Emotionintell: a generic Emotional Intelligence model.

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Abstract

The Emotional Intelligence (EI) research literature is diverse, complex and riddled with controversy concerning the labels and taxonomy used to define emotional intelligence, and the methodology used to assess people against it. This thesis outlines these and other challenges that face researchers and practitioners, offering a pathway through them that respects those factors and features that subject-matter experts (SME) agreed upon. It also addresses many of the criticisms and disagreements across the EI research community. This is a theoretical study that draws on work from the last one hundred years. It proposes a generic Emotional Intelligence model (*EmotionIntell),* also referred to in this thesis as the '*e*' factor. It argues that the EI construct has to centre on *abilities* to enable it to be classified as an *intelligence*. However, it must respect and integrate the value and moderating effect of *traits*, amongst other individual differences, as context is crucial to EI performance. This research asserts that an EI model that qualifies as an *intelligence* did not, until this point, exist. The SMEs confirm this, along with other agreements relating to EI that are deemed significant; these findings are offered as a dataset, to support future research. This research delivers a *generic* model, that is not tied only to leadership, well-being or teamwork. It is also value-neutral (as much as this is possible) and does not dictate a moral code to the user, though the author hopes that its primary use will be to support well-being and constructive behaviour. It provides a framework that captures the idea that *ability* is about guiding *appropriate* thinking, behaviour, and actions, towards *goals* while respecting specific *contexts*. The thesis also proposes assessment approaches that will guide the future development of assessment instruments, thereby providing an *IQ-type* measure of emotional intelligence, against this EI model, to enable subsequent reliability and validity analysis.

1 Introduction

1.1 Preface

This research set out to establish whether a generic, widely accepted, equivalent to *Intelligence Quotient* (IQ) exists for *Emotional Intelligence* (EI). If not, then it will aim to develop a theoretical EI model and an assessment approach that can achieve this.

This work is motivated by the current author's hypothesis that a widely accepted EI model does not exist and, therefore, expects that a significant amount of analysis and development work will be necessary to achieve the aim of developing one. This hypothesis is tested through systematic analysis of the extant literature, and evaluation of the claimed strengths and limitations of the existing EI models and related assessment approaches. It will include a detailed consultation with SMEs who are working in this field of research. This is to ensure that this research and development work is current, and that it incorporates input and peer-review from a diverse range of EI researchers. This is necessary as existing EI models span a mixed-model spectrum; some take a trait-model approach, some take an ability-model approach, and others adopt a mixture of both traits and abilities in the EI model primary factors. Mayer et al., (2008) captured the crucial impact of this *mixed*-model landscape in 2008 [that has only compounded since then] when they reported the criticism that the research on EI

> ....can be described by what Lakatos (1968, cited in Smith, 2005) referred to as a "degenerating research program", which consists of a series of defensive shifts in terminology and hypotheses, that is "unlikely to yield new knowledge and understanding." (Smith, 2005:401).
>
> (2008:513)

This diverse interest in EI has tended to "obscure definitional clarity" (Zeidner et al., 2002:215) which has led to a need for a "clear conceptualization and definition" (Zeidner et al., 2004:247). See also Matthews et al. (2004) and Zeidner et al. (2008) for further reinforcement of this need for construct clarity and unambiguous definitions.

These divisions around EI, and even the root construct of *intelligence*, make the work of the EI researcher more challenging, and interesting. This research will, therefore, establish definitions of EI and related terminologies, so as to guide this work, and also establish the conceptual base that underpins this theoretical development work.

1.2 Outline of the thesis

This thesis aims to deliver:

- a clear definition of EI drawn from empirical research, that is supported by a significant number of subject-matter experts;
- a theoretical EI model, and an assessment approach, that is judged by SMEs to address the major criticisms identified in the literature review;
- a commitment to abilities (not traits) as primary factors so the resulting EI model is capable of being classified as an intelligence;
- isolation of non-ability factors from the primary factors, and integration of traits and other individual differences into an EI taxonomy framework, to respect the moderating effect they have on EI performance/behaviour;
- an ability factor core that is neutral of values, specific contexts and applications;
- clear disaggregation of the primary EI model factors into the knowledge, understanding and skills that underpin them;
- a research driven model for performance assessment that can provide a conceptual base for the future development of assessment instruments/tests.

These aims are addressed and presented, progressively, through four phases (Phase I to IV) of this thesis (in Sections 3, 4, 5, and 6). A comprehensive matrix is created and utilised by the current author to classify, separate, and organise the EI factors from eight core EI models scoped for this project. This then enables a qualitative conceptual synthesis of the core ability factors into a new theoretical EI model, including a detailed underpinning framework, including an appropriate assessment methodology.

The findings sections in phases I to III (see sections 3.2, 4.2 and 5.2) reveal how the resulting EI model evolved from existing core models and describe how it handles the contributions and criticisms from researchers working in the EI research field. These are synthesised as twelve challenges in Section 3.2.6. This twelve challenges include the arguments and counter-arguments from EI framework and assessment-researchers, and instrument developers who cover the spectrum of *ability* and *trait* [and *mixed*] EI models (see sections 2.2 and 3.2.6). The results of a detailed consultation are included in Section 4.2, based on a survey of 104 subject-matter experts (SMEs). The SMEs were surveyed during the development of this EI model and its components (survey included as Appendix 2, with the SME dataset included as Appendix 3). The impact this consultation

had on the final EI model is detailed in Section 5. The multi-dimensional matrices and datasets are included in sections 4 and 6 with the full model-mapping matrix included as Appendix 1. These stages enabled a systematic development process that incorporated: a reverse-engineering exercise against the theoretical base and an in-depth critical analysis in Phase I (Section 3); SME consultation in Phase II (Section 4); and the rebuilding of a complete conceptual model, framework and taxonomy for EI in Phase III (see Section 5). A range of assessment methods are critically reviewed in Phase IV (Section 6), resulting in an assessment approach that the current author posits as most appropriate for the assessment of adults against the *e*-factor.

A summary of the perceived strengths of the findings of this research are presented in the conclusion (Section 7), encompassing what is hoped to be judged a significant EI construct milestone towards the *e*-factor goal. The EI research challenges are summarised in Section 3.2.6, and then are re-presented in Section 7.1, followed by an explanation of how this thesis addresses each challenge. A summary of some of the surprising results feature in Section 7.2. The limitations of this research are also included (Section 7.3), along with suggestions for the research and development work that would flow naturally from this work (Section 7.4). The discussion in Section 7.5 of this thesis shares an evaluation of those findings, along with the current author's claims of how these findings add to the body of knowledge in the EI research field.

1.3 Research questions

The questions central to this research are:

- Can a generic framework of abilities be identified or developed so as to be widely accepted as a reliable measure of emotional intelligence (EI) in the same way that general intelligence is measured (IQ)?
- To what extent can a single assessment methodology reliably assess adults against such a model?

By addressing these questions, this research hopes to make a significant contribution to EI knowledge to help researchers and practitioners break free from this claimed degeneration by bringing the construct back to the basics, in other words, an intelligence (*e*-factor) that is [re-]focused on the ability to perceive and manage emotions in self and others in a way that is appropriate to context and goals.

1.4 Thesis Structure

In order to identify relevant work, the literature review section that follows this introduction (in Section 2) adopts a non-systematic or narrative review (Ferrari, 2015). This approach was used for this research, in preference to systematic review, for several reasons, including: it allows a broader scope for conceptual work; and, it suits more qualitative synthesis (see 'Box 1' in Gregory and Denniss, 2018:895). Also, the literature review sought to identify key evolutionary studies, rather than all articles produced within the specified period, and it used inclusion and exclusion criteria to help this focus (outlined in Section 2.1). Hence, the literature review and analysis focused on significant indicative research and was not intended to be exhaustive and definitive. Although this approach is potentially open to bias, the use of the specific research criteria within this research ensured that key work was thematically congruent with the topic of EI models and EI assessment methodologies.

This main body of this thesis presents a 'phased' approach that represents the logical progression and evolution of EI realted research, captured in four phases in Sections 3, 4, 5, and 6. It presents the detailed methodology, critical analysis and the results in an integrated way within *each* of these four inter-dependent phases:

- Phase I – A Systematic Analysis of the Literature (Section 3);
- Phase II - Subject-Matter Expert Consultation (Section 4);
- Phase III - EI Model Refinement (Section 5); and
- Phase VI – An Assessment Methodology (Section 6).

This structure of the main body of the thesis is not, therefore, strictly conventional. This is because the nature of this developmental project means that the results of each of the phases informs the methodology of the subsequent phase. The overall 'Methodology' is therefore contextualised and is presented at the start of each phase. Colomb and Williams (2012) refer to this approach as creating 'coherence', where each major chapter in a thesis relates to a specific phase, capturing its approach its methods, argument or narrative in context. As the methods are detailed in each phase, this also enables the current research, or its phases, to be repeated in the future by others. In addition, it helps to show how each phase contributes towards the central research questions of the overall study.

Each phase includes three sub-sections that will be expanded upon later:

1. Methodology Section
2. Findings section(s)
3. Implications for next phase and future research.

A conclusion (in Section 7) summarises the current research, its limitations, and includes a discussion around its contribution to the EI body of knowledge.

Prior to the phased analysis, the next section (Section 2) captures the literature review that underpins this study.

2 Literature review

The scope of the literature review is presented briefly here, followed by a summary of the key significant studies and developments revealed by the EI research literature.

2.1 Scope

This literature review was scoped to capture relevant, current work. The span was global to encompass research across cultures, though it was limited to publications in English, and focused primarily on models that apply to adult humans. The complexities of translation, and considering models adapted for animals, or for the specific context of human infants and adolescents, was judged to be a challenge that is best left for future research.

This review is extensive, though channelled so as to capture and distil the key milestones in the EI model research evolution. It highlights (for later analysis in Section 3.2.6) the major claims, criticisms, controversies and arguments from across the literature that have played a significant role in the development and diversification of the multiple EI models which have emerged. The key EI models scoped for this research are then analysed in more depth in the main body of this thesis.

The review spans the last one hundred years, so as to include the first known use of the *Emotional Intelligence* term in research publications (Payne, 1985), and some earlier work under the banner of *social intelligence* (Thorndike, 1920b). The majority of the available literature, however, has been generated over the last two decades with a significant increase in research publications towards the latter end of that period. A search for the combined term, 'emotional intelligence', via the *Scopus*[1] database in January 2018, for example, revealed 87,881 publications, rising year on year from 1997 (n=644) to 2016 (n= 11152) as shown in Figure 1.

[1] www.scopus.com

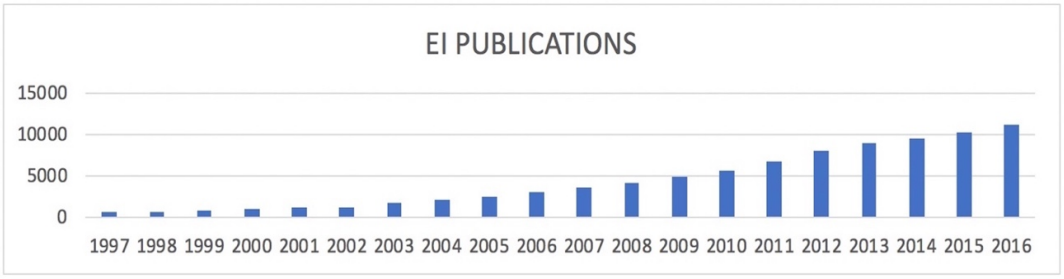


Figure 1 - EI research publication trends

This type of search methodology has been adopted, since it is popular with researchers (see also Stough et al., 2009), even though it is recognised that such a search cannot be exhaustive or definitive, as many publications exist outside of this database, often without peer review, and may be subject to Scopus search and archiving technicalities. In addition, those studies mentioning 'emotional intelligence' in the Scopus search may only be tangential to the EI core construct. It does, however, "provoke some thoughts about the growing interest in EI" (Stough et al., 2009:5). The growth in research is reinforced when it is noted that 72,989 (83%) of the 87,881 studies were published within the last ten years of this twenty-year range.

The majority of this research (62% of the publications) revealed by Scopus comes from the disciplines of psychology and medicine, with most of the balance from social sciences, computer sciences, business management and accounting, and neuroscience. This highlights the sectors that are already exploring EI and might, therefore, be those sectors which may benefit from the generic EI model this research seeks to establish. This is factored into this thesis in Section 5.2.4.

Some of the influencers, developers and reviewers of current EI models and assessment methodologies are captured in Section 2.3, where their key evolutionary studies and contributions to the body of knowledge in the EI field are summarised. To help ensure clarity in this thesis, the current author deemed it necessary to develop and adopt, early on, key language, terminology, and definitions so as to minimise ambiguity, and thereby provide a stable base for this research. This is necessary since popular interest in EI has tended to "obscure definitional clarity" (Zeidner et al., 2002:215) which has led to a need for a "clear conceptualization and definition" (Zeidner et al., 2004:247). See also Matthews et al. (2004) and Zeidner et al. (2008) for further reinforcement of this need for construct clarity and unambiguous definitions. These are addressed in the next section of this thesis (Section 2.2).

2.2 Definitions and terminology

For the purposes of this research, a taxonomy hierarchy has been adopted that identifies strata in the EI context. There are six aspects that the current author presents as a hierarchy as follows:

1. Intelligence (here including the Intelligence Quotient [IQ], though the current author's hope is that once EI is firmly established as an intelligence, IQ can be relegated to level 2 alongside EI)
2. Emotional Intelligence (alongside other sub-domains of intelligence, such as those within multiple intelligence models – see Section 2.3)
3. Performance (or behaviour)
4. Ability/Competence
5. Knowledge, Understanding and Skills (that underpin ability)
6. Tests/Assessments.

2.2.1 Intelligence: the construct hierarchy

At the head of the taxonomy hierarchy is the construct of *Intelligence* in its widest sense. Although, as indicated above, IQ might be placed at a second level to help remove the assumption that '*IQ' equals* '*intelligence'*. The current author, however, sets out with what is generally accepted, and positions IQ alongside general intelligence (or 'g') as the primary construct. Relegating IQ to a second-level sub-strata of intelligence may be too controversial for readers of this thesis, and so this was resisted. That said, the current author hypothesises that the development of an EI construct that: can be classified as an intelligence; addresses the major criticism across the EI field; is generic and values neutral in the same way as IQ; and, includes an appropriate measurement methodology, might lead to acceptance from the research communities that IQ is only *one* facet of intelligence. These hypotheses are tested and addressed through this research and development work, and the results are presented in the conclusion in Section 7.

This output of this research then might help to open up the possibility of EI and IQ being classified alongside each other as sub-constructs of the generic construct of *intelligence*. This notion is already supported by the early work on the idea of multiple intelligences though there are counter arguments that need addressing (and will thus be explored in more detail in Section 2.3).

2.2.1.1 Emotional Intelligence: the sub-construct (or model)

EI is framed as a *sub-construct* or *model* of intelligence in this thesis and positioned alongside other sub-constructs.

2.2.1.2 EI Performance/Behaviour groupings: the domains

Most EI, and other, sub-constructs are divided down and clustered into groupings or *domains* (see Section 3.2.1), in the same way that IQ might be broken down into numerical-, verbal-, and special-reasoning domains. An example of one domain in EI might be the 'Awareness of one's own emotions'.

2.2.1.3 Abilities/Competences: the factors

In this study, each descriptor of a relatively stand-alone aspect of performance is termed a *factor* in this study. An example in EI might be the 'Ability to perceive emotions as they arise'.

2.2.1.4 Knowledge/Understanding/Skills: the facets

Each factor of ability is often underpinned by multiple *facets* of knowledge, understanding and skills. Such disaggregation is useful in the development of curricula and assessments that are designed to develop and measure abilities and competences.

2.2.1.5 Tests: assessment methodology

The majority of the core EI models scoped for this research (see Table 6) include the use of a test instrument that is often developed in conjunction with the EI model by the model developer. *Tests* are separated from the main five levels, at a lower level, to position them as something that might follow any development of EI models. It is considered useful to clarify when *EI models*, or *tests*, are being referred to, as some developers use the same label for both, so this will be made clear, when necessary in this thesis. Outlines of the assessment instruments are included in Section 6.

2.2.1.6 Context: individual differences and time/place

Context is included in this terminology section, but not integrated within the hierarchy, as it captures influences on EI performance and behaviour. These include traits, attitudes, personality, and the more specific time and place contexts where EI might be applied. These are explored in Section 5.2.7.

The matrix in Table 1 is offered to summarise the terminology adopted within this thesis and how this aligns with the *levels* in the intelligence construct hierarchy. It also maps these against terms used generally within psychology and more specifically across EI research.

	Level	Intelligence 'Hierarchy'	Term(s) and/or taxonomy/classification adopted within this study	Broad equivalents/ examples in psychology	Other equivalents/terms/ examples used in EI research
	1	**Intelligence**	**Intelligence** Construct. *g*-factor. IQ.	Construct General intelligence** Cognitive intelligence** *g*-factor** IQ**	Psychometric construct Manifold Meta-model
	2	**Emotional Intelligence**	**EI** or **EI Model** or **Domain** (or EI Construct or EI Framework) *e*-factor. EQ. (later: "*EmotionIntell*" label)	Construct Model Theory Second-stratum factor	Model, framework, array, structure Fluid(Gf)/Crystallized intelligence(Gc) Multiple intelligences (8+) Existing EI model labels (MSCEIT, EQ-i, TEIQUE, etc.)
CONTEXT Individual differences (for example, beliefs/ desires/ goals/ personality/ traits) and other variables (for example, time/place) that impact as moderating influences on EI performance.	**3**	**Performance (or behaviour)**	**Sub-Domains** (later ***Quadrants*** - influenced by the resulting EI model visual adopted in this study)	Domains 'Second-stratum' factor*** Higher-order factor	Domains, branches, framework, clusters, quadrants, factors, bi-factor, scores (strategic/experiential), perspectives.
	4	**Ability/ Competence**	**Factors**	Factors	Competences, abilities, skills, factors, traits
	5	**Knowledge, Understand-ing and Skills**	**Facets**	Facets	Factors Curriculum
	6	**Tests**	**Assessment methodology** (one or a combination of approaches, instruments, tests or tools)	Assessment methodologies, tests, instruments, tools	Tasks, tests, questionnaires, instruments, tools, scales, measurement methods, surveys, self-/peer- reports.

Notes:
* 'First principles' function as cognitive organizers, supporting the construction of procedures that are consistent with the principles (Gelman and Brenneman, 1994).
** Shown here as a top-level of Intelligence, though often restricted to 'academic' intelligence (c.f., Gardner) and therefore these too may fit better relegated to level 2 once/if EI earns a place alongside IQ.
*** see MacCann et al., 2014:361.

Table 1 - 'First principles' behind the terminology adopted for this study

The stratification of the taxonomy of the EI construct into its levels helps to provide a template for organising and assimilating data from other EI researchers who assign a mix of labels to their own construct and taxonomies. This framework is adopted to help ensure consistency and clarity in this thesis, so as not to confuse readers regarding references that are made, and to also enable comparisons of mixed terminology to be anchored around these levels.

2.2.2 Defining Emotional Intelligence

The EI research literature contains disparate terminology and this impacts on definitions, not only in respect to *emotional intelligence* (Salovey and Mayer, 1990; Goleman, 1995), but also emotional literacy (Cooper and Sawaf, 1998), emotional quotient (Cooper, 1997; Bar-On, 2006) and personal intelligences (Gardner, 1983; Mayer, 2014).

Definitions of *emotional intelligence* from the developers of the EI models scoped for this research include the following:

- Emotional intelligence is "a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990:189).
- The same researchers modified this definition seven years later to "the ability to perceive emotions, to assess and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotion so as to promote emotional and intellectual growth" (Mayer and Salovey, 1997:11).
- Goleman offered this definition in a conference paper presented in London: Emotional intelligence is "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (1997:2).
- Bar-On defined EI as "a multi-factorial array of interrelated emotional and social competences, skills and facilitators that influence one's ability to recognize, understand and manage emotions, to relate with others, to adapt to change and solve problems of a personal and interpersonal nature, and to efficiently cope with daily demands, challenges and pressures" (1997:22).
- Caruso later took a broader perspective and defined EI in the MEIS Feedback Booklet (MEIS is the earlier version of what evolved as MSCEIT – see 3.2.1.8) as the "ability to use your emotions to help you solve problems and live a more effective life" (1999:3).

Other definitions (some more recent) to emerge include:

- “the ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, information, connection, and influence” (Cooper and Sawaf, 1998:226);
- “the ability of a person to use emotions as a guiding tool for interpersonal effectiveness in his or her social environment” (Kunnanatt, 2004:489);
- “the intelligent use of emotions: you intentionally make your emotions work for you by using them to help guide your behaviour and thinking in ways that enhance your results” (Weisinger, 2006:xvi);
- “the capability of individuals to recognize their own emotions and those of others, discern between different feelings and label them appropriately, use emotional information to guide thinking and behavior, and manage and/or adjust emotions to adapt to environments or achieve one's goal(s)” (Colman, 2015:224).

Although the definitions vary, there are commonalties across them as captured in Table 2. Note that common keywords contained within these definitions including the following:

- ability
- capacity
- monitor
- perceive
- understand
- influence
- own emotions
- other’s emotions
- contexts
- thinking
- actions
- goals
- growth.

These thirteen components were added to the matrix (see the top row of Table 2). This enabled the frequency of use of these key terms across the range of definitions to be established. The definition generated by the current author from this matrix was added to the bottom row, incorporating only those terms that featured in two or more of the nine definitions.

Author	Definition	Ability	Capacity	Monitor	Perceive	Understand	Influence	Own emotions	Other's emotions	Contexts	Thinking	Actions	Goals	Growth	Reference
Salovey and Mayer (1990)	a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions	X		X				X	X		X	X			Salovey, P., and Mayer, J. D. (1990). Emotional Intelligence. Imagination. Cognition and personality, 9(3), 185-211.
Mayer and Salovey (1997)	the ability to perceive emotions, to assess and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotion so as to promote emotional and intellectual growth	X			X	X	X	X	X		X			X	Mayer, J. D., and Salovey, P. (1997). What is Emotional intelligence. In P. Salovey and D. Sluyter (Eds.), Emotional Development and Emotional Intelligence: Educational implications (pp. 10-11).
James (2004)	the ability of a person to use emotions as a guiding tool for interpersonal effectiveness in his or her social environment	X					X	X	X	X					Kunnanatt, J. T. (2004). Emotional Intelligence: The New Science ofInterpersonal Effectiveness. Human Resource Development Quarterly, 15(4),489-495.
Goleman (1997)	the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships		X		X		X	X	X						Galeman, D. (1997). Beyond IQ: developing the leadership competences of emotional intelligence. Paper presented at the 2nd International Competency Conference, London.
Cooper and Sawaf (1997)	the ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, information, connection, and influence	X			X	X	X	X							Cooper, R. K., and Sawaf, A. (1998). Executive EQ: Emotional Intelligence in Leadership and organisations. In. New York, NY: Perigee Books, The Berkley Publishing Group.
Bar-On (1997)	a multi-factorial array of interrelated emotional and social competences, skills and facilitators that influence one's ability to recognize, understand and manage emotions, to relate with others, to adapt to change and solve problems of a personal and interpersonal nature, and to efficiently cope with daily demands, challenges and pressures	X				X	X	X		X					Bar-On, R. (1997). The emotional quotient inventory (EQ-I): Technical manual. Toronto, Canada: Multi-Health Systems.
Weisinger (1998)	the intelligent use of emotions: you intentionally make your emotions work for you by using them to help guide your behaviour and thinking in ways that enhance your results							X				X	X		Weisinger, H. (1998). Emotional Intelligence at Work. In. San Francisco, CA: Jossey-Bass Inc.
Caruso (1999)	ability to use your emotions to help you solve problems and live a more effective life	X					X	X							Caruso, D. R. (1999). Multi-factor Emotional Intelligence Scale (MEIS) (VoL Feedback Booklet. Version 1.1): Connecticut, Wolf and Associates.
Coleman (2008)	the capability of individuals to recognize their own emotions and those of others, discern between different feelings and label them appropriately, use emotional information to guide thinking and behaviour, and manage and/or adjust emotions to adapt to environments or achieve one's goal(s)	X			X	X		X	X	X	X	X	X		Coleman, Andrew (2008). *A Dictionary of Psychology* (3 ed.). Oxford University Press. ISBN 9780199534067
Lansley (2020)	the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals	X			X	X	X	X	X	X	X	X	X		Author's definition incorporating only those terms that featured in two or more of the other nine definitions.

Table 2 - EI definitions grid

The definition, therefore, adopted for this research is, *'Emotional Intelligence* is the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals'.

Definitions of other key terms are [unless stated otherwise] sourced from the Oxford Dictionary (1989), and are reproduced here:

1. *intelligence* – "the ability to acquire and apply knowledge and skills"
2. *ability* – "possession of the means or skill to do something"
3. *competency* – "the ability to do something successfully".

The need for such definitions becomes evident when their overlapping meanings are noted, and this may explain why the terms are often used interchangeably. The latter two here suggesting that *competency* is an *ability* applied to a goal or a standard. Any performance or behaviour related to IQ, to EI, to sport, to work-roles will usually centre around an ability to do something to a *standard* (to a certain level over time), such as a soccer striker wanting to score every time he/she takes a penalty kick; and also to a *goal* (a one-time target), such as scoring 95%+ of penalties taken in a soccer season. This means that goals and standards then bridge ability and competence into *performance* and *behaviour*, especially when considering real-world applications, tasks and functions. They are defined here:

- *Performance* is considered to be "any activity or gathering of reactions which leads to an outcome or has an impact on the surroundings" (Colman, 2015:116).
- *Behaviour* is often used more generally about "the way in which one acts or conducts oneself, especially towards others" (Oxford Dictionary, 1989).

These terms will be used interchangeably within this thesis to suit the context, since they are both human outputs, and they have similar meanings.

The other two terms that feature frequently in EI research are *trait* and *personality*. Indeed, these are the constructs/factors that many EI model developers have gravitated towards (see Section 3.2.6), taking many of the EI models into the trait arena, but away from ability. In EI, this temptation is understandable, as our *emotional self-management* and our *interactions with others* can often be influenced by our own traits and personality, and the traits and personality of those we interact with. For the purposes of this study, these two terms are defined as:

1. *trait* – "a distinguishing quality or characteristic, typically one belonging to a person" (Oxford Dictionary, 1989)
2. *personality* – "the set of individual differences in characteristic patterns of thinking, feeling and behaving" (from the online dictionary of the *American Psychological Association*, 2018).

These two terms are also often used interchangeably too, though these definitions support the idea that *personality* is more holistic, and *traits* are more segmented and a subset of personality. Eysenck (1991) supported this hierarchy when he suggested that personality is reducible to three major traits: neuroticism, extraversion, and psychoticism (1991:773–790).

The other terms that are worth defining in the context of how they are applied in this EI thesis are:

1. *mixed model* – an EI model consisting of a mixture of abilities, traits and other qualities;
2. *subject-matter experts (SMEs)* – 105 researchers recognised by a third-party organisation as experts in EI;
3. *model mapping* – a systematic approach to laying out EI models against key parameters that allow them to be compared, contrasted and aggregated to aid analysis and decision making;
4. *factor analysis* – is applied in a more literal way in this research to describe the current author's analysis of the factors that researchers combine towards the EI construct, that is, towards qualitative conceptual synthesis and separation;
5. *taxonomy* – representing a cumulative hierarchy, so that mastery of each simpler category builds to mastery of the next, more complex category. The model adopted for this analysis is "a simplified and extended Bloom's Taxonomy [(Bloom, 1956)], abbreviated as KUSAP: knowledge, understanding, skill, application (simulation) and performance." (Lansley, 2016) to cover the spectrum from knowledge through to performance.

2.3 Key 'evolutionary' studies and developments revealed by the literature

Prior to a analysis of the literature in and around the eight core EI models scoped for this research (see Section 3.2.1), this section provides a brief history of EI, outlining what the current author sees as the milestone studies directly associated with the evolution of EI.

To begin, it is worth recognising the early influence of the century-old construct of *social intelligence*. Thorndike (1920b) positioned *social intelligence* alongside *abstract intelligence* (the ability to understand and manage ideas), and *mechanical intelligence* (the ability to visualize relationships between objects and understand how the physical world worked). The original definition of *social intelligence*, offered by Thorndike, is succinct and focusses on relationships with others [in some cases but had little emphasis on *self*]. In his definition, Thorndike (1920b) suggests that this focus on *social intelligence* refers to "the ability to understand and manage men and women, boys and girls, to act wisely in human relations" (1920b:229). Several attempts were made at measuring and testing this construct, notably the George Washington University Social Intelligence Test (Thorndike and Stein, 1937:279) which was a written test designed to measure certain factors of judgment, information and memory, and was related to dealing with people and carrying on social relationships.

Gardner's (1983) work on multiple intelligences helped to challenge the (still) dominant 'g' intelligence, as outlined in the introduction (see Section 2.2), and suggested that there were (then) a total of seven intelligences, including *intrapersonal* and *interpersonal* intelligences as two of these. It is Gardner's inclusion of these two *personal intelligences* that prompted the focus and the consideration of his approaches to *multiple intelligences* here in this current study, that is, the relevance of these two *personal intelligences* to EI.

To qualify as any intelligence, the multiple intelligence theory suggests (Gardner, 2000) that each must satisfy eight specific criteria (see below) drawn from the biological sciences; logical analysis; developmental psychology; experimental psychology; and psychometrics. The eight criteria necessary to be considered as "candidate intelligences" (2000:36) are as follows:

- the potential for brain isolation by brain damage;
- its place in evolutionary history;
- the presence of core operations;
- susceptibility to encoding;
- a distinct developmental progression;
- the existence of idiot-savants, prodigies and other exceptional people;
- support from experimental psychology; and
- support from psychometric findings.

