i.e., Genos EI). In several instances throughout this technical manual, the reported validity research is based on Genos EI recovered subscale scores from the SUEIT.

Table 16: Comparison of 7-factor model dimension/subscale labels within the 7-factor model of the SUEIT and the 7-factor model of the Genos EI inventory

7-Factor Model within the SUEIT	7-Factor Model within Genos EI
1. Emotional Recognition	1. Emotional Self-Awareness (ESA)
2. Emotional Expression	2. Emotional Expression (EE)
3. Understanding Emotions External	3. Emotional Awareness of Others (EAO)
4. Affirmation of Emotions	4. Emotional Reasoning (ER)
5. Emotional Management of the Self	5. Emotional Self-Management (ESM)
6. Emotional Management of Others	6. Emotional Management of Others (EMO)
7. Emotional Control	7. Emotional Self-Control (ESC)

Genos EI and the TMMS

In addition to demonstrating a correlation between an inventory and its corresponding revision, another method used to help demonstrate concurrent validity is to correlate the scores

from the inventory with another existing measure of the construct widely acknowledged to be a measure of the construct of interest (Kaplan & Saccuzzo, 2005). Based on a sample of 163 female managers in Australian based companies, Genos EI scores (recovered) were correlated with scores from the Trait Meta-Mood Scale (TMMS; Taylor, Bagby, & Parker, 2003). As can be seen in Table 17, the Genos EI by TMMS correlation matrix yielded a positive manifold, with nearly all inter-subtest correlations reaching statistical significance ($p<.05$). Notably, Total Genos EI and Total TMMS correlated at .50, indicating that 25% of the total variance between Genos EI and the TMMS is shared. To examine the association further, the two EI models were estimated as an oblique factor model. As can be seen in Figure 8, the latent variable correlation between Genos EI and the TMMS was estimated at .68 ($p<.05$), which suggests that 46.2% of the reliable variance between the TMMS and the SUEIT is shared. Thus, it may be contended that the Genos EI and the TMMS are measuring a similar construct (i.e., emotional intelligence); however, the shared variance is not so large as to suggest construct redundancy.

Table 17: Pearson Inter-correlations between Genos EI and the TMMS

Scale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Genos Total EI	1.0											
2. ESA	.60	1.0										
3. EE	.65	.34	1.0									
4. EAO	.78	.52	37	1.0								
5. ER	.52	.38	.31	.37	1.0							
6. ESM	.71	.26	.36	.30	.12	1.0						
7. EMO	.81	.45	.51	.58	.29	.53	1.0					
8. ESC	.57	.26	.26	.23	.04	.65	.41	1.0				
9. TMMS Total	.50	.34	.34	.32	.45	.32	.38	.27	1.0			
10. Attention	.30	.16	.29	.16	.53	.07	.17	.06	.81	1.0		
11. Clarity	.50	.42	.31	.35	.20	.37	.42	.34	.80	.36	1.0	
12. Repair	.41	.21	.13	.26	.24	.42	.34	.28	.68	.34	.51	1.0

Note. N=163; correlations greater than .15 were statistically significant ($p<.05$); Genos EI subscale scores were recovered from the SUEIT as per Gignac (2005); ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control.

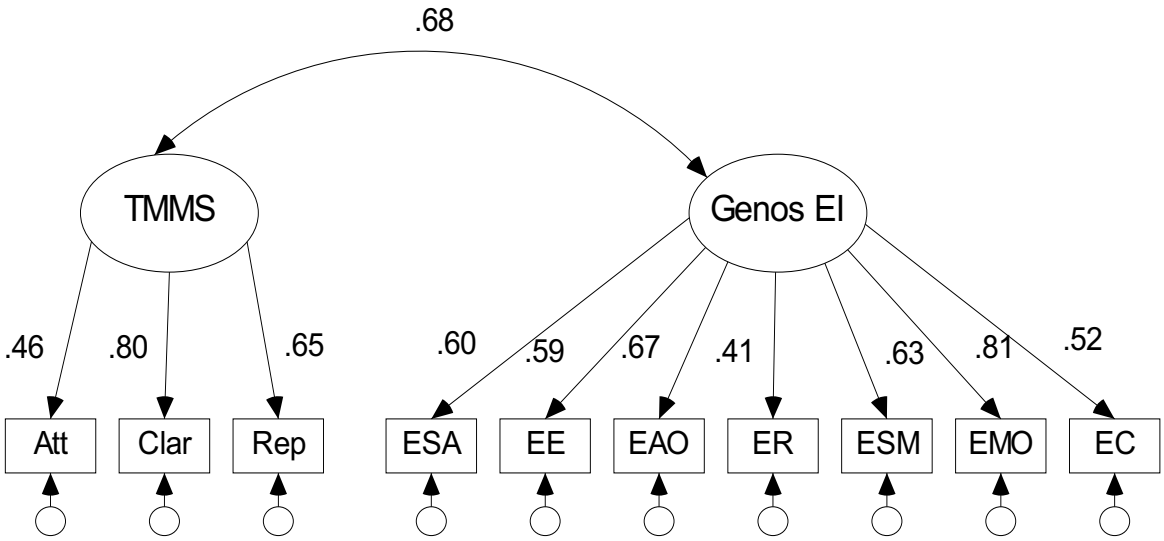


Figure 8: Oblique factor model depicting the latent variable correlation between the TMMS and the SUEIT

Genos EI and Leadership

EI has frequently been suggested to be a correlate and possible mediator of leadership in the workplace, particularly leadership styles such as transformational leadership, which is a leadership style particularly relevant to organisational change (Palmer, Walls, Burgess, & Stough, 2001). In contrast to transformational leadership, laissez-faire leadership is associated with a pervasive indifference to the responsibilities of managing subordinates (Avolio, Bass, & Jung, 1995).

To examine the associations between Genos EI and leadership, the data associated with Downey, Papageorgiou, and Stough (2005) were re-analysed for the purposes of this technical manual. The data were based on 163 managers in Australia across a number of different industries. Participants completed the Multifactor Leadership Questionnaire (MLQ; Avolio, Bass, & Jung, 1995) and the SUEIT. Genos EI subscale scores were recovered from the SUEIT and correlated with two primary leadership styles measured by the MLQ: Transformational Leadership and Laissez-Faire Leadership. It was anticipated that Genos EI would correlate positively with transformational leadership, but negatively with laissez-faire Leadership (the transactional leadership results are presented in the discriminant validity section below).

As can be seen in Table 18, the hypothesis was supported. For example, Genos EI total scores correlated .56 ($p<.05$) with transformational leadership but negatively with laissez-fair Leadership (i.e., $r=.-40$, $p<.05$). It can also be observed in Table 18 that Emotional

Management of Others was the greatest numerical Genos EI subscale correlate of transformational leadership (r=.51) (The TMMS results are discussed further below).

Table 18: Pearson correlations between Genos EI, the TMMS and Leadership (Transformational and Transactional)

Scale	Transformational	Laissez-Faire
1. Genos EI Total	.56	-.40
2. ESA	.39	-.24
3. EE	.34	-.30
4. EAO	.41	-.26
5. ER	.27	-.13
6. ESM	.34	-.35
7. EMO	.51	-.38
8. ESC	.38	-.23
9. TMMS Total	.42	
10. Attention	.29	
11. Clarity	.37	
12. Repair	.32	

Note. N=163; correlations greater than |.15| are statistically significant (p<.05); Genos EI subscale scores were recovered from the SUEIT.

To further understand the nature of the relationship between Genos EI and transformational leadership, a maximum likelihood estimation multiple regression was performed by regression the transformational leadership composite variable onto the seven Genos EI subscale scores. The statistical significance of the completely standardized solution was estimated via 5000 bootstrapped samples within AMOS. As can be seen in Table 19, EMO and ESC were found to be statistically significant contributors to the regression equation, which accounted for a total of 33.9% of the variance in transformational leadership. The observation that both EMO and ESC were statistically significant contributors to the regression equation supports further the factor differentiation within Genos EI. That is, the Genos EI inventory is not measuring single, global EI factor. It also seems congruent, theoretically, to observe that the emotional management related subscales mediated the association between EI and leadership,

as leadership is based, in part, upon successful interactions with others, which would require a non-negligible amount of emotional management skills.

Table 19: Completely standardized multiple regression solution: Transformational leadership regressed onto Genos EI subscales

	β	95%CI	
ESA	.12	-.01	.27
EE	.05	-.10	.21
EAO	.09	-.08	.27
ER	.08	-.08	.24
ESM	.05	-.14	.23
EMO	.26	.06	.45
ESC	.17	.02	.32
R^2	.339	.190	.459

Note. *p<.05; r=Pearson correlation;
β=standardized beta weight

Downey et al. (2005) also administered the TMMS to the managers, which allowed for some comparisons with Genos EI as a predictor of transformational leadership (based on re-analyses conducted by the present author). As can be seen in Table 18 (bottom), the TMMS correlated with transformational leadership at r=.42 (p<.05). Given that data were available for both Genos EI and the TMMS, the opportunity to evaluate which EI measure predicted transformational leadership most strongly could be examined. To examine this issue, a multiple regression model was tested in Amos (i.e., SEM). As can be seen in Figure 9, with transformational leadership regressed onto Genos EI and TMMS latent variables, standardized regression effects of .63 and .50 were observed, respectively. When combined into a single regression model, Genos EI exhibited a unique standardized regression effect of .55 (p<.05), while the TMMS latent variable exhibited a non-significant (p=.34) effect of .12. Thus, with respect to predicting transformational leadership, Genos EI is a much better predictor than the TMMS.

Such a result is likely due to the fact that Genos EI has a substantial emphasis upon the emotional management of emotions, while the TMMS does not. In the defence of the TMMS, it was not designed to be a comprehensive measure of EI. Nonetheless, the validity results depicted in Figure 9 should be viewed as solid concurrent validity (and possibly incremental predictive validity) supporting the Genos EI model and inventory.

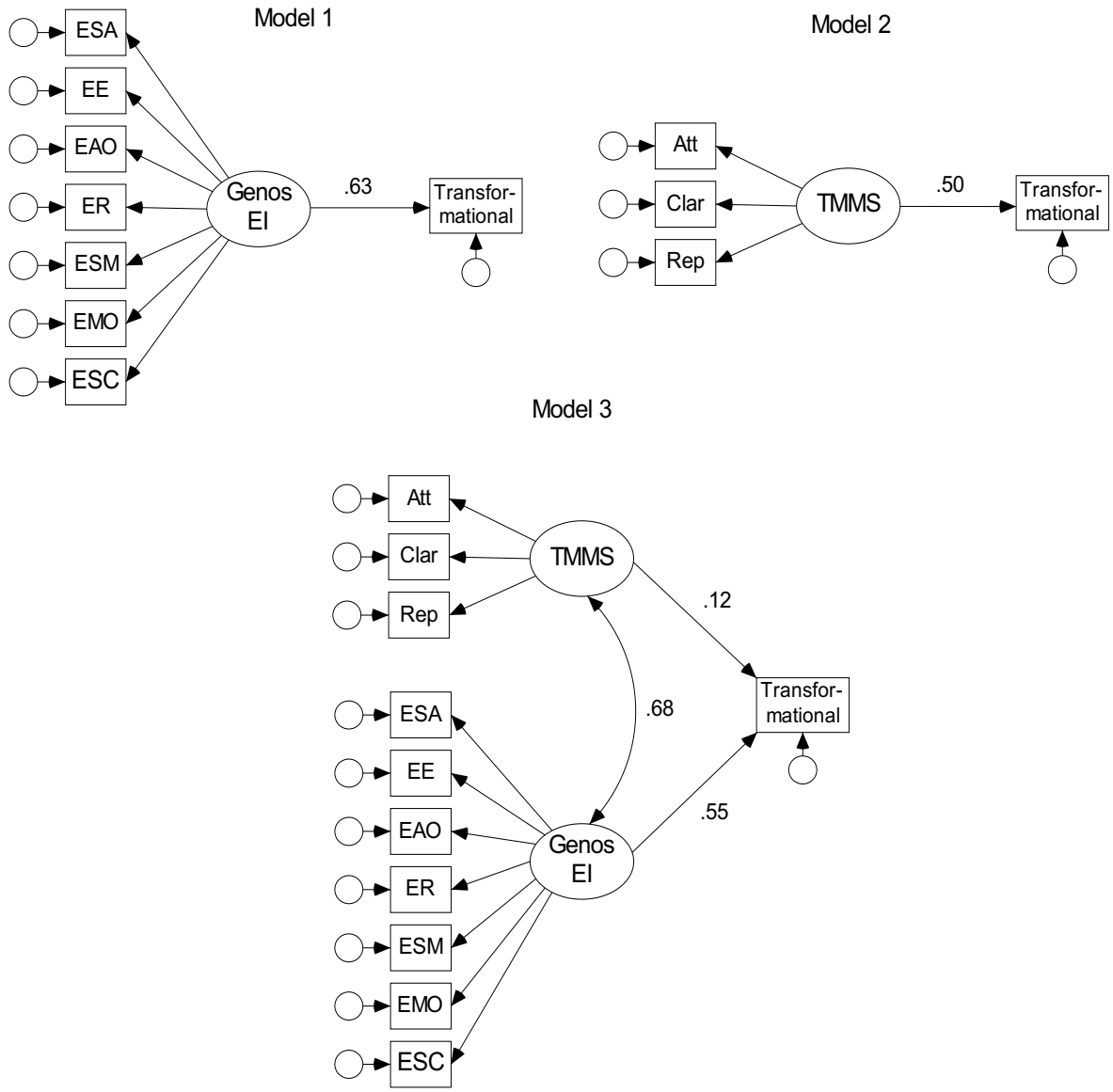


Figure 9: Model 1=leadership regressed onto Genos EI; Model 2=leadership regressed onto TMMS; Model 3=leadership regressed onto TMMS and Genos EI.

Well-Being

Theoretically, emotional intelligence has been suggested to be a predictor of well-being (e.g., Schutte, Malouff, Simunek, McKenley, & Hollander, 2002). That is, those individuals who can identify, use, and manage their emotions on a regular basis, should be able to handle and manage the stresses that arise in daily life, which would be expected to contribute positively to their well-being. Based on data collected by Harmer (2004), Genos EI subscale scores were recovered and correlated with an array of well-being related dependent variables. The well-being dependent variables were all work-place relevant, rather than general in context, which

may be suggested to particularly relevant to users of the Genos EI inventory. Details about the nature of the well-being variables can be found in the *Note* below Table 20.

As can be seen in Table 20, Genos EI (Total) was found to be correlated positively and statistically significantly with Life Satisfaction-Self (r=.34), Life-Satisfaction-Dual (r=.25), Role-Ease (r=.36), Role-Balance (r=.30), Job Competence (r=.29), and Job Aspiration (r=.42). Thus, higher scores on Genos EI were found to be associated with higher levels of several workplace well-being relevant measures. The exception was the Work-Life Balance indicator of well-being, which correlated with total Genos EI at r=.14 (p>.05). In contrast to the above pattern of positive correlations, Genos Total EI was found to correlate negatively and statistically significantly with Role-Overload (r=-.24) and Job Spill-over (r=-.23). Thus, higher scores on Genos EI were found to be associated negatively with contra-indicators of workplace well-being, which would be expected. At the subscale level, the trend of the results was such that the emotional management type of subscales exhibited the most consistent correlations across all workplace well-being indicators.

In summary, there does appear to be evidence to support the contention that EI, as measured by Genos EI, is associated with a number of workplace relevant well-being indicators, although perhaps not Work-Life Balance.

Table 20: Pearson correlations between Genos EI and well-being related outcome variables

Scale	Life Satisfaction Self	Life Satisfaction Dual	Role-Overload	Job-Spill-over	Role-Ease	Role-Balance	Work-Life Balance	Job Competence	Job Aspiration
Total EI	.34*	.25*	-.24*	-.23*	.36*	.30*	.14	.29*	.42*
ESA	-.01	-07	-08	.04	.13	.13	.05	.13	.34*
EE	.22*	.23*	-.25*	-.13	.33*	.22*	.15	.15	.11
EAO	.24*	.14	-.15	-.08	.22*	.04	.04	.15	.22*
ER	.16	.18	-.05	-.08	.22*	.21*	.01	-.05	.16
ESM	36*	.20*	-.27*	-.33*	.24*	.34*	.21	.40*	.49*
EMO	.24*	.19	-.18	-.17	.33*	.21*	.12	.22*	.39*
ESC	.16	.18	-.06	-.22*	.17	.38*	.08	.29*	.28*

Note. *$p<.05$ (one-tailed); $N=71$; Life Satisfaction-Self: Scale developed by Diner et al. (1985) consists of five items designed to measure a respondent's satisfaction with life (e.g., "In most ways, my life is close to my ideal."); Life Satisfaction-Dual: Modification of the scale developed by Diner et al. (1985) which consists of five items designed to measure a respondent's partner's satisfaction with life (e.g., "In most ways, my partner's life is close to his/her ideal."); Role-Overload: Modification of Marks & MacDermind's (1996) 8-item self-report inventory designed to measure workplace overload (e.g., "In my job I can't ever seem to get caught up."); Job-Spill-over: Based on Warr's (1990) four-item self-report scale designed to measure a respondent's negative job spill-over only (e.g., "After I leave my work, I worry about job problems."); Role-Ease: Modification of Marks & MacDermind's (1996) 5-item self-report inventory designed to measure a respondent's retrospective role ease for the preceding 12 months ; Role-Balance: Based on an 8-item scale developed by Marks & MacDermid (1996) to measure the tendency for the respondent to become fully engaged, alert and mindful in the performance of every role in their total role system (e.g., "Nowadays I seem to enjoy every part of my life equally well"); Work-Life-Balance: Scale developed by Hill et al. (2001) consists of five-items that measure the ability of the respondent to balance the demands of work and their own personal and dual-earner lives ("When I take a vacation, I am able to separate myself from work and enjoy myself"); Job Competence: Based on Warr's (1990) six-item self-report scale designed to measure a respondent's ability to cope with their current job, rather than absolute levels of occupational ability (e.g., "I find my job quite difficult."); Job Aspiration: Based on Warr's (1990) six-item self-report scale designed to measure a respondent's mental health with respect to having the capacity to be interested and engaged with the domain-specific context of work (e.g., "I enjoy doing new things in my job.").

Job Satisfaction and Organizational Commitment

The nature and importance of job satisfaction in employees may be argued to be self-evident. That is, all other things being equal, organizations likely wish their employees to have a high level of job satisfaction. In contrast, organisational commitment may be defined as the strength of an individual's identification with and involvement in the organization within which he or she works (Steers, 1977). Organizational commitment has been shown to predict job turnover, absenteeism, job motivation, and job performance (see Barge & Schlueter, 1988, for review). Thus, both job satisfaction and organizational commitment may be viewed as important workplace relevant dimensions of individual differences. How does Genos EI relate to these two constructs?

Although positive associations between EI and job satisfaction and organizational may be viewed as important observations in their own right, the question of whether EI has any unique or direct effect on both job satisfaction and organizational commitment may be posed. That is, does Genos EI predict job satisfaction and organizational commitment, above the mutual effects between job satisfaction and organizational commitment? To test such a hypothesis, a mediation SEM analysis was performed on a sample of 515 adult respondents (69.9% female) with an average age of 43.23 (SD=10.98). The respondents resided in Australia (37.1%), the USA (32.0%), Singapore (14.8%), New Zealand (9.5%), the U.K. (1.0%) and other (5.6%). The respondents reported to be working within a variety of industries, including Professional Services (16.7%), Education and Training (12.2%), HR/Recruitment (8.7%), and Health Care (6.6%).

Emotional intelligence was measured with the Genos EI inventory. Job Satisfaction was measured with the Job Satisfaction Scale (Warr, Cook, & Wall, 1979), and organisational commitment was measured with the Organizational Commitment Questionnaire (Mowday, Steers, & Porter, 1979).

Prior to conducting the mediation analysis, the bi-variate correlations between Genos EI, job satisfaction, and organizational commitment were examined. As can be seen in Table 21, all of the Genos EI subscales correlated positively with both job satisfaction and organizational Commitment. Thus, higher levels of Genos EI were associated with higher levels of job satisfaction and organizational commitment. It will be noted that the correlations were somewhat larger with job satisfaction than organizational commitment. Disattenuated for imperfect reliability via SEM, Genos EI correlated with job satisfaction and organizational commitment at .75 and .45, respectively ($p<.05$), which indicates are large effect based on Cohen's (1992) guidelines. Thus, 56.3% of the reliable variance in job satisfaction, and 20.3% of the variance in organizational commitment, was accounted for by Genos EI.

Table 21: Pearson correlations between Genos EI subscales, Job Satisfaction, and Organizational Commitment

Scale	Job Satisfaction	Org. Commitment
Total EI	.42*	.36*
ESA	.30*	.26*
EE	.42*	.32*
EAO	.28*	.25*
ER	.42*	.37*
ESM	.41*	.35*
EMO	.36*	.31*
ESC	.35*	.27*

Note. N=515; *p<.001.

To test whether job satisfaction or organizational commitment mutually mediated the effect of Genos EI on each other, a mediation analysis was conducted within Amos. As can be seen in Figure 10, Genos EI had a direct effect on Org. Commitment (Model 1; β =.07, p<.05), independently of the indirect effect via Job Satisfaction. Thus, Genos EI could predict some organizational commitment variance, independently of the effects of job satisfaction upon organizational commitment. Conversely, Genos EI also had a direct effect on job satisfaction (Model 2; β =.19, p<.05), independently of the effects of organizational commitment on job satisfaction. Thus, Genos EI was associated with some unique concurrent validity in predicting both job satisfaction and organizational commitment.

Summary: Job Satisfaction and Organizational Commitment

Genos EI scores were found to be positively correlated with both job satisfaction and organizational commitment. Thus, higher scores on Genos EI corresponded with higher levels of job satisfaction and higher levels of organizational commitment. Further, the Genos EI scores were also found to be positively associated with job satisfaction, independently of the effects of organizational commitment, and positively associated with organizational commitment, independently of the effects of job satisfaction. Thus, Genos EI adds incremental concurrent validity in understanding the effects of both job satisfaction and organizational commitment.

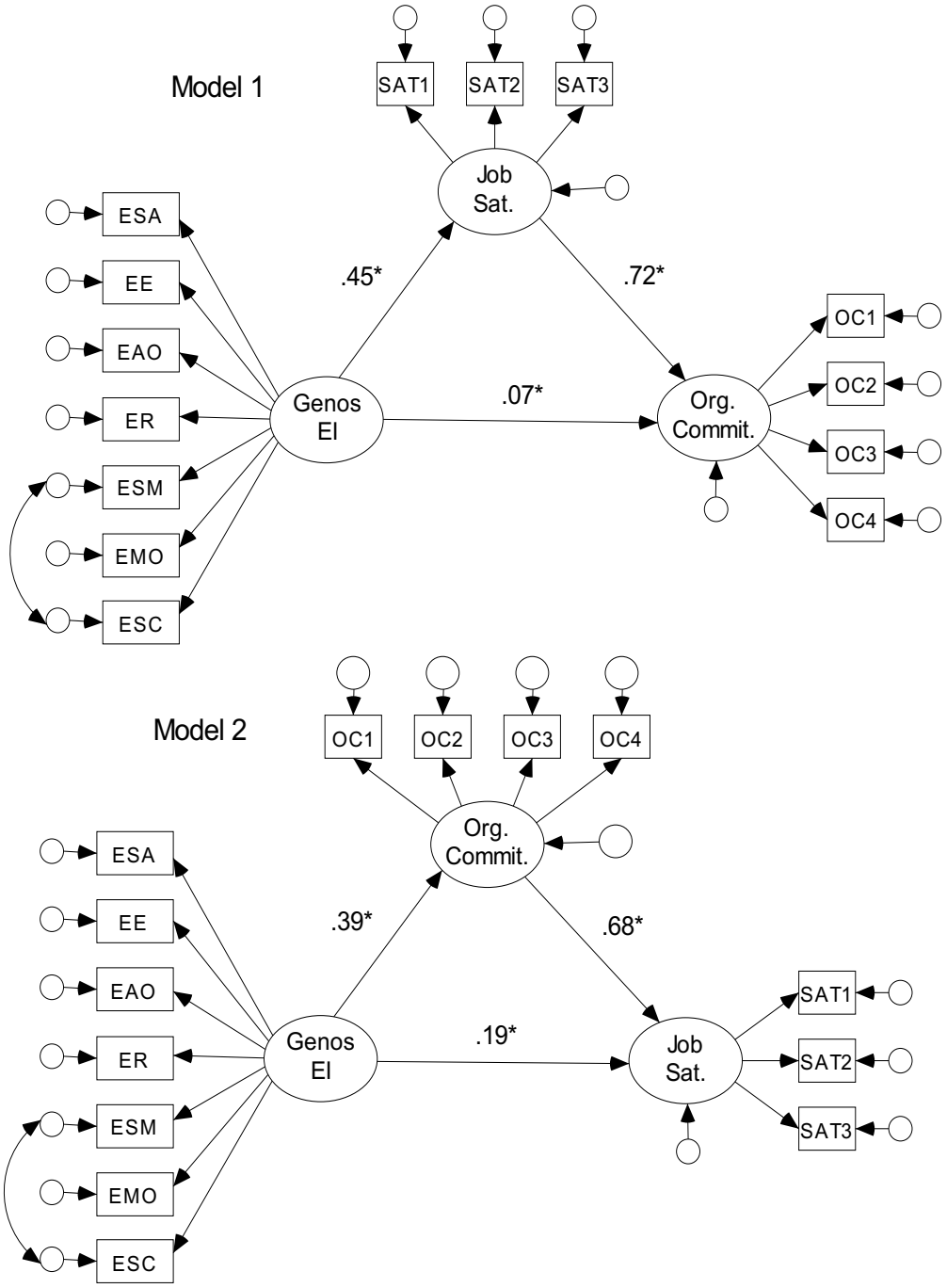


Figure 10: Latent variable mediation models and corresponding standard solutions associated with Genos EI, organizational commitment, and job satisfaction

Predictive Validity

In conjunction with concurrent validity, predictive validity forms the basis of convergent validity. When the scores of a psychometric measure are found to be associated with convergent validity, as well as discriminant validity, factorial validity, content validity and face validity, the basis for construct validity may be firmly contended. Thus, it is a constellation

of empirical findings derived from a variety of validation approaches which supports the interpretations of scores as valid. However, irrespective of the above, predictive validity may be argued to be the most impressive form of validity, particularly for psychometric measures that have an applied focus, such as Genos EI, rather than a purely academic focus. In the area of emotional intelligence, there is perhaps no more powerful and useful evidence for predictive validity than objectively determined job performance. In this section, the results associated with a re-analysis of some Genos EI and job performance data is presented.

Job Performance

Genos EI has been examined as a possible correlate of sales performance in a sample of Australian sales representatives of a large pharmaceutical company (*N*=33). The results presented here were derived from a re-analysis of a larger study that investigated the effects of an EI enhancement program on sales performance (Jennings & Palmer, 2007; see also, Gignac, Harmer, Jennings, & Palmer, in press). Thus, for evidence of the causal effect of EI on performance, readers are referred to Jennings and Palmer (2007). For the purposes of this technical manual, only the time 1 (i.e., pre-treatment) results are reported. All of the sales performance dependent variables represent monthly averages across 10 months. More specifically, the dependent variables included 'Sales' (i.e., mean monthly sales), 'Days on Territory' (i.e., DT, mean monthly number of days spent sales calls), 'Long calls' (i.e., LC, mean monthly number of long sales calls made to customers), and 'Short calls' (i.e., SC, mean monthly number of short sales calls made to customers). Further details can be found in Jennings and Palmer (2007).

As can be seen in Table 22, Genos Total EI correlated at .47 (p<.05) with Sales, which implies that 22.1% of the variability in sales performance could be accounted for by Genos Total EI scores. Thus, higher levels of self-reported EI were associated with higher levels of objectively determined sales performance. It will be noted that Emotional Management of Others (r=.42) and Emotional Awareness of Others (r=.40) were the numerically largest subscale correlates of Sales, suggesting more pronounced 'outwardly EI' influence of EI on performance. It can also be observed that Genos Total EI scores correlated positively with Days on Territory (r=.23), Long Calls (r=.35) and Short Calls (r=.18), although only the Long Calls correlation was statistically significant (p<.05). It will also be noted that Days on Territory, Long Calls, and Short Calls all correlated statistically significantly with Sales Performance at .41, .55, .29, respectively (p<.05).

Table 22: Pearson correlations between Genos EI subscales and sales performance in pharmaceutical sales representatives

	Sales	DT	LC	SC	Cronbach's α
Total EI	.47*	.23	.35*	.18	.92
ESA	.28	.16	.33*	.23	.69
EE	.13	-.14	.05	.05	.71
EAO	.40*	.31*	.30*	.13	.90
ER	.26	.40*	.18	.12	.75
ESM	.33*	-.01	.31*	.19	.81
EMO	.42*	.18	.19	.01	.71
ESC	.30*	-.10	.31*	.24	.71

Note. *p<.05 (one-tailed); N=33 for Sales correlations; N=38 for all other correlations; DT = Days on Territory; LC = Long Calls; SC=Short Calls; ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control.

In light of the above pattern of correlations, it was considered potentially insightful to determine whether Genos EI could be demonstrated to be associated with incremental predictive validity in predicting sales performance, beyond the DT, LC, and SC variables. That is, does Genos EI add any additional insight into predicting and understanding sales performance, above and beyond the number of lengthy sales calls and the number of days spent out on sales calls a sales representative manifests? To test this hypothesis, a hierarchical multiple regression was performed. Specifically, with Sales Performance as the dependent variable, DT, LC, and SC were entered into the regression equation at step 1, and Genos Total EI was entered at step 2. As can be seen in Table 23, at step 1, the performance indicators were associated with a multiple R = .61 (p=.004). At step 2, Genos Total EI was found to increase the multiple R to .67, which amounted to an R change of .29 (p=.049). Thus, Genos Total EI was found to predict Sales Performance beyond the effects of DT, LC, and SC.

Table 23: Standardized solution associated with a hierarchical multiple regression: Sales performance regressed onto sales performance indicators (DT, LC, SC) and Genos Total EI

	β	t	p	$r_{semi\text{-}partial}$
Step 1				
DT	.20	1.00	.328	.15
LC	.74	3.00	.006	.44
SC	-.41	-1.67	.105	-.25
R	.61	2.37	.004	
Step 2				
DT	.22	1.12	.274	.16
LC	.55	2.20	.036	.31
SC	-.31	-1.28	.213	-.18
Genos EI	.31	2.06	.049	.29
R	.67	2.39	.002	
R_{change}	.29	2.05	.049	

Note. DT = Days on Territory; LC = Long Calls; SC=Short Calls; Genos EI = Genos Total EI

In another investigation (Gignac, Lee, & Stough, submitted), Genos EI was used to predict revenue generation in a sample of recruitment consultants (N = 37). In addition to Genos EI, the participants completed an intelligence test (Vocabulary and Matrix Reasoning from the Wechsler scales; Wechsler, 1999), a personality inventory (NEO-FFI; Costa & McCrae, 1992), and the Balanced Inventory of Socially Desirable Responding (BIDR; Paulhus, 1991). To test the hypothesis that Genos EI scores would be associated with incremental predictive validity, a hierarchical multiple regression analysis was performed. Based on the results, total Genos EI scores were found to be a unique contributor to the multiple regression equation. Specifically, Genos EI was associated with a standardized beta weight equal to .43 ($p<.05$). Based on a semi-partial correlation analysis, Genos EI scores were found to be associated with a semi-partial correlation equal to .36, controlling for the effects of intelligence, personality, and socially desirable responding. Thus, 12.9% of variability in revenue generation scores were found to be associated with Genos EI uniquely. Based on the unstandardized regression

weights, Gignac et al. (submitted) suggested that a single unit increase in Genos EI scores was associated with an increase of $2889 in annual revenue generation.