Gardner's original (1983) seven intelligences differentiate intelligence into specific (primarily sensory) modalities, rather than seeing intelligence as dominated by a single general ability. Gardner (1983) also used the concept of *end-states*, suggesting that an end-state for Bodily-Kinaesthetic Intelligence might be as a dancer or as an athlete, in the sense that they constitute an application of the knowledge, understanding, and skills that might make up that intelligence type.

The initial seven types of intelligence (Gardner, 1983) are: Musical Intelligence; Logical-Mathematical Intelligence; Interpersonal Intelligence; Bodily-Kinaesthetic Intelligence; Linguistic Intelligence; Intrapersonal Intelligence; and Spatial Intelligence. The foci of these intelligences are as follows:

- **Musical Intelligence** allows people to create, communicate, and understand meanings made out of sound. Composers and instrumentalists were given as examples of those who might exhibit this intelligence.
- **Logical-Mathematical Intelligence** enables individuals to use and appreciate abstract relations. Scientists, mathematicians, and philosophers were listed as end-states that might rely on this intelligence.
- **Intrapersonal Intelligence** is geared towards understanding one's own interests and goals. This type of intelligence concerns being in tune with one's inner feelings.
- **Bodily-Kinaesthetic Intelligence** relates to the use of all or parts of the body to create products or solve problems. Athletes, surgeons, dancers, choreographers, and crafts people are typical end-states of bodily-kinaesthetic intelligence.
- **Linguistic Intelligence** allows individuals to communicate and make sense of the world through language.
- **Intrapersonal Intelligence** is to do with an ability to distinguish between one's own feelings, to build accurate mental models of self, and to draw on these models to make decisions about interactions.
- **Visual Intelligence** is concerned with the ability to perceive visual or spatial information, to transform this information, and to recreate visual images from memory. Well-developed spatial capacities are suited to the work of architects, sculptors, and engineers. While usually tied to the visual modality, Gardner (1983) highlights that spatial intelligence can also be exercised to a high level by individuals who are visually impaired.

In his later work, Gardner (2000:43) tentatively added an eighth intelligence (*Naturalistic Intelligence*, which is concerned with the ability to recognise and categorise plants, animals and other objects in nature). He also clearly defined the two *personal intelligences* as:

- ***Intrapersonal Intelligence,*** which "involves the capacity to understand oneself, to have an effective working model of oneself including one's own desires, fears and capacities - and to use such information effectively in regulating one's own life"; and
- ***Interpersonal Intelligence,*** which "denotes a person's capacity to understand the intentions, motivations, and desires of other people and, consequently, to work effectively with others".

(Gardner, 2000:43).

Gardner (2000) argued that the narrow definition of intelligence, as being equal to scholastic performance, is simply too constrictive. He was keen to challenge the widespread belief by psychologists that "intelligence is a single faculty and one is either 'smart' or 'stupid' across the board" (2000:34). This was supported in two studies involving children who exhibited an uneven profile across the seven-intelligences spectrum, revealing that "these children did not perform at the same level across activities and suggested that they do have distinct intellectual profiles" (Gardner and Hatch, 1989:8). Gardner's (2000) work suggested these multiple intelligences sat alongside each other, not in a hierarchy under what we know as IQ, and argued that a person could be strong in one type of intelligence and yet not in another (Gardner, 2000). This challenges the theoretical claim that the strength of a model depends on a positive correlation between EI and IQ, since they measure the same overall construct of intelligence, thereby "demonstrating the positive manifold (that is, consistent positive correlations) found among intelligence tests" (Orchard et al., 2009:322). This correlation criterion seems to have originated around general intelligence research (Guttman and Levy, 1991), introduced into EI research by Mayer et al., 1999a, and then perpetuated through other studies, including Orchard et al., 2009 and MacCann et al., 2014. This is despite research evidence that suggests the contrary, including the finding that "logical/mathematical intelligence [a core component of IQ tests] is negatively correlated

with interpersonal intelligence" (Bay and Lim, 2006:33). This current research will explore the arguments for and against the *positive manifold* criterion in Section 4.2.3, due to the influence of the *positive manifold* argument on the EI research community. This correlation criterion is a significant criterion that has been used to evaluate research innovations in the emotional intelligence field; if test results from a new intelligence do not correlate highly with IQ tests, then the IQ advocates might use the *positive manifold* criterion to reject the new emotional intelligence construct.

Such claims against the EI construct may have been biased by the prominence and popularity of IQ-type intelligence tests, and the problem that most EI assessments were (and still are) not really *tests*, but rather they are *self* or *multi-rater* perception reports (see Section 6.2.1). There are suggestions later in this thesis (Paragraph 4 in Section 3.2.6), that the assumption around this single positive manifold argument could be a flawed assumption, highlighting how this may have influenced many researchers and practitioners to reject or adopt EI models that do not/do adhere to this assumption. Even as recently as 2014, research work exploring the hierarchy and bifactor models of intelligences (and questioning whether EI is a *second-stratum* factor of intelligence) are still leaning on this as one of the suggested "correlational criteria" (Mayer et al., 1999a:271) that must be used in EI, and which states that "EI should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361).

There are wider criticisms of the multiple intelligence approach in the EI literature (see also, Sternberg, 1983; Brand, 1996; Klein, 1997). One of the criticisms of the multiple intelligence (MI) theory is the claim that each of the seven multiple intelligences is in fact a cognitive style, rather than a stand-alone construct (Morgan, 1996). To date, this research uncovered no strong rebuttal from Gardner against Morgan's criticism in the literature review for this project, though it is posited by the current author that Morgan is minimising Gardner's work based on a *strawman* argument. Morgan, simply, draws associations between each of Gardner's intelligences, and selected personality, trait, and style factors, such as: extroversion and introversion; Carl Jung's *personal styles* or *functions* (Thinker, Feeler, Sensor, Intuitor)[2]; and the Myers-Briggs wider taxonomy of type-indicators (see Section 5.2.7), and then uses these loose associations to label

[2] See Jung, C.G. and Read, H., 1989. The collected works of CG Jung, Vol. 6: Psychological types. Routledge.

Gardner's intelligences as merely *cognitive styles*. Although Gardner did not directly address Morgan's (1996) criticism, he returned to his argument with a firm, cautionary note to the research community in his more recent publication, *Intelligence Reframed* (2000) stating that:

> [because we] each have a unique blend of intelligences – [it] leads to the most important implication of the [EI] theory for the next millennium [that is, that EI sits alongside IQ, not beneath it]. We can choose to ignore this uniqueness, strive to minimize it, or revel in it…[and] take advantage of the uniqueness conferred on us as a species exhibiting several intelligences.
>
> (Gardner, 2000:45).

In an attempt to organise the factors that make up EI, it is also useful to consider that Gardner's (2000) framing of abilities relating to self, and abilities relating to others, offered a simple delineation between the EI skillsets that evolved into four subsets of skills of self-awareness/self-management, and social-awareness/relationship-management. This foundation also features in Paul Ekman's (2003a) work where he sets out two intra-personal and two inter-personal competence clusters as the four pillars of his book, *Emotions Revealed* (2003a:ix–x):

1. becoming more consciously aware of when you are becoming emotional, even before you speak or act;
2. choosing how you behave when you are emotional, so you achieve your goals without damaging other people;
3. becoming more sensitive to how others are feeling; and
4. using the information you acquire about how others are feeling carefully.

This early EI classification can be summarised by the matrix in Figure 2, which illustrates the dimensions that most EI researchers/developers factor into their EI models.

	Awareness	Management
Self (Personal Competencies)	Self-awareness	Self-management
Other (Social Competencies)	Awareness of others	Social-interaction management

Figure 2 - EI Competences 2x2 matrix

Additional research has highlighted how the *Self (Personal Competences)* part of this matrix is associated with emotion regulation (ER). This is a relatively independent research tradition for EI:

> which focuses on the *processes* which permit individuals to influence which emotions they have, when they have them, and how they experience and express these emotions.… [in contrast to] the emotional intelligence (EI) tradition, which focuses—among other things—on *individual differences* in ER"
>
> (Peña-Sarrionandia et al., 2015:1; *emphasis* added).

In addition, there is the earlier integrative review of ER by Gross (1998) where the concept of emotion regulation was developed. Hughes and Evans (2018) also add to this debate by highlighting how ER can also influence the *Other (Social Competences)* or:

> interpersonal (i.e., conflict resolution within a team) outcomes. There is a wealth of empirical evidence to support this claim (c.f., Gross, 2015), with emotion regulation playing "a core role in everyday social life" (Niven et al., 2012:247) with utility demonstrated across social, health, educational, and occupational outcomes (Gross, 2002; Peña-Sarrionandia et al., 2015).
>
> (Hughes and Evans, 2018:12).

A development of the matrix in Figure 2 might be informed by this, and the recent work of Hughes and Evans who developed an *Ability EI – ER pathway* (2018:9-10) that split *awareness* into *perception* and *understanding*, in addition to *management*, suggesting the idea of *three* columns (*Perception*, *Understanding* and *Management*) for the 2x2 grid. This is developed further in Section 5.2.4 of this thesis. Hughes and Evans (2018) also

highlighted the influence of personality on regulation strategies to help explain performance (2018:10-12).

As the formal construct of EI emerged, it began to feature within multiple research projects in the 1960s (Beldoch, 1964; Leuner, 1966). Beldoch's chapter (*Sensitivity to Emotional Expression in Three Modes of Communicating* [ibid:1964]) featured in the book by Davitz (1964). The chapter explores the interrelationships among abilities to identify non-verbal emotional expressions in three modes of communication: vocal, musical and graphic. This highlights that the ability/trait challenge was being explored over fifty years ago, with Beldoch examining the relationship between self-reported personality characteristics and other individual differences and the several measures of emotional sensitivity (1964).

The first use of the term *emotional intelligence* is usually attributed to Payne's (1985) doctoral thesis. The first published use of the alternate quantitative term 'EQ' (Emotional Quotient) is from an article by Beasley in 1987 in the British Mensa magazine[3], although Bar-On claims to have coined the EQ term in the late 1980s to describe his approach to assessing emotional and social competence in his unpublished doctoral thesis. Bar-On (1997) defined the concept of EI as "an array of personal, emotional and social competences and skills that influence one's ability to succeed in coping with environmental demands and pressures" (1997:14). His model is best referred to as a *mixed model^,* although he prefers to call it an *array* (for more detail see Section 3.2.1.5), as it developed into a framework that consists of fifteen factors (Bar-On, 2006:23), including skills (for example, *assertiveness* and *problem solving*), traits (such as, *optimism*), and other qualities (for instance, *stress tolerance, social responsibility* and *self-actualisation*).

Bar-On (2006), labelled this model the Emotional Intelligence Inventory (EQ-i) and its 15 factors are illustrated in Table 3.

[3] Eqi.org. (2018). Beasley. [online] Available at: https://eqi.org/beasley.htm#The%20Emotional%20Quotient [Accessed 3 Sep. 2018].

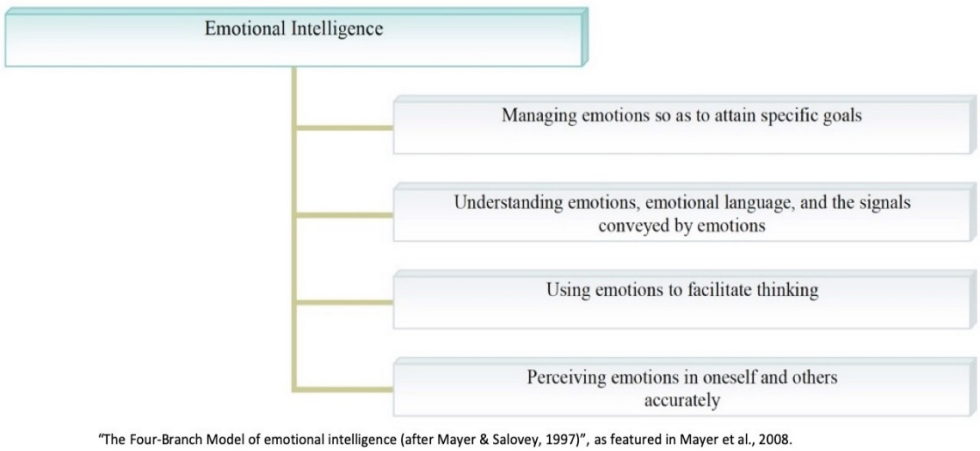
FACTOR	DESCRIPTION
Self-Regard	*To accurately perceive, understand and accept oneself.*
Emotional Self-Awareness	*To be aware of and understand one's emotions.*
Assertiveness	*To effectively and constructively express one's emotions and oneself.*
Independence	*To be self-reliant and free of emotional dependency on others.*
Self-Actualization	*To strive to achieve personal goals and actualize one's potential.*
Empathy	*To be aware of and understand how others feel.*
Social Responsibility	*To identify with one's social group and cooperate with others.*
Interpersonal Relationship	*To establish mutually satisfying relationships and relate well with others.*
Stress Tolerance	*To effectively and constructively manage emotions.*
Impulse Control	*To effectively and constructively control emotions.*
Reality-Testing	*To objectively validate one's feelings and thinking with external reality.*
Flexibility	*To adapt and adjust one's feelings and thinking to new situations.*
Problem-Solving	*To effectively solve problems of a personal and interpersonal nature.*
Optimism	*To be positive and look at the brighter side of life.*
Happiness	*To feel content with oneself, others and life in general.*

Table 3 - Bar-On Emotional Intelligence Array

This EQ-i model is geared towards *well-being* (Di Fabio and Kenny, 2016), which may be a worthy ideal, though this might not be the goal of all those who wish to adopt an EI model. Some individuals may choose to develop and apply EI skills in order to defeat, even hurt, others. This might include, for example, poker players and combat sports professionals (such as karate, judo, fencing and boxing). This is a consideration covered later in this thesis (see Section (3.2.6).

Bar-On claimed (1997:15) that EQ-i was "the first measure of its kind to be published by a psychological test publisher … [and] the first such measure to be peer-reviewed in the Buros Mental Measurement Yearbook (Plake and Impara, 1999)". The primacy claim by Bar-On (1997) runs in parallel with another EI model that contributed to the shape of recent EI developments and was conceptualized in a landmark article by Salovey and Mayer (1990:190) under three factors (focused on self and other): *appraisal and*

expression of emotion; *regulation of emotion*; and, *utilization of emotion*. These two EI models, by Bar-On (1997) and Salovey and Mayer (1990), along with others, are explored in more detail in the review of the literature in Phase I of this thesis (see Section 3). This was the basis of a later adaptation that is now widely known as the *four-branch model* (Mayer and Salovey, 1997:11). Figure 3 is Mayer and Salovey's (1997) own illustration of that model.



"The Four-Branch Model of emotional intelligence (after Mayer & Salovey, 1997)", as featured in Mayer et al., 2008.

Figure 3 - Mayer and Salovey 4-branch EI model (1997)

The two lower branches are grouped into an *experiential* score, defined as a person's "ability to perceive, respond, and manipulate emotional information without necessarily understanding it" (Mayer et al., 2002:18), and the two upper branches are grouped into a *strategic* score, defined as a person's "ability to understand and manage emotions without necessarily perceiving feelings well or fully experiencing them" (2002:18).

There have been multiple studies reviewing the internal structure of EI factors in this model through research using the tool that Mayer, Salovey and Caruso (Mayer et al., 2002) created to assess individuals against their model. This was the tool known as the MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test).

The Mayer et al. (2002) model remained true to the concept of *ability* and it was the basis of an early assessment instrument that was labelled the Multifactor Emotional Intelligence Scale (MEIS) that was developed and used by Mayer, et al. (1999b). This was later commercialized and deployed as MSCEIT, cited in more than 1,500 academic studies, and later evolved into the MSCEIT v2.0 format that is detailed in the MSCEIT User's Manual (Mayer et al., 2002). What is worthy of note at this early stage of the thesis is that the literature reveals that Mayer, Caruso, and Salovey (1999a) have argued that three standard criteria must be met before any form of intelligence can be considered to

constitute a legitimate scientific domain. These authors, therefore, focus on the following three standards to develop and defend their work:

1 An *intelligence* should be capable of reflecting "mental performance rather than preferred ways of behaving, or a person's self-esteem, or non-intellectual attainments" (Mayer et al., 1999a:269–270). In short, this so-called conceptual criterion asserts that the concept in question be operationalized as a set of abilities (in this case, emotion-related abilities) that have clearly defined performance components.
2 An *intelligence* should meet prescribed correlational criteria. For example, tests for different aspects of such an intelligence should be positively intercorrelated. Measures of a new ability should be related to existing psychometric intelligence tests, specifically demonstrating the positive manifold phenomenon represented by a non-negative matrix of correlation coefficients, as prescribed by Guttman's First Law of Intelligence (Guttman and Levy, 1991).
3 *Measures of intelligence* should vary with experience and age.

Researchers have claimed that available evidence supports the notion that EI meets all three criteria and so is a legitimate form of intelligence (Mayer and Salovey, 1993, 1997; Mayer and Cobb, 2000; Mayer et al., 2000; Salovey et al., 2001). The problem here is that these EI assumptions appear to have been validated in a cyclical way by studies that include one or more of the researchers who made the initial claim. These may therefore be problematic as criteria as they may equate to a biased opinion, rather than definitional features.

These assumptions have transferred into research within the last decade, including, for example, the research that includes the claim "that EI should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361).

Another method used to measure EI that is worthy of note is the *Schutte Emotional Intelligence Scale* (SEIS) (1998). This self-report instrument was designed to represent all portions of the early 'three-branch' conceptual model of Salovey and Mayer (1990) and consisted of a 33-item scale, whereby

> 13 of the items [coming] from among those generated for the appraisal and expression of emotion category of the model, 10 of the items came from

> among those generated for the regulation of emotion category of the model and 10 came from among those items generated for the utilization of emotion category of the model.
>
> (Schutte et al., 1998:171)

The prompts used in the SEIS self-report are outlined in their 'Table 1' (Schutte et al., 1998:172), and is reproduced here as Table 4.

Table 1
The 33-item emotional intelligence scale

(1) I know when to speak about my personal problems to others
(2) When I am faced with obstacles, I remember times I faced similar obstacles and overcame them
(3) I expect that I will do well on most things I try
(4) Other people find it easy to confide in me
(5) I find it hard to understand the non-verbal messages of other people*
(6) Some of the major events of my life have led me to re-evaluate what is important and not important
(7) When my mood changes, I see new possibilities
(8) Emotions are one of the things that make my life worth living
(9) I am aware of my emotions as I experience them
(10) I expect good things to happen
(11) I like to share my emotions with others
(12) When I experience a positive emotion, I know how to make it last
(13) I arrange events others enjoy
(14) I seek out activities that make me happy
(15) I am aware of the non-verbal messages I send to others
(16) I present myself in a way that makes a good impression on others
(17) When I am in a positive mood, solving problems is easy for me
(18) By looking at their facial expressions, I recognize the emotions people are experiencing
(19) I know why my emotions change
(20) When I am in a positive mood, I am able to come up with new ideas
(21) I have control over my emotions
(22) I easily recognize my emotions as I experience them
(23) I motivate myself by imagining a good outcome to tasks I take on
(24) I compliment others when they have done something well
(25) I am aware of the non-verbal messages other people send
(26) When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself
(27) When I feel a change in emotions, I tend to come up with new ideas
(28) When I am faced with a challenge, I give up because I believe I will fail*
(29) I know what other people are feeling just by looking at them
(30) I help other people feel better when they are down
(31) I use good moods to help myself keep trying in the face of obstacles
(32) I can tell how people are feeling by listening to the tone of their voice
(33) It is difficult for me to understand why people feel the way they do*

Note: The authors permit free use of the scale for research and clinical purposes.
*These items are reverse scored.

Table 4 - SEIS self-report prompts

The scale uses self-report, an approach often criticised as being "susceptible to faking" (Pauls and Crost, 2004:1137), a response pattern in which test-takers represent themselves with a typically positive bias. Despite this critique, scores on the questionnaires are claimed to be "reliable and stable over time… [though Schutte's factor

analysis was judged to be] technically flawed through use of a statistical procedure that is inappropriate for factors that may correlate" (Zeidner, 2013:118). The scale is considered a trait measure of EI (Schutte et al., 2009:131), which is supported by the 'optimism' type prompt at Number 10 in Table 4 ("I expect good things to happen"). Though it also includes abilities (for example, Items 9, 18, and 21) that would lead to the approach being more correctly labelled a *mixed* model, this works against the movement towards EI being classified as a valid *intelligence*. Vesely Maillefer et al. (2018) summarised this divide at a basic level with the statement that:

> the introduction of traits into [the] EI construct in the literature positioned EI more as a dispositional tendency, in line with a personality trait (trait EI; Petrides and Furnham, 2001), or as an ability, moderately correlated with general intelligence (ability EI: Mayer and Salovey, 1997).
>
> Vesely Maillefer et al. (2018:1)

The distinction between *trait* EI and *ability* EI has been highlighted by Petrides and Furnham (2000:314), with both authors contributing significantly to the debate about the spectrum of EI models (Petrides and Furnham, 2001; Petrides, 2011; Petrides et al., 2016). They "set out the theoretical foundation of emotional intelligence (EI) as a constellation of traits and perceived abilities" (Petrides and Furnham, 2001:425). Trait models gathered support due to their higher (negative and positive) correlation with personality instruments. EI was, for example, found to be "negatively and significantly correlated with Neuroticism, and positively and significantly correlated with Extraversion, Openness, Agreeableness and Conscientiousness" (Saklofske et al., 2003:707). The interest and assumptions about correlation across EI constructs and personality are explored later in Section 3.2.6 to explore whether the weight given to correlational criteria is justified.

In the mid-1990s, the term *Emotional Intelligence* became more widely recognized following the publication of a book by New York Times science writer, Daniel Goleman (1995). Goleman presented a model with twenty-five 'competences', including a mix of skills, abilities, traits and attitudes, which earned it the same *mixed model* label as Bar-On's (Goleman, 1998). Goleman centred his work on *leadership* in the workplace. This specific application may raise questions were the model to be [mis-]applied outside of this context. Goleman claimed justification for a leadership focus is that every person is a leader in some manner, and every leader's main obligation is to "prime good feelings in those they lead" which then generates the best behaviour in others (Goleman et al., 2002:ix). This might be judged as an invalid claim, as competent leadership, while worthy,

is not necessarily an aspirational goal for all humans. In addition, the goal of leadership might not always be to *prime good feelings* in those they lead, since leadership styles and approaches need to flex to the situation and the persons involved.[4]

The best-selling status of Goleman's (1995) book, along with his follow up text (1998), may be the reason that the EI term has gained such popularity, and Goleman deserves credit for this. This increase in discourse and research activity could also be due to the convincing business cases for developing emotional competences reported by the Consortium for Research on Emotional Intelligence in Organizations[5]. The claimed benefits are substantial, though there are multiple criticisms towards those who claim this, including the suggestion that:

> [the] current excitement surrounding the potential benefits from the use of EI in the workplace may be premature or even misplaced… [given that] much of the predictive validity of questionnaire measures of EI may be a product of their overlap with standard personality factors
>
> (Zeidner et al., 2004:388).

Goleman (2000) attempted to counter this in an article on the Consortium for Research on Emotional Intelligence in Organizations website, claiming the criticism is based on "a misreading of my 1995 book" (2000:10). Waterhouse (2006:217–218), however, has countered Goleman's logic with the following:

> Goleman derived his second claim, that EI explains… 80% of job competences that distinguish superior employees (Goleman, 1998, p. 320), from an unpublished privately commissioned study (Goleman, 1998, p. 31). This study determined that 21 key job competences existed, and Goleman decided that only three (analytical thinking, conceptual thinking, and technical expertise) were not EI competences. Goleman concluded that because he judged 18 of 21 job competences to be EI competences and because 18 equals 85.7% of 21, thus EI explained 85.7%, or more than 80% of life success (Pool, 1997, p. 12) or more than 80% of job skill competences of superior workers (Goleman, 1998, p. 320). These conclusions were mistaken.
>
> Waterhouse (2006:217–218)

Cherniss et al. (which also includes Goleman), responded in the same issue of *The Educational Psychologist (2006:242)* with a rebuttal that did not really resolve the

[4] See Hersey, P. and Blanchard, K. H. (1969). Management of Organizational Behavior – Utilizing Human Resources. New Jersey/Prentice Hall, for theories of situational leadership.[accessed 31/7/20]

[5] http://www.eiconsortium.org/reports/business_case_for_ei.htmligence. *Intelligence*, *17*(4), pp.433-442

argument (by providing evidence supporting the claim), as it focused more on the difference that IQ *did not* make to work performance.

There are multiple claims around the benefits of EI, including some which are presented by the model creator(s), their allies, and/or other researchers. These include the claims that EI:

1. is a useful construct for addressing a broad array of behavioural problems (Gillis, 2004);
2. results in better coping with stress (Ashkanasy et al., 2003);
3. contributes to better teamwork (Druskat and Wolff, 2001);
4. is directly linked to career progression (Cherniss et al., 1998);
5. results in individuals who make better leaders (Cherniss et al., 1998);
6. results in individuals who have morally superior values (Cooper and Sawaf, 1998);
7. leads to people being self-starters and self-motivated (Goleman, 1998).

Zeidner (2004), however, argues that "the ratio of hyperbole to hard evidence is high, with over-reliance in the literature on expert opinion, anecdote, case studies, and unpublished proprietary surveys" (2004:371). Although the claims made above (around the benefits the related EI models) might suggest faith and belief by the researchers in their work, and the beneficiaries of training relating to EI models may have enjoyed positive experiences, the current literature review has been unable to source objective evidence to support these claims. There is scepticism from other researchers too, including one study that concluded that "the evidence for the dramatic claims of advocates [of EI] in the areas that we have canvassed – performance, career advancement, and leadership – simply does not hold up" (Jordan et al., 2006:205). Murphy (2014b) states, for example, that "the claims about the relationship between emotional intelligence and success in school and the workplace, and in life are not supported and, in some important cases, are almost certainly untrue" (2014b:346). In addition, there are also comments about the strongest claims being made for the weakest variants of EI, such as those suggested by Murphy and Seidman (2014).

During this literature review, a further four models emerged which although being outside the scope of the this study, are, nevertheless, worthy of note:

1. The first model on 'personal intelligence', from Mayer (2014), is an interesting contribution that recognises the importance of *personality*. His model is characterised by factors such as *finding a satisfying life direction* and *discovering our personal interests*. It is not positioned as an EI model per se and is, therefore, excluded from the group shown later at Table 6.
2. The second model is a multi-level approach presented as 'behavioural emotional intelligence' by Boyatzis (2018), though, in broad terms, this re-presents the ESCI mixed model (Boyatzis and Goleman, 2007), including a mixture of *abilities* (for example, *emotional self-control* and *empathy*), and attitudes which might loosely fall under the heading of *traits* (for example, *positive outlook* and *achievement orientation*). The factors and descriptions in this model seem to suggest that this work is influenced by the 'three streams' approach which was introduced in research by Ashkanasy and Daus (2005). The three streams approach combined: objective tests of *abilities* (using MSCEIT [Section 3.2.1.8]); perception (that is, self and peer reports) around *abilities* from the MSCEIT framework; and, self-report against a *mixed* (trait and abilities) model, centred around EQ-I (Section 3.2.1.5) (see Ashkanasy and Daus, 2005:5-6).
3. The third model is Bar-On's latest work. It moves to what he calls a 'third paradigm shift' for EI: that of multifactor measures of performance with an organisational focus (Bar-On, 2018). This model provides a new level of the mixed model approach, that appears to be looping back towards Gardner's multiple-intelligence model. As a result, it is too broad to help with this EI focus.
4. The fourth model is the *Geneva Emotional Competence Test* or GECo, or which was introduced into the research community as the *Geneva Emotion Recognition Test* (GERT) by Schlegel et al. (2014). GECo falls outside of the scope of the search criteria for IE models, as it did not generate the required levels in the SCOPE searches, due to its recent launch (Schlegel and Mortillaro, 2018). Its approach to assessment is, however, considered later as it, too, attempts to deal with the challenges and critique around current EI assessment methodologies. The objective review of the results of its applications may, however, over time, contribute to future research.

The review has revealed a range of tests that only deal with part of the EI construct, such as the *Situational Tests of Emotion Understanding* (STEU), the *Situational Tests of Emotion Management* (STEM) and the *Micro Expression Training Tool* (METT). STEU and STEM are analysed as part of a collection of 34 EI models or instruments within the recently published 'Compendium and Analysis of Measures of Ability Emotional Intelligence' [Spanish source], which provides a wide [but not comprehensive] reference point for more specific tests and models (Rodrigo-Ruiz et al., 2019). This is a useful list for researchers, although it should be noted that these EI instruments, which are outlined in Table 5, are mostly narrowly focussed 'tests' and they are mapped against the four branches of MSCEIT (*Perceiving*, *Facilitating*, *Understanding* and *Managing* emotions – see Figure 6 – which are referred to in Table 5 as R1/2/3/4 respectively). This MSCEIT theoretical framework may have been chosen to attempt to evidence the comprehensiveness of the researchers' own new instrument, the *Test de Inteligencia Emocional de la Fundación Botín* (TIEFBA). TIEFBA lies outside the scope of this current study of EI for adults, as it was "designed and validated [as] an instrument to measure the Emotional Intelligence of children and young people adapted to [their Spanish and Latin American] cultural context" (FundacionBotin, 2018:1).