Summary: Genos EI and Job Performance

Based on two studies which measured job performance objectively, Genos EI was found to be associated with appreciable predictive validity. In one investigation, Genos EI exhibited large correlations with sales performance, based on Cohen's (1992) guidelines. Specifically, 22.1% of the variance in sales performance could be accounted for by Genos Total EI scores. Genos Total EI scores were also demonstrated to be associated with incremental predictive validity, beyond the effects of long calls, short calls, and days on territory. Specifically, Genos Total EI scores were found to predict 8.4% of the variance in sales performance, independently of the effects of long calls, short calls, and days on territory. Thus, Genos EI may be suggested to have both an indirect effect on sales performance via (primarily) the number of long calls a sales representative conducts, as well as its own direct effect on sales performance. In the another investigation, Genos EI scores were found to uniquely predict annual revenue generation in a sample of recruitment consultants, such that a 1 unit increase in Genos EI scores was associated with a $2889 increase in annual revenue generation.

Discriminant Validity

Discriminant validity is observed when the scores from an inventory are found to be unrelated to an external criterion that, theoretically, should not be associated with scores of interest (Kaplan & Saccuzzo, 2005. It may be argued that learning with what scores do not correlate is as equally informative in understanding the nature of the scores as it is to learn with what they do correlate (Gignac, in press). Discriminant validity in the area of emotional intelligence may be argued to be particularly important, as several commentators have suggested that the emotional intelligence is redundant with other existing constructs such as intellectual intelligence and personality (Matthews, Zeidner, & Roberts, 2002). Self-report measures of EI have been particularly criticized for possibly correlating excessively with socially desirable responding and personality, in contrast to behavioural task based EI measures.

In this section, results relevant to socially desirable responding, personality, and transactional leadership will be reported and interpreted as evidence of discriminant validity in favour of the Genos EI inventory.

Socially Desirable Responding

A consideration in the application of self-report inventories associated with an appreciable amount of face validity is the possibility that the scores may be substantially affected by socially desirable responding (Conway, 2002). Socially desirable responding (SDR) is the tendency to respond to items in such a way as to bias upwardly the perception of oneself (Paulhus, 1991). To examine the possibility that Genos EI may be substantially affected by SDR, the data in Harmer (2004; *N*=70) were re-analysed for the purposes of this technical manual. Harmer (2004) administered a 13-item brief version of the Marlowe-Crowne (see Reynolds, 1982) to 71 adult participants (Cronbach's α = .82), in addition to the SUEIT from which the Genos EI subscales were recovered by the present author. The Harmer (2004) data were collected in a non-recruitment context, thus, the respondents may be argued to have had less motivation to fake-good.

As can be in Table 24, the Genos Total EI scores correlated with the M-C at .27, which implies that 7.3% of the variance in Genos Total EI scores can be accounted for by socially desirable responding. The numerically largest subscale correlate was associated with ESM (i.e., *r*=.29). Thus, overall, it may be contended that less than 10% of the variance in Genos EI scores were affected by SDR (in a non-recruitment context), which may be suggested to be relatively negligible and commensurate with other self-report measures of a similar nature.

Table 24: Pearson correlations between Genos EI subscales and socially desirable responding

	Total EI	ESA	EE	EAO	ER	ESM	EMO	EC
SDR	.27*	-.03	.05	.22*	.12	.29*	.22*	.15
SDR′	.30*	-.03	.05	.24*	.13	.32*	.24*	.16

Note. *p<.05; *N*=70; SDR=Socially Desirable Responding; SDR′=Socially Desirable Responding (disatenuated for imperfect reliability).

In order to evaluate further the effects of SDR on the Genos EI inventory, the 70 Genos EI items were correlated with the Genos Impression Management (IM) subscale scores (the Genos Impression Management subscale was used prior to the development of the Inflation and Manipulation indices; see the first edition, Chapter 4, of the Genos EI Technical manual for a description of the Impression Management index) within a sample of 325 respondents applying for a job (i.e., recruitment context). Next, the Genos EI items were correlated with their respective subscales. Both sets of correlations were squared and the difference between the r_{total} and r_{IM} correlations was calculated for each item. The squared differences were then square rooted to represent a "unique" correlation (Δr). It was expected that the difference

between the squared correlations would be positive, if the Genos EI inventory items were associated with unique reliability, independently of the effects of socially desirable responding. This technique is predicated upon the Differential Reliability Index (Jackson, 1994) and specifically used by Morey (1991), for example.[5]

As can be seen in Table 25, the difference between the item-IM and item-total correlations were nearly all positive and relatively large. The mean unique item-total correlation was equal to .49. The lone exceptional item was item 18, which was associated with a Δr equal to .00. Item 18 was designed as an indicator of Emotional Reasoning, which has been identified as the weakest factor with the Genos EI factor model (see section on factorial validity). The absence of a unique item-total correlation associated with item 18 was not considered totally unacceptable, as the correlation between item 18 and the total Genos EI scale was equal to .36 (based on supplementary analyses), which is greater than the correlation between item 18 and the impression management subscale (i.e., .32). Thus, there may be some reason to believe that item 18 is factorially complex, rather than a relatively unique indicator of Emotional Reasoning. Consequently, item 18 was considered acceptable to include in the current version of Genos EI, although it has been identified for modification in a future version of Genos EI.

[5] These results could have been placed within the reliability chapter of this technical manual. However, it was considered more directly relevant to discriminant validity.

Table 25: Pearson correlations between each Genos EI item and impression management and corresponding item-total correlations

Item	r_{IM}	r_{total}	Δr	Item	r_{IM}	r_{total}	Δr
i1	-.03	.50	.50	i38	.31	.59	.50
i2	.23	.56	.51	i39	.17	.59	.56
i3	.13	.55	.53	i40	.21	.60	.56
i4	.20	.54	.50	i41	.21	.58	.54
i5	.37	.48	.31	i42	.13	.46	.44
i6	.26	.53	.46	i43	.43	.64	.47
i7	.29	.52	.43	i44	.19	.54	.51
i8	-.09	.51	.50	i45	.20	.64	.61
i9	.21	.57	.53	i46	.20	.58	.54
i10	.20	.56	.52	i47	.32	.59	.50
i11	.23	.45	.39	i48	.24	.68	.64
i12	.30	.46	.35	i49	.26	.48	.40
i13	.22	.59	.55	i50	.27	.59	.52
i14	.17	.44	.41	i51	.09	.63	.62
i15	.21	.60	.56	i52	.18	.66	.63
i16	.24	.55	.49	i53	.19	.51	.47
i17	.25	.58	.52	i54	.31	.50	.39
i18	.32	.32	.00	i55	.34	.65	.56
i19	.13	.40	.38	i56	.26	.53	.46
i20	.24	.51	.45	i57	.31	.57	.48
i21	.42	.64	.48	i58	.28	.56	.48
i22	.32	.60	.51	i59	.30	.65	.58
i23	.27	.61	.55	i60	.13	.52	.50
i24	.28	.69	.63	i61	.37	.60	.48
i25	.05	.51	.51	i62	.28	.68	.62
i26	.35	.47	.31	i63	.19	.51	.47
i27	.31	.71	.64	i64	.46	.62	.42
i28	.28	.50	.41	i65	.38	.60	.46
i29	.12	.63	.62	i66	.25	.60	.55
i30	.44	.62	.44	i67	-.05	.30	.30
i31	.30	.57	.48	i68	.35	.67	.57
i32	.15	.51	.49	i69	.17	.48	.45
i33	.28	.59	.52	i70	.28	.65	.59
i34	.27	.71	.66				
i35	.36	.59	.47				
i36	.27	.61	.55				
i37	.31	.48	.37				

Personality

Self-report measures of emotional intelligence have been particularly criticised for likely being redundant with well-established measures of personality, such as those that measure the Five Factor Model or the Big Five (see Davies, Stankov, & Roberts, 1998, for example). To evaluate the possibility that the Genos EI inventory was redundant with personality, two samples of data (Sample 1 *N*=206; and Sample 2 *N*=106) were analysed via bi-variate correlations and SEM technique known as unique CFA (Gignac, 2005b).

As can be seen in Table 26, the numerically largest average correlation (sample 1) was associated with the Neuroticism personality dimensions (i.e., r=-.34, p<.05). Thus, higher levels of Genos EI were associated with lower levels of Neuroticism. Average correlations of approximately .30 were also observed for Extraversion, Openness to Experience and Conscientiousness. The sample 2 correlations were somewhat smaller in magnitude on average; however, they were more consistent in magnitude across all seven subscales. Overall, it may be said that the Genos EI subscales share a moderate amount of variance with personality. It may also be suggested that the pattern of correlations is theoretically congruent. Specifically, based on the results presented in Table 26, an individual high on emotional intelligence may be said to be less neurotic, more extraverted, more open to experience, more agreeable, and more conscientious.

Table 26: Bi-variate correlations between Genos EI subscales and NEO-FFI personality scales

	ESA	EE	EAO	ER	ESM	EMO	EC	Avg.
Sample 1								
N	-.25	-.21	-.25	-.01	-.70	-.43	-.52	-.34
E	.31	.40	.35	.21	.38	.43	.16	.32
O	.33	.27	.33	.25	.33	.41	.20	.30
A	.12	.08	.20	.07	.04	-.01	-.15	.10
C	.30	.27	.34	.13	.42	.41	.43	.33
Sample 2								Avg.
N	-.20	-.46	-.20	-.26	-.37	-.26	-.38	-.30
E	.04	.23	.15	.29	.29	.42	.19	.23
O	.15	.23	.26	.24	.17	.28	.04	.20
A	.04	.09	.07	.16	.23	.28	.34	.17
C	.25	.10	.29	.50	.38	.47	.36	.34

Note. Sample 1 *N*=206; Sample 2 *N*=106; In sample 1, Genos EI subscale scores were recovered from the SUEIT; Sample 2 subscale scores are based on the Genos EI inventory; for sample 1, correlations greater than .18 were statistically significant ($p<.05$); for sample 2, correlations greater than .25 were statistically significant ($p<.05$).

To examine the issue of possible construct redundancy with greater sophistication, a unique CFA was performed (Gignac, 2005b). The first step of performing a unique CFA is to estimate the factor solution associated with the inventory interest, excluding the measure with which it may be redundant. Specifically, Genos EI was modelled as a single, general factor model (Model 1)[6]. Next, Genos EI general factor model was re-estimated, while simultaneously controlling for the shared variance between the Genos EI subscales and the five personality dimensions measured by the NEO FFI (Model 2). A depiction of the two CFA models is presented in Figure 11.

As can be seen in Table 27, the Global EI factor was strong in both samples, with an average factor loading of .61 and .79 in samples 1 and 2, respectively. When the NEO FFI scale scores were added to the model, the Global EI factor's strength was reduced, as expected. However, the factor integrity of the unique Global EI factors was sufficiently strong in both samples (mean loading of .39 and .67, respectively) as to suggest a legitimately reliable latent

[6] It was considered more justifiable to model a single, global factor based on the total aggregation method, rather than the seven factor model based on the partial disaggregation model, given the relatively small sample sizes (Bagozzi & Heatherton, 1994).

Genos EI variable, independent of the FFM as measured by the NEO FFI. Thus, Genos EI is not factorially redundant with personality, as measured by the NEO FFI.

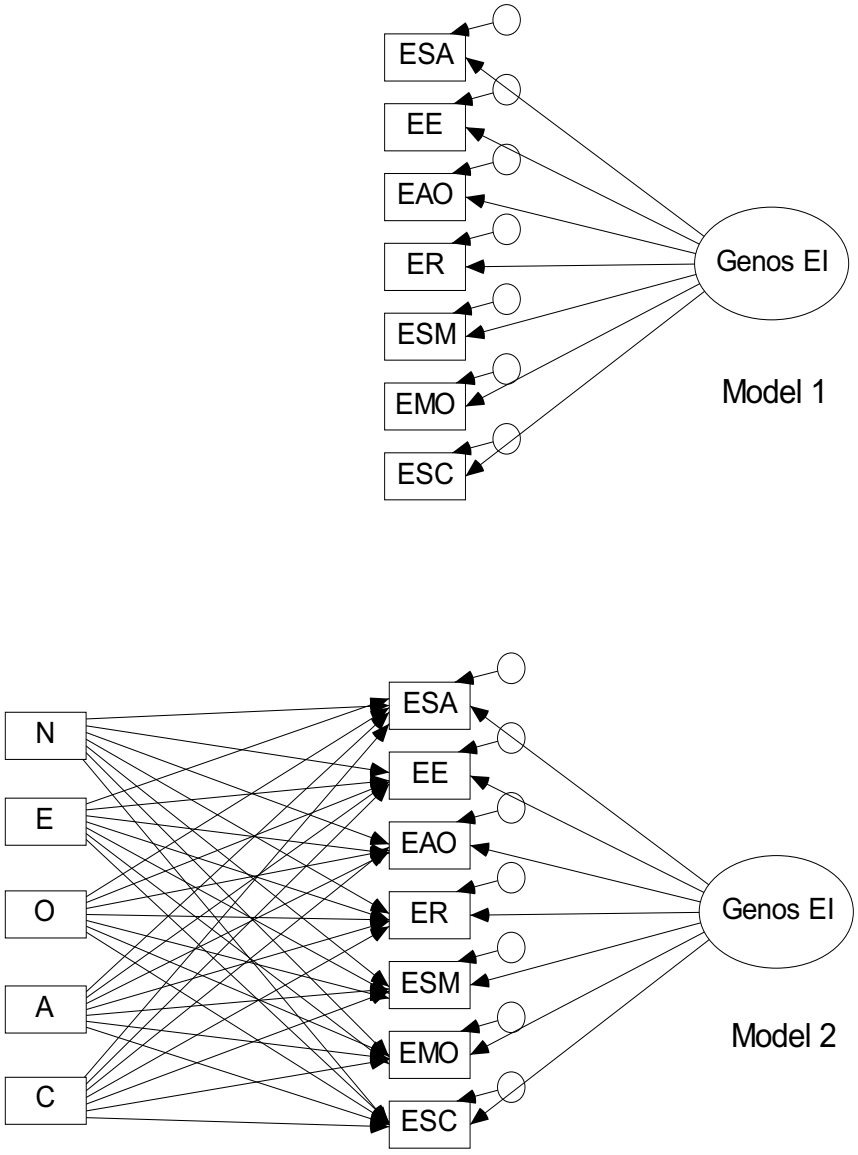


Figure 11: Genos Global EI mode l (Model 1) and Unique Genos Global EI independent of the Five Factor Model as measured by the NEO FFI (Model 2)

Table 27: Completely standardized factor loadings associated with Genos Global EI factor solution and Unique Genos Global EI independent of the NEO FFI

	Sample 1		Sample 2	
	Genos Global EI	Genos Global EI (Unique)	Genos Global EI	Genos Global EI (Unique)
ESA	.57	.37	.78	.74
EE	.54	.37	.83	.72
EAO	.71	.57	.83	.75
ER	.43	.42	.74	.56
ESM	.65	.21	.84	.70
EMO	.86	.63	.86	.71
ESC	.50	.17	.66	.50
Mean	.61	.39	.79	.67

Note. Sample 1 N = 206; Sample 2 N = 106.

Transactional Leadership

In the above section on concurrent validity, Genos EI was found to correlate positively with a transformational leadership style, which is a theoretically congruent observation. In contrast to transformational leadership is a leadership style known as transactional leadership, which is measured by the MLQ (Avolio, Bass, Jung, 1995). A transactional leadership style consists of emphasizing remuneration for performance (and punishment for lack of performance), as well as clear roles and levels of authority, whereby subordinates are expected to do what is asked of them from managers (Avolio et al., 1995). As can be seen in Table 28, Genos EI neither correlates positively nor negatively with a transactional leadership style. Thus, Genos EI inventory scores are effectively completely distinct from a transactional leadership style. This observation is viewed as discriminant validity, as Genos EI scores are effectively totally distinct from a transactional leadership style.

Table 28: Pearson correlations between Genos EI and Transactional Leadership Style

Scale	Transactional
1. Total Genos EI	.06
2. Emotional Self-Awareness	.11
3. Emotional Expression	-.01
4. Emotional Awareness of Others	.03
5. Emotional Reasoning	.11
6. Emotional Self-Management	-.01
7. Emotional Management of Others	.08
8. Emotional Self-Control	.08

Note. *N*=163; correlations greater than |.15| are statistically significant ($p<.05$); Genos EI subscale scores were recovered from the SUEIT.

Summary: Discriminant Validity

Genos EI may be argued to be associated with an appreciable and meaningful amount of discriminant validity, as it does not correlate very substantially with socially desirable responding. Further, based on a differential reliability index analyses, all of the Genos EI inventory items were found to be more substantially correlated with the Genos EI scales than with impression management. Although moderately sized correlations were reported between several personality dimensions and Genos EI, Genos EI was associated with a sufficient amount of unique factorial validity to refute contentions of construct redundancy. The direction of the correlations between Genos EI and personality were such that an individual high on EI was less emotionally unstable, more extraverted, more open to experience, more agreeable, and more conscientious. Finally, Genos EI was not found to be correlated with a transactional leadership style.

Genos EI (five-factors): Review of selected validity research

As written a previous section, the Genos EI inventory is a revision of the SUEIT (or perhaps more accurately, the Genos EI seven-factor model is a revision of the Genos EI five-factor model; the SUEIT was a term used exclusively in academic research, while Genos EI was always used in professional settings, even when the five-factor model was applied). Not surprisingly, the Genos EI inventory and the SUEIT correlate with each substantially (*r*=.90+),

as reported in the chapter on validity in this technical manual. Given the substantial correlation between the two inventories, it may be argued that the validity related findings associated with the Genos EI (five-factor model) inventory would apply at least equally to the Genos EI (seven-factor model) inventory. The phrase "at least equally" is used, here, because in every case where Genos EI (five-factor) item level responses were re-scored by the present author into the Genos EI seven-factor model, the validity results were more impressive (i.e., the validity coefficients were larger). In light of the above, a review of some Genos EI validity research that used the Genos EI inventory (five-factors) will be provided, here. The results are restricted to Genos total EI scores, rather than subscale scores, so as to reduce potential confusion. This information should be viewed as additional to the validity information provided above. That is, it may be of interest to those with a strong interest in learning more about the effects of emotional intelligence in the workplace, as measured by Genos EI.

Semadar, Robins, & Ferris (2006) analysed the associations between Genos EI and job performance in a sample of 136 managers (79% males) within a large Australian automotive company. Job performance was measured based on the internal performance appraisals of each respondent's immediate supervisor. In addition to Genos EI and job performance, data on self-report political skill, leadership efficacy, and self-monitoring were also collected. Semadar et al. (2006) reported that Genos EI and job performance correlated positively at .25 ($p<.05$). Thus, higher levels of self-reported Genos EI were found to be associated with higher levels of supervisor ratings of job performance. Further, Genos EI was found to correlate positively and statistically significantly ($p<.05$) with political skill ($r=.71$) self-monitoring ($r=.24$) and leadership self-efficacy ($r=.42$). Thus, higher levels of Genos EI were associated with higher levels of political skill, self-monitoring, and leadership.

Semadar et al. (2006) further explored the association between Genos EI and job performance, by performing a multiple regression whereby job performance was regressed onto all of the independent variables (i.e., Genos EI, political skill, leadership self-efficacy, and self-monitoring). Further, the effects of gender and seniority were also entered into the multiple regression to control for their effects on job performance. The results of the multiple regression revealed that only Political Skill was a unique contributor to the regression equation in predicting job performance. Although the multiple regression results reported in Semadar et al. (2006) may not reveal Genos EI in particularly impressive light, as it did not demonstrate Genos EI to be associated with incremental predictive validity, there are some considerations that should be highlighted.

First, it would be inaccurate to state that Genos EI does not predict job performance based on the Semadar et al. investigation. As reported in Table 1 of Semadar et al., Genos EI did in fact correlate with job performance at r=.25 (p<.001). Further, although political skill was found to correlate with job performance in a numerically more substantial way than Genos EI (i.e., r=34 vs. r=.25), the numerical difference between the two correlations (r=.09) was not statistically significant (t=-1.44, p=.150), as determined by the present author. Thus, it is perfectly reasonable to expect Genos EI to be a greater numerical correlate of job performance than political skill in another sample of data, which would have a dramatic effect on a corresponding multiple regression analysis as performed by Semadar et al. (2006). It is for this reason (i.e., the substantial instability in regression equations and the corresponding beta weights), that multiple regression results, particularly the beta weights, have been recommended to be interpreted cautiously and with clear caveats (e.g., Gardner, 2001; Courville & Thomson, 2001). Courville and Thomson (2001) specifically recommended that standardized beta weights be supplemented by structure coefficients, which represent the correlation between a multiple regression predictor and scores derived from the multiple regression equation. Based on the present author's calculations, the structure coefficients associated with political skill and Genos EI were estimated at .83 and .61, respectively. These values are in stark contrast to the standardized beta weights reported by Semadar et al. (2006), where Genos EI was reported to be associated with a standardized beta weight of -.06 (p>.05).

In summary, the Semadar (1996) study is valuable, as it included job performance data as rated by each employee's immediate supervisor. It may be concluded that Genos EI was found to be positively associated with job performance, as well as a number of other social effectiveness skills, such as political skill, leadership self-efficacy, and self-monitoring. Precisely how each of these variables predicts job performance uniquely will require further investigation based on large sample sizes, and, ideally, the Genos EI seven-factor model inventory, which is superior to the Genos EI five-factor model inventory used by Semadar et al.

In another investigation, Brand (2007) conducted a study on emotional intelligence (Genos EI five-factors), occupational stress and burnout in a sample of 122 South African nurses. Brand (2007) reported that the Emotional Management and Emotional Control subscales of the Genos EI inventory correlated -.33 and -.41 with work stress, suggesting that individuals who self-reported higher levels of emotional management and control experienced less stress at work.

Further, Brand (2007) also reported that the Emotional Management and Emotional Control subscales of the Genos EI (five-factor) inventory correlated -.31 and -.41 with the

Depersonalisation subscale of the Maslach Burnout Inventory (MBI), suggesting that individuals who self-reported higher levels of emotional management and control experience less depersonalisation at work.

Perhaps most noteworthy of the Brand (2007) study was the observation that emotional intelligence acted as a moderator of the association between stress and burnout. In particular, the total EI * Work Stress interaction term was associated with a beta weight of -.55 ($p<.05$) in the multiple regression model. Another way to interpret the importance of the this effect is to consider that for the low EI group, the correlation between Work Stress and Depersonalisation was .51, while for the high EI group, the correlation between Work Stress and Depersonalisation was much smaller at .23. This result implies that Genos EI acted as a "buffer" on the effects of work stress and burnout. That is, if and individual possesses higher levels of emotional intelligence, they are less likely to report higher levels of burnout, even if they may be experiencing relatively high levels of work stress.

Ilarda and Findlay (2006) investigated the effects of Genos EI (five factors) and teamwork, as it was theorized that individuals higher on EI would be expected to be better at teamwork. Specifically, Ilarda and Findlay (2006) argued that successful teamwork would require the capacity to handle and negotiate interpersonal conflict, as well as the exhibition of effective emotional communication. Ilarda and Findlay were also interested in the effects of personality on teamwork. In particular, they were interested in determining whether Genos EI could be found to exhibit incremental predictive validity in predicting teamwork, independently of the effects of personality as measured by the NEO FFI (Costa & McCrae, 1992).

To test such a hypothesis, Ilarda and Findlay administered the Genos EI (five factors) inventory, the NEO FFI (Costa & McCrae, 1992), and The Team Player Inventory (TPI; Kline, 1999) to a sample of 134 adult Australians who had previous experience working within a team. According to Kline (1999), the TPI is a self-report inventory that "assesses the degree to which individuals are positively predisposed toward organizational team-working environments" (p. 102). Ilarda and Findlay (2006) hypothesized that Genos EI would display incremental predictive validity in predicting TPI score, independently of the effects of personality. For reasons left unexplained, Ilarda and Findlay (2006) included only two of the five NEO FFI personality dimensions within the hierarchical multiple regression, which may be suggested to be a less rigorous test of the incremental predictive validity hypothesis. Consequently, the present author imputed the Ilarda & Findlay (2006) correlation matrix into SPSS and re-tested the hypothesis by entering all five of the NEO personality dimensions into

block 1, followed by Genos Total EI at step 2. If the hypothesis were supported, a statistically significant increase in R^2 would be observed at step 2 of the hierarchical multiple regression analysis.

As can be seen in Table 29, the hypothesis was supported. Specifically, at step 1, the NEO FFI personality dimensions were found to be associated with a multiple R=.49 ($p<.01$). The numerically largest personality predictor was Extraversion with a beta weight of .31 and a corresponding structure coefficient of .82. With Genos Total EI entered at step 2, the multiple R increased to R=.52 ($p<.05$), which corresponded to a statistically significant R change of .18 (p=.021). As can be seen in Table 29, Genos EI was associated with a standardized beta weight of .21 and a structure coefficient of .71. Thus, higher levels of Genos EI were associated with higher levels of a predisposition to be a team oriented employee, independently of the effects of all five NEO FFI personality dimensions.

In summary, the Genos Total EI scores were found to predict an additional 3.2% of the variance in individual differences of disposition toward team work, above the effects of the five FFM personality dimensions. Such an amount may seem small, however, Hunsley and Meyer (2003) recommended that semi-partial correlations of between .15 and .20 should be considered a reasonable amount of incremental predictive validity associated with a predictor. As the Genos Total EI scores were associated with a semi-partial correlation of .18, it may be suggested that the incremental impact of Genos Total EI was reasonably large.

Table 29: Standardized solution associated with a hierarchical multiple regression: Team Player Inventory scores regressed onto NEO FFI personality dimensions and Genos Total EI (five-factors)

	β	t	p	r_S	$r_{semi\text{-}partial}$
Step 1					
N	-.14	-1.53	.129	-.45	-.12
E	.31	3.66	.000	.82	.28
O	.23	2.84	.005	.61	.22
A	.09	1.05	.294	.37	.08
C	-.05	-.57	.573	.09	-.04
R	.49	2.81	<.001		
Step 2					
N	-.08	-.83	.407	-.42	-.06
E	.27	3.16	.002	.77	.24
O	.20	2.55	.012	.56	.19
A	.04	.44	.662	.35	.03
C	-.08	-.96	.341	.08	-.07
Genos EI	.21	2.34	.021	.71	.18
R	.52	2.78	<.001		
R_{change}	.18	2.34	.021		

Note. N=Neuroticism; E=Extraversion; O=Openness to Experience; A=Agreeableness; C=Conscientiousness; Genos EI=Genos Total EI (five-factors); β=standardized beta-weight; r_S=structure coefficient.

In a sample of a 157 New Zealand professionals (mostly managers), King and Gardner (2006) investigated the effects of Genos EI on occupational stress. Specifically, King and Gardner hypothesized that Genos EI would mediate the association between a number of occupational stress related indicators, such as challenge appraisals, threat appraisals, and avoidance. King and Gardner (2006) found that Genos EI did fully or partially mediate the association between the above occupational stress mediators, which was interpreted to suggest that EI plays in important role managing work-related stress.

For the purposes of this review, the King and Gardner (2006) correlation matrix (p. 196) was re-analysed to investigate an incremental predictive validity hypothesis. Specifically, can

Genos Total EI scores predict coping (as measured by the Brief COPE, Carver, 1997), independently of the effects of positive state affect (PA) and negative state affect (NA) as measured by the PANAS inventory (Watson, Clark, & Tellegen, 1988)? To test such a hypothesis, coping was first regressed onto a Genos Total EI composite.[7] As can be seen in Figure 12, the regression analysis produced a standardized beta weight of .39 (p<.05) between coping and Genos EI. Thus, higher levels of Genos Total EI were associated with higher levels of coping. With the addition of the PA and NA variables to the regression model, the Genos Total EI effect was reduced to .32, which was statistically significant (p<.05). Thus, positive and negative affect only partially mediated the effect of Genos EI on coping. Stated alternatively, Genos EI demonstrated incremental predictive validity in predicting coping, beyond the effects of positive and negative state affect on coping.

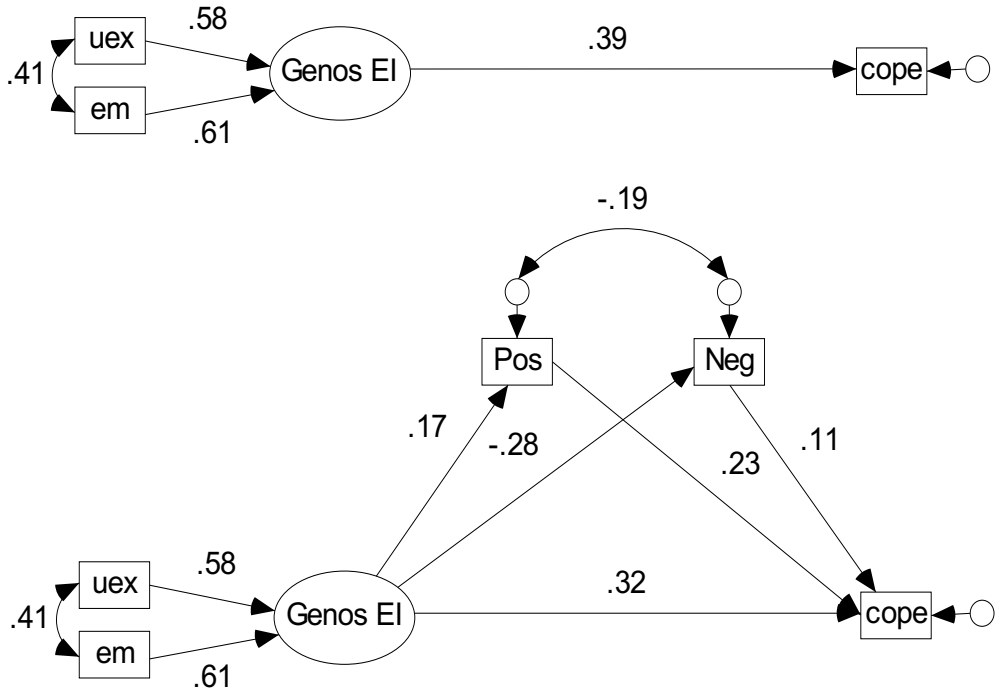


Figure 12: Genos EI, coping, and positive/negative affect mediation path analysis

[7] King and Gardner (2006) identified only three factors of emotional intelligence based on the 64-item version of Genos EI. Consequently, they only calculated three subscale scores: Understanding Emotions External (UEx), Emotional Management (EM), and Emotions Direct Cognition. For the purposes of this analysis, the UEx and EM subscales were combined to form a Genos Total EI component, which was considered to represent a Genos Total EI composite variable.