Tabla 1. Instrumentos para la medida de la IE capacidad y ramas que miden del Modelo de Mayer y Salovey (1997)

Instrumento	Rama medida			
	R1	R2	R3	R4
CARAT. *Communication of Affect Receiving Ability Test* (Buck, 1976; CARAT-SPR: Buck, Powers, y Hull, 2017)	✓			
PONS. *Profile of Nonverbal Sensitivity* (Rosenthal et al., 1979)	✓			
CFT. Chimeric Faces Test (Levine y Levy, 1986)	✓			
IPT. *Interpersonal Perception Task* (Costanzo y Archer, 1989)	✓			
LEAS. *Levels of Emotional Awareness Scale* (Lane et al., 1990)			✓	
MTAP. Minnesota Test of Affective Processing (Lai et al., 1991)	✓			
DANVA2-AF. *Diagnostic Assessment of Non Verbal Affect-Adult Facial Expressions* (Nowicki y Carton, 1993)	✓			
CASP. *The Child and Adolescent Social Perception Measure* (Magill-Evans et al., 1995)	✓			
DANVA2-AP. *Diagnostic Assessment of Non Verbal Affect-Adult Paralanguage* (Baum y Nowicki, 1998)	✓			
FAB. *Florida Affect Battery* (Bowers et al., 1999)	✓			
MEIS. *Multi-factor Emotional Intelligence Scale* (Mayer et al., 1999)	✓	✓	✓	✓
JACBART. *Japanese and Caucasian Brief Affect Recognition Test* (Matsumoto et al., 2000)	✓			
RAFL. *Recognition of Affect in a Foreing Language* (Scherer, inédito)	✓			
ERT. *Emotion Recognition Test* (Shimokawa et al., 2000)	✓			
RMET. *Reading the Mind in the Eyes Test* (Baron-Cohen et al., 2001)	✓			
EARS. *Emotional Accuracy Research Scales* (Geher et al., 2001)	✓			
Emotional Stroop (Sharma y McKenna, 2001)	✓			
FEFA. Frankfurt Test and Training of Social Affect (Bölte et al., 2002)	✓			
MSCEIT. *Mayer-Salovey-Caruso Emotional Intelligence Test* (Mayer et al., 2002)	✓	✓	✓	✓
EMT. *Emotion Matching Task* (Izard et al., 2003)	✓			
ERT. Emotional Recognition Test-Revised (Lee et al., 2004)	✓			
DANVA2-POS. *Diagnostic Analysis of Nonverbal Acuracy 2 Posture Test* (Pitterman y Nowiki, 2004)	✓			
EIT. *Emotional Inspection Time* (Austin, 2005)	✓			
MP-EMA. *Maximum-Performance Emotional Management Abilities* (Freudenthaler y Neubauer, 2005)				✓
Emotion differentiation card-sorting task (Kang et al., 2005)			✓	
CATS. *Comprehensive Affect Testing System* (Froming et al., 2006)	✓			
STEU. *Situational Test of Understanding* (MacCann y Roberts, 2008)			✓	
STEM. *Situational Test of Emotion Management* (MacCann y Roberts, 2008)				✓
The NimStim set of facial expresions (Tottenham et al., 2009)	✓			
MERT. *Multimodal Emotion Recognition Test* (Bänziger et al., 2009)	✓			
ERI. *Emotion Recognition Index* (Scherer y Scherer, 2011)	✓			
STJ-based measure of EI. *Situational Judgment Test-based measure of Emotional Intelligence* (Sharma et al., 2013)	✓		✓	
TIEFBA. *Test de Inteligencia Emocional de la Fundación Botín* (Fernández-Berrocal et al., 2018)	✓	✓	✓	✓

Nota. R1: rama 1; percepción y expresión emocional; R2: rama 2; facilitación emocional; R3: rama 3; comprensión emocional; R4: rama 4; regulación emocional.

Table 5 - EI Instruments as outlined in 'Table 1' of the 'Compendium and Analysis of Measures of Ability Emotional Intelligence' [Spanish source] (Rodrigo-Ruiz et al., 2019:103).

Many of these EI 'models' [and others] are, however, merely assessment *instruments* and are, therefore, excluded from the eight-model sampling due to their limited scope. Some,

however, will feature later in this thesis, due to their contribution towards assessment methodologies (see Section 6.2.7).

2.4 Summary

The initial literature review suggests that there are five general challenges facing the goal of a realising a generic *e*-factor for EI that need further investigation, analysis, and expansion (see Section 3):

1. The literature reveals that a generic model and assessment methodology that provides a reliable measure of EI, paralleling the way IQ tests measure general intelligence, does not exist. It has even been questioned and challenged as "a promise unfulfilled…[as]… there is no strong, over-arching general factor of EI that shapes human emotional functioning across a range of diverse contexts" (Matthews et al., 2012:105). This lack of concensus is revealed in the conclusion of the same study where the authors resign themselves to the idea that "future progress may depend on abandoning the search for a single EI factor, and separating multiple fields of inquiry, each requiring its own theories and measures", though they "believe that innovations in ability-based testing may have more long-term potential than personality trait questionnaires" (ibid:122);
2. According to Murphy (2014b:346), EI is "poorly defined and poorly measured", a claim supported by Zeidner et al. (2008) who state that a generic, widely accepted definition of emotional intelligence does not seem to exist either;
3. The literature reveals that there are diverse EI models (for example, Bar-On's EQ-i (1997); and the Mayer et al. MSCEIT (2002)), that describe EI qualities, using different constructs across a spectrum of abilities and traits, and this complexity needs to be resolved. The "way forward is to use models of emotional intelligence that are less contaminated by personality constructs" (Jordan et al., 2006:27);
4. The spectrum of factors in the disparate EI models mean that there is no widely accepted methodology for the measurement of EI. EI assessment evidence "remains murky…[as] … studies that speak to the issue have used

different measures of EI, which are in turn based on different definitions of the construct" (Emmerling and Goleman, 2003:11); and

5. There are claims around EI benefits, highlighted in this literature review (see Section 2.3), which need to be analysed to see if they are resting on historical anchoring to theoretical beliefs, researcher alliances, and/or other commercial or publisher influences, as is suggested by Zeidner et al.(2004); Jordan et al.(2006); and Murphy, 2014b).

This thesis hopes to contribute towards verifying, and addressing, these challenges with: clearer definitions that are substantiated by research (Section 1.1); the creation of an EI model that fills the gap highlighted by the literature (Section 5.2); an EI ability model with primary factors that are uncontaminated by traits (Section 5.2.5); an assessment methodology that addresses the major criticisms (Section 6.2); and, an EI model that has been developed from a conceptual, theoretical base, whilst drawing on empirical research across the research community (Section 5.2).

2.5 Outline of the upcoming chapters

The challenges in the literature review highlighted the need for a systematic analysis across the research to establish where there is agreement and where there is disagreement. This requires an in-depth critical analysis to establish the merits of the arguments behind the multiple approaches to EI models and the assessment of them. As the literature review examined the evolution of EI over a hundred years, with most of the research spreading across the last twenty years, this research then needs to explore the detail behind the core EI models, and establish thinking from subject matter experts, including those who have been central to the establishment of the those EI models. This can then inform the creation of an EI model and an underpinning taxonomy that is based on significant agreement across the subject matter experts. Once this model is in place it can then serve as a framework to inform an appropriate assessment methodology to assess people against the model.

This logic led to the decision to structure the research into four separate, but inter-dependent, stages of research and development, and these are presented as 'Phases' in across the next four sections (Sections 3, 4, 5, and 6).

Those four sections present the methodology, critical analysis and the results in an integrated way within *each* of the four phases as outlined here:

- *Phase I - A Systematic Analysis of the Literature* (Section 3): the primary EI factors and related elements that emerged from the literature review are mapped against each other in this phase, with a critical analysis of the models enabled using a series of matrices;
- *Phase II - Subject Matter Expert (SME) Consultation* (Section 4): the criteria used to select forty-three SMEs and the methodology adopted to elicit their input into the development phase of the research is shared. The results of the SME consultation against the findings in Phase I are presented so as to provide a reliable dataset that informed Phase III and IV of this research and can inform future research and debate in this field by other researchers;
- *Phase III - EI Model Refinemen*t (Section 5): the final EI Model is presented with its underpinning taxonomy informed by Phases I and II; and
- *Phase IV - Assessment Methodology* (Section 6): a theoretical approach is offered, based on the culmination of Phases I to II, which proposes an

assessment approach to assess people's EI against the model in Phase III. This will guide future development of assessment instruments (beyond this current thesis – see *Where next* in Section 7.4), to provide a measure against the EI model that can enable subsequent reliability and validity analysis.

3 A Systematic Analysis of the Literature (Phase I)

This phase explores the primary EI factors and related elements that have emerged from the literature review. These are mapped against each other within this phase, with a critical analysis of the models enabled using a series of matrices.

It includes three sub-sections (as do Sections 4, 5, and 7):

- Methodology - how the data has been collected and/or generated, how it will be analysed, anticipated problems and how they have been handled;
- Findings - the results and the analysis; and
- Implications and where next - how these findings feed into the next phase and into future research.

3.1 Methodology

This initial scoping of the research literature narrowed down the focus to enable a mapping, and in-depth analysis, of the commonalities and the relative strengths and weaknesses across and between the main model types. An extensive (3 metre by 2 metre) wall-mounted *mindmap* has been used to capture, visualise, organise, and analyse the complexities and extent of the existing EI research, (a *mindmap* is a diagram that presents information with a central idea in the middle and the connected ideas are arranged around it). This emulates a forensic investigation board, often used in crime cases, with the purpose of helping to reveal connections, commonalities, overlaps, gaps, conflicts, and themes across the EI evolution and spectrum. This includes the key research studies and researchers, along with their influences and dependencies. This mindmap is organised using standard mindmap methodology in that it captures, analyses, disaggregates and assembles the data. Studies by Holland et al., 2004 and D'Antoni and Zipp, 2006 established mind mapping to be a valuable technique for helping someone plan and structure projects and theses more effectively.

One challenge that needed to be overcome related to the capturing and evidencing data that have resulted from the mindmap exercise in a presentable format in this thesis for analysis and third-party scrutiny. The current author has opted to use an extensive Excel spreadsheet, which can be found in Appendix 1.

A methodological approach termed *factor analysis* (defined in Section 2.2.2 as the *analysis of the factors that researchers combine towards the EI construct, that is, towards qualitative conceptual synthesis and separation*) was employed for this research. The approach here, however, should not be confused with how factor analysis is often used within the *individual differences* research community across the psychology field (Olkin and Sampson, 2001). *Traditional factor analysis* can be an extremely complex mathematical procedure and is often performed with software to assess the internal reliability of a measure (Stephanie, 2014). In this current research, therefore, factor analysis methodology is applied more literally, used to describe the current author's *analysis of the factors* that researchers have selected as the primary components of their EI models (sometimes labelled by them as *factors*, *scales*, *branches*, *competences* or *facets* (see Table 1).

The methodology adopted uses a deductive research process that transitions to inductive methods, which allows the generation of new theory emerging from the data. In practice, this involves two main processes:

1. Review and critical analysis of each of the core EI models scoped for this study; and
2. A comprehensive mapping exercise that enables synthesis work across the EI models.

These processes include a range of methodologies. Firstly, is the creation and population of a master spreadsheet, that consists of an extensive two-dimensional matrix included in Appendix 1. This matrix is broken down into a series of tables, and included throughout this thesis, to help collate and build the research data for analysis and synthesis work. These, matrices, serve as logical mapping frameworks that enable critical comparative analysis of the EI factors used *across* the core EI models scoped for this research. Secondly, there is an aggregation and filtering process, where EI factors are able to be compared, correlated, extracted, sorted, grouped and aggregated to inform a theoretical model that removes any context-specific elements (for example, leadership/teamwork), and value-laden content (for example, well-being/win-win principles). This approach better serves one of the main aims of the study, this being the development of a *generic* EI model that is neutral of such values and specific applications. Thirdly, (all three methodologies relating to this Phase 1 [Section 3]), is a disaggregation process that allows

the generation of a taxonomy of the knowledge, understanding and skills that underpin the primary EI factors.

Later (methodological detail included in those later sections), the resulting EI principles, definitions, factors, and underpinning taxonomy are presented to SMEs for evaluation and comment in Phase II (see Section 4). Phase III (Section 5) allows the integration of; a) the SME analysis; with, b) the analysis of the research literature (from this phase), to inform the creation of a refined EI model (Section 5) and detailed taxonomy (5.2.6) that the current author hopes will address the significant agreements and criticisms from both sources. Phase IV (Section 6) can then analyse and match appropriate assessment methodologies to the new EI model.

To be clear, this study chose deliberately to *not* venture into the arena of comparing and contrasting the results of multiple versions of established EI *tests*, based on multiple EI models, across diverse contexts. This type of research has been carried out extensively over the last twenty years by researchers from perspectives along the ability-mixed-trait model spectrum, and it was felt, therefore, that a 'back to basics' approach would be more imaginative, would better avoid any contamination and drift, and would have a better chance of offering an innovative 'game-changer' in the EI field. To have followed the route comparing and contrasting established EI tests may have contributed to the degeneration in the EI research field that was highlighted in the introduction (Section 1).

3.1.1 Review and analysis of each of the core models scoped for this study

The EI models considered in this research have been identified on the basis that they claim to define and factorise the EI construct. They are limited to those that have featured in 15 or more peer-reviewed publications in the last twenty years on the SCOPUS database (accessed 21 November 2017); and, *in addition,* are those that have generated more than 20,000 results on a Google search when the title of the model and the words 'Emotional Intelligence' were entered as essential search terms. This latter filter helps to highlight EI models that have wide interest and impact in order to avoid incorporating models that have emerged only from insular, academic review. Eight models (outlined in Table 6) satisfy both of these criteria: three *ability* models, four *mixed* models and one [labelled as a] *trait* model. It is recognised that some good yet less popular models, plus some unpublished research, may be missed in these two filtering exercises, though the current author posits that this collection provides a reasonable,

manageable spread across the types of model to enable in-depth analysis. The eight models (labelled in most cases using the abbreviation of the associated assessment instrument) are displayed in grid format in Table 6 against the original creator; the common abbreviation used for the model; or the assessment instrument associated with it. General features of each model have been captured in this simple grid to enable easy oversight prior to the more detailed comparative analysis which follows within this section. The primary model creators, commercial associations, scoring/rating methodology, number of primary factors, context focus and model types have been included in order to outline the key features of each in an overview format.

EI Model	Original Creator(s) (Members of CREIO in **Bold** 'Core Members **underlined**)	Commercial Associations	Scoring/ Rater Instrument	Number of Main Factors/ Qualities/ Criteria	Context Focus	Claimed Model Type (Ability/ Mixed/ Trait)
TEIQUE	Petrides	Thomas International	Self	15	Generic	Trait
ESCI	**Boyatzis** + **Goleman**	Hay Group (acq by Korn Ferry 2015)	Multi	18	Leadership	Mixed
ECI 2.0	**Goleman**	Hay Group (acq by Korn Ferry 2015)	Self + Multi	19	Leadership	Mixed
GOLEMAN	**Goleman**	Hay Group (acq by Korn Ferry 2015)	Self	25	Leadership	Mixed
EQ-I 2.0	**Bar-On**	Multi Health Systems	Self + Multi	15	Well-being	Mixed
SAARNI	Saarni	NA	N/A	8	Well-being	Ability
GENOS	Palmer + Stough	Genos International	Self + Multi	7 (6)	Worker	Ability
MSCEIT	Mayer, **Salovey** + **Caruso**	Multi Health Systems	Expert or Concensus	16	Generic	Ability

Table 6 - Overview of EI models within the scope of this study

The latest popular versions of each model are featured in the grid of Table 6, though some of these models, and/or the assessment instruments used to assess them, have evolved and changed from previous versions, typically from early 2000, where developers often added or deleted one or more factors over time, sometimes for reasons not clearly justified by the research. An example is Goleman's (1998) adaptation of Mayer and Salovey's (1990) work, where Goleman simply says that he has "adapted their model into a version I find most useful for understanding how these talents matter in work life." (Goleman, 1998:318).

3.1.2 A comprehensive mapping exercise

Two major dimensions that could be applied across the eight models scoped for this study were designed into the mapping matrix by the current author. The first dimension

was the *type* of the EI model: *ability*, *trait* or *mixed*. The second dimension concerned how the *primary factors* of the EI models were organised. The four elements of *self-awareness*, *self-management*, *social (other) awareness*, and *social (other) interaction management* from Figure 2 feature in Table 7, rather than using existing branches or groupings from the scoped core models, so as not to bias the analysis towards one or more of the EI models being scrutinised. *Self-motivation* was, later, added as an element, since this emerged in some of the mixed models in the literature review is Section 2, and is confirmed when the core models are analysed in detail in Section 3.2.1.

The current author recognised that this use of the four elements from Figure 2 may itself introduce bias towards the pioneering work of Thorndike (1920b), Gardner (1983) and Ekman (2003a), though the current author was comfortable to use this as a working hypothesis due to two main factors:

1. Later, researchers and their models reveal that they respect and include these major domains as necessary qualities for high EI performance (see Section 3.2.1).
2. This preceded the major construct framework groupings/branches that emerged in the mid-1990s, which were judged to be responsible for the "degenerating research program" (Smith, 2005:401) highlighted in the Introduction (Section 1).

The current author opted to include these four elements in the SME consultation survey (in Phase II – Section 4). This was to enable peer-review and scrutiny that can generate data that can be used to evaluate this working hypothesis, prior to the EI model refinement work in Phase III (Section 5), and the assessment methodology development work in Phase IV (Section 6).

If anything fell outside of these domains, then they were to be adjusted accordingly. Therefore, these five provisional facets were: Self-awareness; Self-management; Social (other) awareness; Social (other) interaction management; and Self-motivation.

The core template (see Table 7) was created to form a base for the comparative analysis of the detail within and across the eight core models scoped for this study.

EI Model Type	ABILITY		MIXED		TRAIT	
Ei Model + No of Elements	AAAAAA	x	BBBBBB	y	CCCCCC	z
Assessment methodology + Target Sector						
Facet	COMPETENCES/ SKILLS	STYLES/ MINDSETS/ TRAITS	COMPETENCES/ SKILLS	STYLES/ MINDSETS/ TRAITS	COMPETENCES/ SKILLS	STYLES/ MINDSETS/ TRAITS
SELF AWARENESS						
SELF MANAGEMENT						
SOCIAL AWARENESS						
SOCIAL INTERACTION MANAGEMENT						
SELF MOTIVATION						

Table 7 - Template for EI model analysis

The final matrix evolved following the testing of several prototypes. This resulting matrix has been designed to provide a basis for the generation of a dataset that achieves the following:

- identification of the model label (in the cells showing "AAAAAA"/"BBBBBB"/"CCCCCC");
- separation of abilities (including knowledge, understanding, and skills) from the other factors which include traits, attitudes, mindsets and/or beliefs. This enables clear analysis of what competences and traits are core to the widely used models, and aids the identification of the outlier factors and contaminants, so they can be isolated and/or addressed appropriately;
- incorporation of the commonly used (type) label of each model (*Ability*, *Trait* or *Mixed*; colour-coded for later tracking and patterning purposes);
- identification of the number ('x') of primary factors/elements in each EI model;

- provision of a space to log the assessment methodology used, and the target sector or application that the model was developed for (for example, leadership, workplace and well-being); and
- adoption of the five facets, or domains, down the left column of Table 7, as a working framework to enable collation and grouping of the factors (qualities and competences) to aid analysis.

These are argued, by the current author, to be sufficient to enable organisation of primary factors, and enable analysis across the diverse range of EI models scoped for this research.

3.2 Findings

The literature review highlights (see Section 2.4) five of the general challenges faced by researchers. These being that:

1. a generic model and assessment methodology that provides a reliable measure of EI, paralleling the way IQ tests measure general intelligence, does not exist. (Matthews et al., 2012);
2. EI is "poorly defined and poorly measured" (Murphy, 2014b:346; see also Zeidner et al. (2008);
3. there are diverse EI models (for example, Bar-On's EQ-i (1997); and the Mayer et al. MSCEIT (2002)), that describe EI qualities, using different constructs across a spectrum of abilities and traits;
4. there is no widely accepted methodology for the measurement of EI (Emmerling and Goleman, 2003); and
5. the bold claims around EI benefits are critiqued by some researchers (Zeidner et al.(2004); Jordan et al.(2006); and Murphy (2014b)).

Unless these key challenges are resolved, many students, researchers and organizations will be investing time, resources and effort, building research, assessment tools and development processes on diverse foundations. This may not be an issue for some researchers, though this diverse array of EI models creates problems (highlighted later in this section) for those wishing to research the parallels and correlations between EI and IQ; between EI and other facets of intelligence; and between EI and success (whatever that means to an individual in terms of their life and work). There is a need "to develop both the theoretical and the empirical bases of support for EI" (Murphy, 2014b:344).

These challenges reinforce the necessity for a thorough analysis, and, therefore, the four phases in this research were undertaken with two key questions in mind, which are the basis of the main research questions (see Section 1.3), that is; which *primary factors*[6] should make up an EI taxonomy (traits, abilities or a mix of these); and, how should those EI factors be assessed?

The starting point *has* to be the identification of the type of EI model needed, whether that is a *trait*, *ability* or *mixed* model. A schism has evolved across the EI research community where "some researchers focus on EI as a distinct group of mental *abilities*, and other researchers instead study an eclectic mix of positive *traits* such as happiness, self-esteem, and optimism" (Mayer et al., 2008:503). These same authors also stress that "applications of EI must be conducted with much greater attention to the research literature, be grounded in good theory, and reject outlandish claims" (2008:514). Other research highlights the tension that has arisen around these extensive claims around the benefits of EI within the more "journalistic and popular psychology literature" (Spector and Johnson, 2006:326), set against the other end of the spectrum from those EI researchers committed to

> ....a very high standard of validity evidence, far in excess of what is typically required for claiming the validity of a new construct…. [, thereby] marginalising the more scientific work on EI that has emerged in the organizational literature.
>
> (Spector and Johnson, 2006:326).

EI research seems to have fallen victim to a *degenerating* effect (Smith, 2005), where EI researchers are building complex, often defensive, arguments against and between diverse EI constructs. This has resulted in different compounds of ability/trait factors and sub-factors across the *ability-trait* schism (illustrated later in Table 24).

Smith (2005) was referring to the criticism of general scientific research programmes by Imre Lakatos (Lakatos, 1968). Smith suggests that some research can degenerate due to the *building-on* effect, or a "(theoretical) *progressive problem-shift*" of a "*series of theories"* rather than a clean, isolated conceptual base (2005:164) – italics and parenthesis from the source). Smith is eluding to the practice of addressing a previous

[6] By 'primary factors' this refers to those factors that make up the main units in the taxonomy – sometimes (rightly or wrongly) described as *factors*, *scales*, *branches*, *competences*, or *facets* – see Section 3.2.1.

theory using a counter, or new way of thinking, or an update, “in a merely semantic, unscientific way…offering a content-decreasing – linguistic reinterpretation [rather than an argument supported by] a content-increasing, scientific explanation” (2005:164).

A clear example of this can be seen with the changes Goleman made to his competency framework. Goleman adapted Mayer and Salovey’s work (1990), where he simply says that he has "adapted their model into a version I find most useful for understanding how these talents matter in work life." (Goleman, 1998). This simple reframing, based on one person’s preferences, might therefore be judged to have derailed the theoretical progress Mayer and Salovey (1990) seemed to be making with EI (see sections 2.2 and 3.2.1.8). The impact could have been compounded due to the success and high visibility that Goleman gained in the publishing world with the EI concept. The current author posits that this was a significant moment in popularising EI, though adds that it might also be a factor that contributed towards the EI research degeneration due to the mixed model approach taken by Goleman (1998). Researchers have a responsibility to provoke rigorous debate, so EI research may be able to move out of the loop it appears to have been trapped in for the past twenty years, if we accept the *degeneration* label highlighted in this Section.

What has resulted, as can be seen from the diversity of the eight core models scoped for this research (see 3.2.1), is the lack of a reliable base-construct and factor-structure that can enable clean comparative analysis across the multiple EI models and their associated assessment methodologies. This drift can serve to derail the deductive analysis necessary in the development of a conceptual, theoretical model that is not contaminated by such deviations. Some researchers have called for a consolidation towards a single construct model (Matthews et al., 2007; Cherniss, 2010; Jordan et al., 2010). This thesis argues the case for EI research to *return to the basics* and seek or develop a model that has the potential to be an Emotional *Intelligence* construct, in order to attempt to interrupt this EI research degeneration. In so doing, this critical review will also explore the conflicts of interest in the commercial world of EI testing (see Paragraph 11 of Section 3.2.6). This thesis will later (Section 7.1) address the many challenges that are raised in this analysis, including some of the compounding, substantial claims and assumptions that have often been accepted within the EI field. This includes those to do with assumed and actual correlations across: emotional and general intelligences; abilities and trait factors; and, stated and proven EI benefits (see Section 3.2.6).

The current author suggests that this confusion in the EI field that has been compounded over the last twenty years, with EI models using diverse definitions and a range of different factors. This thesis shows in the next Section (3.2.1) how the eight core EI models, scoped for this research, fall across the spectrum of *ability*, *trait*, and *mixed* models, with most using a blend of abilities and traits to make up the primary factors of their taxonomies (see Jordan et al., 2006; Zeidner et al., 2008; Murphy, 2014b).

The results of the mapping and analysis of the literature, presented in this Section, take stock of those eight core models scoped for this research and presents them under the following core headings:

- Overview and analysis of the factors within each of the core EI models
- Mapping of the EI models
- Results of the analysis of the factor mapping and the related literature.

This process allows inductive analysis from the specific, core EI models, followed by an aggregation across the models using the matrix for the mapping work.

3.2.1 Overview and analysis of the factors within the core EI models

The detail of the eight models scoped for this research (see Section 2.1) are presented here with their component parts so as to enable the population of the matrices. Each EI model sub-section includes a descriptive outline of the EI primary factors. This is necessary to support the qualitative conceptual synthesis, separation and analysis of the primary factors to help create the resulting EI model. They are structured as follows:

- TEIQue
- ESCi
- ECI 2.0
- GOLEMAN
- EQ-I 2.0
- SAARNI
- GENOS
- MSCEIT.

3.2.1.1 TEIQue

The Trait Emotional Intelligence Questionnaire, or TEIQue (Petrides and Furnham, 2001) measures 15 facets of EI (outlined in Table 8) has been cited in more than 2000 studies.

Facets	High scorers perceive themselves as…
Adaptability	…flexible and willing to adapt to new conditions.
Assertiveness	…forthright, frank, and willing to stand up for their rights.
Emotion perception (self and others)	…clear about their own and other people's feelings.
Emotion expression	…capable of communicating their feelings to others.
Emotion management (others)	…capable of influencing other people's feelings.
Emotion regulation	…capable of controlling their emotions.
Impulsiveness (low)	…reflective and less likely to give in to their urges.
Relationships	…capable of having fulfilling personal relationships.
Self-esteem	…successful and self-confident.
Self-motivation	…driven and unlikely to give up in the face of adversity.
Social awareness	…accomplished networkers with excellent social skills.
Stress management	…capable of withstanding pressure and regulating stress.
Trait empathy	…capable of taking someone else's perspective.
Trait happiness	…cheerful and satisfied with their lives.
Trait optimism	…confident and likely to "look on the bright side" of life.

Table 8 – TEIQue facets of EI

The 15 facets feed into four correlated factors (and an overall EI score). Petrides and Furnham (2001) define these four factors as:

- well-being,
- self-control,
- emotionality, and
- sociability.

The 15 facets also fall neatly into the 4 domains in the analysis template with 8 of the 15 facets classified as competences and skills. Even 'Trait Empathy' is a skill when one considers the descriptor of having the ability to take someone else's perspective. The addition of the word 'capable' to the descriptor by the developers reinforces the current author's claim that one needs to have the knowledge, understanding, skill and ability to be capable, rather than being about attitude or personality.

Table 9 organises the facets into an analysis template to allow this to be set alongside the other EI models in this section.

EI Model Type	MIXED (claimed 'TRAIT')	
Ei Measurement Tool	TEIQue (2009)	15
Assessment methodology	SELF-REPORT/MULTI-RATER	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	EMOTION PERCEPTION	
SELF MANAGEMENT	EMOTION REGULATION	ADAPTABILITY
	STRESS MANAGEMENT	IMPULSIVENESS
SOCIAL AWARENESS	(EMOTION PERCEPTION)	
	SOCIAL AWARENESS	
	TRAIT EMPATHY	
SOCIAL INTERACTION MANAGEMENT	ASSERTIVENESS	RELATIONSHIPS
	EMOTION EXPRESSION	
	EMOTION MANAGEMENT	
SELF MOTIVATION		SELF ESTEEM
		SELF MOTIVATION
		TRAIT HAPPINESS
		TRAIT OPTIMISM
Bracketed factor "(Emotion Perception)" is duplicated as this is a cross-domain factor		

Table 9 – TEIQue competences analysis

The assessment of TEIQue is completely based on self-report, against 153 prompts (for example, “On the whole I’m able to deal with stress”; “When I’m under pressure, I tend to lose my cool”; “I don’t like planning ahead”; and “I am an ordinary person”), using a six-point scale from ‘completely disagree’ to ‘completely agree’. The instrument has been adapted into several versions including Short, 360 and 360-short, Adolescent and Adolescent-short, and Child forms. This self-report approach may be logical, as TEIQue is “predicated on trait EI theory” (Petrides, 2011:663) and the idea that emotional intelligence is defined and measured from a personality perspective. The strength of trait-based EI measures is supported by the argument that, since trait EI “tend[s] to measure typical behavior[sic] rather than maximal performance, they tend to provide a good prediction of actual behaviors in a range of situations” (O’Connor et al., 2019:3). This is

countered by both the weakness of self-report and its susceptibility to faking, as is reported elsewhere in this thesis (see Paragraph 8 in Section 3.2.6), and the related argument that people are not always good judges of their emotion-related abilities and tendencies (Brackett et al., 2006; Sheldon et al., 2014; Boyatzis, 2018).

A further consideration is that, if TEIQue is not measuring skills or ability, and there are general arguments that personality is relatively enduring and consistent across a wide variety of situations and contexts[7] (then there might then be questions about the purpose of measuring EI with TEIQue, if EI cannot be developed. The creators of TEIQue highlighted positive, but only marginal, post-training increases stating that

> ....approximately 50 studies have been conducted to determine whether or not trait EI scores improve after EI training (Pérez-Gonzaléz, Botella, and Mikolajczak, 2016). About 90% of these studies concluded in the affirmative, but most suffered from important methodological limitations (e.g., no control group or small sample sizes). From the few well-conducted studies (for a review, see Mikolajczak and Pena-Sarrionanda, 2015), the average improvement, as reflected in TEIQue or EQ-i scores, seems to be about 12% (in self-reports) or 6.6% (in reports by spouses or friends).
>
> (Petrides et al., 2016:339).