Summary of the Selected Genos EI (five-factor) Research

A selection of four previously published investigations that used the Genos EI (five-factors) inventory were reviewed and the correlation matrices re-analysed for further insights into the validity of the Genos EI inventory. The Genos Total EI scores were found to be associated positively with job performance and a number of social skill indicators (e.g., political skill, self-monitoring) in a sample of managers of an automotive company. Thus, in combination with the other job performance study reported above (i.e., pharmaceutical sales), it may be contended that Genos EI may play a role in the performance of employees in the workplace. Evidently, more job performance research needs to be conducted. However, the effects in both investigations were relatively clear and meaningful.

Genos Total EI scores were also found to be associated with a unique predictive capacity in predicting a disposition toward teamwork, independently of the effects of five personality dimensions. Thus, personality should not be considered the only factor that determines one's disposition toward teamwork. Instead, EI appears to also play an important role. Genos EI was also found to act as a buffer between the effect of stress on burnout. Stated alternatively, simply because an individual may be experiencing relatively high levels of stress does not necessarily imply that they will also be experiencing a relatively high level of burnout, as their EI levels may help them deal with the stress effectively, and, thus, prevent them from ultimately experiencing burnout. Finally, Genos Total EI was found to be associated with incremental predictive validity in predicting coping, beyond the effects of positive and negative state affect. Thus, it may be suggested that Genos Total EI may play and important role in the capacity to cope with stressful events at work.

Overall Summary of the Genos EI Reliability and Validity Research

As reported in Chapter 6, the Genos EI inventory scores were found to be associated with respectable levels of both internal consistency reliability and test-retest reliability. Further, the validity associated with the scores of the Genos EI inventory can be justifiably said to be associated with an appreciable amount of validity. Evidence supporting the observation of all common forms of validity was reported in Chapter 7. Specifically, evidence of factorial validity, concurrent validity, predictive validity, discriminant validity, as well as evidence of incremental predictive validity, was reported in detailed and comprehensive manner. Consequently, researchers and practitioners should be confident that the Genos EI inventory produces scores that are both reliable and valid indicators of adult emotional intelligence in the workplace.

Chapter 8: Nation Specific Norms and Analyses

In this chapter of the technical manual, the descriptive statistics, reliability and factorial validity, associated with the Genos EI inventory within three different national groups of the normative sample are provided. Additionally, a section is devoted to Chinese translated version of the Genos EI inventory. The purpose of these analyses is to evaluate whether there are meaningful cultural differences in responses to the Genos EI inventory. Admittedly, this chapter is not a comprehensive or exhaustive analysis. First, only four nationalities are examined: American, Asian, South African, and Chinese. Secondly, the analyses are limited to reliability, factorial validity, and differential item functioning. However, in comparison to other technical manuals of psychometric measures, the cultural specific analyses reported in this chapter should probably be viewed as at least adequate.

Within each nationality, the results are reported in three sections. First, a description of the sample is provided based on gender, age, and educational background. Next, the factorial validity of the Genos EI inventory is evaluated based on the same CFA models that were tested in the factorial validity section of the primary validity chapter. Consequently, readers should read the validity chapter before this chapter. Finally, the descriptive statistics and reliability estimates are reported. In cases where meaningful mean differences between a particular nationality and the remaining normative sample are observed, the analyses were supplemented with a comprehensive differential item functioning analysis to determine whether any of the Genos EI inventory items discriminate based on nationality.

America

Description of Sample

The American portion of the normative sample is based on a sample of 465 employees (34.8% males) who reported to be currently residing in America on a permanent basis. The average age of the American portion of the normative sample was 47.26 (SD= 9.88). The educational background of the American portion of the sample consisted of: Doctorial Degree (7.7%), Master's Degree (33.2%), Graduate Diploma (3.8%), Graduate Certificate (1.9%), Bachelor Degree (35.1%), Advanced Diploma (5.8%), Diploma (6.8%), Certificate (1.4%), Senior Secondary (.8%), Grade 12 = (2.7%), Missing (.8%).

Factorial Validity

As can be seen in Table 30, model fit associated with general factor models and the higher-order 5-factor model were not associated with an acceptable level of model-fit. In contrast, the higher-order 7-factor model was associated with satisfactory model fit. As can be seen in Figure 13, all of the factor loadings were positive and statistically significant. Overall, there is a close correspondence between the factor model solution associated with the American portion of the normative sample and the total normative sample (see Chapter 7).

Table 30: Model fit statistics and close-fit indices associated with the CFA models: America

	Model	χ^2	*df*	RMSEA	SRMR	CFI	TLI
0	Null Model	5582.41	210	.265	.497	.000	.000
1	Global EI	919.47	189	.103	.055	.864	.849
2	Global EI + Neg.	783.39	182	.095	.049	.888	.871
3	Higher-Order 5-factors	595.94	177	.081	.044	.923	.909
4	Higher-Order 7-factors	475.20	175	.069	.042	.944	.933

Note. $N = 365$

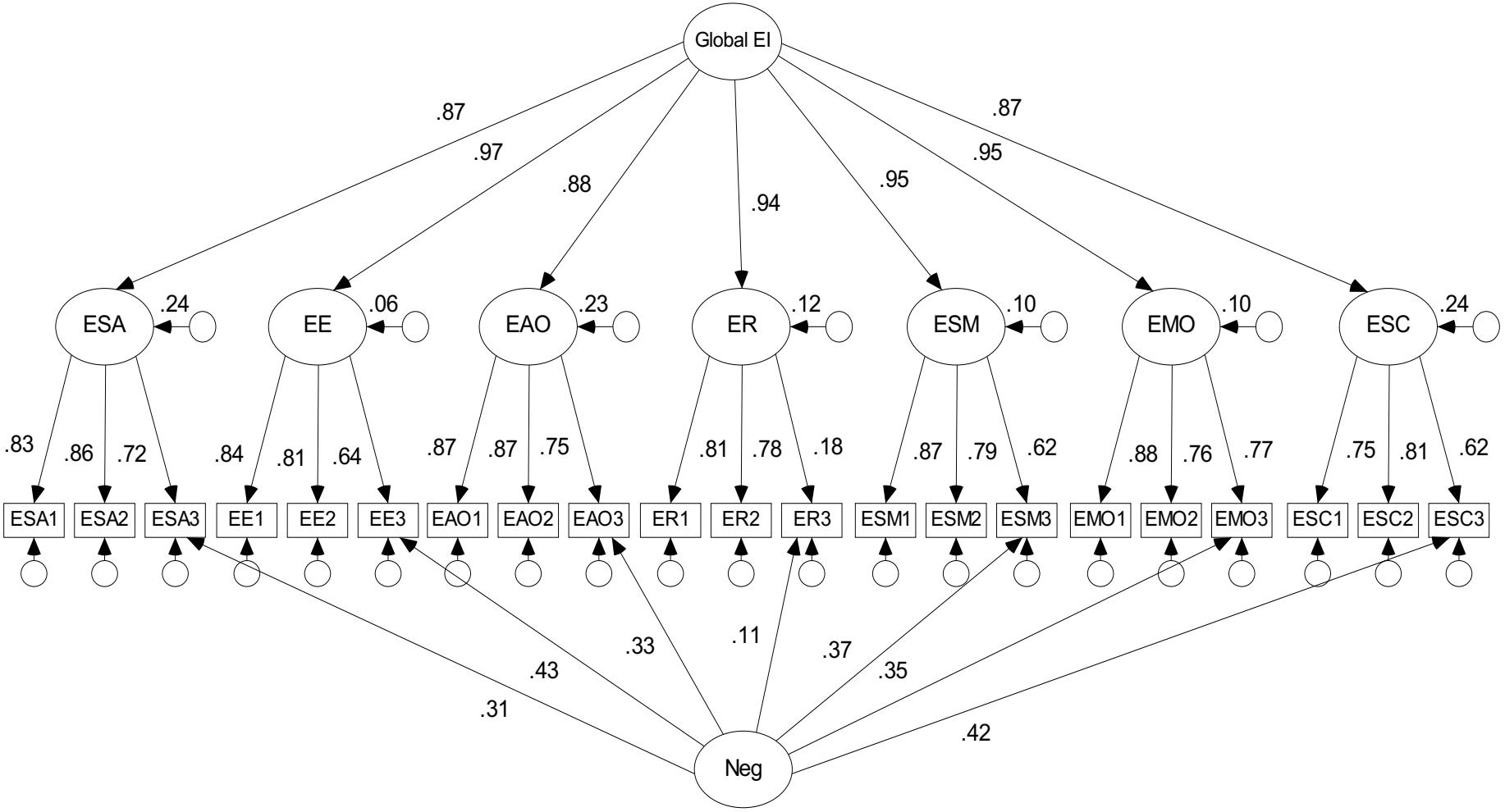


Figure 13: Completely standardized higher-order factor model solution: American sample (N=365)

Descriptive Statistics and Reliability

As can be seen in Table 31, several of the Genos EI means associated with the American portion of the normative sample (*N*=365) were found to be statistically significantly (*p*<.05) larger than the Ex-America General normative sample (*N*=4410). However, the differences were not found to be large from a practical significance perspective (i.e., effect size). Specifically, based on Cohen's *d*, the largest mean difference amounted to .20, which is equal to 20% of a standard deviation difference, which is small based on Cohen's (1992) guidelines.

The internal consistency reliabilities associated with subscales and the total scale scores are also reported in Table 31. It can be observed that the total score was found to be highly reliable (.97). Further, all of the subscale scores were associated with reliabilities above.70. Thus, overall, the reliabilities estimated from the American portion of the normative sample were found to be acceptable and consistent with the total normative sample.

Table 31: Means, Standard Deviations, Skew, Kurtosis, Reliability, Standard Error of Measurement: America

	American						Ex-American		Difference	
	Mean	SD	Skew	Kurtosis	α	SEM	Mean	SD	*t*	*d*
Total EI	283.24	29.58	-.36	-.20	.97	5.12	278.78	27.58	**82.91**	.16
ESA	42.21	4.55	-.41	-.22	.83	1.88	41.92	4.56	5.49	.06
EE	40.71	5.09	-.44	.01	.83	2.10	40.18	4.76	**9.86**	.11
EAO	40.45	4.95	-.36	-.11	.88	1.71	39.45	4.83	**18.53**	.20
ER	40.02	4.66	-.24	-45	.76	2.28	39.23	4.41	**14.62**	.17
ESM	38.90	5.17	-.43	.15	.83	2.13	38.31	4.68	**11.00**	.12
EMO	41.09	5.07	-.46	.07	.87	1.83	40.22	4.87	**16.24**	.18
ESC	39.86	4.92	-.72	.76	.80	2.20	39.47	4.79	7.16	.08

Note. American sample *N*=365; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control; Ex-American refers to that portion of the normative sample that does not resided in American; 'Difference' refers to an independent samples t-test between the 'America' and 'Ex-American' means; *d* = Cohen's *d*; *t*-values in bold were statistically significant (*p*<.05). Levene's test of homogeneity of variance identified two variances between groups to be statistically significantly different from each other; however, the corresponding *t*-tests that did not assume equality of variances were also all statistically significant.

Asia

Description of Sample

The Asian portion of the normative sample is based on a sample of 455 employees (41.8% males; mean age=39.88, SD=8.60) who reported to be currently residing in the following Asian countries: Hong Kong (48.1%), Singapore (41.1%), China (6.6%), Thailand (1.5%), Korea (1.1%), Malaysia (0.9%), Japan (0.4%), and Philippines (0.2%). It should be noted that these participants completed the English version of Genos EI under the pretence that they could speak English proficiently. The educational background of the South African portion of the sample consisted of: Doctoral Degree (1.8%), Master's Degree (33.0%), Graduate Diploma (6.6%), Graduate Certificate (1.8%), Bachelor Degree (40.2%), Advanced Diploma (2.4%), Diploma (8.4%), Certificate (2.0%), Senior Secondary (2.2%), Grade 12 = (.9%), Grade 11 = (.9%).

Factorial Validity

As can be seen in Table 32, model fit associated with general factor models and the higher-order 5-factor model were not associated with an acceptable level of model-fit. In contrast, the higher-order 7-factor model was associated with satisfactory model fit. As can be seen in Figure 14, all of the factor loadings were positive and statistically significant. Overall, there is a close correspondence between the factor model solution associated with the Asian portion of the normative sample and the total normative sample (see Chapter 7).

Table 32: Model fit statistics and close-fit indices associated with the CFA models: Asia

	Model	χ^2	*df*	RMSEA	SRMR	CFI	TLI
0	Null Model	6613.18	210	.259	.469	.000	.000
1	Global EI	1274.55	189	.112	.064	.830	.812
2	Global EI + Neg.	982.26	182	.098	.051	.875	.856
3	Higher-Order 5-factors	766.37	177	.086	.046	.908	.891
4	Higher-Order 7-factors	563.13	175	.070	.047	.939	.927

Note. *N*=455

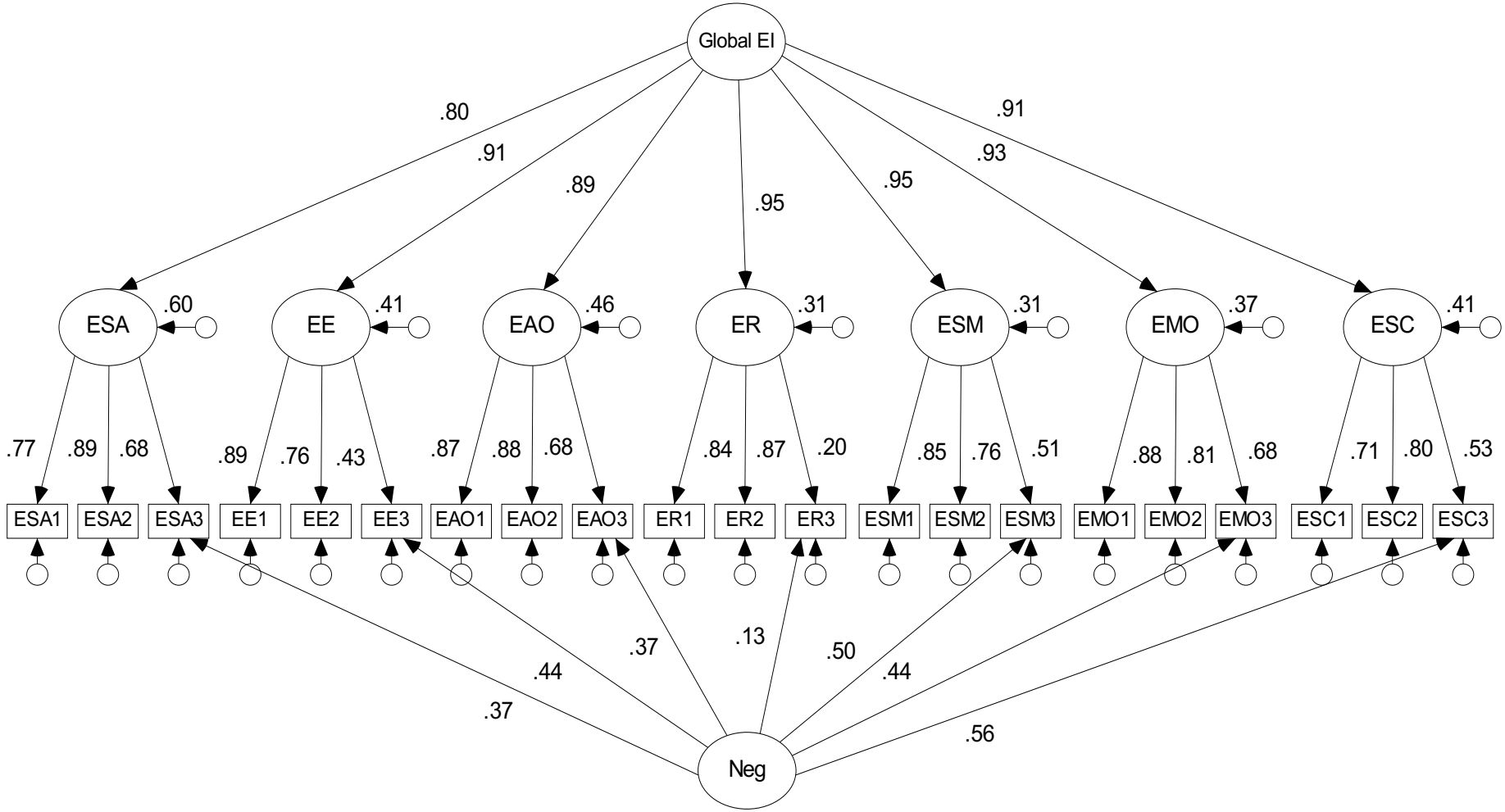


Figure 14: Completely standardized higher-order factor model solution: Asian sample (N=455)

Descriptive Statistics and Reliability

As can be seen in Table 33, the Genos EI means associated with the Asian portion of the normative sample (*N*=455) were found to be statistically significantly ($p<.05$) smaller than the Ex-Asia portion of the normative sample (*N*=4320). Further, the differences were found to be relatively large from a practical significance perspective (i.e., effect size). Specifically, based on Cohen's *d*, the largest mean difference amounted to .72, which is equal to 72% of a standard deviation difference, which is large based on Cohen's (1992) guidelines.