It should also be noted that the post-training re-testing in most of these studies was also self-reporting and, as a result, there may be a training effect that is not to do with EI capability increases, but more to do with positive feelings that can result from training and self-development. The rationale that Petrides (2011) provides, for resorting to self-report, is supported by an argument that, for ability measures, it is very difficult "to create items or tasks that can be scored according to truly objective criteria and that can cover the sampling domain of ability EI comprehensively" (Petrides, 2011:659). Petrides adds that:

> ....it is unclear whether [ability measures] reflect confounding with vocabulary size (Wilhelm, 2005), conformity to social norms (Matthews, Emo, Roberts, and Zeidner, 2006), theoretical knowledge about emotions (Austin, 2010 ; Freudenthaler, Neubauer, and Haller, 2008), stereotypical judgments (O'Sullivan, 2007), or some unknown combination, or interaction, of some, or all, of these factors.
>
> (Petrides, 2011:659).

[7] Roberts, B.W., 2009. Back to the future: Personality and assessment and personality development. *Journal of research in personality*, *43*(2), pp.137-145.

Whilst the research effort, the development work and the testing of assessment instruments that use objective criteria may be difficult, defaulting to self-report might be judged to be a way to avoid such effort, while compromising on assessment quality. Self-report approaches, alone, are likely to take an EI model away from the intelligence (ability) construct that this study is trying to achieve. Petrides (2011) poses two questions for anyone developing an ability measure framework:

> (1) Is it based on truly veridical [that is, trustworthy] scoring criteria (as opposed to novelty psychometrics)? [novelty psychometrics, here, referring to limited predictive value]
> (2) Does it provide comprehensive coverage of the sampling domain of the construct (as opposed to a handful of convenient facets)?
>
> (2011:659).

These can be considered on completion of this study, to establish whether the EI model and assessment methodology provides a base sufficient for work on the development and validation of the actual test instruments that needs to follow this thesis. This is revisited in the conclusion as part of 'Where next' in Section 7.4.

3.2.1.2 ESCI

The Emotional and Social Competence Inventory (ESCI) consists of 12 competency scales:

1. **Emotional Self-Awareness:** recognizing one's emotions and their effects
2. **Emotional Self-Control**: keeping disruptive emotions and impulses in check
3. **Adaptability:** flexibility in handling change
4. **Achievement Orientation:** striving to improve or meet a standard of excellence
5. **Positive Outlook:** persistence in pursuing goals despite obstacles and setbacks
6. **Empathy:** sensing others' feelings and perspectives, and taking an active interest in their concerns
7. **Organizational Awareness:** reading a group's emotional currents and power relationships
8. **Coach and Mentor:** sensing others' development needs and bolstering their abilities
9. **Inspirational Leadership:** inspiring and guiding individuals and groups
10. **Influence:** wielding effective tactics for persuasion
11. **Conflict Management:** negotiating and resolving disagreements
12. **Teamwork:** working with others toward shared goals. Creating group synergy in pursuing collective goals.

When organised into the analysis matrix (see Table 10), they show a relatively even spread, whereby five of the competences are traits, styles or attitudes, and where seven are abilities or kills. These are each assessed with a multi-rater instrument that includes self-report.

EI Model Type	**MIXED**	
EI Measurement Tool	**ESCI (BOYATZIS+GOLEMAN) 2017**	**12**
Assessment methodology	**SELF-REPORT and MULTIRATER. (Focus on Leadership).**	
Domains	**COMPETENCES/ SKILLS**	**STYLES/ ATTITUDES/ TRAITS**
SELF AWARENESS	**EMOTIONAL SELF-AWARENESS**	
SELF MANAGEMENT	**EMOTIONAL SELF CONTROL**	**ADAPTABILITY**
SOCIAL AWARENESS		**ORGANISATIONAL AWARENESS**
SOCIAL INTERACTION MANAGEMENT	**EMPATHY**	**INSPIRATIONAL LEADERSHIP**
	COMMUNICATION	
	INFLUENCE	
	COACH AND MENTOR	
	CONFLICY MANAGEMENT	
	(TEAMWORK)	
SELF MOTIVATION		**ACHIEVEMENT ORIENTATION**
		POSITIVE OUTLOOK
Bracketed factor "(TEAMWORK)" = earlier model adaptation		

Table 10 - ESCI competences analysis

ESCI consists of 110 items focused on leadership and the workplace context. The items include statements such as “I recognise my emotions and their effects on others,” and “I can keep disruptive emotions or impulses under control”, leaving this open to the same criticism as the other self-report assessment approaches, in that they are perception-based and can be faked, though the multi-rater element might offset such subjectivity.

3.2.1.3 ECI 2.0

Following early work on the model that originated as ECI, ECI 2.0 was developed and consisted of 20 competences. These are outlined in Table 11.

1. Emotional Self-Awareness	11. Achievement Orientation
2. Accurate Self-Assessment	12. Initiative
3. Self-Confidence	13. Developing Others
4. Empathy	14. Leadership
5. Organizational Awareness	15. Influence
6. Service Orientation	16. Communication
7. Self-Control	17. Change Catalyst
8. Trustworthiness	18. Conflict Management
9. Conscientiousness	19. Building Bonds
10. Adaptability	20. Teamwork and Collaboration

Table 11 - ECI 2.0 competences

ECI 2.0 was reviewed and revised with two competences removed (*9. Conscientiousness;* and *16. Communication*). In addition, several name or label changes were made: *Leadership* became *Inspirational Leadership*; *Trustworthiness* became *Transparency*; *Achievement Orientation* became *Achievement*; and *Self-Control* became *Emotional Self-Control*. *Building Bonds* was integrated into *Teamwork*, and an *Optimism* competency was added. This mixed model combines skills (for example, *Emotional Self-Awareness* and *Developing Others*) with traits (such as, *Achievement Orientation* and *Conscientiousness*), the latter traits being qualities or attitudes that take this model away from *abilities*, and therefore away from objective assessment, and also being classified as an *intelligence*. This leaves this model, as all the other mixed models, having to default to self-report or multi-rater perception questionnaires with all the related problems of faking and bias (see Section 6.2.5).

The Emotional Competence Inventory 2.0 (ECI 2.0) was the result of the review and revisions (for more detail, see ECI_2_0_Technical_Manual_v2.pdf, n.d.). ECI 2.0 measures the reduced 18 competences, organized into four *clusters*: Self-Awareness, Self-Management, Social Awareness, and Relationship Management, as outlined in Table 12.

Cluster	Competences
Self-Awareness concerns knowing one's internal states, preferences, resources, and intuitions.	Emotional Awareness: Recognizing one's emotions and their effects Accurate Self-Assessment: Knowing one's strengths and limits Self-Confidence: A strong sense of one's self-worth and capabilities
Self-Management refers to managing ones' internal states, impulses, and resources.	Emotional Self-Control: Keeping disruptive emotions and impulses in check Transparency: Maintaining integrity, acting congruently with one's values Adaptability: Flexibility in handling change Achievement: Striving to improve or meeting a standard of excellence Initiative: Readiness to act on opportunities Optimism: Persistence in pursuing goals despite obstacles and setbacks
Social Awareness refers to how people handle relationships and awareness of others' feelings, needs, and concerns.	Empathy: Sensing others' feelings and perspectives, and taking an active interest in their concerns Organizational Awareness: Reading a group's emotional currents and power relationships Service Orientation: Anticipating, recognizing, and meeting customers' needs
Relationship Management concerns the skill or adeptness at inducing desirable responses in others.	Developing Others: Sensing others' development needs and bolstering their abilities Inspirational Leadership: Inspiring and guiding individuals and groups Change Catalyst: Initiating or managing change Influence: Wielding effective tactics for persuasion Conflict Management: Negotiating and resolving disagreements Teamwork and Collaboration: Working with others toward shared goals. Creating group synergy in pursuing collective goals.

Table 12 - ECI competences in the four clusters

When the ECI 2.0 competences are filtered into the analysis matrix (see Table 13), we can see a relatively even split between the factors which are ability-focused and those which are trait- or attitude-based.

EI Model Type	MIXED	
Ei Measurement Tool	GOLEMAN (ECI2.0)	20 (was 19 in ECI1.0)
Assessment methodology	SELF-REPORT and MULTIRATER. (Focus on Leadership).	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	EMOTIONAL SELF-AWARENESS	SELF CONFIDENCE
	ACCURATE SELF-ASSESSMENT	
SELF MANAGEMENT	(EMOTIONAL) SELF CONTROL	CONSCIENTIOUSNESS
		ADAPTABILITY
SOCIAL AWARENESS		ORGANISATIONAL AWARENESS
		SERVICE ORIENTATION
SOCIAL INTERACTION MANAGEMENT	EMPATHY	(INSPIRATIONAL) LEADERSHIP
	COMMUNICATION	
	INFLUENCE	
	DEVELOPING OTHERS	
	CONFLICY MANAGEMENT	CHANGE CATALYST
	(BUILDING BONDS - later integrated into Teamwork)	
	TEAMWORK (AND COLLABORATION)	
SELF MOTIVATION		ACHIEVEMENT (ORIENTATION)
		TRANSPARENCY (TRUSTWORTHINESS)
		OPTIMISM (added in 2.0)
		INITIATIVE
Bracketed factors "( )" = earlier model adaptation		

Table 13 - Goleman (ECI 2.0) competences analysis

3.2.1.4 Goleman

Goleman (1995) presented a model with twenty-five 'competences', including a mix of skills, abilities, traits and attitudes, earning it the same *mixed model* label as EQ-I 2.0 from Bar-On (1997). Goleman's 25 'competences' are shown in Table 14 uses the five categories he presented in his 1995 publication *Emotional Intelligence – why it can matter more than IQ* (Goleman, 1995).

GOLEMAN	25 FACETS ('COMPETENCES')
SELF AWARENESS	EMOTIONAL AWARENESS
	ACCURATE SELF ASSESSMENT
	SELF CONFIDENCE
SELF REGULATION	SELF CONTROL
	TRUSTWORTHINESS
	CONSCIENTIOUSNESS
	ADAPTABILITY
	INNOVATIVENESS
SELF MOTIVATION	ACHIEVEMENT DRIVE
	COMMITMENT
	INITIATIVE
	OPTIMISM
SOCIAL AWARENESS	EMPATHY
	SERVICE ORIENTATION
	DEVELOPING OTHERS
	LEVERAGING DIVERSITY
	POLITICAL AWARENESS
SOCIAL SKILLS	INFLUENCE
	COMMUNICATION
	LEADERSHIP
	CHANGE CATALYST
	CONFLICY MANAGEMENT
	BUILDING BONDS
	COLLABORATION AND COOPERATION
	TEAM CAPABILITIES

Table 14 – Goleman's mixed model of competences

Goleman centred his work on *leadership* in the workplace. This specific application might raise criticisms were the model to be [mis-]applied outside of this context. For example, Leadership and Political Awareness might be valid for senior (adult) managers, though

may not be useful factors to assess primary age children. His claimed justification for a leadership focus is that every person is a leader in some manner, and every leader's main obligation is to "prime good feelings in those they lead" which then generates the best behaviour in others (Goleman et al., 2002:ix). This might be judged an invalid claim, since good leadership, while perhaps worthy, might not necessarily be an aspirational goal for all humans. The 'mixed model' label is justified by the mixture of 14 styles/traits/attitudes and 11 competences/skills. This mixture can be seen in the analysis matrix in Table 15.

EI Model Type	MIXED	
Ei Measurement Tool	GOLEMAN (1998)	25
Assessment methodology	SELF-REPORT (Focus on Leadership).	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	EMOTIONAL AWARENESS	SELF CONFIDENCE
	ACCURATE SELF ASSESSMENT	
SELF MANAGEMENT	SELF CONTROL	TRUSTWORTHINESS
		CONSCIENTIOUSNESS
		ADAPTABILITY
		INNOVATIVENESS
SOCIAL AWARENESS		POLITICAL AWARENESS
		SERVICE ORIENTATION
		LEVERAGING DIVERSITY
SOCIAL INTERACTION MANAGEMENT	EMPATHY	LEADERSHIP
	COMMUNICATION	
	INFLUENCE	
	DEVELOPING OTHERS	
	CONFLICY MANAGEMENT	CHANGE CATALYST
	BUILDING BONDS	
	COLLABORATION AND COOPERATION	
	TEAM CAPABILITIES	
SELF MOTIVATION		ACHIEVEMENT DRIVE
		COMMITMENT
		INITIATIVE
		OPTIMISM

Table 15 - Analysis of Goleman's 25 competences

3.2.1.5 EQ-I 2.0

Bar-On (1997) developed an 'array' of 15 facets or competences. He grouped his 15 facets into five clusters. Although his framework included some of the main *Interpersonal* and *Intrapersonal* components of EI in the 2x2 grid in Figure 2, it deviates from this grid, as it adds in the three clusters of:

- *Stress Management* [an intrapersonal ability];
- *Adaptability* [a context feature that cuts across intra- and inter-personal skills]; and
- *General Mood* [which contains qualities that are more akin to traits and mindsets].

In Table 16 Bar-On describes his scale (which is clustered into five sub-domains) in more detail as 'the ability to', though his array is a mixture of skills/abilities and traits/attitudes.

Scale	Description of the scale
Intrapersonal EQ	
Self-regard (SR)	Is the ability to be aware of, understand, accept and respect oneself
Emotional self-awareness (ES)	Is the ability to recognise and understand one's emotions
Assertiveness (AS)	Is the ability to express feelings, beliefs and thoughts and to defend one's rights in a non-destructive manner
Independence (IN)	Is the ability to be self-directed and self-controlled in one's thinking and actions and to be free of emotional dependency
Self-actualisation (SA)	Is the ability to realise one's potential and to do what one wants to do, enjoys doing and can do
Interpersonal EQ	
Empathy (EM)	Is the ability to be aware of, understand and appreciate the feelings of others
Social responsibility (RE)	Is the ability to demonstrate oneself as a cooperative, contributing and constructive member of one's social group
Interpersonal relationship (IR)	Is the ability to establish and maintain mutually satisfying relationships that are characterised by emotional closeness, intimacy and giving and receiving affection
Stress management EQ	
Stress tolerance (ST)	Is the ability to withstand adverse events, stressful situations and strong emotions without 'falling apart' by actively and positively coping with stress
Impulse control (IC)	Is the ability to resist or delay an impulse, drive or temptation to act and to control one's emotions
Adaptability EQ	
Reality testing (RT)	Is the ability to assess the correspondence between what is experienced internally and subjectively and what exists externally and objectively
Flexibility (FL)	Is the ability to adjust one's feelings, thoughts and behaviour to changing situations and conditions
Problem solving (PS)	Is the ability to identify and define personal and social problems and to generate and implement potentially effective solutions
General mood EQ	
Optimism (OP)	Is the ability to 'look on the brighter side of life' and to maintain a positive attitude, even in the face of adversity
Happiness (HA)	Is the ability to feel satisfied with one's life, to enjoy oneself and others, to have fun and express positive emotions

Table 16 - Bar-On Emotional Intelligence Inventory [Adapted from Bar-On, 1997a)]

In particular, the two *general mood* facets, *Optimism* and *Happiness*, are clearly traits or attitudes, as are *Social responsibility*, *Stress tolerance*, *Self-regard*, *Self-actualisation*, and *Independence*.

The remaining facets in Bar-On's inventory (*Empathy, Impulse control, Problem solving, Reality testing, Interpersonal relationship, Assertiveness,* and *Emotional self-awareness*) are, however, skills and abilities. This spread of the facets of his scale, across the *competences/skills* column and the *styles/attitudes/traits* column is clear on the analysis matrix in Table 17. Like other mixed models, this restricts assessment approaches to self-

report or multi-rater perception questionnaires, with all the related problems of faking and bias (see Section 6.2.5).

EI Model Type	MIXED	
Ei Measurement Tool	EQI 2.0 BAR-ON	15
Assessment methodology	SELF-REPORT +/or MULTIRATER. (focus on Wellbeing)	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	EMOTIONAL SELF AWARENESS	
SELF MANAGEMENT	IMPULSE CONTROL	STRESS TOLERANCE
	EMOTIONAL EXPRESSION	
	PROBLEM SOLVING	HAPPINESS
	REALITY TESTING	
SOCIAL AWARENESS		SOCIAL RESPONSIBILITY
SOCIAL INTERACTION MANAGEMENT	EMPATHY	
	INTERPERSONAL RELATIONSHIPS	
	ASSERTIVENESS	
SELF MOTIVATION		SELF REGARD
		SELF ACTUALISATION
		INDEPENDENCE
		OPTIMISM

Table 17 - Bar-On competences analysis

3.2.1.6 SAARNI

Saarni's emotional competences model was the framework for her publication *The Development of Emotional Competence* (Saarni, 1999), though she never developed an assessment instrument for the model. The bulk of the book was devoted to her eight emotional competence skills:

1. awareness of one's own emotions;
2. ability to discern and understand others' emotions;
3. ability to use the vocabulary of emotion and expression;
4. capacity for empathic involvement;
5. ability to differentiate subjective emotional experience from external emotion expression;

6. adaptive coping with aversive emotions and distressing circumstances;
7. awareness of emotional communication within relationships; and
8. capacity for emotional self-efficacy.

Skills 1 to 6 are based on developmental research into emotions, but the final two skills are based on her experience as a clinical developmental psychologist. Saarni's work influenced thinking on child development (see Revelle and Scherer, 2009:335). All eight factors cross the four main domains and fall into the category of abilities (competences/skills) as can be seen in Table 18.

EI Model Type	ABILITY BASED	
Ei Measurement Tool	SAARNI	8
Assessment methodology	N/A (focus on well-being)	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	AWARENESS OF OWN EMOTIONAL STATE	
	USE COMMON EMOTION/EXPRESSION VOCABULARY	
SELF MANAGEMENT	USE SELF REGULATION STRATEGIES FOR ADAPTIVE COPING WITH ADVERSIVE OR DISTRESSING EMOTIONS	
	LEVERAGE EMOTIONAL SELF-EFFICACY TO ACHIEVE RESULTS	
SOCIAL AWARENESS	DISCERN OTHERS' EMOTIONS BASED ON SITUATIONAL CUES	
SOCIAL INTERACTION MANAGEMENT	BE EMPATHIC TO OTHERS' EMOTIONAL EXPERIENCES	
	USE SELF PRESENTATION STRATEGIES THAT DISTINGUISH BETWEEN INNER STATES AND OUTWARD EXPRESSION IN SELF AND OTHERS	
	COMMUNICATE EMOTIONS TO MANAGE RELATIONSHIPS	
SELF MOTIVATION		

Table 18 - Saarni's competences analysis

The model is designed to enhance well-being, although the positive bias is only really evidenced in the competency 'Use self-regulation strategies for adaptive coping with adversative or distressing emotions', whereas self-regulation might also be beneficial for

masking emotions for competitive gain (as in poker playing and in business) or for deception (as needed by undercover intelligence agents).

3.2.1.7 GENOS

The Genos Emotional Intelligence Inventory, or GENOS EI, was originally conceptualized by Palmer and Stough at Swinburne University (Gignac, 2010). GENOS EI uses self-report and multi-rater formats, 180 and full 360-degree formats (the 180-degree format designed for leaders who wanted to elicit responses from peers and direct-reports only, whereas the 360-degree version also incorporates upward [line-] management input). It is designed for a leadership context with 70 items contributing to seven factors, though other concise and short form versions have been created since. These original factors are outlined in Table 19 with example items.

Factor		Example items
1	Emotional Self-Awareness	-Is aware when he/she is feeling negative at work -Is aware of how his/her feelings influence the way he/she responds to colleagues
2	Emotional Expression	-Expresses how he/she feels at the appropriate time -Expresses his/her feelings effectively when someone upsets him/her at work
3	Emotional Awareness of Others	-Demonstrates an understanding of others' feelings at work -Understands the things that make people feel valued at work
4	Emotional Reasoning	-Asks others how they feel about different solutions when problem solving at work -Demonstrates to colleagues what he/she has considered others' feelings in decision he/she makes at work
5	Emotional Self-Management	-Ruminates about things that anger him/her at work* -Responds to events that frustrate him/her at work effectively
6	Emotional Management of Others	-Creates a positive working environment for others -Motivates others toward work related goals
7	Emotional Self-Control	-When under stress, he/she becomes impulsive* -Demonstrates excitement at work appropriately
* Negatively keyed items.		

Table 19 - GENOS factors and sample items (adapted from Palmer et al. 2009)

When these are mapped into the analysis matrix, the competences are all ability-focused and cover the four main domains, as can be seen in Table 20.

EI Model Type	ABILITY BASED	
Ei Measurement Tool	GENOS EI	7
Assessment methodology	MULTIRATER (focus on Workplace)	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	EMOTIONAL SELF AWARENESS	
	EMOTIONAL REASONING	
SELF MANAGEMENT	EMOTIONAL SELF MANAGEMENT	
	EMOTIONAL EXPRESSION	
	EMOTIONAL SELF CONTROL	
SOCIAL AWARENESS	EMOTIONAL AWARENESS OF OTHERS	
	(EMOTIONAL REASONING)	
SOCIAL INTERACTION MANAGEMENT	EMOTIONAL MANAGEMENT OF OTHERS	
SELF MOTIVATION		

Table 20 - Analysis of GENOS competences (bracketed factor crosses two domains)

The GENOS model evolved out of the Swinburne University Emotional Intelligence Test (SUEIT). Some limitations, that work against it being classified as an *intelligence,* are volunteered in the technical manual, where GENOS is described as measuring "*typical EI performance* as distinct from *maximal EI performance*" (Gignac, 2010:10) and the developer, Gignac, admits "there are no *right* or *wrong* answers to the items within the GENOS EI inventory" (2010:19).

Palmer et al. (2009) highlight that GENOS contains a range of states including "satisfaction, enthusiasm, optimism, excitement, engagement, motivation", plus a range of emotions that includes "anxious, anger, stressed, annoyed, frustrated, disappointed, upset." (2009:109). This highlights that some items contributing to the abilities might be states that are 'trait'-focused (for example, *optimism*, *enthusiasm*,

excitement), thereby contaminating the *ability* model claim. *Optimism*, for example, is a personality trait that is not right or wrong, so this then prevents this factor being assessed objectively. This as an overall model, therefore, would have issues being classified as an intelligence if the definition within this thesis is accepted (that is, *intelligence* is defined as the *ability to acquire and apply knowledge,* see Section 2.2).

3.2.1.8 MSCEIT

The MSCEIT model was developed in the late 1990s, and is organised according to four *branches*: *Perceiving*, *Facilitating*, *Understanding* and *Managing* emotions (see Figure 3). These branches were organised into four levels of skill clusters that represent levels of emotional maturity from "*infant…* [to a] *grown person"* (Mayer and Salovey, 1997:10–11). This is reproduced with Branch One in the lower row, rising to Branch Four in the highest row, as shown below in Figure 4.

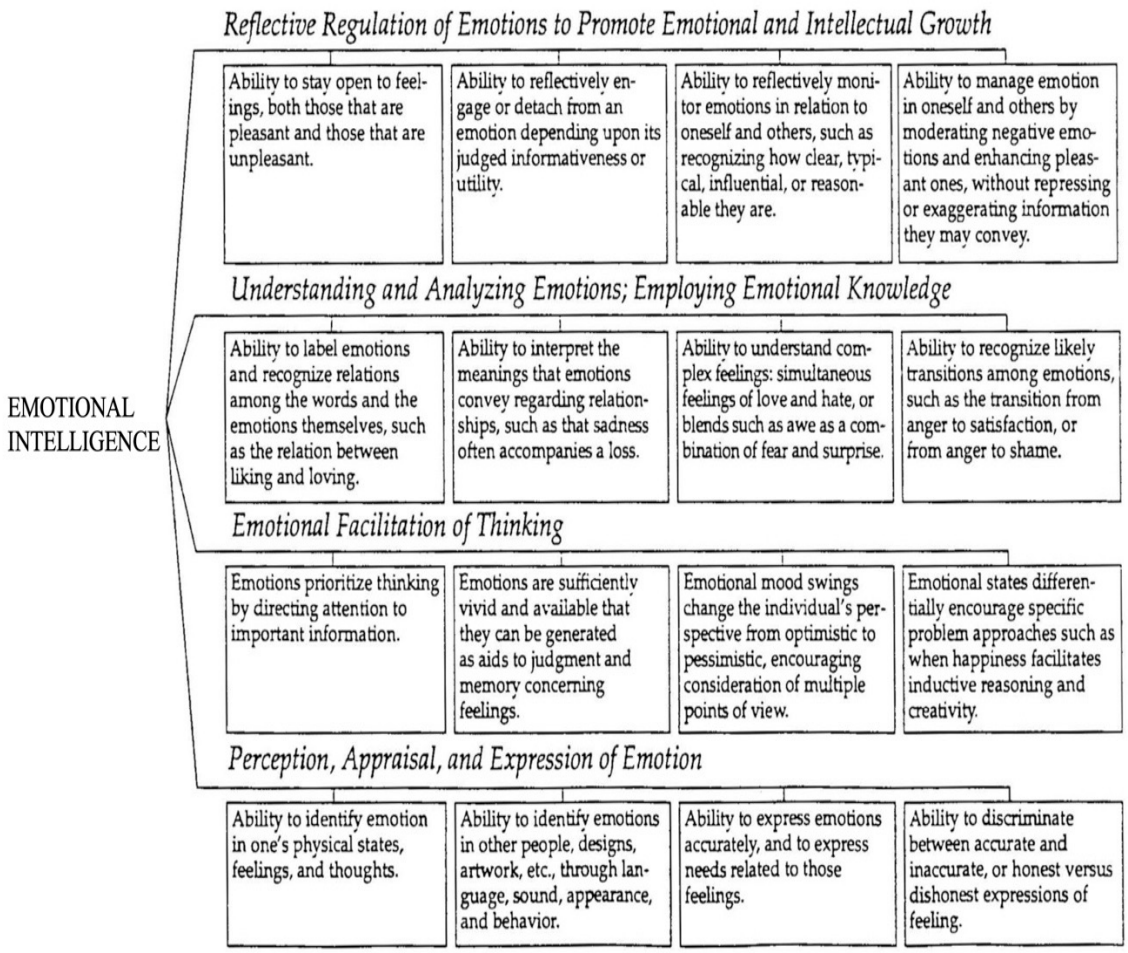


Figure 4 - MSCEIT 'levels' of emotional maturity (v1997)

The ‘skills’ within this model were also organised in such a way as to show the more complex skills as a hierarchy, towards the right-hand side of the model. This early model was not without its problems. Indeed, Mayer and Salovey (2016:293) admitted themselves that they had needed to add:

> ....several areas of problem solving to this revised model that initially we overlooked. For example, the “Understanding Emotion” area originally included the abilities to label emotions, to know their causes and consequences, and to understand complex emotions. To those original areas of understanding, we have added emotional appraisal and emotional forecasting - topics that have experienced increased research attention and that have been directly related to emotionally intelligent reasoning (see also Barrett, Mesquita, and Gendron, 2011; Dunn, Brackett, Ashton-James, Schneiderman, and Salovey, 2007; MacCann and Roberts, 2008) - as well as a sensitivity to cultural contexts.
>
> (Matsumoto and Hwang, 2012).

This framework therefore evolved with additions to address these problems and some “rewriting for clarity” (Mayer et al., 2016:293). The resulting detail was published in the same article (2016:294) and is reproduced as Table 21, with their original footnotes included.

The Four Branches	Types of Reasoning
4. Managing emotions	• Effectively manage others' emotions to achieve a desired outcome[b] • Effectively manage one's own emotions to achieve a desired outcome[b] • Evaluate strategies to maintain, reduce, or intensify an emotional response[b] • Monitor emotional reactions to determine their reasonableness • Engage with emotions if they are helpful; disengage if not • Stay open to pleasant and unpleasant feelings, as needed, and to the information they convey
3. Understanding emotions	• Recognize cultural differences in the evaluation of emotions[c] • Understand how a person might feel in the future or under certain conditions (affective forecasting)[c] • Recognize likely transitions among emotions such as from anger to satisfaction • Understand complex and mixed emotions • Differentiate between moods and emotions[c] • Appraise the situations that are likely to elicit emotions[c] • Determine the antecedents, meanings, and consequences of emotions • Label emotions and recognize relations among them
2. Facilitating thought using emotion[d]	• Select problems based on how one's ongoing emotional state might facilitate cognition • Leverage mood swings to generate different cognitive perspectives • Prioritize thinking by directing attention according to present feeling • Generate emotions as a means to relate to experiences of another person[c] • Generate emotions as an aid to judgment and memory
1. Perceiving emotion	• Identify deceptive or dishonest emotional expressions[b] • Discriminate accurate vs. inaccurate emotional expressions[b] • Understand how emotions are displayed depending on context and culture[c] • Express emotions accurately when desired • Perceive emotional content in the environment, visual arts, and music[b] • Perceive emotions in other people through their vocal cues, facial expression, language, and behavior[b] • Identify emotions in one's own physical states, feelings, and thoughts

Note. [a]The bullet-points are based on Mayer and Salovey (1997) except as indicated in superscripts b and c. Within a row, the bulleted items are ordered approximately from simplest to most complex, bottom to top. The four-branch model depicts the problem-solving areas of emotional intelligence and is not intended to correspond to the factor structure of the area.

[b]An ability from the original model was divided into two or more separate abilities.

[c]A new ability was added.

[d]Note that the Branch 2 abilities can be further divided into the areas of *generating emotions to facilitate thought* (the bottom two bulleted items) and *tailoring thinking to emotion* (the top three bulleted items).

Table 21 - MSCEIT 'levels' of emotional maturity (v2016)

Petrides, the developer of TEIQue, and a strong trait EI model advocate, rejects MSCEIT bluntly, suggesting that it:

> ....relies on awkward scoring procedures that had previously been used in unsuccessful social "intelligence" tests (see Legree, 1995). These procedures yield scores that are psychologically invalid, which is why it is counterproductive to subject them to factor analyses, correlate them with other variables, and enter them into regression equations.
>
> (Petrides, 2009:90).

The current author suggests that this criticism is overly harsh, especially when made by the developer of a model that relies only on self-report, with all its weaknesses (see Section 6.2.5).

When the main MSCEIT branches are mapped into the analysis grid for this study, they cover all four of the main domains, as can be seen in Table 22.

EI Model Type	ABILITY BASED	
Ei Measurement Tool	MSCEIT (prev. MEIS)	4
Assessment methodology	Expert or consensus - Leadership focused	
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	PERCEIVING EMOTIONS	
	UNDERSTANDING EMOTIONS	
SELF MANAGEMENT	FACILITATING THOUGHT	
	MANAGING EMOTIONS	
SOCIAL AWARENESS	(PERCEIVING EMOTIONS)	
	(UNDERSTANDING EMOTIONS)	
	(FACILITATING THOUGHT)	
SOCIAL INTERACTION MANAGEMENT	(MANAGING EMOTIONS)	
SELF MOTIVATION		
Bracketed factors "( )" = duplicated as this is a cross-domain factor		

Table 22 - MSCEIT 'branches' and the four primary domains

As MSCEIT is the most widely recognized ability model, the sub-groups of 'skills' have been inserted into the mapping matrix (see Table 23), from the originators' publication (Mayer and Salovey, 1997:3-34), to help organise the MSCEIT abilities into the domains adopted in the left hand column in Table 23, to aid the mapping work, and later synthesis and development work (Section 3.2.4).

EI Model Type	ABILITY BASED		
Ei Measurement Tool	MSCEIT (prev. MEIS)		16
Assessment methodology		Expert or consensus (Leadership focused)	
Domains	**Sub groups of 'skills' ref: Mayer, J. D., and Salovey, P. (1997). What is emotional intelligence? In P. Salovey and D. J. Sluyter (Eds.), Emotional development and emotional intelligence: Educational implications (pp. 3-34). New York: Harper Collins.**	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	PERCEIVING EMOTIONS IN OWN STATES, FEELINGS THOUGHTS		
	UNDERSTAND COMPLEX FEELINGS: SIMULTANEOUS FEELINGS OF LOVE AND HATE, OR BLENDS SUCH AS AWE AS A COMBINATION OF FEAR AND SURPRISE	PERCEIVING EMOTIONS	
	LABEL EMOTIONS AND RECOGNISE RELATIONS AMONG THE WORDS AND THE EMOTIONS THEMSELVES, SUCH AS RELATION BETWEEN LIKING AND LOVING		
	RECOGNISE LIKELY TRANSITIONS AMONG EMOTIONS, SUCH AS THE TRANSITION FROM ANGER TO SATISFACTION, OR FROM ANGER TO SHAME	UNDERSTANDING EMOTIONS	
SELF MANAGEMENT	EMOTIONS PRIORITISE THINKING BY DIRECTING ATTENTION TO IMPORTANT INFORMATION		
	EMOTIONS ARE SUFFICIENTLY VIVID AND AVAILABLE THAT THEY CAN BE GENERATED AS AIDS TO JUDGEMENT AND MEMORY CONCERNED FEELINGS		
	EMOTIONAL MOOD SWINGS CHANGE THE INDIVIDUAL'S PERSPECTIVE FROM OPTIMISTIC TO PESSIMISTIC, ENCOURAGING MULTIPLE POINTS OF VIEW	FACILITATING THOUGHT	
	EXPRESS EMOTIONS ACCURATELY AND EXPRESS NEEDS RELATING TO THOSE FEELINGS	MANAGING EMOTIONS	
	EMOTIONAL STATES DIFFERENTIALLY ENCOURAGE SPECIFIC PROBLEMS APPROACHES SUCH AS WHEN HAPPINESS FACILITATES INDUCTIVE REASONING AND CREATIVITY		
	STAY OPEN TO FEELINGS, BOTH THOSE THAT ARE PLEASANT AND THOSE THAT ARE UNPLEASANT		
	ENGAGE OR DETACH FROM AN EMOTION DEPENDING UPON ITS JUDGED INFORMITAVENESS OR UTILITY		
SOCIAL AWARENESS	IDENTIFY EMOTIONS IN OTHER PEOPLE, DESIGNS, ARTWORK (MULTICHANNEL)	*(PERCEIVING EMOTIONS)*	
	DISCRIMINATE BETWEEN ACCURATE/INNACCURATE OR HONEST/DISHONEST EXPRESSIONS OF FEELING	*(UNDERSTANDING EMOTIONS)*	
	INTERPRET THE MEANINGS THAT EMOTIONS CONVEY REGARDING RELATIONSHIPS, SUCH AS THAT SADNESS OFTEN ACCOMPANIES A LOSS	*(FACILITATING THOUGHT)*	
SOCIAL INTERACTION MANAGEMENT	MANAGE EMOTION IN ONESELF AND OTHERS BY MODERATING NEGATIVE EMOTIONS AND ENHANCING PLEASANT ONES, WITHOUT REPRESSING OR EXAGGERATING INFORMATION THAT THEY MAY CONVEY	*(MANAGING EMOTIONS)*	
	REFLECTIVELY MONITOR EMOTIONS IN RELATION TO ONESELF AND OTHERS, SUCH AS RECOGNISING HOW CLEAR, TYPICAL, INFLUENTIAL AND REASONABLE THEY ARE		
MOTIVATION			
(Bracketed items duplicated as they apply to multiple domains).			

Table 23 - MSCEIT 'sub-factors'

Problems with the MSCEIT taxonomy are revealed by the multiple versions (MEIS, MSCEIT, MSCEIT RV1.0, MSCEIT-YRV, MSCEIT v2.0), and by the type of adjustments eluded to in the footnotes of Table 21 (where they state that competences were 'split' and 'added'). Some may judge this MSCEIT evolution as trial and error. Others

will recognise that research and development is a dynamic process (in that, for example, you cannot steer a stationary vehicle) and sometimes conceptual models need to be launched before they are tested and refined. The aim of this study is to learn from past research, and the SME input (see Section 4) to establish an EI model that is conceptually clean (as far as it can be) from contextual, commercial and other contaminants from the outset, rather than a prototype that evolves. This is due to the extensive work and investment that is likely to be involved in developing, testing and validating assessment instruments that can assess EI abilities.

The MSCEIT model reveals that it retains the *ability* factor that is focused on perception of emotional content in visual arts and music ("Identify emotions in other people, designs and artwork" [see Table 23]). This is problematic in that art and music are subjective and open to cultural variability. Some visual and auditory stimuli are culturally rooted and/or often hard-wired to past experiences that are idiosyncratic to each of us, and this might suggest that they should not feature in a generic, ability-based EI intelligence model, since there can be no '*right-wrong*' answers. Maul supports this view by claiming that "emotion is a property of conscious beings, and therefore strictly speaking cannot be present in these stimuli" (2012:398). He also adds critique around the term *meaning* in the statement "Determine the… meaning… of emotions", and argues that:

> ...."meaning" could refer to communication (e.g., the meanings of words and phrases about emotions), or the causes of something (e.g., the meaning of one's heart rate increasing in the presence of spiders), or personal significance, among other possibilities".
>
> (Maul, 2012:398).

Maul (2012) added that perhaps the experts were not very expert as they "comprised 21 volunteer members of the International Society for Research on Emotion (ISRE) at their conference in 2000" (2012:398). Mayer, et al. (2012) reacted swiftly (one month later in the same journal) to argue that:

> ....[their] expertise involved research and scholarship on emotions. The group included 16 professors and lecturers, 2 'researchers,' and 2 doctoral students (and one non-identified) with a median age of 38. We consider this adequate evidence of their expertise.
>
> (Brody, 2012:403)

Brody (2004) adds a further layer to the challenges around how the MSCEIT team selected their experts, especially those that might have been assigned the 'expert' label

only from academic qualifications. He suggests that a person might have academic knowledge and qualifications but have limited ability in applying that knowledge. It could be argued, for example, that an airline pilot who has demonstrated expert knowledge through academic development, research and/or assessment may not be judged an expert pilot, unless he/she has also gained significant expertise in applying that knowledge over many years of practice, across a range of flight conditions and contexts. Brody sums up this notion when he argues that "a person who has expert knowledge of emotions may or may not be expert in the ability that is allegedly assessed by the test" (2004:234). This has implications for how EI is assessed and is an issue that is addressed in Section 6.

The criticisms levelled against MSCEIT by Maul was summarised with the statement that "it does not seem that the accumulated evidence provides clear support for the idea that the structure of MSCEIT conforms to third party expectations" (2012:400).

MSCEIT is one of multiple EI tests (see Section 6.2.4), and the correlation between MSCEIT and other EI tests appears to be weak. As an example, associations of the MSCEIT ability model to the mixed model Bar-On's EQ-i Self-Report EI Test (mixed model) are rather low at 0.22 (Brackett and Mayer, 2003). A more detailed analysis is included in Section 6.2.4. Similar correlational challenges exist between EI and IQ (see Paragraphs 4 and 5 in Section 3.2.6).

The problems with MSCEIT might, however, be considered minor, when compared to the challenges of the trait-based and mixed models. Therefore, this low correlation between MSCEIT and EQ-I was not a surprise to the current author. The five trait/mixed models in the fully populated matrix in Appendix 1 include, as already referred to, factors such as *optimism*, *commitment*, *impulsiveness*, and *self-esteem*, which distance the models from the intelligence construct. It is also clear that they incorporate *skills* (confirmed by the SME review in Section 4) such as *emotional self-awareness*, *self-control* and *empathy*, making them all mixed models, rather than trait models.

The current author suggests that the developers of MSCEIT should be commended for staying committed to the *ability* factor focus of EI, thereby helping to retain the EI construct within the wider *intelligence* construct.

Other emerging models

The Geneva Emotional Competence Test (GECO) model (Schlegel and Mortillaro, 2018) (see also ERA[Emotion Recognition Ability] and GERT[Geneva Emotion Recognition Test]) was raised in the SME consultation (see Section 4), and so is outlined here to supplement the eight-model data.

The GECo:

> ....has been built specifically for the workplace and for organizations: all scenarios and items describe situations and events that could happen in the workplace and are based on interviews conducted with managers and professionals during the first phase of the project. For each item there is a correct or a wrong response that is determined on the basis of multiple criteria: theoretical foundations, expert judgments, and consensus in the general population.
>
> (*GECo - Swiss Center For Affective Sciences - UNIGE*, 2018)

The new model of Emotional Intelligence used in the GECo defines 4 central competences:

1) Emotion recognition - the ability to accurately recognize emotions from other people's non-verbal expressions conveyed by the face, voice, or body.

2) Emotion understanding - the ability to understand the qualities, causes, and consequences of one's own and others' emotions.

3) Emotion management - the ability to effectively regulate other people's (usually negative) emotions through behavioural strategies.

4) Emotion regulation - the ability to create and maintain positive affective (or emotional) states and reduce negative affective states in oneself.

These competences break away from the 2x2 model (see Figure 1) as the emotional recognition competence focuses only on others, rather than on self, but respects the components of the quadrants across this framework. Its ability-based framework with a situational judgement test approach to assessment will be considered later in this thesis (6.2.7.1).

3.2.2 Mapping of the EI models

The main factors of each of the core models have been extrapolated into the mapping matrix in Appendix 1 where the detail can be reviewed. In addition, each Section of this

busy matrix is separated out and analysed throughout this section. An outline replica image of the core of the mapping is shown in Table 24 to illustrate the overall shape of the matrix.

EI Model Type	ABILITY BASED						MIXED MODELS										TRAIT BASED		Hay 1996
Commercial Partners	MHS		Genos Intl		NA		MHS		Hay/McBer+ KornFerry		Hay/McBer+ KornFerry		Hay/McBer+ KornFerry		Thomas Intl				FROM MCBER SCALED COMP DICTIONARY 1996
EI Measurement Tool	MSCEIT (was MEIS)	4	GENOS EI	7->8	SAARNI	8	EQI 2.0 BAR-ON	15	GOLEMAN (1998)	25	GOLEMAN(EQ 1.0) **later to EQ2.0	19 (18)	ESCI (BOYATZIS+GOLEMAN) 2017	12	TEIQUE (2009)	15	None Found	N/A	18
Assessment methodology	Rate the extent for 6/8. Right/wrong for 2/8 (expert) or consensus		Self+Multirater (focus on Workplace)		N/A (focus on well-being)		SELF-REPORT +/OR Multirater. (focus on Wellbeing)		SELF-REPORT. (Focus on Leadership).		SELF-REPORT and Multirater. (Focus on Leadership).		SELF-REPORT and Multirater. (Focus on Leadership).		SELF-REPORT. (focus on Workplace+Wellbeing)				
Facet	COMPETENCES	STYLES/ MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/MINDSETS/TRAITS	COMPETENCES/SKILLS	STYLES/ MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/ MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/ MINDSETS/ TRAITS	COMPETENCES/SKILLS	STYLES/MINDSETS/TRAITS	COMPETENCES/SKILLS	STYLES/MINDSETS/TRAITS	
SELF AWARENESS																			
	PERCEIVING EMOTIONS		EMOTIONAL SELF AWARENESS		AWARENESS OF OWN EMOTIONAL STATE		EMOTIONAL SELF AWARENESS		EMOTIONAL AWARENESS		EMOTIONAL SELF-AWARENESS		EMOTIONAL SELF-AWARENESS		EMOTION PERCEPTION				
			EMOTIONAL REASONING		USE COMMON EMOTION/EXPRESSION VOCABULARY				ACCURATE SELF ASSESSMENT		ACCURATE SELF-ASSESSMENT								
	UNDERSTANDING EMOTIONS									SELF CONFIDENCE		SELF CONFIDENCE							SELF CONFIDENCE
SELF MANAGEMENT																			
							IMPULSE CONTROL		SELF CONTROL		SELF CONTROL		EMOTIONAL SELF CONTROL						
	FACILITATING THOUGHT		EMOTIONAL SELF MANAGEMENT (AT WORK)		USE SELF REGULATION STRATEGIES FOR ADAPTIVE COPING WITH ADVERSIVE OR DISTRESSING EMOTIONS		EMOTIONAL EXPRESSION			TRUSTWORTHINESS					EMOTION REGULATION	ADAPTABILITY			
	MANAGING EMOTIONS		EMOTIONAL EXPRESSION				PROBLEM SOLVING	STRESS TOLERANCE		CONSCIENTIOUSNESS		CONSCIENTIOUSNESS			STRESS MANAGEMENT	IMPULSE CONTROL			ANALYTICAL THINKING
			EMOTIONAL SELF CONTROL		LEVERAGE EMOTIONAL SELF-EFFICACY TO ACHIEVE RESULTS		REALITY TESTING			ADAPTABILITY		ADAPTABILITY		ADAPTABILITY					
										INNOVATIVENESS		TRANSPARENCY							
SOCIAL AWARENESS								SOCIAL RESPONSIBILITY							EMOTION PERCEPTION				
	(PERCEIVING EMOTIONS)		EMOTIONAL AWARENESS OF OTHERS		DISCERN OTHERS EMOTIONS BASED ON SITUATIONAL CUES					POLITICAL AWARENESS		ORGANISATIONAL AWARENESS		ORGANISATIONAL AWARENESS	SOCIAL AWARENESS				ORGANISATIONAL AWARENESS
	(UNDERSTANDING EMOTIONS)		(EMOTIONAL REASONING)							SERVICE ORIENTATION		SERVICE ORIENTATION			EMPATHY				CUSTOMER SERVICE ORIENTATION
	(FACILITATING THOUGHT)									LEVERAGING DIVERSITY									ORGANISATIONAL COMMITMENT
SOCIAL INTERACTION MANAGEMENT									EMPATHY		EMPATHY		EMPATHY						INFORMATION SEEKING
									COMMUNICATION		COMMUNICATION		COMMUNICATION						IMPACT AND INFLUENCE
									INFLUENCE		INFLUENCE		INFLUENCE						DIRECTIVENESS
					BE EMPATHIC TO OTHERS' EMOTIONAL EXPERIENCES		EMPATHY		DEVELOPING OTHERS	LEADERSHIP	DEVELOPING OTHERS	LEADERSHIP	COACH AND MENTOR		ASSERTIVENESS				DEVELOPING OTHERS
	(MANAGING EMOTIONS)		EMOTIONAL MANAGEMENT OF OTHERS (AT WORK)		USE SELF PRESENTATION STRATEGIES THAT DISTINGUISH BETWEEN INNER STATES AND OUTWARD EXPRESSION IN SELF AND OTHERS		INTERPERSONAL RELATIONSHIPS		CONFLICT MANAGEMENT	CHANGE CATALYST	CONFLICT MANAGEMENT	CHANGE CATALYST	CONFLICT MANAGEMENT		EMOTION EXPRESSION	RELATIONSHIPS			INTERPERSONAL UNDERSTANDING
							ASSERTIVENESS		BUILDING BONDS		BUILDING BONDS				EMOTION MANAGEMENT				RELATIONSHIP BUILDING
					COMMUNICATE EMOTIONS TO MANAGE RELATIONSHIPS				COLLABORATION AND COOPERATION										FLEXIBILITY
									TEAM CAPABILITIES		TEAMWORK AND COLLABORATION		TEAMWORK						TEAMWORK AND COOPERATION
														INSPIRATIONAL LEADERSHIP					TEAM LEADERSHIP
SELF MOTIVATION								SELF REGARD		ACHIEVEMENT DRIVE		ACHIEVEMENT ORIENTATION		ACHIEVEMENT ORIENTATION		SELF ESTEEM			ACHIEVEMENT ORIENTATION
								SELF ACTUALISATION		COMMITMENT						SELF MOTIVATION			
								INDEPENDENCE		INITIATIVE		INITIATIVE				HAPPINESS			INITIATIVE
								OPTIMISM		OPTIMISM				POSITIVE OUTLOOK		OPTIMISM			INTEGRITY

Table 24 - Overview of core populated matrix

This is an amalgam of all eight core EI models and provides a dataset that helps with the identification of common factors for holistic analysis. Ninety-eight (86%) of the 114

factors from the eight core models in the vertical columns, mapped cleanly against the first four facets in the horizontal rows, and remaining 16 factors could be classified under self-motivation. None of the 16 factors are *abilities* and therefore would have no impact on the primary factors of any final EI model based on ability.

Some model developers claim the label 'trait' for their models. TEIQue is a good example as the 'T' stands for 'Trait' (see Section 3.2.1.1), yet the primary factors include *abilities* such as 'Impulse control', 'Adaptability', and the skills to build 'Relationships'.

No EI model based purely on traits was sourced, and therefore none of the eight models analysed could be labelled *trait*. This has implications for the EI research community as such 'mis-labelling' might mislead future researchers. This is illustrated by reviewing the matrix in Table 24 (or see in more detail in Appendix 1) and noticing those factors which had to be organised under the 'Competences/Skills' (*abilities*) column, rather than the 'Styles/Mindsets/Traits' column. All eight models contained *abilities*, such as *assertiveness*, *empathy* and *self-control*, as well as other qualities, such as *social responsibility* and *leveraging diversity* that do not fall cleanly under the adopted definition of *trait* when seen as a facet of personality.

Some abilities emerged that were common to multiple models. The common factors are highlighted in bold in Table 24 across the matrix (see also Appendix 1). In spite of the slight differences in terminology, there is obvious common ground. Indeed, the current author has been able to collate the common *ability* factors into three columns of the same matrix, as shown in Table 25.

	EXTRAPOLATED FATORS FROM CORE MODELS (Blue/Green shading = Ability/Mixed primary Model source)			
Domains	**COMMON FACTORS/ COMPETENCES (occurring three or more times across EI Core models)**			**TRAITS etc (extracted)**
SELF AWARENESS	EMOTIONAL SELF AWARENESS			SELF ESTEEM
		EMOTIONAL SELF AWARENESS	PERCEIVING EMOTIONS	SELF REGARD
		EMOTIONAL REASONING	ACCURATE SELF ASSESSMENT	SELF CONFIDENCE
		EMOTIONAL SELF AWARENESS	UNDERSTANDING EMOTIONS	INDEPENDENCE
				SELF ACTUALISATION
SELF MANAGEMENT	STRESS MANAGEMENT			SELF MOTIVATION
	SELF CONTROL			ACHIEVEMENT ORIENTATION
	EMOTIONAL EXPRESSION	IMPULSE CONTROL	EMOTIONAL SELF CONTROL	IMPULSIVENESS
	LEVERAGE EMOTIONAL SELF-EFFICACY TO ACHIEVE RESULTS	EMOTIONAL SELF CONTROL	MANAGING EMOTIONS	ADAPTABILITY
		EMOTIONAL SELF MANAGEMENT (AT WORK)	EMOTION REGULATION	CONSCIENTIOUSNESS
				OPTIMISM/HAPPINESS
	SOCIAL AWARENESS			INITIATIVE
SOCIAL AWARENESS	DISCERN OTHERS' EMOTIONS BASED ON SITUATIONAL CUES			POLITICAL AWARENESS
		(EMOTION PERCEPTION)	EMOTIONAL AWARENESS OF OTHERS	ORGANISATIONAL AWARENESS
		(UNDERSTANDING EMOTIONS)	(EMOTIONAL REASONING)	SERVICE ORIENTATION
		TRAIT EMPATHY	(FACILITATING THOUGHT)	SOCIAL RESPONSIBILITY
				LEVERAGING DIVERSITY
SOCIAL INTERACTION MANAGEMENT	COMMUNICATION			
	COLLABORATION AND COOPERATION			CHANGE CATALYST
	BUILDING BONDS	INTERPERSONAL RELATIONSHIPS	EMPATHY	RELATIONSHIPS
		CONFLICY MANAGEMENT	ASSERTIVENESS	LEADERSHIP
		INFLUENCE	EMOTIONAL MANAGEMENT OF OTHERS (AT WORK)	TEAMWORK AND COLLABORATION
				TRAIT HAPPINESS
				COACH AND MENTOR
SELF MOTIVATION				

Table 25 - Common abilities and trait measures

The trait factors used across the models have also been extrapolated from the eight core models into a fourth column. Colour coding has been employed to highlight whether the

primary (majority) origin of the factor was from *ability* (blue) or *mixed/trait* (green) models.

The fifth facet, or domain, (Self Motivation) in the lower Section of Table 25 includes the qualities of:

- Self-regard
- Self esteem
- Self-motivation
- Self-actualisation
- Independence
- Integrity
- Initiative
- Optimism
- Happiness
- Positive outlook
- Achievement orientation, and
- Commitment.

The current author posits that these are styles, mindsets, or traits, rather than abilities, based on the definitions established in Section 2.2Definitions and terminology, with most occurring only once across the eight core EI models. This domain of 'Self-Motivation' could, therefore, be put aside in a framework of abilities, as the other four facets can adequately capture all the abilities from all the models analysed.

3.2.3 Synthesis of the abilities from the core EI models

Having mapped all eight of the core EI models we are now able to extract and analyse the common ability elements that emerged within the four facets. In the populated core EI models matrix (Table 24), the common factors (three or more occurrences) were highlighted in bold to aid analysis. In addition, the current author revisited the literature behind the core models to examine what other data could be found, to clarify what the developers meant by the few words that they adopted into their models (for example, 'perceiving emotions'; 'impulse control'; 'social awareness'; 'influence'; etc.). This provided the foundation for the development of a framework of more descriptive abilities that could form the core of a new EI model, one which is based purely on ability, and drawing on the findings and outcomes from previous EI model research and

development. The following descriptors summarise the core abilities that were extracted in Table 25, aligned with the four main domains of *Self-awareness*, *Self-management*, *Social-awareness*, and *Social interaction management*. The EI models that featured each descriptor prominently is added (in parenthesis) to highlight the frequency that each descriptor occurred. These descriptors are not the exact wording of the factors used (due to semantic variations across researchers), though are informed by the factors, the detail in the literature, and the questions in the assessment instruments. Section references are provided here to minimise complexity within the Sections below:

- TEIQue (Section 3.2.1.1)
- ESCi (Section 3.2.1.2)
- ECI 2.0 (Section 3.2.1.3)
- GOLEMAN (Section 3.2.1.4)
- EQ-I 2.0 (Section 3.2.1.5)
- SAARNI (Section 3.2.1.6)
- GENOS (Section 3.2.1.7)
- MSCEIT (Section 3.2.1.8).

3.2.3.1 Self-awareness

Self-awareness encompasses abilities relating to *awareness*, working out or *perceiving* what emotions we are sensing and feeling, so that we can reason and *understand* the reason(s) we might be experiencing the emotion. The ability factors used by the developers of the core EI models included:

- Emotional self-awareness (GENOS/EQI-2.0/Goleman/ESCi)
- Perceiving emotions (MSCEIT/TEIQue/SAARNI)
- Accurate self-assessment/Emotional reasoning (GENOS/Goleman/ECi-2.0)
- Understanding emotions (MSCEIT/SAARNI/GENOS)

3.2.3.2 Self-management

The abilities that fell within this facet centred around:

- Emotional self-control (EQI-2.0/Goleman/GENOS/ECi-2.0)
- Emotion expression (EQI-2.0/GENOS/SAARNI))
- Emotion regulation appropriate for context/goal (TEIQue/GENOS/MSCEIT)
- Emotion self-management (MSCEIT/GENOS/ECI2.0/Goleman/ESCI)

- Stress management (TEIQue)
- Leverage emotional self-efficacy to achieve results (SAARNI).

These descriptors suggest that self-management is about what an individual chooses to do (that is, control impulses and emotions) once they have worked out what emotion he/she is experiencing, and the ability to appraise the usefulness of the emotion to their goals (results). Self-efficacy is defined, in general applications as a person's belief in his or her "ability to effect change in his or her life, achieve goals, or produce desired results" (Oxford Dictionary, 1989). In an EI context, the current author suggests that self-efficacy might be better defined as *our ability to influence our own thinking and behaviour to produce a desired or intended result*. This is influenced by the observation that the abilities within this facet seem to be concerned with expressing, controlling and/or regulating the impulses and behaviour that the emotion is designed to generate. Emotion regulation also included abilities to initiate appropriate emotions to support a future task. This was significant in the MSCEIT model where one of the branches is about *facilitating thought using emotions* (see Table 23) and includes the proactive *generation of emotions* to support what is going on as a type of reasoning within the branch.

3.2.3.3 Social-awareness

This facet encompasses the following abilities:

- Perception and awareness of emotions of others (MSCEIT/GENOS/SAARNI/TEIQue/ ESCI/ECI 2.0)
- Understanding emotions of others (TEIQue/SAARNI/MSCEIT/GENOS)
- Trait empathy – awareness of, and connection with, others' styles and preferences (TEIQue/ESCI/ECI 2.0/Goleman/EQI-2.0/SAARNI)
- Facilitating thought - appraisal of potential (inter-)actions (MSCEIT)
- Discern others' emotions based on situational cues (SAARNI).

The abilities within this facet are all concerned with *awareness*, *perception*, and *understanding* of the emotions of others within a situation to help us to appraise what we might do next.

3.2.3.4 Social interaction management

This facet is about what we choose to do to *influence* others. The ability to initiate, sustain and resolve interactions with others based on the emotions of self and those we interact with. The facet includes the following abilities from the core EI models (Table 6):

- Empathy -understanding and sharing/exhibiting emotions (TEIQue/ESCI/ECI 2.0/Goleman/EQI-2.0/SAARNI/MSCEIT)
- Building bonds - rapport and understanding (ECI2.0/Goleman
- Collaboration and cooperation (ECI2.0/Goleman/ESCI)
- Communication - two-way (ECI2.0/Goleman/ESCI)
- Interpersonal relationship building (SAARNI/TEIQue/EQI2.0)
- Conflict management (ECI2.0/Goleman/ESCI/TEIQue)
- Emotional management of others - as appropriate for the context/goals (MSCEIT/TEIQue/SAARNI)
- Assertiveness (TEIQue/EQI2.0)
- Influence (ECI2.0/Goleman/ESCI).

3.2.4 Core EI abilities from the mapping

This synthesis work revealed three themes through the four facets of EI:

- *awareness* and *perception* of our own and others' emotions,
- *understanding* those emotions, and then using this information to
- *influence* our own and others' thinking and behaviour.

The results of this disaggregation can be reconstructed into ability descriptors that might then form the core of a new EI model (see below). They are captured here within twelve ability descriptors, organised within the four facets. The inclusion of specific contexts (work/leadership/well-being, etc.) is avoided here (and throughout) in the hope that this new EI model can be applied in any context in the future.

- Self-awareness:
    - perceive and label own emotions as they occur;
    - identify and anticipate triggers for own emotions;
    - appraise appropriateness of initial emotional reactions to goals.
- Self-management:
    - interrupt initial thoughts and own emotional reactions where appropriate;
    - adopt strategies to manage own emotions when appropriate;
    - initiate and regulate emotions to support goals.
- Social awareness:
    - read others' emotional signals across multiple communication channels;
    - hypothesize about others' emotional signals;

    - appraise options for own actions relative to goals.
- Social interaction management:
    - engage others appropriate to goals;
    - interact appropriately to analyse and understand others;
    - influence others towards goals.

These can be inserted into the template that was used for the mapping of the eight core EI models as shown in Table 26. This *Emotionintell* matrix (labelled *Emotionintell* to enable easy referencing) allows for general application contexts that have emerged from the research (namely, interviewing, leading, managing, relationship-building, meeting, developing, supporting, negotiating, competing and performing), along with the styles/attitudes/traits extracted and 'de-duplicated' from across the eight core models.