The internal consistency reliabilities associated with subscales and the total scale scores are also reported in Table 33. It can be observed that the total score was found to be highly reliable (.96). Further, all of the subscale scores were associated with reliabilities above .70. Thus, overall, the reliabilities estimated from the Asian portion of the normative sample were found to be acceptable and consistent with the total General normative sample.

Table 33: Means, Standard Deviations, Skew, Kurtosis, Reliability, Standard Error of Measurement: Asia

	Asia						Ex-Asia		Difference	
	Mean	SD	Skew	Kurtosis	α	SEM	Mean	SD	*t*	*d*
Total EI	260.86	29.48	-.14	-.03	.96	5.90	281.05	26.86	**15.10**	.72
ESA	39.87	4.55	-.06	-.06	.82	1.91	42.16	4.51	**10.27**	.51
EE	36.40	4.77	-.03	.00	.77	2.29	39.86	4.74	**14.78**	.73
EAO	37.89	5.11	-.12	-.12	.87	1.84	40.46	4.68	**11.05**	.53
ER	36.92	4.88	-.10	-.21	.79	2.24	39.54	4.31	**12.15**	.57
ESM	35.91	4.79	-.33	.55	.80	2.14	38.62	4.64	**11.78**	.57
EMO	37.25	5.27	-.31	.12	.87	1.90	40.61	4.74	**14.23**	.67
ESC	36.61	5.29	-.39	-.02	.82	2.24	39.81	4.64	**13.77**	.64

Note. Asian sample *N*=455; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control; 'Ex-Asia' refers to that portion of the normative sample that did not reside in Asia; 'Difference' refers to an independent samples *t*-test between the 'Asia' and 'Ex-Asia' means; *d* = Cohen's *d*; *t*-values in bold were statistically significant ($p<.05$). Levene's test of homogeneity of variance identified five variances between groups to be statistically significantly different from each other; however, the corresponding *t*-tests that did not assume equality of variances were also all statistically significant.

Differential Item Functioning

As there were statistically significant and practically significant differences in means between the Asian portion of the normative sample and the Ex-Asian portion of the normative sample, it was considered important to examine whether the differences in EI scores between the two groups were due to the fact that some of the items within Genos EI actually discriminated "unjustifiably" against the Asian individuals. That is, does the Genos EI inventory suffer from some sort of bias against Asian respondents?

To address this issue, a statistical analysis known as differential item analysis (DIF) was performed based on an ordinal logistic regression procedure described by Zumbo (1999) which can test for both uniform and non-uniform DIF. Based on the procedure described by Zumbo (1999), DIF may be observed when either the uniform or the non-uniform regression term is associated with a statistically significant increase in R^2. However, Zumbo (1999) emphasized effect size rather than statistical significance when interpreting the effects of DIF. Hidalgo and Lopez-Pina (2004) found the more conservative effect size interpretation guidelines of Jodoin and Gierl (2001) to be more accurate than the effect size guidelines recommended by Zumbo and Thomas (1997). Consequently, the Jodoin and Gierl (2001) guidelines were employed, here, which specify negligible <.035 moderate =.035-.070, and large >.070.

The DIF results associated with all 70 Genos EI items are reported in full within Table 34. Based on a Bonferonni correction procedure, the critical chi-square value was determined to be 14.50. As can be seen in the second last column of Table 34, a total of seven items were found to exhibit statistically significant DIF. However, more importantly, the effect sizes associated with the combined uniform and non-uniform DIF (i.e., $_{\Delta}R^2$) were all found to be negligible. Specifically, the mean associated with the $_{\Delta}R^2$ was equal to .006, which is substantially less than the maximum range of a negligible effect (i.e., .035). Further, the range in observed $_{\Delta}R^2$ values was equal to .000 to .021. Thus, based on Jodoin and Gierl's (2001) recommendations for a negligible (<.035), moderate (.035-.070) and large effect (<.070), all of the Genos EI items were found to be associated with a very negligible DIF effect.

Table 34: Hierarchical ordinal logistic regression results associated with uniform (Total+Group) and non-uniform (Total+Group+Total*Group) differential item functioning

	Total		Total + Group		Total + Group + Total*Group		Difference	
Item	χ^2	R^2	χ^2	R^2	χ^2	R^2	$_{\Delta}\chi^2$	$_{\Delta}R^2$
1	93.83	.111	95.26	.113	95.81	.114	1.98	.003

2	290.93	.302	291.98	.302	292.58	.303	1.65	.001
3	378.98	.414	379.55	.414	382.23	.418	3.25	.004
4	311.95	.317	312.36	.318	314.38	.318	2.43	.001
5	136.82	.152	145.50	.162	146.13	.163	9.31	.011
6	411.35	.440	411.36	.440	411.36	.440	0.01	.000
7	344.38	.374	348.46	.378	348.47	.378	4.09	.004
8	91.33	.106	91.52	.106	93.22	.110	1.89	.004
9	441.54	.436	441.59	.436	443.86	.439	2.32	.003
10	318.81	.334	326.88	.342	327.89	.344	9.08	.010
11	140.59	.150	156.70	.164	160.92	.168	20.33*	.018
12	306.61	.329	306.66	.329	310.89	.333	4.28	.001
13	477.75	.473	478.43	.474	478.46	.474	0.71	.001
14	246.00	.273	248.68	.276	249.68	.277	3.68	.004
15	278.18	.315	286.66	.324	287.99	.326	9.81	.011
16	211.85	.223	223.62	.233	226.79	.239	14.94*	.016
17	422.98	.419	423.11	.420	423.24	.420	0.26	.001
18	268.91	.298	279.44	.308	279.45	.308	10.54	.010
19	323.48	.354	323.51	.354	323.53	.354	0.05	.000
20	269.95	.297	274.39	.302	276.47	.307	6.52	.010
21	336.83	.340	337.36	.340	337.38	.340	0.55	.000
22	381.52	.379	381.68	.379	384.63	.383	3.11	.004
23	379.85	.395	381.75	.397	381.78	.397	1.93	.002
24	519.14	.523	521.47	.525	521.49	.526	2.35	.003
25	109.39	.118	118.97	.129	119.78	.129	10.39	.011
26	125.21	.132	125.21	.133	130.65	.138	5.44	.006
27	523.99	.507	524.17	.507	524.24	.507	0.25	.000
28	446.19	.451	453.55	.457	453.86	.457	7.67	.006
29	328.36	.375	328.43	.375	332.55	.384	4.19	.009
30	216.92	.226	228.16	.235	228.64	.235	11.72	.009
31	455.19	.465	458.95	.468	461.41	.472	6.22	.003
32	365.27	.377	371.62	.383	371.77	.384	6.50	.007
33	535.48	.501	535.57	.501	539.11	.504	3.63	.003
34	565.53	.523	570.15	.526	575.22	.531	9.69	.008
35	303.42	.325	316.80	.335	317.11	.340	13.69	.015
36	397.58	.413	397.95	.413	398.43	.415	0.85	.002

37	464.00	.469	464.23	.469	464.23	.469	0.23	.000
38	312.59	.326	312.98	.326	319.66	.336	7.07	.010
39	383.68	.384	385.00	.385	388.72	.386	5.04	.002
40	414.84	.412	415.55	.411	430.02	.426	15.19*	.014
41	400.91	.404	401.46	.404	402.05	.405	1.14	.001
42	129.66	.147	132.22	.151	133.47	152	3.81	.005
43	491.70	.475	496.94	.479	509.06	.491	17.36*	.016
44	255.26	.285	255.88	.289	260.70	.293	5.44	.008
45	359.89	.361	360.74	.360	360.86	.363	0.97	.002
46	474.90	.457	489.80	.468	491.23	.466	16.33*	.009
47	518.29	.531	518.77	.532	521.03	.532	2.74	.001
48	516.14	.492	516.26	.492	516.26	.493	0.12	.001
49	118.32	.133	118.36	.133	120.31	.135	1.99	.002
50	342.35	.369	350.27	.376	353.56	.380	11.21	.011
51	326.65	.329	327.53	.330	341.77	.346	15.12*	.017
52	523.43	.525	533.15	.533	533.16	.533	9.73	.008
53	404.13	.427	404.19	.427	404.37	.427	0.24	.000
54	282.82	.311	285.70	.314	291.73	.318	8.91	.007
55	406.15	.401	407.73	.401	409.60	.404	3.45	.003
56	317.09	.333	330.52	.346	331.38	.348	14.29	.015
57	434.38	.435	437.28	.438	438.97	.440	4.59	.005
58	507.12	.507	507.62	.508	510.54	.508	3.42	.001
59	536.93	.537	540.29	.539	540.30	.539	3.37	.002
60	285.49	.317	285.49	.317	285.60	.317	0.11	.000
61	508.58	.473	510.00	.474	510.15	.474	1.57	.001
62	515.46	.509	528.26	.517	528.76	.519	13.3	.010
63	486.04	.536	486.72	.536	487.04	.536	1.0	.000
64	610.16	.550	614.67	.553	614.68	.553	4.52	.003
65	438.53	.416	440.87	.418	448.04	.426	9.51	.010
66	484.31	.501	484.66	.502	487.25	.503	2.94	.002
67	49.75	.527	50.03	.529	50.05	.531	0.30	.004
68	390.03	.389	399.20	.389	400.15	.392	10.12	.003
69	183.84	.205	196.06	.219	201.66	.226	17.82*	.021
70	455.63	.426	461.13	.430	464.65	.434	9.02	.008

Note. *$p<.0007$; Total = Total EI; Group = Asia or Ex-Asia; Total*Group = Total EI by Asia or Ex-Asia;

Summary

Although moderately sized mean differences in Genos EI were observed between Asian and non-Asians, the seven-factor model of Genos EI was supported based on CFA. Further, when analysed at the item level, there was no evidence for any practically significant DIF within Genos EI. Thus, the Genos EI inventory was not found to be unfairly biased against Asian respondents.

South Africa

Description of Sample

For South African respondents, Genos EI scores are benchmarked against a uniquely South African normative sample (N=1023). The South African normative sample consists of 1023 employees (56.9% males; 60.8% white; mean age = 38.3, SD = 8.5, range = 17 to 67) who reported to be currently residing in South Africa on a permanent basis. Tables 35 to 38 list the education levels, the occupations, the role levels, and the industries, associated with the individuals within the South African normative sample. It can be seen that there is a relatively wide variety across all demographic characteristics, although the sample may be considered relatively well educated. The participants who completed the inventory typically did so for research and/or educational purposes during the years 2007 to 2009.

Table 35: Breakdown of educational levels that comprise the Genos EI South African normative sample

	Percentage	N
Doctoral Degree	1.8	18
Masters Degree	13.1	134
Graduate Diploma	3.5	36
Graduate Certificate	2.6	27
Bachelor Degree	28.8	295
Advanced Diploma	4.4	45
Diploma	18.1	185
Certificate	9.5	97
Senior Secondary	.9	9
Grade 12	15.6	160
Grade 11 or below	1.7	17
Total	100.0	1023

Table 36: Occupational breakdown associated with the Genos EI South African normative sample

	Percentage	N
Administration	8.9	91
Development	5.7	58
Financial	7.9	81
Management	39.9	408
Operations	2.0	20
Other	14.5	148
Sales/marketing	8.4	86
Support services	7.4	76
Technical	5.4	55
Total	100.0	1023

Table 37: Role-level breakdown associated with Genos EI South African normative sample

	Percentage	N
CEO/Executive Board Member	3.7	38
CIO/CFO/CTO	3.9	40
Division Leader	13.5	138
Manager/Forman/Team Leader	41.1	420
Project/Services Mgr	11.8	121
Employee	19.7	202
Student	.7	7
Other	5.4	55
Total	100.0	1023

Table 38: Industry breakdown associated with the Genos EI South African normative sample

	Percentage	N
Accounting/Audit	4.2	43
Administration/Support	3.0	31
Advertising/Marketing/PR	1.2	12
Agriculture/Forestry/Fisheries	6.2	63
Architecture/Design	.2	2
Banking	21.9	224
Construction/Mining	.2	2
Consulting/Professional Services	5.4	55
Education/Training	4.4	45
Engineering	.7	7
Finance	16.0	164
Food/Catering	.5	5
Government/ Public Sector	1.0	10
Healthcare/Medical/Personal Care	3.4	35
Hospitality/Tourism/Travel	.2	2
HR/Recruitment	9.1	93
Internet/Ecommerce/IT/Comms	7.4	76
Legal	.2	2
Logistics & Transportation	.5	5

Manufacturing/Production	4.4	45
Media/Entertainment	.5	5
Non-Profit/Charity	.2	2
Other	5.9	60
Property/Real estate	.5	5
Retail/Consumer Products	.7	7
Sales	.7	7
Science/Research	.7	7
Petroleum/Energy	.2	2
Total	100.0	1023

Factorial Validity

As can be seen in Table 39, model fit associated with general factor models and the higher-order 5-factor model were not associated with an acceptable level of model-fit. In contrast, the higher-order 7-factor model was associated with satisfactory model fit. As can be seen in Figure 15, all of the factor loadings were positive and statistically significant, with the exception of the ER3 parcel, which as previously discussed in the main portion of the technical manual, is based on only one negatively keyed item which may need to be modified in a future version of the inventory. Overall, however, there is a close correspondence between the factor model solution associated with the South African normative sample and the international English speaking normative sample (see Chapter on Validity).

Table 39: Model fit statistics and close-fit indices associated with the CFA models: South Africa

	Model	χ^2	*df*	RMSEA	SRMR	CFI	TLI
0	Null Model	109304.93	210	.224	.3868	.000	.000
1	Global EI	2202.49	182	.111	.069	.812	.791
2	Global EI + Neg.	1546.05	182	.094	.051	.873	.853
3	Higher-Order 5-factors	1175.13	177	.074	.046	.907	.890
4	Higher-Order 7-factors	890.08	175	.063	.045	.933	.920

Note. N = 1023.