EI Model Type	ABILITY BASED		
Ei Measurement Tool	Emotionintell*	12	
Assessment methodology	TBC (to be confirmed)		
Domains	COMPETENCES/SKILLS (WITH UNDERPINNING SKILLS/ KNOWLEDGE/ UNDERSTANDING)	APPLICATIONS (TASKS)	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR	Treatment of these TBC. _____ Interviewing Relationship-building Meeting Leading Managing Developing Supporting Negotiating Competing Performing	Treatment of these (drawn from other models) TBC. _____ Trustworthiness. Achievement-orientation. Service-orientation. Achievement-drive. Optimism. Initiative. Empathy. Compassion. Commitment. Leveraging-diversity. Political-awareness. Innovativeness. Adaptability. Conscientiousness. Self-confidence. Organisational-awareness. Efficiency-orientation. Attention-to-detail. Social-responsibility. Self-regard. Self-motivation. Self-actualisation Independence. Adaptability. Impulsiveness. Self-esteem. Trait-happiness. Trait-optimism.
	IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS		
	APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO CONTEXT AND GOALS		
SELF MANAGEMENT	INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE		
	ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE		
	INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS		
SOCIAL AWARENESS	READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS		
	DISCERN OTHERS' EMOTIONS BASED ON CONTEXT		
	APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO CONTEXT AND GOALS		
SOCIAL INTERACTION MANAGEMENT	ENGAGE OTHERS APPROPRIATE TO THE CONTEXT AND GOALS		
	INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS		
	INFLUENCE OTHERS TOWARDS GOALS		
SELF MOTIVATION			

*Emotionintell = name of the EI model outcome of this study.
"TBC" = not established at this stage of this research project (see Section 6).

Table 26 - Aggregation of common competences, applications and traits (Emotionintell)

The common competencies/abilities in column 2 (in Table 26) provides the primary (ability) factors clustered across the four domains to provide the core of the new EI model

(see Section 5.2.5),. Column three provides the data for the applications of EI (to be addressed in Section 5.2.4), and column four collates all the non-ability factors from the eight core EI models for later analysis (see Section 5.2.2).

3.2.5 Outliers from the mapping

The mapping exercise has revealed an unusual pattern of *identical* trait descriptors adopted by four of the five mixed/trait models in Table 24, including the following:

- organizational/political awareness;
- achievement drive/orientation;
- teamwork/cooperation/collaboration;
- service orientation;
- relationship/bond building;
- developing others; and
- initiative.

The current author hypothesised that this could merely be a coincidence, or it could be an indicator of a common influence affecting the design of some of the EI models. Following in-depth searches, the literature revealed that most of these common terms are identical or similar to entries in the McBer[8] Scaled Competency Dictionary (SCD). The SCD competences are added into the last column of Table 24 (see also the full dataset spreadsheet in Appendix 1). This helps in the review of the potential influence of this commercial entity on existing, and emerging, EI models. They are extracted here in Table 27 for ease of reference and mapped into the analysis template.

[8] McBer and Hay Group combined under Saatchi and Saatchi in 1984.

EI Model Type	MIXED
Ei Measurement Tool	FROM MCBER SCALED COMP DICTIONARY 1996. (18)
Assessment methodology	SELF-REPORT + MULTI-RATER
Domains	
SELF AWARENESS	SELF CONFIDENCE
SELF MANAGEMENT	CONCEPTUAL THINKING
	ANALYTICAL THINKING
SOCIAL AWARENESS	ORGANISATIONAL AWARENESS
	CUSTOMER SERVICE ORIENTATION
	ORGANISATIONAL COMMITMENT
SOCIAL INTERACTION MANAGEMENT	INFORMATION SEEKING
	IMPACT AND INFLUENCE
	DIRECTIVENESS
	DEVELOPING OTHERS
	INTERPERSONAL UNDERSTANDING
	RELATIONSHIP BUILDING
	FLEXIBILITY
	TEAMWORK AND COOPERATION
	TEAM LEADERSHIP
SELF MOTIVATION	ACHIEVEMENT ORIENTATION
	INITIATIVE
	INTEGRITY

Table 27 - Hay/McBer Scaled Competency Dictionary 1996

Commercial relationships were found to be present, as Goleman (who was involved with three of the EI core models – Goleman, ESCI[9], and ECI 2.0[10]) and the Hay Group[11] collaborated in the 1990s. Goleman's colleague, Richard Boyatzis, was a past president of

[9] See http://www.danielgoleman.info/ei-assessments/

[10] http://www.eiconsortium.org/pdf/ECI_2_0_Technical_Manual_v2.pdf

[11] https://www.kornferry.com/haygroup

Hay/McBer. The influence of the McBer SCD, scaled from the 1993 Lyle Spencer and Signe Spencer competences, published in *Competence at Work* (Spencer and Spencer, 1993), is evident in the original Goleman (1998) model, the Goleman ECI2.0 model and the Boyatzis and Goleman ESCi model, and may explain some of the changes in EI competency labels from the 1990s to the current day. Many of the SCD factors found their way, almost intact, into the Goleman, ECI2.0 and ESCi models. These factors included, for example, *Service Orientation*; *Achievement Orientation*; *Organisational/Political Awareness*; *Influence*; as well as *Teamwork and Cooperation*. The current author could not locate research to support these adaptations and, therefore, hypothesises that this may have been influenced by commercial benefits, as the author posits that these developments are likely to have enabled Hay/McBer (now KornFerry[12]) to access the growing EI market with their existing, generic/leadership competences.

With these SCD 'competences' isolated, what remains across the mixed/trait models are primarily to do with abilities/skills such as:

- empathy;
- self-control (emotions/impulse);
- emotion expression;
- regulation/management of emotions;
- communication;
- social awareness;
- influence;
- conflict management; and
- assertiveness.

3.2.6 Results of the analysis of the factor mapping and the related literature

The results of the mapping and review are distilled and listed here, in summary format, as twelve key challenges that build upon each other to guide this research investigation. The list is followed by extracts from the literature and critical review, and then these challenges are revisited in the conclusion highlighting the extent to which this study and

[12] https://www.kornferry.com/haygroup

its new EI model address each of these challenges (see Section 7.1). The twelve challenges (presented as statements, questions or arguments) are:

1. Should primary factors in EI models consist of a mix of abilities and traits?
2. Trait EI and personality correlate.
3. Untangling the domains of emotion from cognition.
4. EQ should positively correlate with IQ.
5. Trait EI and IQ do not correlate.
6. Does high EI means we are a nice person and vice versa?
7. EI is sometimes context-specific.
8. Self-report EI assessment can be faked.
9. EI needs to factor in *appropriateness* of behaviour towards *goals* within the micro and macro *context* that applies.
10. Can EI be developed?
11. Is there a conflict between EI model development and commercial test instrument interests?
12. Which are the EI primary factors?

The following twelve paragraphs expand on each of these.

1. **Should primary factors in EI models consist of a mix of abilities and traits?** Traits and abilities have generally been accepted as interrelating yet opposing constructs (Eysenck, 1994; Zeidner, 1995) and therefore should not be mixed as primary factors in an EI model. It has been demonstrated in Section 3.2.1 that the majority of the core EI models scoped for this research have traits as part of the primary factors (see these mixtures of factors in five of the eight EI models scoped for this current research in Sections 3.2.1.1, 3.2.1.2, 3.2.1.3, 3.2.1.4, and 3.2.1.5, labelled in this current thesis as TEIQue, ESCi, ECI 2.0, Goleman, and EQ-I 2.0). Two more recent studies from within a collection of 28 studies, brought together under a special collection on Trait Emotional Intelligence (Pérez-González et al., 2020), suggest that a combination of constructs within the overall EI construct may collectively help traits to have a place in EI measurement. First is the Integrated Model of Affect-Related Individual Differences (IMARID), which explores the inter-relation of "existing models of cognitive ability (ability EI), personality (trait EI), and emotion regulation (EI competences)…[as] a

theoretically driven agenda for future research" (Hughes and Evans, 2018:1). Secondly, there is the *PAT* approach, which represents the Emotion Information Processing (EI**P**), ability EI (**A**EI), and trait EI (**T**EI), and which takes a similar approach and puts forward the argument that "different approaches of EI may be interwoven [, and in so doing, this] ....is of primary importance for clarifying the conceptualization of EI and organizing the literature around it" (Vesely Maillefer et al., 2018:1). They go on to suggest that a theoretical framework where "trait EI, ability EI, and emotion information processing…[can] contribute effective emotion-related performance and provide initial evidence supporting its usefulness in predicting EI-related outcomes" (2018:1). Some EI model developers and researchers are therefore either mixing traits into the primary ability factors (see these mixtures of factors in five of the eight EI models scoped for this research in Sections 3.2.1.1, 3.2.1.2, 3.2.1.3, 3.2.1.4, and 3.2.1.5, labelled in this thesis as TEIQue, ESCi, ECI 2.0, Goleman, and EQ-I 2.0), or featuring traits into the EI framework by mixing multiple constructs as highlighted in this paragraph (as *IMARID* and *PAT*). The current author suggests that these approaches might contaminate the EI models if the goal is to classify the model as an *intelligence*, and this approach is, therefore, avoided in this current research.

2. **Trait EI and personality correlate.** One study (referred to in Section 2.3) suggests that EI was found to be "negatively and significantly correlated with Neuroticism, and positively and significantly correlated with Extraversion, Openness, Agreeableness and Conscientiousness" (Saklofske et al., 2003:707). However, this (Saklofske et al., 2003) and other studies (for example, Law et al., 2004) suggest that the EI concept is not fully reducible to personality and IQ, and a more recent meta-analysis by O'Boyle Jr et al. (2011) provided positive results about the EI's role in work outcomes, even when the personality and intelligence were controlled for. In O'Boyle Jr et al.'s meta-analysis (2011:494), moreover, "after controlling for relevant variables and the Big Five personality dimensions, EI still accounted for more than 10% of the variance in in-role and extrarole performance when peer ratings of EI were used".

3. **Untangling the domains of emotion from cognition.** This separation is necessary so that assessment of a person against an EI model is seen to be clearly assessing *emotional* abilities, rather than *cognitive* skills. For example, a person's decision-making ability in interactions could be strong, either "because their cognitive processing skills are generally better… [or/and] because they are open to their own

and others' emotional reactions" during the decision-making process (Mayer and Geher, 1996:91).

4. **EQ should positively correlate with IQ.** Orchard et al. (2009) claim, amongst others (Mayer et al., 1999a; MacCann et al., 2014) states that "EI should show positive manifold with other established tests of intelligence"(2009:322). They add that the strength of a model depends on a positive correlation between EI and IQ, since they measure the same overall construct of intelligence "demonstrating the positive manifold (that is, consistent positive correlations) found among intelligence tests" (2009:322). The current author posits that this just might be flawed. Generic IQ (known as 'g') and 'e', the current author's reference for generic EI when it is defined, structured and measured well, may not correlate positively. EI and IQ may not correlate or, indeed, could even be negatively correlated. The answer to this is not known. However, what is known is that high academic achievement correlates with high IQ at a level somewhere between 'moderate to strong' (Jencks, 1979; Herrnstein and Murray, 1994; Fischer et al., 2018). What is still not clear, though, is whether that 'smartness' make us less receptive, attentive and empathic towards the inputs and perspectives of others. Until an e-factor measure of EI is developed it is not possible to correlate EI with IQ, although it is possible to pose this question to EI SMEs. The findings of this consultation can be found in Section 4.2.1.

5. **Trait EI and IQ do not correlate.** In the same way that trait EI and personality have been shown to correlate (see paragraph 2 in this section), Petrides and Furnham (2001), state that if trait EI is argued to be a personality construct, then "one should not expect it strongly to correlate with measures of psychometric [IQ] intelligence" (2001:437). Reinforcement of this trait EI versus IQ disconnect is supported at a wider level by the weak correlations found between personality traits and [general] intelligence (Ackerman and Heggestad, 1997). This suggests that trait or mixed EI models (including those five EI models[TEIQue, ESCi, ECI 2.0, Goleman, and EQ-I 2.0] covered in Sections 3.2.1.1, 3.2.1.2, 3.2.1.3, 3.2.1.4, and 3.2.1.5), might need to reflect on including the label *intelligence* in their competency models and assessment instruments.

6. **Does high EI means we are a nice person and vice versa?** There may be assumptions by raters that a high EI score means we are a *nice person*, and vice versa. This bias is

known as the 'Halo-Effect', which is the tendency for an impression created in one area to influence opinion in another area. This term was first coined within a paper entitled *The Constant Error in Psychological Ratings* (Thorndike, 1920a). In the two (1915) experiments described in the paper, Thorndike asked commanding officers in the military to evaluate a variety of qualities in their subordinate soldiers. These characteristics included such disparate issues as leadership, physical appearance, intelligence, loyalty, and dependability. The correlations were judged by Thorndike to be too high and too evenly spread across the disparate factors, and therefore more likely to be a result of the Halo-Effect. Conversely, just as an immoral, narcissistic person could attain and misuse a high IQ, the same applies to EI. Some people may wish to develop EI not only to win at poker, to compete in a business arena, or to beat others in competitive sports, but also to serve less socially acceptable, selfish motives. This may mean that *openness*, *win-win intent*, *wellbeing*, and other prosocial qualities, although socially desirable, should not feature in an *e*-factor framework. There is a *dark side* to EI, as there is in leadership, which is a fine line between influence and self-serving manipulation and other deleterious outcomes. There is also a common perception of EI that it is a desirable moral quality, rather than an ability. Indeed, this dark side of EI has been described as "the strategic disguise of one's own emotions and the manipulation of others' emotions for strategic ends are behaviors [*sic*] evident… in the offices and corridors where power and influence are traded" (Kilduff et al., 2010:147). More recently, Davis and Nichols (2016) have argued that:

> ....individuals who possess high levels of skill but have lower self-perceptions of their abilities fare worse that those with more balanced profiles. Future research must now improve methodological and statistical practices to better capture EI in context and the negative corollary associated with high levels.
>
> (2016:1).

Consequently, it seems desirable that a generic EI model needs to remain neutral of positive and negative value-laden bias.

7. **EI is sometimes context-specific.** IQ is context-independent, and it is often used by organizational gatekeepers to filter and select individuals for education and carer pathways. A generic *e*-factor for EI would, therefore, need to be equally context-independent and, as far as practically possible, should be free from specific, restrictive or contaminating frames such as leadership, management, team building, worker, and

well-being, (the primary contexts of the core EI models scoped for this study), so as to enable independent application across contexts. Alternatively, EI assessment would have to be set in a generic context that most test-takers can relate to, though the results in an EI score should be able to predict similar performance across a range of real-world situations (*ecological validity*). In other words, that it measures transferrable abilities. There is a need to demonstrate that the construct of EI "has some value as a basis for predicting, explaining and influencing behavior [*sic*] across some reasonable range of relevant situations" (Murphy, 2014b:344).

8. **Self-report EI assessment can be faked.** Assessment methodology needs to be fit for purpose. Self-report, multi-rater, consensus and expert scoring all have their strengths and flaws. Self-perception (for example, 'how I would respond in x situation'), features prominently within many EI instruments and this is often criticised as being "susceptible to faking" (Pauls and Crost, 2004:1137), which often results in a response pattern in which test-takers tend to represent themselves with an excessive positive bias. This, and other assessment challenges, will be explored in depth in Phase IV (Section 6), which examines the second aim of this project, which is identifying an appropriate methodology for assessment of the *e*-factor.

9. **EI needs to factor in *appropriateness* of behaviour towards *goals* within the micro and macro *context* that applies.** This includes cultural, personality, and other individual differences. Since nothing happens in a vacuum, Brody (1988) covered this issue in terms of the importance of context in an experimental environment, focusing on the primary physical *micro*-context. He recognized that "a room may be poorly ventilated, and the effects of a less-than-perfect atmosphere may lead individuals to be irritable and uncomfortable – thus changing their characteristic social behaviour" (Brody, 1988:22; see also, Cherniss, 2010 and Jordan et al., 2010 on the issue of *context*). The traits of self and other(s) are also key, as it is claimed that there is "a general consensus in favour of the interactionist position that both traits and situations are important influences on behaviour" (Boyle et al., 2008:14-15). In addition, to ensure ecological validity, for the varied environments that are faced in life and work, attention is also needed with the idea that most people can be emotionally intelligent when things are in the *green* of a metaphorical traffic light signal, in other words, when things are going well. The model and measures arguably also need to challenge learners and test-takers when things are in the *amber*

(emotionally charged) zone and the *red* (high-stakes) zone of the metaphorical traffic light, in order for the model to achieve this ecological validity.

10. **Can EI be developed?** Intelligence is often deemed to be fixed relative to age when considering IQ, but it may also be the case that EI can be developed, which some feel that it can (Higgs and Dulewicz, 2016). If then EI can be developed, perhaps all intelligences need to be redefined as 'learnable'.

11. **Is there a conflict between EI model development and commercial test instrument interests?** There may well be issues as to how scientists handle the ethics and conflict of interests when reviewing new approaches and defending models under the non-disclosure agreements which may exist with commercial producers and distributors of assessment instruments based on these models? Most researchers cited in this current research sometimes openly declare their commercial interests as, for example, Mayer, Caruso and Salovey (2016) do, by stating that they "receive royalties from Multi-Health Systems on sales of the… MSCEIT and MSCEIT-YRV" (Mayer et al., 2016:298). Indeed, reputable publishers of empirical research insist on this type of disclosure. Researchers may also have the additional pressure (from developers, distributors and users) to produce cost-effective, quick assessment approaches, rather than more substantial instruments that might be expensive; could take a long time to complete; and may be difficult to produce. The current author expects that a counter for this would be that there is a compromise between 'good enough' and 'time and cost' though this does not seem to be a prominent argument in the EI literature. In addition, once a reliable measure is developed there may be a need for studies that identify (or create) a simple 'test' that is easy to administer, that produces the same or similar results for the same individual.

12. **Which are the EI primary factors?** The issue needs to be addressed as to which factors should feature as the core of an EI framework, for example, knowledge, skills, abilities, attitudes, traits, or any other relevant factors. Although the literature referenced in this section has highlighted how traits can distance EI from being classified as an intelligence (see paragraphs 1, 2 and 5) this challenge is revisited in the SME survey and (Section 4.2.3) and analysed and developed in Sections 5.2.2 and 5.2.7, with a summary in the conclusion in Section 7.1.12 .

These 12 key challenges serve to drive the analysis work through the current research project and are revisited in the Conclusion (Section 7) of this thesis with a summary of how this research has addressed each of them.

3.3 Implications for next phase and future research

The previous issue regarding the decision as to which factors make up the core of EI is primary in deciding a way forward. The research and the definitions, when the aim is to develop an EI model that can be classified as an *intelligence*, supports the hypothesis that EI needs to be based on *ability*. The adoption of traits into the primary factors of the majority of EI models (six of the eight models core to this study) is perhaps the result of researchers and practitioners recognising the significance of traits on EI performance (see Section 5.2.7). The current author recognises this value and, therefore, the principle that an ability EI model must respect and integrate the moderating effect and the value of traits, amongst other individual differences, and their impact on EI performance.

This was also the conclusion from an in-depth review by Jordan et al. (2006) that was published in a text which is highly relevant to the current research, and is entitled *A Critique of Emotional Intelligence* (Murphy, 2014a:14). In this review, Jordan et al. sum up the sentiment from across the literature by arguing that the introduction of elements of personality or traits into models of EI has:

> ....confounded our understanding of the area. While the use of broad models and measures of emotional intelligence increases the likelihood that the construct will predict human behavior [*sic*], it does not contribute to the incremental validity that researchers of emotional intelligence seek. The way forward is to use models of emotional intelligence that are less contaminated by personality constructs.
>
> (Jordan et al., 2006:205)

The key point here is that Jordan and colleagues are not arguing that there is no place for personality constructs in EI, rather that they seem unsure as to how personality or traits can be built into an EI model in a way which enhances the construct, as opposed to contaminating it. That challenge will be addressed in Sections 3.2.6 (paragraph 9) and Section 5.2.7 of this study by factoring traits of self and others into the contextual considerations of applied EI when *appropriateness* decisions are being made.

This analysis work has enabled the organisation of the mass of research literature around EI models from over the past twenty years into twelve statements, questions and

challenges. The main benefits of this analysis, following the literature review, are three-fold:

- they helped to focus the development and research work for this thesis;
- they provide a framework to evaluate the results of this research in the Conclusion (Section 7); and
- they create a distilled summary of the EI model related literature for other researchers.

The methodology, findings and implications of the SME review relating to these Phase I findings (Section 3.2) are covered in the following section, Section 4 (Phase II).

Section 5 (Phase III) also factors these results into the theoretical model, and Section 6 (Phase IV) will then draw on all three phases to propose the appropriate assessment methodology.

4 Subject Matter Expert Consultation (Phase II)

The decision to incorporate an SME consultation phase was taken for several reasons. First, as this is a critical analysis and development research project with the aim of producing a new EI model, the current author invited expert opinion into the analysis from around the world, and from those across the trait-ability model schism, so that the results and conclusions could be scrutinised. This would open responses to key questions, and the emerging outcomes of this study, to scrutiny and evaluation from this community of practice. Secondly, the global mix of the experts would also open the concepts, principles, definitions, and factors (underpinning the draft EI model) to testing from experts across different continents and, therefore, their different cultures. Third, the consultation with experts (conducted in 2019) opens up the research to thinking and experience informed by the latest thinking, and possibly unpublished, EI research and practice.

This phase includes three sub-sections:

- Methodology Section – how the data was collected and/or generated and how it was analysed including anticipated problems and how they were handled;
- Findings Section – the results and the analysis;
- Implications and where next – how these findings feed into the next phase and future research.

4.1 Methodology

The current author was fortunate in securing the support of three of the top researchers in this field as initial advisers to this project (they cannot be named due to ethics/confidentiality controls). This early consultation was based on semi-structured interviews (one was allowed to be recorded) and these helped the current author to identify some of the major challenges in the EI research field, and these conversations also helped in the creation of the SME survey.

The key questions that evolved from these discussions follow (though these were included within the full questionnaire along with ethics and confidentiality notes (extracted from SurveyMonkey online format into a readable format in Appendix 2).

The SME core questions and response options are listed here (most questions also had a comments box facility [see Appendix 2]):

1. Do you believe it is feasible to create a generic Emotional Intelligence framework and assessment model that parallels the generic IQ model? *[Yes/No]*
2. Do you believe a generic Emotional Intelligence assessment model already exists that provides a reliable measure of EI that parallels the way IQ tests measure general intelligence? *[Yes/No]*
3. There are numerous definitions of 'Emotional Intelligence'. Could you generally support the following definition which has attempted to capture the core of all the other definitions? *"Emotional Intelligence is the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals." [Yes/No/* If 'no', how would you change the definition to be acceptable to you?*]*
4. There are numerous definitions of 'Ability'. Could you generally support the following definition which has attempted to capture the core of all the other definitions? *"Ability is the possession of the means or skill to do something." [Yes/No/* If 'no', how would you change the definition to be acceptable to you?*]*
5. There are numerous definitions of 'Trait'. Could you generally support the following definition which has attempted to capture the core of all the other definitions? *"Trait is a distinguishing quality or characteristic, typically one belonging to a person." [Yes/No/* If 'no', how would you change the definition to be acceptable to you?*]*
6. There are numerous definitions of '*Competency*'. Could you generally support the following definition which has attempted to capture the core of all the other definitions? *"Competency - the ability to do something successfully or efficiently." [Yes/No/* If 'no', how would you change the definition to be acceptable to you?*]*
7. What do you believe should be the primary factors for a generic Emotional Intelligence model? [Traits/Abilities/Mixture of traits and abilities]
8. To what degree would you hypothesize that a reliable measure of Emotional Intelligence might correlate with IQ? [High positive correlation/High inverse correlation/No or low correlation]

9. Do you believe Emotional Intelligence can be developed in people? [Yes/No/Don't know]
10. Do you classify the following as a "Skill or Ability" or as a "Trait" [A cross section of factors were then provided for SME judgement (see Appendix 2)].
11. Please confirm your agreement or disagreement that each of the following 'knowledge/understanding, skills and competency' components should be present as a positive feature in an Emotional Intelligence model. The aim here being to identify what components should/should not be included in an EI model so that a model and a taxonomy can be built that would help develop individuals with high EI. [A wide range of 'knowledge/understanding, skills and competency' components were then provided, with options to *Strongly agree/Agree/Disagree/Strongly disagree* (see Appendix 2)].
12. Without consideration of cost and difficulty in terms of design and development, to what degree are the following assessment methods appropriate for reliably measuring Emotional Intelligence? [A range of nine assessment methods were then provided, with options to judge as having *No value/Low value/High value/Very valuable/Don't know* (see Appendix 2)].

Due to the criticism of the MSCEIT approach to SME selection (see Section 3.2.1.8), it seemed wise for to pose these questions to subject matter experts who cover the academic/practitioner divide; those who are recognised as experts by an independent party, rather than by the current author. The participants in this questionnaire survey need to be recognised as subject matter experts (SMEs) in EI, and the current author needed to ensure that he did not draw from his own network. It was deemed important to guard against any unwitting substantive bias in the SME identification, due to the current author's own work in the field of emotions and emotional intelligence. This meant resisting the temptation to approach the current author's own network of SMEs, especially as some of them are associates and friends. As this consultation was being conducted within the framework of a doctoral study, a Director of Studies and two Psychology Supervisors were consulted and they supported the idea of approaching the total membership of a consortium of EI researchers, the *Consortium for Research on*

Emotional Intelligence in Organizations (CREIO)[13]. SMEs were then chosen based on the criteria for membership of the consortium (*CREIO*, 2019), namely, their:

- having published several [not quantified] empirical journal articles and/or empirically-based books on the topic of emotional or social intelligence;
- currently being involved in research or interventions relating to emotional or social intelligence;
- passion for promoting emotional or social intelligence through research; and
- expertise enhancing the consortium's capabilities.

The mission of the non-profit CREIO, formed in 1996, is to advance research into the practice of emotional and social intelligence through the generation and exchange of knowledge. The CREIO website features eleven assessment instruments from across the ability/mixed/trait model range. These are:

- Bar-On Emotional Quotient Inventory*
- Emotional and Social Competence Inventory*
- Emotional and Social Competence Inventory - U
- Geneva Emotional Competence Test (GECo)
- Genos Emotional Intelligence Inventory*
- Group Emotional Competency Inventory
- Mayer-Salovey-Caruso EI Test (MSCEIT)*
- Schutte Self Report EI Test
- Trait Emotional Intelligence Questionnaire (TEIQue)*
- Work Group Emotional Intelligence Profile
- Wong's Emotional Intelligence Scale.

(* see next page for explanation of the five asterisked assessment instruments)

CREIO state on their website that they:

> ....have reviewed many of these tests and selected those for which there is a substantial body of research (at least five published journal articles or book chapters that provide empirical data based on the test). However, inclusion of a test on this web site does not constitute an endorsement of that test by the Consortium for Research on Emotional Intelligence in Organizations.

[13] http://www.eiconsortium.org/members/consortium_membership.html

(*CREIO*, 2019).

In addition, they also state that they do not sell or endorse any of these instruments.

Five of these CREIO models (*) are included as one of the core models, which fell within the scoping criteria of Phase I of the current research (see Table 6). One of the eight core models (SAARNI), does not have an assessment instrument, and the remaining two were developed by Goleman. The current author is unsure whether this exclusion by CREIO is due to them not meeting the CREIO criteria, or whether they are excluded to avoid a conflict of interest, as Goleman is Co-Chair of CREIO. The remaining six CREIO models fell outside the scope of the current research due to them failing to meet the inclusion criteria, namely:

- featuring in 15 or more peer reviewed publications in the last twenty years on the SCOPUS database (accessed 21 November 2017), and, *in addition,*
- generating more than 20,000 results on a Google search when the title of the model and the words 'Emotional Intelligence' were entered as essential search terms.

CREIO had 105 individual members at the time of the survey (March 2019) from across North America, Europe, the Middle East, Asia and Australia. This global reach helps to maximise the chances that the data collected could factor in cross-cultural perspectives. A challenge and the benefits of choosing this group is that many members have spent their careers working on EI models and related assessment instruments. This helps to provide scrutiny from those heavily involved in the EI field, though the current author had early concerns around how members might handle their conscious and sub-conscious biases, since some have commercial contracts with corporations who market and sell their instruments. It was felt by the current author that such allegiances might lead some developers and researchers to resist any model that is at odds with their own. It was expected, however, to see honest and objective appraisals and feedback from these professionals, even where this was directed towards the methodologies and model(s) they had adopted themselves. This expectation is supported by the culture of peer-reviewed, academic research and the many examples of self-critique revealed in the literature including, for example, the admission that there are "technical imperfections that are a part of any real-life form of measurement, and [also] acknowledging that

improvements in the MSCEIT and measurement in the area are desirable" (Mayer et al., 2012:407).

The full survey questionnaire used in this research is included in this thesis as 'Appendix 2 – SME Questionnaire' so as to enable open scrutiny. The current author also developed a participant information sheet, which made clear that responses would be anonymised and that participants could withdraw their participation at any time (see page 1 of the questionnaire in Appendix 2). All those who participated also completed a participant consent form and confirmation that ethical clearance had been granted for the project by the University. The current author designed a review feature into the survey, asking SMEs to declare their interests, with an option was offered to them to respond with 'prefer not to say' (see question 34 in the questionnaire in Appendix 2). This was incorporated to maximise the chances of the more involved researchers responding to the survey. This was reinforced with strict confidentiality and ethical controls.

The Co-Chair of CREIO was approached, in order to adopt the proper protocols for this consultation. This included a central email about the project to all 104 members[14], followed by emails to each member inviting them into an online survey. SurveyMonkey was utilized as the platform because of its secure features and built-in data analysis facility. The survey was tested with a group of four SMEs outside the CREIO network to establish functionality and completion times. This revealed a duplicate question, which was removed, and an average completion time of 24 minutes. The estimated completion time was added to the survey invitation.

The survey was conducted online from 8th March to 22nd March 2019 with the 104 subject-matter experts (SMEs) allowing 14 days for SME completion. Although this may seem a short period, this timeframe was chosen to minimise inter-expert collusion and to capture responses that were relatively synchronous. Following the invitation, and three automated reminders on 15th, 20th and 21st March to non-responders, 43 responses (n=43 [41%]) were received from across the global membership.

The dataset emerging from the research is included as 'Appendix 3 – SME responses'. The SME responses exclude the free text comments to protect anonymity, though some

[14] author excluded himself from the 105 members in this 2019 study. (In 2020 members increased to 106).

comments have been included in this section where necessary, albeit detached from the Unique Reference Number (URN) related to each SME respondent. Confidentiality was necessary as CREIO members include prominent EI scientists who would be identifiable due to references to their own work. A confidentiality pact was felt to be the best way to encourage openness and objectivity within the survey.

In advance of receiving the results, a threshold to establish *agreement significance* of 80% was established for the consultation process, in order to establish a dataset that could inform this study and support other researchers. A simple majority of over 50% is a general norm for agreement for some situations within politics, government, marketing and business contexts, though such a benchmark might be judged too low when considering the potential impact and influence of a new EI construct. The current author was surprised that it was not possible to locate clear recommendations as to what might constitute 'good' agreement in the EI research/survey field. As a result, therefore, parallels were drawn on from business and politics:

- 50% - simple majority[15] needed at company board meetings, political referenda and other similar voting environments.
- 67% - a two-thirds super-majority[16] where twice as many people vote in favour compared to the number who vote against. The US Senate requires this level of support in both Houses of US Congress to promote a congress-driven constitutional amendment, as well as a 2/3 super-majority to pass a bill over the president's veto.
- 75% - a three-quarter majority is required by the UK Companies Act (2006) to pass special resolutions[17] for major decisions such as changing the board of directors or changing the name of the organisation.
- A super-majority of two-thirds is deemed to help insulate decisions from special interest groups, bias and therefore prevent bad results in a democracy (McGinnis and Rappaport, 2006).

[15] https://www.informdirect.co.uk/company-records/ordinary-resolution-what-is-it/ [accessed 31 July 2020]

[16] https://en.wikipedia.org/wiki/Supermajority [accessed 31 July 2020]

[17] https://www.informdirect.co.uk/company-records/ordinary-resolution-what-is-it/ [accessed 31 July 2020]

For this study, the 67% super-majority[18], which is often used for important decision-making, was selected. To support the idea of *significant agreement*, this threshold was increased to 80%, to allow for a 12% margin of error above the 67% super-majority, to give a 95% confidence level. The sample surveyed was 104 SMEs (excluding the current author) and 43 responded (41%). The 105 CREIO membership surveyed is adult and of mixed gender (29% female; 71% male). The survey should have multi-cultural input as the likely[19] culture of the survey population is relatively representative of the major global continents[20]. It is acknowledged, however, that the CREIO membership (see Table 28) originated in North America, and is administered from there, and it may not be representative of the global population of EI subject matter experts.

	Survey Respondents	% of Respondents	CREIO Member Demographics	% of Membership
North America	29	67%	53	50%
Asia	8	19%	23	22%
Europe	4	9%	19	18%
Australasia	2	5%	5	5%
Middle East	0	0%	5	5%
Total	**43**	**1**	**105**	**1**

Table 28 - Geographical spread of Respondents and Survey Group

The survey results of the survey were exported from SurveyMonkey as a Comma Separated Variable (CSV) file and imported into an Excel spreadsheet for easy data sorting, in preparation for importing into this thesis in the form of tables and figures. The dataset is provided in Appendix 3 – SME responses to allow scrutiny and verification by anyone interested in citing this thesis and/or dataset for their own research or to challenge or utilise this project in future research.

4.2 Findings

The findings from the SME consultation are structured as follows:

- General results (4.2.1)

[18] https://en.wikipedia.org/wiki/Supermajority [accessed 31 July 2020]

[19] Participant ethnicity cannot be confirmed as no verification was completed to check if ethnicity of CREIO members correlated with how they were each classified as members under the geographical groupings.

[20] Eiconsortium.org. (2019). *Emotional Intelligence Consortium- Membership*. [online] Available at: http://www.eiconsortium.org/members/consortium_membership.html [Accessed 11 Jun. 2019].

- Definitions (4.2.2)
- Conceptual factors (4.2.3)
- Responses to the EI taxonomy presented that emerged from the wider research (4.2.4 to 4.2.40)
- Assessment methodologies for EI (4.2.7)
- SME consultation summary of what SMEs agree and disagree on (4.2.9 and 4.2.10)
- SME feedback about the research itself (4.2.11).

4.2.1 General results

Overall the EI definitions, statements and taxonomy presented in the online SME survey generated data that reveal (in Sections 4.2.1 to 4.2.8) significant agreement from the 43 subject matter experts. This is likely to be due to the survey factors being drawn from a range of prominent EI research and models, many of which were developed or influenced by the world's leading EI scientists, most of whom are members of CREIO. The other outcomes of that SME consultation are outlined here.

The consultation revealed that, although 90.7% believe it is feasible to create a generic Emotional Intelligence framework and assessment model that parallels the generic IQ model, 83.7% of the SMEs do not believe a generic Emotional Intelligence assessment model already exists that provides a reliable measure of EI, which parallels the way IQ tests measure general intelligence. The few (16.3%; n=7) who believe one already existed offered the following in the comments box to support their response [respondent references are due to confidentiality]:

- "Bar-On model is quite comprehensive and can also be mapped to the facets of the Big Five model of personality" (n=1)
- "The Boyatzis and Goleman Emotional and Social Intelligence Competency Model" (n=1)
- "Emotional and Social Competence Inventory" (n=1)
- "MSCEIT" (n=2)
- "GECo" (n=1)
- "Bar-On's EQi model" (n=1)

Some of those naming these instruments declared interests and associations with the tool they proposed. These findings reinforce one of the main aims of this research (see

Section 1.3), being the creation of a generic Emotional Intelligence framework that parallels the generic IQ model.

4.2.2 Definitions

The primary definition that the SMEs were consulted on was the definition of *Emotional Intelligence*. The definition offered to stimulate debate and test agreement was that EI is the *ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals* (see Section 1).

There was a high level of agreement with this definition (76.7%). This was not surprising since the definition was developed from the common features of definitions already in the EI field (see Section 2.2). The five comments (*'a'* to *'e'* below) offered were as follows, with the current author's specific notes immediately after each:

a) 'I think that emotive perception is generalizable, but emotive management is situationally specific. I would want to add, "at all levels, from trait to behavioral"'.

This was a good point that reinforced the inclusion of across *a range of contexts* and the decision to include traits within the scope of context (see Section 3.2.6 Paragraph 7; Section 5.2.2; and Section 5.2.7).

b) 'I agree with this definition, but is it only "to help us achieve our goals"? Can Emotional Intelligence also be applied when goals are not being pursued, or when goals are pursued, but not achieved?'

It is possible that the perception from this SME respondent might be that *goals* are meant to be specific. The current author is not alone in the inclusion of goals in the EI definition as it is used in *A Dictionary of Psychology* (Colman, 2015), where EI is defined as "the capability of individuals to recognize their own emotions and those of others, discern between different feelings and label them appropriately, use emotional information to guide thinking and behaviour, and manage and/or adjust emotions to adapt to environments or achieve one's goal(s)" (2015:224). Similarly, Weisinger defines EI as "the intelligent use of emotions: you intentionally make your emotions work for you by using them to help guide your behaviour and thinking in ways that enhance your

results" (Weisinger, 2006:xvi). Although Weisinger might not use the term *goals* he does use the *results* synonym which is part of the definition of a goal as "[t]he object of a person's ambition or effort; an aim or desired result" (Oxford Dictionary, 1989).
It is also worth adding a definition from two of the MSCEIT researchers, who posited that EI is:

> the ability to perceive emotions, to assess and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotion so as to promote emotional and intellectual growth.
>
> (Mayer and Salovey, 1997:11).

This incorporates the goal of emotional and intellectual growth, though excludes the many other (wider) goals in life and interactions we might have for ourselves and others, such as well-being, happiness, friendship, romance, and independence.

c) 'This supersedes the 1990 Salovey and Mayer definition. It deals with the assimilation branch of the MSCEIT'.

This refers to the definition of EI being "a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990:185). It seems the respondent supports the inclusion of *understand* in the definition prompt as this is not explicit in the Salovey and Mayer 1990 version.

d) 'I would eliminate "to help us to achieve our goals" and emphasize more the management of emotions. EI is not necessarily transactional, and it [sic] only purpose may be understanding or empathy. I would also change "perceive, understand and influence our own and other's emotions" to "... our own and/or others' emotions." Finally, "to guide our current thinking and actions" should incorporate not only guiding but informing, as well as thinking, sensing, feeling and actions'.

This is addressed in Point *b)* above, as understanding and empathising with others could be argued to be a choice, and therefore a goal. The 'and/or' suggestion is interesting though the inclusion of the word 'our' in "…towards our goals" was intended to let the EI model user decide whether they are thinking/interacting with EI towards a selfish goal

(for example, to win at poker), a selfless goal (for example, compassionate support of another with no consideration of one's own well-being), or a cooperative goal (for example, to build a better relationship in a partnership).

e) 'I do like it, and I am probably being a bit picky, I'd change it around the 'guide our current thinking and actions' as I think it is about guiding our own and/or others thinking and actions as well. When I perceive or influence your emotion(s) I may keep my thinking and actions the same and aim to guide yours (for example, in a pro-social coaching context to get you to look at a problem differently). Does that make sense? So, you could change to: "Emotional Intelligence is the ability to perceive, understand and influence our own or others' emotions, across a range of contexts, to guide thinking and actions to help us achieve our goals." OR "Emotional Intelligence is the ability to perceive, understand and influence our own or others' emotions, across a range of contexts, to guide our own or others' thinking and actions to help us achieve our goals."'

The early points are addressed in *Point d)* above which recognises that EI is about self *and* others. The definition suggested by the SME in *response e)* mirrors the definition presented in this thesis except that 'own or others' was suggested as an alternative to 'our', so this was not in conflict.

In summary, on the SME responses around the EI definition:

- There was some resistance (n=3) to the incorporation of *goals*, though the current author is confident that comments added above address the points made as it is argued that the alternatives offered can be classified as *goals*.
- The other point about 'our' being able to be interpreted as 'our and/or others' (n=4) has also been addressed as something that is not a contradiction.

Definitions of other related terms prompted multiple minor comments and preferences though, overall, there was strong support for the following three definitions (central to the research around *trait* and *ability* competencies) that were presented to the SMEs:

1. ***Ability*** is "the possession of the means or skill to do something" (81.4%). The word *means* was felt by a minority (n=4) to be too vague and too broad (that

is, it could relate to a computer), with suggestions (n=2) that it could be replaced with *knowledge*.

2. ***Trait*** is "a distinguishing quality or characteristic, typically one belonging to a person" (79.1%). There were suggestions (n=5) that the definition should, or could, end after the word 'characteristic'. The supported definition was retained.
3. ***Competency*** as "the ability to do something successfully or efficiently" (79.1%). Although there was a high level of agreement with the definition there were suggestions (n=3) that competency needs to centre more clearly on *performance*. There were also suggestions (n=3) that the features of the *ability* definition should replace the word *ability* in this definition.

4.2.3 Conceptual factors

Can EI be developed?

There was significant support (95%) for the belief that Emotional Intelligence can be developed in people, with only a minority (n=2) suggesting that EI is fixed. This may be based on an assumption of EI and IQ concept alignment, transferring the claim that IQ is fixed relative to age (see Section 1).

Abilities, traits, or mixed, as primary factors

The SME consultation revealed that 100% of the SMEs believed that *abilities* need to feature in the primary EI factors. There was a slight majority of 53.5% who felt that ability factors should be primary, with 46.5% suggesting that the primary factors should be *mixed* (abilities and traits), though none of the SMEs felt that *traits* alone should be the primary factors. This supported earlier findings in the wider study, where an EI model that was based on trait-only factors could not be found (see Section 3.2).

The six SMEs who added comments to their judgement offered the following:

a) To include traits will never sufficiently address face validity issues for EI as an intelligence distinct from other personality concepts...they should be identified as cofactors that mediate EI ability in practice (and be studied as such). EI also involves cultural knowledge and worldview - these are not inherently defined under traits. [selected 'Ability' as primary factors].

b) Accurate perception and management of motive readiness as a function of 1) situational expertise (a 'knowledge' dimension) and 2) acceptance

and awareness of the role of emotion in our lives. This latter is essentially a function of developmental stage characteristics. So, I would prefer to think of this type of 'intelligence' as primarily a 'perspective-taking' on self and other in situations. It is a developmental stage thing. [selected 'Traits' as primary factors].

c) All of them: traits, abilities, and competences. [selected 'Mixed' as primary factors].

d) To the extent that trait is trying to measure a more permanent element which could have a genetic element or become more permanent like personality. [selected 'Traits' as primary factors].

e) Abilities and traits are highly relevant for a generic model of social and emotional competences, but I personally do not view these as part of intelligence. [selected 'Mixed' as primary factors].

f) A generic model probably wants to capture both, hence 'generic'... if someone has or learned the ability to use EI, but doesn't (which would probably be reflected through his traits), he should have a lower EI score for his 'behavior', still his ability also needs to be scored to show the full picture. I guess it's the difference between what I can do and what I do. [selected 'Mixed' as primary factors].

g) There is no such thing as an 'intelligent' personality. Same applies to emotional intelligence. They shouldn't be mixed as primary factors. [selected 'Ability' as primary factors].

Six of the seven responses highlighted the recognition of the value of traits and the need to include them in an EI model, whilst recognising that an intelligence has to be *ability* based. How this challenge is addressed in this current study can be found in Section 5.2.2 of this thesis.

EI and IQ correlation

A good majority (76.2%) of the SMEs hypothesized that a reliable measure of Emotional Intelligence would have no or low correlation with IQ. Only 21.4% felt that there would be a high, positive correlation, but only 2.4% felt that there would be a high, inverse correlation. This finding has great significance for future research, as one of the key assumptions made by some researchers is that the strength of an EI model should be judged on a positive correlation between EI and IQ, since they measure the same overall construct of intelligence "demonstrating the positive manifold (that is, consistent positive correlations) found among intelligence tests" (Orchard et al., 2009:322). The lack of correlation thereby leads to criticism of the EI models, where scores do not correlate. This

may have deterred researchers from developing or using EI models that do not correlate with IQ.

It was interesting to note how some common factors, which were often misclassified by researchers, were classified by SMEs (see Table 29). There was significant agreement, above the 80% dataset threshold, that *empathy*, *conflict-management*, *influence* and *self-control* are abilities. There was also significant agreement that *extroversion*, *conscientiousness*, *agreeableness*, *openness*, *neuroticism*, *self-confidence* and *achievement-orientation* were all traits. This correlated with the definitions established for this study. The majority was, however, only marginal in judging *customer-orientation* (51.2%) and *organisational-awareness* (53.5%) as traits, as opposed to abilities. These are clearly traits when the definitions used in this study are applied to these terms, though it is recognized by the current author that not all research studies will attempt to make clear separations between traits and abilities. The challenges seem to be primarily around terms representing preferences and orientations [such as these] that are not part of the familiar, popular personality models such as the 'Big Five' and MBTI.

The support across the SMEs in the classification of the factors that populated the ability, trait and mixed models is captured in Table 29.

Factor	% SMEs judging this as an Ability (bold = majority)	% SMEs judging this as a Trait (bold = majority)	Assignment adopted by the current study based on definitions (* = an 80% threshold issue)
Empathy	**72.1**	27.9	Ability*
Conflict management	**88.4**	11.6	Ability
Optimistic	**76.7**	23.3	Trait*
Customer orientation	48.8	**51.2**	Trait*
Organisational awareness	46.5	**53.5**	Trait*
Influence	**95.3**	4.7	Ability
Self-control	**88.4**	11.6	Ability
Extroversion	9.3	**90.7**	Trait
Conscientiousness	20.9	**79.1**	Trait*
Agreeableness	16.3	**83.7**	Trait
Openness	9.3	**90.7**	Trait
Neuroticism	11.6	**88.4**	Trait
Self confidence	18.6	**81.4**	Trait
Achievement orientation	14.0	**86.0**	Trait

Table 29 - Factor classifications by SMEs

Optimistic is clearly a mindset that fits the definition of a *trait*, which 79.1% of SMEs agree on ('a distinguishing quality or characteristic, typically one belonging to a person'). Yet, this was still judged by most SMEs (76.7%) as an ability. 27.9% of the SMEs classified *empathy* as a trait, which is interesting when the definition of a trait, agreed by SMEs (Section 4.2.2) is applied (that is that a *trait* is more of a personality feature, defined as 'a distinguishing quality or characteristic, typically one belonging to a person' (Oxford Dictionary, 1989)). This might be forgiven as some may confuse the skill, *empathy* (something you *do*), with the adjective, *empathic*, which is a term that describes a quality a person may possess (that is, a trait). This confusion on these basics is an example of why some models might be mis-classified. *All* of the eight models researched contained some skills and abilities (see Figure 11). This suggests that there are *no* trait models and that those who claim this should more accurately be labelling them as *mixed* models. This presents a real challenge to those who wish to measure these mixed models reliably with one measurement instrument and explains one of the reasons why most mixed and trait model developers resort to simple self-perception tests, some adding in multi-rater approaches. Whereas the ability models, like MSCEIT, have grasped the challenge and tend towards assessment

based on *expert*-based assessment; based on right/wrong answers, as far as that can be achieved. This approach is similar, in principle, to the way that IQ is assessed.

The underpinning EI taxonomy (of knowledge and understanding, skills, and primary competences) that emerged from the current study (see Table 34), were presented to the SMEs with the results outlined in the following sections (Sections 4.2.4, 4.2.5 and 4.2.6).

4.2.4 Knowledge and understanding

This facet of knowledge/understanding (in other words, 'theory') judged necessary by SMEs for those who have high Emotional Intelligence are rank ordered in Table 30. Each one is preceded by "The ability to state/describe....".

100.0%	Emotions and their characteristics
100.0%	Stress (causes and effects)
97.7%	Functions of emotions
97.7%	Psychological biases, and their impact on self and interactions with others
95.3%	How responses differ from reactions and reflexes
95.3%	Psychophysiology and association with emotions
95.3%	The emotional timeline from trigger through to response
95.3%	Verbal content and association with emotions
95.3%	Effect of interactional context (time/place/conditions/etc)
93.0%	Facial expressions and association with emotions
93.0%	Our own hot triggers
93.0%	Emotional load
93.0%	Body language and association with emotions
93.0%	Voice (for example, pitch/volume/tone) and association with emotions
93.0%	Interactional/conversation style and association with emotions
93.0%	Communication styles (for example, passive, aggressive, assertive)
90.7%	How moods, traits and disorders differ from emotions
90.7%	How psychological scripts and formed and can affect emotions
90.7%	Individual differences (general/cultural)
88.4%	Impact of disorders on emotions/behavior
88.4%	Cognitive load
88.4%	Mindfulness and attentiveness
88.4%	Influencing others
86.0%	Workings of the autonomic nervous system (SNS/PNS)
83.7%	Neuroscience as it applies to emotions
76.7%	Personality and trait theory
76.7%	Questioning and elicitation methods
74.4%	Biometric/technical measurement of effects of emotion on the body
69.8%	Emotions and the brain measurements (for example, fMRI/EEG)

Table 30 - EI knowledge and understanding elements

Emotions and the brain measurements (for example, fMRI/EEG) fell outside the threshold. Support was good, though not significant (using the 80% criteria), for the need to know

and understand personality/trait theory; questioning and elicitation techniques; and biometric/technical measurement of effects of emotion on the body. This differentiation of significance, revealed by the SME data, may need to be factored into any weighting of any later development and assessment approaches (see Section 6.2).

Additional suggestions from respondents included:

- Resilience;
- Political Savvy;
- Situation and its impact on others' emotions.

The current author believes that the first two additional suggestions are traits, as they describe personal attributes, whereas, the latter suggestion is covered by *Effect of interactional context (time/place/conditions, etc.)*.

4.2.5 Ability/Skill

The facets of skill (that is, 'ability'), judged necessary by SMEs for those who have high Emotional Intelligence, are presented in rank order in Table 31.

Each one is preceded by 'The ability to....' (in respect of appropriateness to goals and context).

100.0%	Read body language signals and their possible association with emotions
100.0%	Engage others
97.7%	Be attentive and mindful in the moment
97.7%	Anticipate and manage hot triggers
97.7%	Be empathic towards others
97.7%	Read voice signals (for example, pitch/volume/tone) and their possible association with emotions
97.7%	Read verbal content and its possible association with emotions
97.7%	Use effective questions and elicitation approaches to suit goals
97.7%	Review and evaluate own emotional intelligence
97.7%	Influence the interactional context (time/place/conditions/etc) as/if needed
95.3%	Adopt a mindset of curiosity rather than judgement during interactions
95.3%	Manage moods
95.3%	Analyse and manage interactional context
95.3%	Analyse and consider wider context (culture/general)
95.3%	Manage own bias
95.3%	Regulate our own emotions
93.0%	Read interactional/conversation style and its possible association with emotions
93.0%	Be assertive when appropriate
93.0%	Label emotions in self as they arise
93.0%	Engage emotions to support activity
93.0%	Read facial expressions and their possible association with emotions
93.0%	Read psychophysiology signals and their possible association with emotions
93.0%	Recognise and flex personal styles to styles/preferences of others to help meet the goals of interactions
90.7%	Manage/change context when appropriate
90.7%	Mirror, pace and lead others to support the goals of the interaction
90.7%	Influence others
90.7%	Establish baseline behavior in others
88.4%	Read multi-channel data from others simultaneously and determine its possible association with emotions
86.0%	Interrupt emotional reactions
86.0%	Generate and test hypotheses from multi-channel data relating to emotions
72.1%	Practice contemplative meditation
72.1%	Suppress our own emotions when appropriate to minimise burnout
60.5%	Interpret biometric/technical measurement signals and their possible association with emotions
46.5%	Interpret brain measurements (for example, fMRI/EEG) and their possible association with emotions

Table 31 - EI ability elements

The last four elements fell outside the threshold and will need the same consideration for weighting and treatment in later development/assessment approaches (see Section 6.2). Additional suggestions from respondents included:

- Correctly identifying others' motives; and

- Practice of distancing from and observing self.

These are covered already in the EI ability elements in Table 31 listed respectively as:

- 'Generate and test hypotheses from multi-channel data relating to emotions'; and
- 'Be attentive and mindful in the moment' / 'Manage own bias' / Practice contemplative meditation'.

The current author found it interesting that there was significant support for the elements of knowledge and abilities to read multi-channel data to help EI performance. This interest was generated due to the absence of many of these communication channels within existing EI models. None of the core EI models incorporate all of these communication channels in their model or their associated assessment instruments. The multi-channel ability elements that received significant support are rank ordered here:

- Read body language signals and their possible association with emotions (100%).
- Read voice signals (for example, pitch/volume/tone) and their possible association with emotions (97.7%).
- Read verbal content and its possible association with emotions (97.7%).
- Read interactive/conversational style and its possible association with emotions (93%).
- Read facial expressions and their possible association with emotions (93%).
- Read psychophysiology signals and their possible association with emotions (93%).
- Read multi-channel data from others simultaneously and determine its possible association with emotions (88.4%).

There was also reinforcement from the SMEs about the importance of the ability to *Recognise and flex [own] personal styles to styles/preferences of others to help meet the goals of interaction* (93%). This requires knowledge and abilities relating to trait theory and personality. How this can be factored into an ability EI model, without creating a *mixed EI model*, is covered in a subsequent section (see Section 5.2.2).

4.2.6 Primary competences

The twelve abilities that were disaggregated and developed from the common factors in the core EI models (see Section 3.2.4) are listed in Table 32, along with the degree of support for each one from the SMEs.

95.3%	1. PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR
100.0%	2. IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS
97.7%	3. APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO GOALS
97.7%	4. INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE
95.3%	5. ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE
93.0%	6. INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS
97.7%	7. READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS
93.0%	8. HYPOTHESISE ABOUT OTHERS' EMOTIONAL SIGNALS
95.3%	9. APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO GOALS
93.0%	10. ENGAGE OTHERS APPROPRIATE TO GOALS
97.7%	11. INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS
93.0%	12. INFLUENCE OTHERS TOWARDS GOALS

Table 32 - EI competences

It can be seen that these twelve abilities were judged by the SMEs to be necessary for those who have high Emotional Intelligence, with a highly significant mean of 95.7% across the twelve competences. There was a range of 7% across the agreement scores for the twelve abilities (93% to 100%) with a standard deviation from the mean of 2.395% (see Appendix 3 dataset for calculations) revealing the consistency of the high SME evaluations of these abilities. They were also judged to be sufficient as no additional factors were proposed by the SMEs.

Apart from the significant support, there were only three free-text comments offered by SMEs against these 12 primary factors:

a) EI would need a good level of verbal and non-verbal communication skill to convey ideas and influence others.

b) Influencing can be equal to manipulation and can lead to dark and dangerous places.

c) Leave "goals" out of this. What we're really "emoting" about are both opportunities and threats perceived in the world around us (most of

> them social rather than abstracted as "goals"). Goals also assume a "deliberate movement toward opportunity", rather than seeing how people appraise BOTH opportunities and risks without cognitive mediation. Robert Zajonc referred to this as "the primacy of affect" over cognition. I would add that we are actually more risk averse than opportunity driven (per Kahneman and Tversky's work). Put another way, as soon as our amygdala gets "hit", we're paying very little "mindful" attention to anything but the risk we're trying to avoid, and we're more likely to be oriented toward avoiding risk than to seeking opportunities ("goals").

The first comment ('a') above was reinforced by the significant support for these facets of ability (see Table 31) including:

- Read body language signals and their possible association with emotions (100% of SMEs felt this was essential to EI performance)
- Read voice signals (for example, pitch/volume/tone) and their possible association with emotions (97.7%)
- Read verbal content and its possible association with emotions (97.7%)
- Read interactional/conversation style and its possible association with emotions (93%)
- Read facial expressions and their possible association with emotions (93%)
- Read psychophysiology signals and their possible association with emotions (93%).

The 'dark side' comment, b), is addressed in Section 3.2.6 (paragraph 6), and in Section 5.2.3. The current author respects both the concern and dangers around the abuse of EI skill, though argues in those sections that, as in leadership, an EI model should not force only positive values and ethics on the user, though it is hoped (by the current author) that this and other EI models will be applied towards making the world more compassionate and safe.

The third SME comment, c), suggests that 'goals' should not feature in this model. This was raised earlier in Section 4.2.2 around the EI definition. The suggestion by the SME is that there may be an initial goal, though the power of emotions can hijack those goals, if faced with a stimulus that triggers a powerful emotion. The SME states in c) above that '*as soon as our amygdala gets "hit", we're paying very little "mindful" attention to anything but the risk we're trying to avoid'.* He/she seems to be thinking about a trigger of *fear* here by mentioning the words 'threats' and 'risk'. 'Goal' is

defined by the Dictionary as “The object of a person's ambition or effort; an aim or desired result” (Oxford Dictionary, 1989). The current author suggests therefore that if a holistic view is taken of the ‘person’ then that would include the conscious, opportunistic goals of, say, climbing a mountain, though it should also consider the person’s innate goals such as ‘staying alive’. If a life-threatening event occurred (for example, an avalanche of rocks from above) then the power of the subconscious (emotional) parts of the brain would shift a person’s goal to staying alive, and most likely drown out or neutralise the initial goal to climb the mountain until the threat had passed.

4.2.7 Assessment methodology

In preparation for Phase IV (see Section 6), SMEs were also asked to what degree the following assessment methods are valuable for reliably measuring Emotional Intelligence, without consideration of cost and difficulty in terms of design and development. This latter freedom was added to the question to explore opinion on optimal methodologies. The SME consultation results are outlined in Figure 5, rank ordered, where the hierarchy reveals significant support (80%+) for four of the eight main assessment approaches [in bold] for capturing the depth and range of qualities of one who might be judged to have a high EI rating:

92.5%	**Emotion Recognition Assessments (of facial expressions, voice, body language, etc)**
85.0%	**Situational Judgement Tests (case study/written/video vignettes) against 'expert' scoring**
81.6%	**Situational Judgement Tests (case study/written/video vignettes) using 'own typical response' scoring**
80.5%	**Multi-Rater (assessment by others/peers via questionnaires)**
75.6%	Implicit Association/Belief Tests (assesses the relative strength of positive and negative associations test-takers have for a range, or opposing, ideas)
69.0%	Self-Report (self-assessment questionnaires)
67.4%	Sustained observation and expert assessment of the subject(s) in real life contexts
59.5%	Knowledge and understanding tests (written/online)
42.9%	Assessment Centres (tasks/activities performed with expert assessment)

Figure 5 - EI assessment methodologies

There was no consensus about one assessment methodology for EI, as the SMEs supported the use of most of the methods offered. *Emotion Recognition Assessments* and *Situational Judgement Tests* (SJTs) gained significant support, along with *Multi-Rater* assessments, with all three gaining over 80% support from the SMEs. One SME raised the challenge of the degree to which an assessment can replicate the real-world context in suggesting "*Situational Judgement Tests are of high value. However, when the respondents are taking the test they might be in different states of mood and also they are not facing the situation actually. A question that has remained unanswered in my mind is "Will they choose the same response if they face the situation in real life?* " (SME survey respondent [identity confidential]).

The most widely used assessment methodology by existing EI models, that of self-report, had good but not significant support at only 69%. There was, however, interesting support for 'own typical response' in SJTs. This clashes with wider findings that any form of self-perception about how individuals claim they would respond in certain situations is "susceptible to faking" (Pauls and Crost, 2004:1137). This is a response pattern in which test-takers may represent themselves with an excessive positive bias. Indeed, it may be influenced by the commonality of self-perception/report in several EI assessment instruments. This warrants further investigation and, hence, is revisited in Phase IV (Section 6) of this thesis.