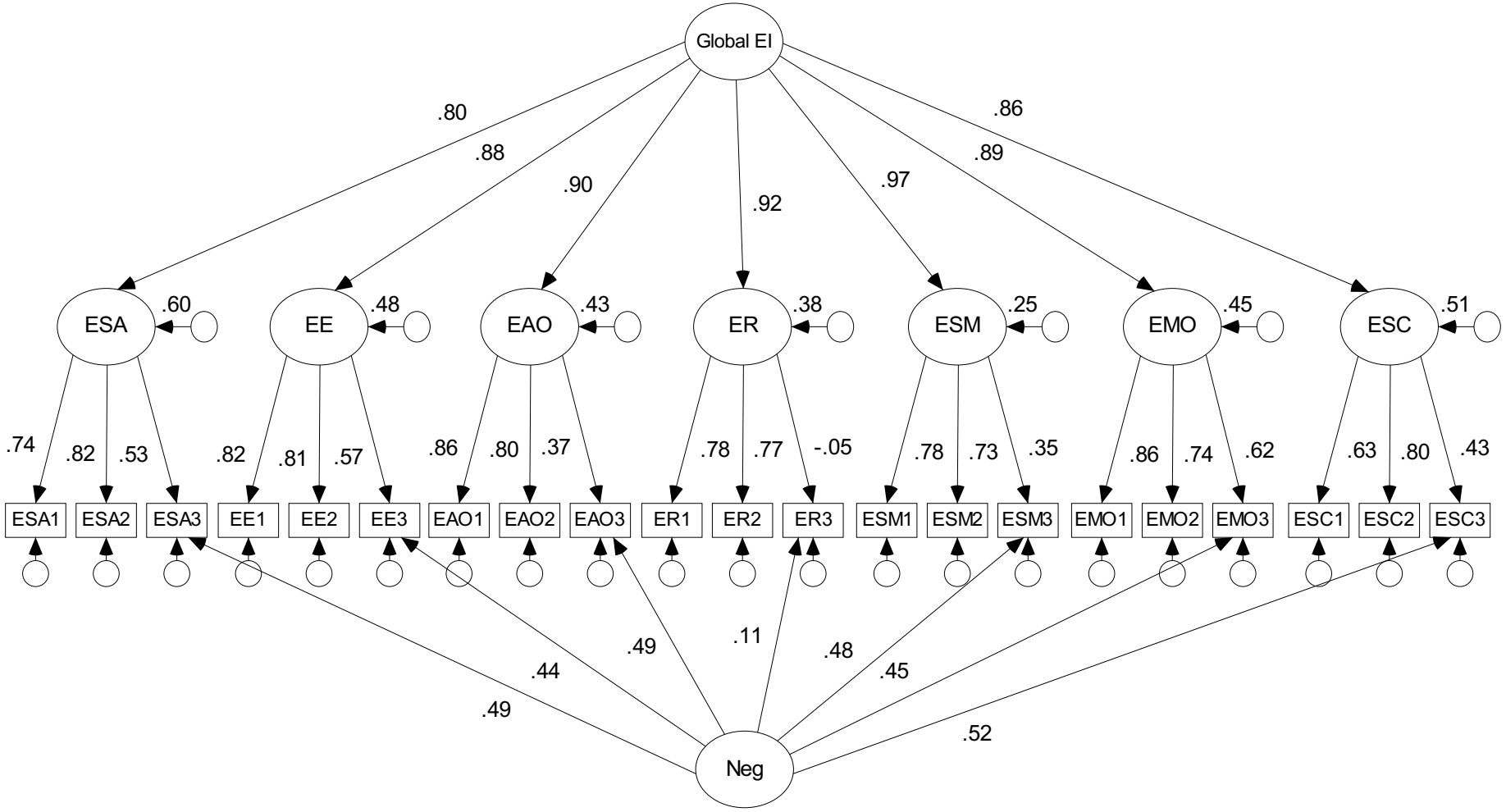


Figure 15: Completely standardized higher-order factor model solution: South African sample (*N*=1023)

Reliability

As can be seen in Table 40, the Genos EI means associated with the South African normative sample (*N* = 1023) were slightly higher than the Ex-South Africa General normative sample (*N* =4356). Based on a series of independent groups t-tests, several of the mean comparisons were found to be statistically significant ($p<.05$), however, in all cases, the difference was found to be small from a practical significance perspective (i.e., effect size). Specifically, based on Cohen's *d*, the largest mean difference amounted to .38, which is equal to 38% of a standard deviation difference, which is small to moderate based on Cohen's (1992) guidelines. Although, the mean differences between the South African sample and the international normative sample (ex-South Africa) may be considered relatively small, Genos EI scores are benchmarked against the South African normative sample when the participant states that they reside in South Africa.

The internal consistency reliabilities associated with subscales and the total scale scores are also reported in Table 40. It can be observed that the total score was found to be highly reliable (.94). Further, all of the subscale scores were associated with reliabilities above .70, with exception of the Emotional Reasoning subscale. Thus, overall, the reliabilities estimated from the South African normative sample were found to be acceptable and consistent with the international normative sample.

Table 40: Means, Standard Deviations, Skew, Kurtosis, Reliability, Standard Error of Measurement: South Africa

	South Africa						Ex-South Africa		Difference	
	Mean	SD	Skew	Kurtosis	α	SEM	Mean	SD	*t*	*d*
Total EI	284.82	25.10	-.47	.36	.94	6.15	278.76	27.91	**6.87**	.23
ESA	42.63	4.34	-.42	-.05	.77	2.08	41.90	4.57	**4.84**	.16
EE	40.15	4.78	-.50	.54	.75	2.39	39.50	4.84	3.94	.14
EAO	40.80	4.59	-.29	.00	.81	2.00	40.62	4.80	1.13	.04
ER	39.38	4.28	-.48	.62	.67	2.46	39.30	4.45	.54	.02
ESM	39.98	4.38	-.40	.44	.73	2.28	38.25	4.72	**11.31**	.38
EMO	41.49	4.74	-.56	.32	.83	1.95	40.19	4.90	**7.91**	.27
ESC	40.40	4.53	-.65	.91	.73	2.35	39.45	4.81	**6.02**	.20

Note. South African sample *N* = 1023; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control; 'International' refers to the international English speaking normative sample of data ex-South African respondents (N=4356); 'Difference' refers to an independent samples t-test between 'South Africa' and 'International' means; *d* = Cohen's *d*; t-values in bold were statistically significant ($p<.05$). Levene's test of homogeneity of variance did not identify any variances between groups to be statistically significant.

Differential Item Functioning: Whites and Non-Whites

An important issue to address with respect to psychological assessment in the South African context is the possibility that one or more of the items within an inventory may discriminate against a particular racial group. For this reason, Genos EI has been investigated for this purposes using a statistical technique known as differential item functioning, the results of which have been published in a peer-reviewed publication (Gignac & Ekermans, 2010). Briefly, based on two samples of white (N=393) and non-white (N=393) participants (stratified for age, gender, and education), the Genos EI items were not found to discriminate between either group in a meaningful way. These results help support the notion that Genos EI may be justifiably applied to individuals within South Africa's two largest racial groups, providing the participants are fluent in English (see Gignac & Ekermans, 2010, for further details).

China

In this section, the Chinese version of the Genos EI inventory is discussed from a psychometric perspective. The Chinese version of the Genos EI inventory consists of the original 70 Genos EI items translated into simplified Chinese. The Chinese version of Genos EI has its own corresponding sample upon which percentile/benchmarks are calculated for respondents.

Description of Sample

Currently, the Chinese normative sample consists of 422 individuals (39% male, 61% female) with an average age of 32.1 (SD = 6.76). Tables 41 to 44 list the education levels, the occupations, the role levels, and the industries, associated with the individuals within the Chinese normative sample. It can be seen that there is a relatively wide variety across all demographic characteristics, although the sample may be considered relatively well educated.

Education Level

Table 41: Breakdown of educational levels that comprise the Genos EI Chinese normative sample

	Percentage	N
Doctoral Degree	.7	3
Masters Degree	25.6	108
Graduate Diploma	.2	1
Bachelor Degree	49.8	210

Advanced Diploma	21.8	92
Certificate	.2	1
Senior Secondary	1.2	5
Grade 11 or below	.5	2
Total	100.0	422

Occupation

Table 42: Occupational breakdown associated with the Genos EI Chinese normative sample

	Percentage	N
Administration	18.0	76
Development	.5	2
Financial	3.6	15
Management	32.5	137
Operations	1.9	8
Other	23.2	98
Sales/marketing	9.2	39
Support Services	3.3	14
Technical	7.8	33
Total	100.0	422

Role-Level

Table 43: Role-level breakdown associated with Genos EI Chinese normative sample

	Percentage	N
CEO/Executive Board Member	1.9	8
CIO/CFO/CTO	2.6	11
Division Leader	10.9	46
Manager/Forman/Team Leader	33.6	142
Project/Services Mgr	8.5	36
Employee	32.7	138
Student	4.3	18
Other	5.5	23
Total	100.0	422

Industry

Table 44: Industry breakdown associated with the Genos EI Chinese normative sample

	Percentage	N
Accounting/Audit	3.1	13
Administration/Support	1.4	6
Advertising/Marketing/PR	1.4	6
Agriculture/Forestry/Fisheries	.2	1
Architecture/Design	2.1	9
Banking	.7	3
Biotech/Pharma	4.5	19
Childcare/Teaching	.2	1
Construction/Mining	.5	2
Consulting/Professional Services	7.6	32
Defence Force/Police/Security	.2	1
Education/Training	4.7	20
Engineering	.9	4
Finance	1.9	8
Food/Catering	.5	2
Government/ Public Sector	.5	2
Healthcare/Medical/Personal Care	1.4	6
Hospitality/Tourism/Travel	.9	4
HR/Recruitment	18.7	79
Internet/Ecommerce/IT/Comms	3.8	16
Legal	.2	1
Logistics & Transportation	1.7	7
Manufacturing/Production	15.9	67
Media/Entertainment	1.2	5
Other	10.7	45
Property/Real estate	1.7	7
Retail/Consumer Products	5.0	21
Sales	3.1	13
Science/Research	.9	4
Sports/Rec	.2	1
TRADE Services	3.1	13
Petroleum/Energy	.9	4
Total	100.0	422

Differences between the Chinese and International Normative Samples

Pure comparisons between the Chinese and International normative samples with respect to mean differences should probably be considered indicative only, as the Chinese version of the assessment may not be considered exactly the same as the English version. However, for the purposes of addressing a question that is asked frequently, the mean average item response between the Chinese and English (International) samples is presented in Table 45. It can be observed that there are fairly substantial differences such that the Chinese sample scored lower than the English/International sample. Specifically, the differences were

practically significant in two cases, as the Cohen's d value was approximately .80 or greater for the emotional self-awareness and emotional self-control subscales.

Table 45: Statistical Differences between the Chinese and English Normative Samples

	Chinese Sample			International Sample			Difference	
	Mean	SD	Reliability (α)	Mean	SD	Reliability (α)	$t_{(5195)}$	Cohen's d
ESA	3.77	.39	.71	4.19	.46	.83	18.19*	-.98
EE	3.73	.43	.77	3.95	.49	.81	8.92*	-.48
EAO	3.78	.45	.81	4.02	.48	.87	9.89*	-.52
ER	3.69	.45	.79	3.93	.44	.74	10.72*	-.54
ESM	3.69	.41	.74	3.84	.47	.79	6.35*	-.34
EMO	3.75	.50	.84	4.03	.49	.86	11.23*	-.57
ESC	3.56	.48	.80	3.95	.48	.78	16.00*	-.81
Total EI	3.71	.38	.95	3.99	.40	.96	13.83*	-.72

ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control; *p<.05.

Differences Between Males and Females

As can be seen in Table 46, Chinese males and females scored approximately equally on the Genos EI dimensions, with the exceptions of Emotional Reasoning and Emotional Management of Others, where males rated themselves moderately higher than females rated themselves. This is an interesting effect, as the opposite pattern is evident in the English/International normative sample. Overall, the effect sizes tended to be small in magnitude (Cohen, 1992).

Table 46: Mean differences between Chinese Males and Females

	Male		Female		Difference		
	Mean	SD	Mean	SD	$t_{(419)}$	p	Cohen's d
ESA	37.7	4.3	37.7	3.7	.13	.899	.00
EE	37.3	4.2	37.2	4.4	.26	.797	.02
EAO	38.1	4.5	37.6	4.5	1.05	.295	.11
ER	37.8	4.4	36.3	4.5	3.35	.001	.34
ESM	37.3	4.3	36.7	4.1	1.42	.155	.14
EMO	38.1	5.1	37.1	4.9	2.00	.046	.20
ESC	36.0	5.0	35.2	4.7	1.64	.101	.16
Total EI	262.4	26.8	257.9	25.9	1.72	.086	.21

Confirmatory Factor Analysis

To test the plausibility of the Genos EI seven-factor model, the seven-factor higher order model reported in Chapter 7 on the English international normative sample was also tested on

the Chinese normative sample. The seven-factor higher-order model yielded good fit: (χ^2 = 429.78, *df* = 175, TLI = .941, CFI = .951, RMSEA = .059, SRMR = .042. Furthermore, a competing general factor model with a negatively keyed item factor was associated with poor fit: χ^2 = 673.70, *df* = 182, *p* <.05 and poor close-fit, TLI = .891 CFI = .906, RMSEA = .080, SRMR = .048. Furthermore, based on the chi-square difference test, the seven-factor higher-order model was found to be better fitting than the competing general factor model from both a statistical and practice significance perspective ($\Delta\chi^2$ = 243.92, *df* = 7, *p* < .05; ΔTLI = .050).

Summary

The Chinese translated version of the Genos EI inventory appears to be associated with respectable levels of internal consistency and factorial validity. The Chinese sample scored notably lower than the international English speaking normative group, underscoring the importance of using a Chinese sample specific benchmark, which Genos in fact does.

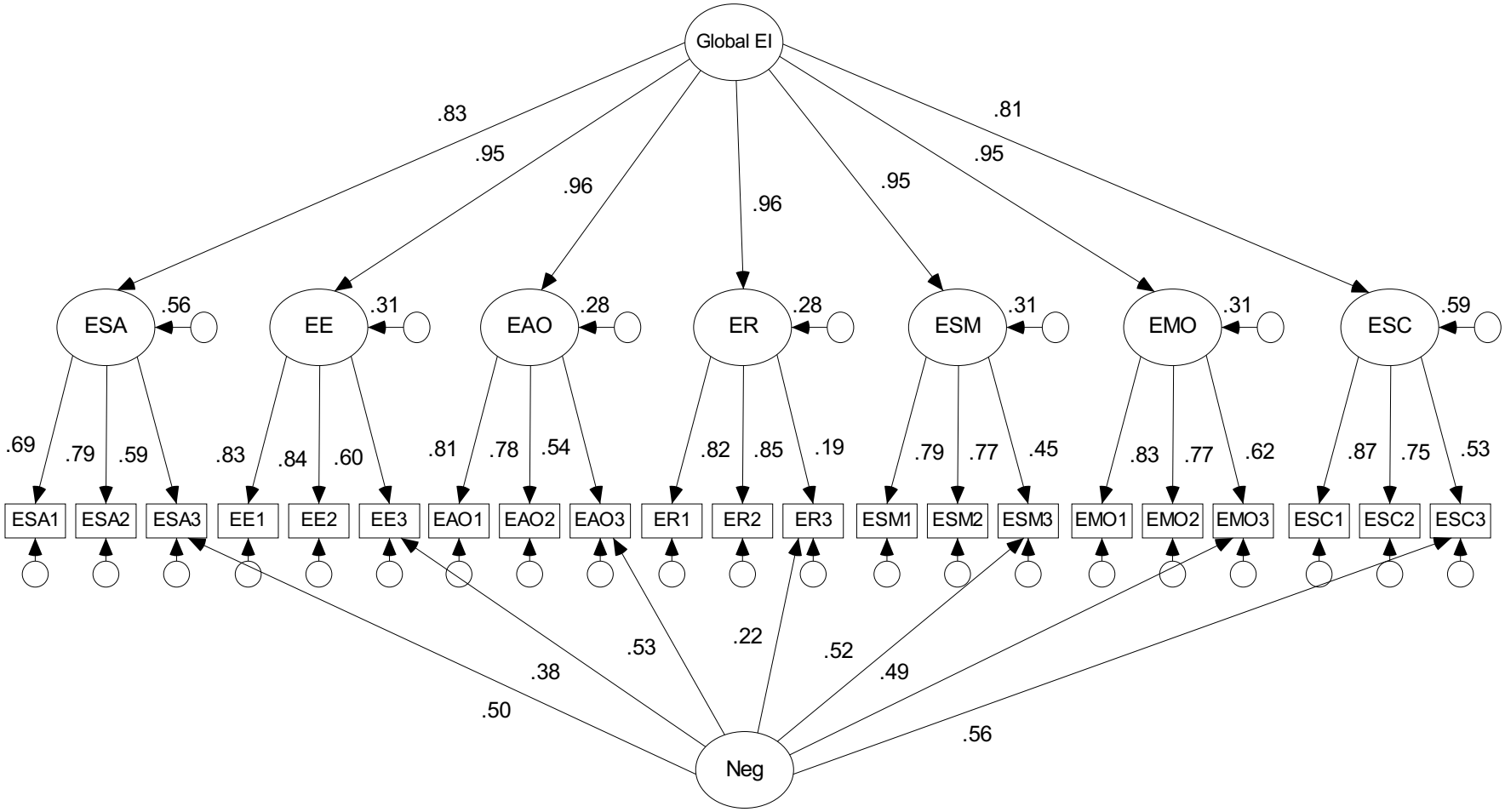


Figure 16: Completely standardized higher-order factor model solution: Chinese sample (N=422)

Chapter 9: Concluding Comments

The Genos EI inventory (and its predecessor the SUEIT) has been in use for research and professional purposes for a relatively short period of time (i.e., since 2001), in comparison to other popular measures used in psychology. However, despite its relative youth, the research reported and reviewed in this technical manual does support strongly the contention that the Genos EI inventory produces reliable and valid scores of EI for use in a variety of workplace contexts. Of course, much more research needs to be conducted to further discover the utility and predictive capacity of the Genos EI inventory scores. Genos is currently conducting a number of investigations to this effect. Recently, two abridged versions of the Genos EI inventory have been developed for research purposes: the Genos EI Short inventory (14-items) and the Genos EI Concise inventory (31-items). Further details can be found at www.genos.com.au.

The ongoing research on the Genos EI inventory will no doubt help direct the development of revisions of the currently employed measure. It is also hoped that the ongoing research that uses the Genos EI inventories will help both the academic and broader public at large to understand the nature of emotional intelligence and its relevance to individuals and organizations in the workplace.

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Appendix A: Genos EI Inventory Items

Emotional Self-Awareness

1. I am aware of things that upset me at work.
8. I am aware of when I am feeling negative at work.
15. I am aware of how my feelings influence the way I respond to colleagues.
22. I am aware of my body language at work.
29. I am aware of my mood state at work.
36. I am aware of the tone of voice I use to communicate with others at work.
43. I fail to recognise how my feelings drive my behaviour at work. (R)
50. I am aware of how my feelings influence the decisions I make at work.
57. I find it difficult to identify my feelings on issues at work. (R)
63. I am aware of things that make me feel positive at work.

Emotional Expression

2. I effectively express how I feel about issues at work.
11. I express how I feel to the wrong people at work. (R)
16. I express positive emotions I experience at work inappropriately. (R)
23. I express how I feel at the appropriate time.
37. I provide positive feedback to colleagues.
44. When I am happy at work I express how I feel effectively.
51. When someone upsets me at work I express how I feel effectively.
58. I effectively express optimism at work.
65. I have trouble finding the right words to express how I feel at work. (R)
70. When I get frustrated with something at work I discuss my frustration appropriately.

Emotional Awareness of Others

3. I am aware of the things that make colleagues feel satisfied at work.
9. I find it difficult to identify the things that motivate people at work. (R)
17. I fail to identify the way people respond to me when building rapport. (R)
31. I demonstrate an understanding of others' feelings at work.
31. I demonstrate an understanding of others' feelings at work.
38. I fail to recognise when colleagues' emotional reactions are inappropriate. (R)
45. I identify others' non verbal emotional cues (e.g., body language).
52. I understand the things that make people feel optimistic at work.
59. I understand what makes people feel valued at work.
66. I identify the way people feel about issues at work.

Emotional Reasoning

4. I ask others how they feel about different solutions when problem solving at work.
10. I demonstrate to others that I have considered their feelings in decisions I make at work.
18. I consider the organisation's values when making important decisions.
25. I demonstrate to others that I have considered my own feelings when making decisions at work.
32. I communicate decisions at work in a way that captures other's attention
39. I gain stakeholders' commitment to decisions I make at work.
46. I appropriately communicate decisions to stakeholders.
53. I consider the way others may react to decisions when communicating them.
60. I take into account both technical information and the way I feel about different choices when making decisions at work.

67. I focus solely on facts and technical information related to problems when trying to derive a solution. (R)

Emotional Self-Management

5. I take criticism from colleagues personally. (R)
19. I engage in activities that make me feel positive at work.
26. I ruminate about things that anger me at work. (R)
33. I effectively deal with things that annoy me at work.
40. I appropriately respond to colleagues who frustrate me at work.
47. I demonstrate positive moods and emotions at work.
54. I quickly adjust to new conditions at work.
61. I fail to handle stressful situations at work effectively. (R)
62. I respond to events that frustrate me appropriately.
69. I explore the causes of things that upset me at work.

Emotional Management of Others

6. I create a positive working environment for others.
12. I fail to get colleagues to cooperate. (R)
13. I motivate others toward work related goals.
20. When necessary I effectively demonstrate empathy to colleagues
27. I am effective in helping others feel positive at work.
34. I help people find effective ways of responding to upsetting events.
41. When colleagues are disappointed about something I help them feel differently about the situation.
48. I help people deal with issues that cause them frustration at work.
55. I don't know what to do or say when colleagues get upset at work. (R)
64. I fail to resolve emotional situations at work effectively. (R)

Emotional Self-Control

7. I demonstrate enthusiasm appropriately at work
14. I remain focused when anxious about something at work.
21. I behave inappropriately when angry at work. (R)
28. I demonstrate excitement at work appropriately.
30. When I am under stress I become impulsive. (R)
35. I fail to control my temper at work. (R)
42. I hold back my initial reaction when something upsets me at work.
49. I am impatient when things don't get done as planned at work. (R)
56. When upset at work I still think clearly
68. I fail to keep calm in difficult situations at work.

Items denoted with an (R) are negatively keyed. Consequently, these items need to be reverse scored prior to summing the items (see p. 17 for further details).

Appendix B: Detailed Information on Validity Indices

Inconsistency Index

Each of the item pairs and their corresponding correlation are presented in Table 1. It can be observed that the inter-item correlations were relatively high; further, the item content and wording were generally only different in a subtle way. To calculate the Inconsistency Index, the absolute difference in item response for each of the item pairs is calculated and summed across all seven item pairs and then divided by seven. Thus, the Inconsistency Index represents the average absolute deviation across the seven item pairs.

Table 1: Corresponding item pairs and inter-correlations associated with the Genos EI Inconsistency Index

Item #	Item pair	*r*
39	I gain stakeholders commitment to decisions I make at work.	.58
46	I appropriately communicate decisions to stakeholders.	
34	I help find effective ways of responding to upsetting events.	.58
48	I help people deal with issues that cause them frustration at work.	
52	I understand the things that make people feel optimistic at work.	.58
59	I understand what makes people feel valued at work.	
24	I understand the things that cause others to feel engaged at work.	.57
52	I understand the things that make people feel optimistic at work.	
41	When colleagues are disappointed about something I help them feel differently about the situation.	.53
48	I help people deal with issues that cause them frustration at work.	
13	I motivate others toward work related goals.	.52
27	I am effective in helping others feel positive at work.	
24	I understand the things that cause others to feel engaged at work.	.52
59	I understand what makes people feel valued at work.	

Note. *r*=the Pearson correlation between the two paired items.

The observed frequencies and percentages associated with the Inconsistency Index scores are presented in Table 2. It can be observed that the vast majority of the normative sample respondents exhibited an appreciable level of consistency. For example, 65.28% of the respondents deviated, on average, less .50 of an item score (NB: the item Likert scale ranges from 1 to 5) across the seven item pairs.

Table 2: Observed frequencies and percentiles associated with inconsistency index scores

Inconsistency Score	Frequency	Percentage of Respondents	Cumulative Percent
0	783	10.12	10.12
.143	713	14.93	25.05
.286	934	19.56	44.61
.429	987	20.67	65.28
.571	790	16.54	81.82
.714	455	9.53	91.35
.857	222	4.65	96.00
1.000	113	2.37	98.37
1.143	46	.96	99.33
1.286	17	.36	99.69
1.429	13	.27	100.96
1.571	2	.04	100.00

Note. *N*=4775.

Socially Desirable Responding

A well-known limitation associated with self-report inventories is that they tend to be susceptible to "faking-good" (a.k.a., socially desirable responding). That is, because most assessments are comprised of face valid items (i.e., what any given item may be measuring is obvious on the "face of it"), a candidate responding to the assessment may respond to items in such as way as to suggest that they have higher levels of the ability or trait than is in fact the case. The susceptibility of faking good is considered to be particularly acute in recruitment and selection contexts.

In light of the above, Genos has taken the responsibility of dealing with the faking-good issue within its Genos EI Selection very seriously. Ultimately, Genos believes it is an important ethical expectation on the part of the client and the test-taker that the scores derived from the Genos EI Selection inventory will be as minimally contaminated by faking-good as is practicable.

Consequently, based on an extensive review of the academic literature, Genos EI has taken a well-established, multi-dimensional approach to the assessment of the degree to which respondents may be faking good. A multi-dimensional approach was adopted, because academic research has shown that faking-good is likely not a single process (e.g., Paulhus,

1984). Two faking-good processes that have received a significant amount of research over the past 30 years are known in academia as (1) 'self-deceptive enhancement' and (2) 'over-claiming'. Genos EI Selection includes both constructs; however, they have been named 'Inflation' and 'Manipulation'.

Inflation

The Genos EI Inventory measures a subscale named 'Inflation' (7 items), which represents the degree of excessive self-belief that an individual possesses relevant to their abilities at work. The Inflation subscale may be said to be conceptually similar to the psychological concept of narcissism. Theoretically, Inflation is predicated closely upon the dimension of self-deceptive enhancement as measured by the well-established Balanced Inventory of Desirable Responding (BIDR: Paulhus, 1998). An example item is, 'I have doubts about whether I will have time to complete a work-related task successfully.' In accordance with the BIDR, only extreme responses of 'Never' or 'Always' to such items are scored as indicative of an inflated view of one's abilities. That is, while it may be the case that some individuals may only occasionally or even rarely have such doubts about their abilities, it is highly unlikely that they would never have such thoughts. In order to receive an elevated Inflation index score, it is necessary to endorse 'Never' or 'Always' (depending on the key of the item) to several Inflation items. Thus, a single extreme response to the Inflation items would not yield an elevated Inflation score.

As Inflation scores have been found to be correlated positively with Genos EI scores (see below), Genos EI scores are adjusted (via a multiple regression algorithm) to better reflect their 'true' level of demonstrated EI, independently of the effects of 'faking good'.

Over-claiming

In contrast to the construct of self-deceptive enhancement (which is measured by Inflation within Genos EI), there is an additional cognitive process whereby an individual may be consciously motivated to increase their scores during an assessment, independently of any genuine belief of their unjustifiable 'superior' abilities. To measure such a process, Genos EI includes a Manipulation index, which is directly predicated upon a psychological construct known as over-claiming. In contrast to Inflation (or self-deceptive enhancement), the construct of over-claiming is likely less well-known to those with only a passive interest in socially desirable responding. However, over-claiming has nonetheless been the subject of a substantial amount of academic research over the years.

Over-claiming as a psychometric approach was first suggested by Philips and Clancy (1972). Delroy Paulhus and Nadine Bruce developed the first widely used measure of over-claiming (Over-Claiming Questionnaire, OCQ) in 1990. A portion of the OCQ is presented in Table 3. It can be observed that all of the items appear to relate to physical science terms or concepts; however, three of the items are 'foils': cholarine, ultra-lipid, and plates of parallax.

Table 3: Portion of the Over-Claiming Questionnaire (Paulhus & Bruce, 1990)

Format of the Over-Claiming Questionnaire (OCQ)

Using the following scale as a guideline, write a number from 0 to 6 beside each item to indicate how familiar you are with it.

Never heard of it ... Very familiar

0 1 2 3 4 5 6

Physical Sciences

_____ Manhattan Project	_____ asteroid	_____ nuclear fusion
_____ cholarine	_____ atomic number	_____ hydroponics
_____ alloy	_____ plate tectonics	_____ photon
_____ ultra-lipid	_____ centripetal force	_____ plates of parallax
_____ nebula	_____ particle accelerator	_____ satellite

Note. Of the 15 items above, the following 3 are foils: cholarine, ultra-lipid, and plates of parallax. Other topic categories include literature, art, history, social science, language, contemporary culture, and consumer products.

The degree to which respondents claim familiarity with these faux terms/concepts is indicative of the extent to which the respondents are over-claiming knowledge (Paulhus & Harms, 1999). Since 1990, validity research on the OCQ has been documented across more than a dozen peer reviewed publications, based on 1000s of responses (see Bibliography, Published Research on Over-Claiming). The OCQ is not the only psychometric assessment that uses foils strategically to assess an individual's level of 'faux' knowledge. In fact, the Author Recognition Test (ART, Stanovich & West, 1989) is predicated upon the same concept and has been used in dozens of academic investigations (e.g., Stanovich & Cunningham, 1992; Chateau & Jared, 2000).

The Manipulation subscale within Genos EI Selection is predicated very closely upon the concept and measurement of over-claiming endorsed by Delroy Paulhus and his colleagues. More specifically, a series of plausibly sounding strategies, apparently relevant to emotional intelligence, but, in fact, non-existent, are presented to respondents to gauge the frequency with which they use these faux strategies at work, from 'Never' to 'Always'. An example item is, 'I use the 'Wilson-Stanley Technique' to emotional conflict resolution with my peers.'

As Manipulation scores have been found to be correlated positively with Genos EI scores (see below), Genos EI scores are adjusted (via a multiple regression algorithm) to better reflect their 'true' level of demonstrated EI, independently of the effects of 'faking good'.

Psychometrics of Genos EI Inflation and Manipulation

Based on a sample of 228 respondents, the internal consistency reliability associated with Inflation and Manipulation scores has been estimated at .77 and .91, respectively. The correlation between Inflation and Manipulation has been estimated at $r = .23$ ($p<.05$), suggesting that they are related but substantially unique processes.

The mean Inflation score was .31 (SD=.63). This value may seem small, however, it should be kept in mind that only the extreme responses on the 7-point Likert scale (1 = Never, and 7 = Always) are scored a value 1, while all other responses are scored 0. The mean Manipulation score was 17.46 (SD=6.31). Manipulation items are scored on a 0 to 6 scale (0 = Never and 6 = Always). Only 5% of the sample received a score of zero on Manipulation, suggesting a large percentage of respondents engage in some level of Manipulation when completing a self-report EI inventory.

Finally, as can be seen in Table 4, there are moderately sized positive correlations between Inflation and Manipulation and Genos EI scales. Inflation correlated with Total EI scores at $r = .48$, while Manipulation correlated with Total EI at $r = .28$. The pattern of positive correlations was consistent across all Genos EI scales.

Table 4

Pearson correlations between Inflation, Manipulation, and Genos EI scales

	Total EI	ESA	EE	EAO	ER	ESM	EMO	ESC
Inflation	.48*	.39*	.36*	.43*	.41*	.44*	.42*	.38*
Manipulation	.28*	.23*	.20*	.30*	.28*	.25*	.28*	.13*

Note. ESA=Emotional Self-Awareness; EE=Emotional Expression; EAO=Emotional Awareness of Others; ER=Emotional Reasoning; ESM=Emotional Self-Management; EMO=Emotional Management of Others; ESC=Emotional Self-Control; *$p<.05$.