4.2.8 SME consultation summary

As noted in Section 4, this SME consultation was included in this project to elicit expert opinion on the diverse thinking and findings that emerged in the research literature. It was also an opportunity to test the draft principles, definitions, ability factors and underpinning taxonomy of a new EI model, thereby guiding its development and assessment methodology. The sections that follow highlight where there was significant agreement with respect to the principles, definitions, and concepts associated with EI, as well as extracting those areas where there was disagreement across the SMEs.

4.2.9 What do SMEs agree on?

This dataset highlights that there was significant agreement (80%+) from the forty-three subject matter experts around five key aspects of EI:

- the idea that EI can be developed in people;
- that there is currently no EI equivalent of IQ;
- that EI can be defined as the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals;
- that many of the elements of a core EI taxonomy are supported (that is, facets of knowledge / understanding, abilities and competences);
- three of the assessment methodologies were supported (Emotion recognition tests, SJTs, and Multi-Rater).

Many of the above factors were supported at very high levels (90%+). This could be due to the fact that the survey factors and taxonomy were drawn from a range of eight prominent EI models that were developed or influenced by the world's leading EI scientists, as well as these scientists also being members of CREIO. That said, the need to recognize the range of interests and diversity of models of approaches researched and developed by the SMEs supports the establishment of significance at the 80% agreement threshold established for this dataset.

4.2.10 Where do SMEs disagree?

Support was less significant in the following areas:

- support fell below the 80% threshold for five commonly used assessment approaches, including self-report (see Table 36).
- there is low support (46.5%) for the idea that the primary factors should consist of a mix of abilities and traits. The majority of SMEs believe that ability factors should be the primary factors of an EI model, though this support was marginal and came from only 53.5% of the SMEs who responded (see 4.2.3);
- there is some confusion from developers and researchers around how they are classifying EI factors in terms of abilities or traits (see Table 29).

Although SME support is higher with regards to abilities, the current author concluded from this SME support that the impact and influence of traits, personal styles, and preferences on EI performance cannot be neglected in new EI model development. The criticality of traits, personality and other individual differences on applied personal and interpersonal emotional intelligence has been prominent in the wider research project

(see point 7 in Section 3.2.6) and, therefore, trait EI proponents will be reassured to see that traits are factored into the *e*-factor model later (see Section 5.2.2) without resulting in another mixed model.

4.2.11 SME feedback

Overall feedback was captured at the end of the SME survey. Below are the fourteen responses received:

> I have recorded a question (regarding situational judgment tests) that has been bothering me[21]. If your research finds an answer for that, it would be great. My best wishes for the successful conduct of this research. I would be happy to help.
>
> I am interested in reading the results
>
> I am very glad to see that you are doing this Emotional Intelligence research, it is a fascinating field and I look forward to reading your work! Thank you.
>
> From looking at some of the elements in the questions I can see that you are incorporating elements from facial and body language channels. I feel that this is a missing element in existing assessments.
>
> It might be useful to you to present your preliminary findings to the Consortium for feedback.
>
> You are taking on a very challenging task and I hope you are successful. Success will be difficult to measure since there are many voices in the field today and some very strong beliefs and opinions. Good luck.
>
> Thanks for your work...please be rigorous about validity/reliability issues.
> Great survey, with the noted exceptions. I'd actually like a copy of the survey instrument itself.
>
> A new ability model which integrates awareness of communication changes across multiple channels I believe would be an excellent step forward. This work is much needed.
>
> Please be careful to not equate EI with interactional manipulation. Please be responsible with your research and call out the need for EI to focus on understanding and not manipulation. GOOD LUCK!
>
> This is important work. Good luck!
>
> Good luck!
>
> All the best!

[21] This question was to do with ecological validity – can a choice on an SJT represent the respondent's likely choice I real-life, high pressure contexts. This is covered in Section 6.2.1.

> Encouraging you to conduct a comprehensive analysis and to keep the output simple and applicable. Thank you for your effort.

The comments were encouraging, in that they indicate an interest in the output, whilst highlighting the passions in the field to the current author ('many voices' with 'strong beliefs and opinions'). The comment about 'manipulation' applications also raises the ethical aspects of this work (explored and summarised in the conclusion in Section 7.1.6.

4.3 Implications for next phase and future research

The SME consultation has provided a reliable base of significant agreement on the development work in Section 3 (Phase I). The consultation revealed that although 90.7% believe it is feasible to create a generic Emotional Intelligence framework and assessment model that parallels the generic IQ model, 83.7% of the SMEs do not believe a generic Emotional Intelligence assessment model already exists that provides a reliable measure of EI to parallel the way IQ tests measure general intelligence. This reinforced the research and development aim of creating one, as opposed to finding one.

This study has supported the approach to adopt ability factors as primary factors in the EI model (see Section 3.2.6, paragraph 12). The study also reinforced the value of traits, and prompted the current author to integrate traits firmly within the taxonomy as part of the context element (see Section 3.2.4). As will be seen, this is now at the heart of the model presented in Section 3 (Phase I). It also provides a useful dataset for the development of the assessment methodologies (Phase IV in Section 6 later).

Phase III, in the next section (Section 5), synthesises the analysis of the EI literature and the SME dataset to refine and finalise the EI model and its underpinning taxonomy.

5 EI Model Refinement (Phase III)

As a reminder to the reader, this thesis seeks to address two central research questions:

- Can a generic framework of abilities be identified or developed and be widely accepted as a reliable measure of emotional intelligence (EI) in the same way that general intelligence is measured (IQ)?
- To what extent can a single assessment methodology reliably assess adults[22] against such a model?

Phase I (the literature review) and Phase II (the SME consultation) have provided reliable information that can support the development of an EI model, in the quest towards an *e*-factor, and thus help us with respect to the first question. Phase III of this project builds upon Phases I and II by seeking to establish the primary factors of a new EI model. A reliable assessment methodology will then be outlined in Section 6 (as a means of addressing the second research question, above). Phase III includes three sub-sections:

- Methodology Section – explaining how the data has been collected and/or generated and how it has been analysed including anticipated problems and how they were handled;
- Findings Section – the synthesis (and outputs) of the literature analysis and the SME survey data;
- Implications and where next – how these findings feed into the next phase and future research.

5.1 Methodology

The methodology in this phase involved revisiting the analysis work in Section 3 (Phase I) and reviewing the 12 statements and questions that resulted from that review (see Section 3.2.6). The methodology also factored in the SME data from Section 4 (Phase II). This has been captured in an EI model to summarise the output of this analysis (see Figure 7). A detailed matrix was designed to help disaggregate the primary factors into relevant knowledge, understanding and skills, and abilities (see Table 34). This then

[22] See the Introduction to review the reasons for limiting the current research to *adults*.

enabled the traits and other individual differences to be drawn from the earlier phases (Table 35) and to be considered within the context of the application of EI.

The process will involve the synthesise of the data from the first two phases, centred on the primary factors, dealing with traits, ensuring the model is generic, and factoring in context. The EI model will be created and its underpinning taxonomy assembled. The findings from this process will present the synthesis work, along with the outcomes of this research, following a similar structure.

5.2 Findings

This findings Section is, therefore, structured into the following sub-sections:

- Primary factors of the EI framework must be ability-based (5.2.1).
- Factoring traits into an ability model, without resulting in a mixed model (5.2.2).
- A model that is neutral of values and restrictive context (5.2.3).
- Factoring in context and applications (5.2.4).
- The 'EmotionIntell' model (5.2.5).
- EmotionIntell model disaggregation into a detailed taxonomy (5.2.6).
- Traits and other individual differences (5.2.7).

5.2.1 Primary factors of the EI framework must be *ability* based

The SME consultation revealed majority support (53.5%) for abilities to be the primary factors in an EI model. However, this is not significant support if we accept the 80% threshold applied in the SME dataset. The result, moreover, suggests that there is still good support (46.5%) amongst SMEs for the idea that the primary factors should consist of a mix of abilities and traits. This is despite the claim that traits and abilities have generally been accepted as opposing constructs (Eysenck, 1994; Zeidner, 1995) and, therefore, should not be mixed as primary factors in an EI model. A recent study based around the *ability*, *trait* and *emotion regulation* triad in the *Integrated Model of Affect-related Individual Differences* (IMAID) concluded that "any construct labelled EI should consist of both emotion and intelligence. Currently, only the ability EI perspective meets this criterion and thus we would recommend that the label 'EI' is reserved exclusively for this perspective" (Hughes and Evans, 2018:13). If this logic is accepted, then this means that the ability focus of the EI model resulting from the current research qualifies it as an "EI".

This contradiction between strong research and weaker SME opinion around *traits* as primary factors (46.5%) may be influenced by the domination of mixed models in the EI marketplace (six of the eight models that met the scoping criteria for this study are mixed models). The Introduction laid out working definitions for this project (see Section 2.2), including defining the broader Intelligence construct as *the ability to acquire and apply knowledge and skills.* The SME survey revealed good support for all the definitions adopted for the project, including the ones of *Emotional Intelligence* and *Competency* and these underpin the principle that EI needs to be based on *ability.* These key terms are re-stated here from that section [*emphasis* added]:

- **Emotional Intelligence** is defined as the *ability* to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals;
- Also, **Competency** is defined as the *ability* to do something successfully or efficiently.

When the ten EI definitions that emerged from the literature review are examined (see Table 2), it can be seen that 80% of the definitions are focused on *ability*.

If EI is to become an *e*-factor and classified and recognised by the scientific community as an *intelligence*, then the core of the EI model *must* be ability-based. That does not, however, mean the rejection of traits, nor does it mean resorting to another mixed model as is revealed in this Section (see Section 5.2.2 following).

5.2.2 Factoring traits into an ability model without resulting in a mixed model

The primary challenge is how to find a place for traits in an ability-focused model without creating another *mixed* model? One approach is to factor traits into *context*.

The analysis of the literature in Section 1 of this thesis suggested that EI needs to factor in *appropriateness* of behaviour towards *goals* within the micro- and macro-*context* that applies (see paragraph 9 of Section 3.2.6). This included cultural context(s), personality, and other individual differences (such as, gender, age, life experiences [see Section 2.2.1.6]). Brody covered the importance of context in an experimental environment, focusing on the primary physical *micro*-context (1988). As noted, in paragraph 9 of Section 3.2.6, he exemplified this by suggesting that "a room may be poorly ventilated, and the effects of a less-than-perfect atmosphere may lead individuals to be irritable and uncomfortable – thus changing their characteristic social behaviour" (Brody, 1988:22).

Traits of self and other(s) are key too, as the literature suggests that there is "a general consensus in favour of the interactionist position that both traits and situations are important influences on behaviour" (Boyle et al., 2008:14-15). To ensure ecological validity[23], for the varied environments we face in life and work, attention also needs to be paid to the idea that most people can be emotionally intelligent when things are going well but tend to be less emotionally intelligent when they are not. This would suggest, in turn, that any EI model to result from this research, as well any future assessment measures created to test EI abilities using the model, need to make use of emotionally charged and/or high-stake situations at some stage in the assessment process (paragraph 9 of Section 3.2.6). when one SME, who was discussing the topic of testing (Situational Judgement Tests [SJTs] in particular [to be covered later in Section 6.2.5]), commented that:

> ....Situational Judgement Tests [a simulation presented to a subject for testing purposes] are of high value. However, when the respondents are taking the test they might be in different states of mood and also, they are not facing the situation actually. A question that has remained unanswered in my mind is 'Will they choose the same response if they face the situation in real life?'

Context, therefore, needs to be factored into an EI model to remind model users, and assessment instrument developers, about this crucial component, thereby helping to ensure better ecological validity. We might want to argue that the importance of including context also emerged in the synthesis work around the core abilities of EI (see Section 3.2.4) given that EI is about *awareness* of one's own and others' emotions; *understanding* those emotions; and *influencing* our own and others' thinking and behaviour. Such instances have prompted the current author, in turn, to update the 2x2 matrix illustrated earlier (Figure 2).

This has been achieved by developing a 3x3 grid to conceptualise EI more completely (see Figure 6). Figure 6 expands on the two rows of Figure 2 by bringing in Context, and factoring in *Understanding* into the Awareness/Management columns. It was felt by the current author that *management* of our own and other's emotions suggests one has firm

[23] Ecological validity being the extent to which the findings of a research study are able to be generalized to real-life settings.

control over their emotions, whereas *influence* factors in the power of emotions to affect our own thinking and respects the emotions and thinking of others, although this may be a conflicting concept. The psychology literature supports the idea that emotions are unbidden, and that they simply happen to us (Ekman, 2003a), and the field of neuroscience also reinforces this notion (see LeDoux, 1998).

	Awareness	Understanding	Influence
Self	Physiological sensations and thoughts	Trigger, impulse, evolved reaction, potential impact	Self-management
Context	Macro and micro factors	Impact on behaviour	Context management
Other	Account, baseline and cross-channel data consistencies	Intended message, semantics, thinking, feeling and values	Interaction/ relationship management

Figure 6 - Emotional intelligence 3x3 grid

This *context* feature brings in the moderating effect of *personality* on EI performance that Hughes and Evans highlighted (2018:10-12) and provides a placeholder for how traits might be integrated into an ability model without creating another mixed model construct. This trend in EI research to split the EI constructs of traits and ability (see Section 1) is reminiscent of Bruner's (1986) warning:

> about the common tendency to draw strong conceptual boundaries in thought, action, and emotion as independent "regions" of the mind, requiring scholars to build conceptual bridges to connect what should never have been separated.
>
> (!986:322).

Nothing happens in a vacuum, and the judgment of the appropriateness of behaviour against EI competences can only be established if the *micro*- and *macro*-context is accounted for (Bruner, 1986:322). The *micro-context* relates to the immediate situation or interaction. It is what Brody (1988:22) was referring to when he commented that "a poorly ventilated" room can lead to "a less-than-perfect atmosphere" even under

experimental conditions, such that it changes a person's "characteristic social behaviour" (see paragraph 9 of Section 3.2.6). *Macro-context*, in contrast, is about the preferences, styles, culture, history and the broader political, economic, social, technological, legal and environmental factors that surround the event or interaction (see Brody, 1988; Boyle et al., 2008; Cherniss, 2010; Jordan et al., 2010). *Context,* therefore, provides the opening to integrate traits, temperament and personality of self and others so that those individual differences can be factored into our thoughts, actions, and performance.

5.2.3 A model that is neutral of values and restrictive context

The goal was that the EI model would aspire to be classed as an *intelligence* construct. A further aim was that it would be *generic*, that is not framed or constrained to *leadership*, *workplace*, *well-being* or other restrictive contexts, while nonetheless allowing the model to be applied to them. As *intelligence* was defined earlier as *the ability to acquire and apply knowledge and skills* (see Section 2.2), it follows that *ability* (or *competency)* needs to be at the core of the model. These primary ability factors need to be disaggregated into a fuller taxonomy of sub-components, such as knowledge, understanding, and skills. This provides a detailed foundation for curriculum development and assessment design (see Table 34), which was something that was not always evident for the core EI models scoped for this study. Without this detail, the curriculum design, and the tasks, questions or statements used to populate the assessment instruments cannot be evaluated for reliability and validity against the EI primary factors or *e*-factor being scored.

In this research, motives of those who may use emotional skills and competences were set aside, whether they were constructive or destructive. The current author previously highlighted (see paragraph 6 in Section 3.2.6) that this is likely to be a little controversial on two fronts:

a) There is a theme across EI research for EI models to be a tool to encourage well-being, happiness, co-operation, and positive relationships. This association introduces the risk of the 'halo-effect' bias which was raised in the challenge.

b) There is a fear that EI abilities have a 'dark-side' and can be used to manipulate others.

This first point proposes that directive factors, such as this example from the MSCEIT model *"moderating negative emotions and enhancing pleasant emotions"* (see Table 23 - MSCEIT 'sub-factors'), have been omitted from the proposed generic model too. It is hoped, therefore, that the motivation of the users of EI models is constructive and pro-social, though the model should not discriminate against its use and applications by poker players, business leaders and sports professionals who may be tasked to 'win' at the cost of others. In addition, the model should not be biased solely towards being a manipulation tool. Interestingly, one of the SMEs seemed to share this concern and provided the cautionary comment that the project should be careful not to *"equate EI with interactional manipulation"* (Section 4.2.11).

EI models should not dictate the biases of the framework developer onto the ones who seek to use it for others; be measured against it; or developed towards high EI intelligence. With the above exception, the MSCEIT model is fairly clean of restrictive context contamination and is already based on ability, though the current author posits that it fails to address the crucial effect of trait and personality, as these constructs do not feature in the model. The bulk of these problems with trait and mixed models have already been captured as part of Phase I (see Section 3.2.6).

5.2.4 Factoring in context and applications

A range of functional applications were collated by the current author during the early analysis stage in the mind-mapping exercise and the following applications emerged:

- Interviewing
- Relationship-building
- Meeting
- Leading
- Managing
- Developing
- Supporting
- Negotiating
- Competing
- Performing.

These have been added in the [third] context column of Table 33.Table 33- Draft core EI model

EI Model Type	ABILITY BASED		
Ei Measurement Tool	Emotionintell*	12	
Assessment methodology	TBC		
Domains	COMPETENCES/SKILLS (WITH UNDERPINNING SKILLS/ KNOWLEDGE/ UNDERSTANDING)	APPLICATIONS (TASKS)	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS	PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR	Treatment of these TBC. _____ Interviewing Relationship-building Meeting Leading Managing Developing Supporting Negotiating Competing Performing	Treatment of these (drawn from other models) TBC. _____ Trustworthiness. Achievement-orientation. Service-orientation. Achievement-drive. Optimism. Initiative. Empathy. Compassion. Commitment. Leveraging-diversity. Political-awareness. Innovativeness. Adaptability. Conscientiousness. Self-confidence. Organisational-awareness. Efficiency-orientation. Attention-to-detail. Social-responsibility. Self-regard. Self-motivation. Self-actualisation Independence. Adaptability. Impulsiveness. Self-esteem. Trait-happiness. Trait-optimism.
	IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS		
	APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO CONTEXT AND GOALS		
SELF MANAGEMENT	INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE		
	ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE		
	INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS		
SOCIAL AWARENESS	READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS		
	DISCERN OTHERS' EMOTIONS BASED ON CONTEXT		
	APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO CONTEXT AND GOALS		
SOCIAL INTERACTION MANAGEMENT	ENGAGE OTHERS APPROPRIATE TO THE CONTEXT AND GOALS		
	INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS		
	INFLUENCE OTHERS TOWARDS GOALS		
SELF MOTIVATION			

*Emotionintell = name of the EI model outcome of this study.
"TBC" = not established at this stage of the current research project.

Table 33- Draft core EI model

The current author developed these functional applications by first brainstorming the occupations and roles that are centred around human interactions (with a 4”x 3” card for each), and then clustering these cards into groups. These groups were later labelled as ten functions or ‘types’ of occupations/roles. These ten functional applications are:

1. Leading (leading and influencing others at work, in politics, socially and in the wider world);
2. Relationship building (between adults and children across many facets of society);
3. Interviewing (casual engagement and elicitation to more formal interview processes [for example, Legal/Human-Resources/Security/Fraud/ Recruitment]);
4. Developing (including teaching, training, mentoring and coaching arenas);
5. Supporting (counselling, therapy, health, social work, and other helping roles);
6. Competing (in business, sport and other contexts where performance is compared);
7. Performing (acting, entertaining and other arts areas);
8. Managing (the more operational side of getting things done, through and with others);
9. Negotiating (resolving differences and mediating in life, work and society);
10. Meeting (the dynamic of exchanging information to support decision making).

This serves to be a reminder of the potential contexts where a generic EI model may be needed and would be useful in achieving worthy goals.

The key terminology across the models was previously extrapolated into statements of ability/competence and clustered under the four domains of *self-awareness*, *self-management*, *social awareness* and *social interaction* (see Table 24). As Phase I research found that competences fell under the domain of *self-motivation*, only attitudes and traits, this facet was put aside (Section 3.2.5).

The language has been edited by the current author as part of the Phase I development work (Section 3.2.4). This was undertaken in order to factor in the key themes which emerged, and this was transferred into the matrix in Table 31 - EI ability elements. The main principles, factors and components of the new EI model were tested and supported by the SMEs (see Section 4.2) and the resulting EI model (Figure 7) is subsequently referred to as *EmotionIntell*, in order to help with referencing.

5.2.5 The 'EmotionIntell' model

The twelve competences are listed again here (from Section 3.2.44.2) in their four facets:

- Self-awareness:
    - Perceive and label own emotions as they occur
    - Identify and anticipate triggers for own emotions
    - Appraise appropriateness of initial emotional reactions to goals.
- Self-management:
    - Interrupt initial thoughts and own emotional reactions where appropriate
    - Adopt strategies to manage own emotions when appropriate
    - Initiate and regulate emotions to support goals.
- Social awareness:
    - Read others' emotional signals across multiple communication channels
    - Hypothesize about others' emotional signals
    - Appraise options for own actions relative to goals.
- Social interaction:
    - Engage others appropriate to goals
    - Interact appropriately to analyse and understand others
    - Influence others towards goals.

The twelve competences in the model were judged necessary by the SMEs for those who have high Emotional Intelligence. They were also judged sufficient as no additional competences were suggested (see Section 4.2.6).

This model is presented visually in Figure 7 as a four-quadrant image, with *context* at the heart of it, and using the label *EmotionIntell.*

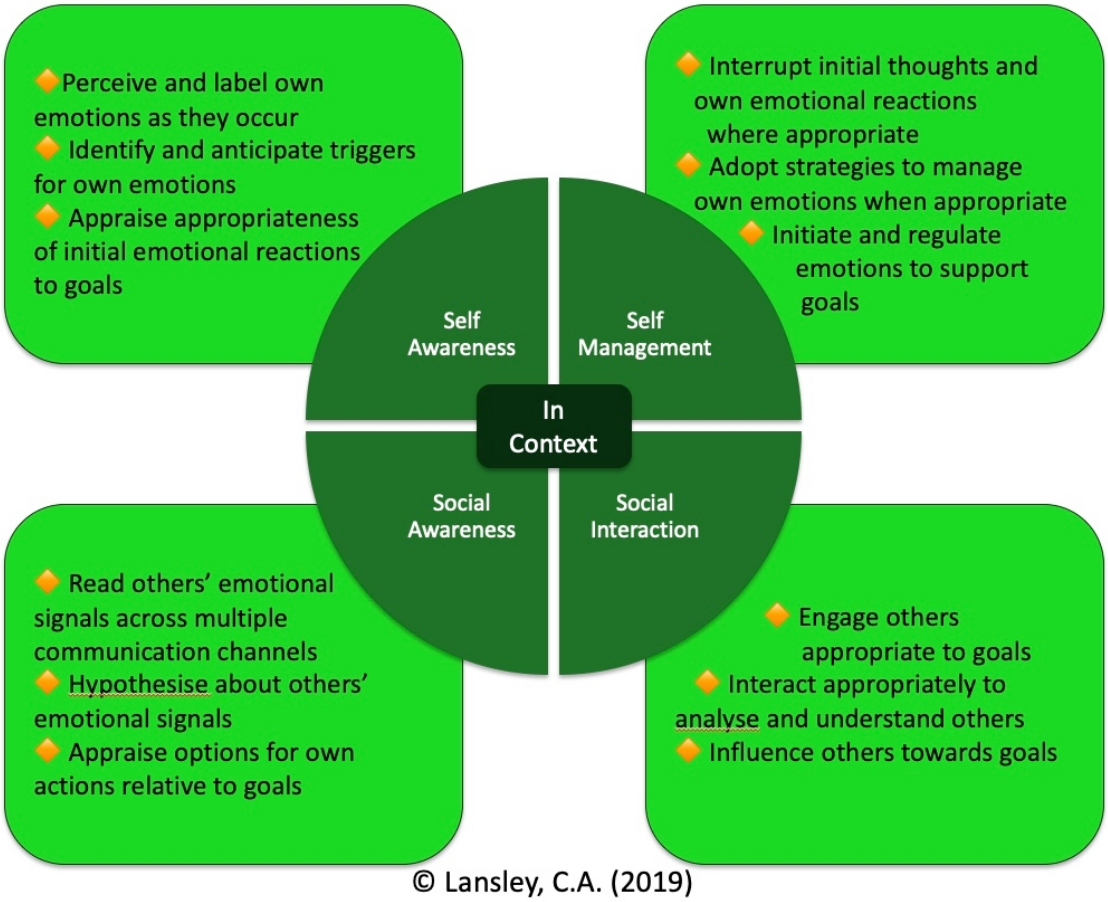
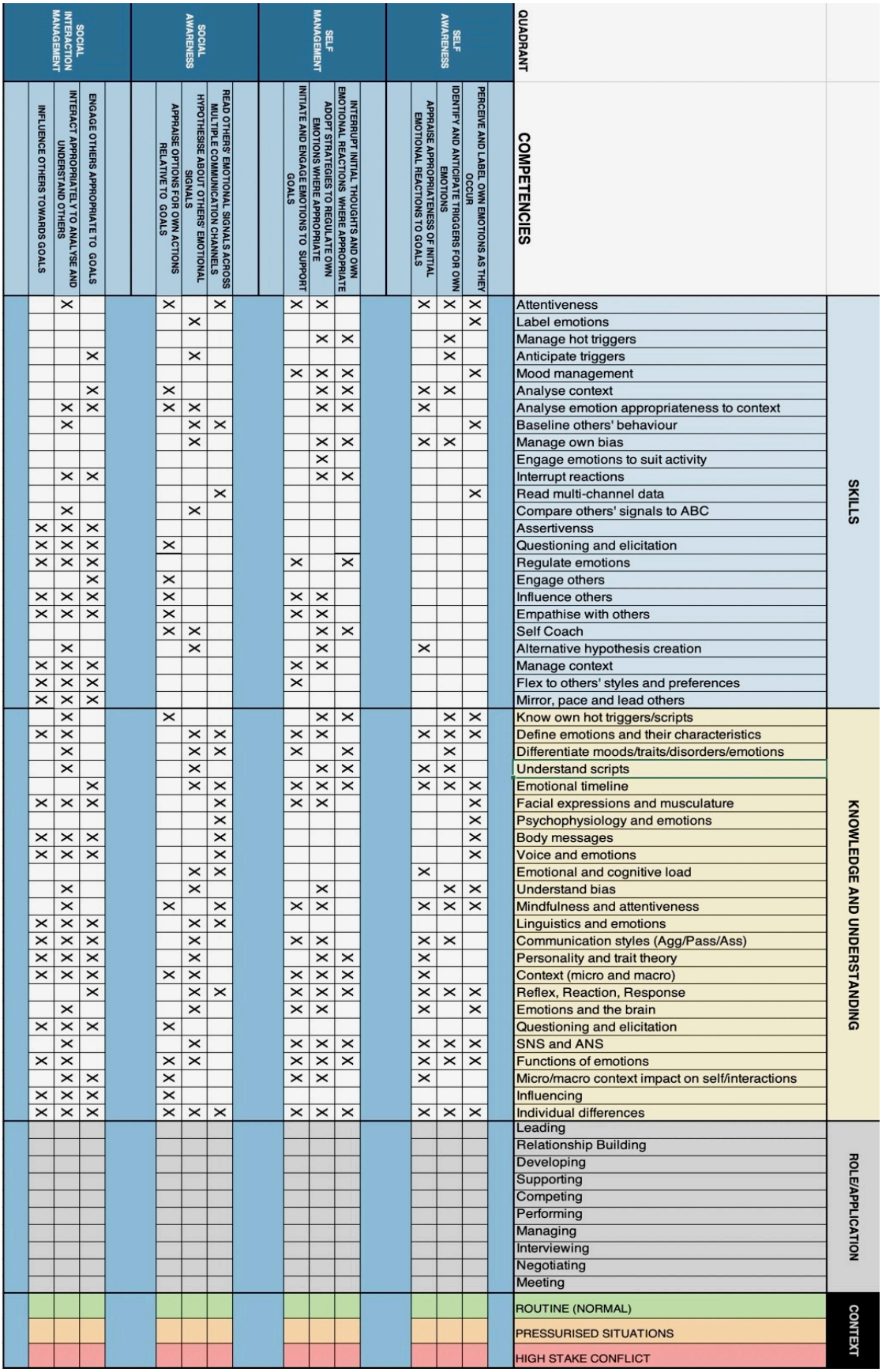


Figure 7 - EmotionIntell Model

5.2.6 The EmotionIntell model disaggregation into a detailed taxonomy

The twelve competences from *EmotionIntell* have been disaggregated into a matrix of *skills,* along with the underpinning *knowledge and understanding* in Table 34.



QUADRANT	COMPETENCIES		SELF AWARENESS			SELF MANAGEMENT			SOCIAL AWARENESS			SOCIAL INTERACTION MANAGEMENT		
			PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR	IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS	APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO GOALS	INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE	ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE	INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS	READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS	HYPOTHESISE ABOUT OTHERS' EMOTIONAL SIGNALS	APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO GOALS	ENGAGE OTHERS APPROPRIATE TO GOALS	INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS	INFLUENCE OTHERS TOWARDS GOALS
SKILLS	Attentiveness		X	X	X		X	X	X			X	X	
	Label emotions		X							X				
	Manage hot triggers			X		X	X							
	Anticipate triggers			X						X			X	
	Mood management		X				X	X						
	Analyse context			X	X	X	X				X	X	X	
	Analyse emotion appropriateness of context				X	X	X			X		X	X	
	Baseline others' behaviour		X						X	X			X	
	Manage own bias			X	X	X	X			X			X	
	Engage emotions to suit activity						X							
	Interrupt reactions					X	X						X	
	Read multi-channel data		X						X				X	
	Compare others' signals to ABC									X			X	
	Assertivenss												X	X
	Questioning and elicitation										X		X	X
	Regulate emotions					X		X					X	X
	Engage others										X		X	
	Influence others						X	X			X		X	X
	Empathise with others						X	X			X		X	X
	Self Coach					X	X				X			
	Alternative hypothesis creation				X		X						X	
	Manage context						X	X					X	X
	Flex to others' styles and preferences							X					X	X
	Mirror, pace and lead others												X	X
KNOWLEDGE AND UNDERSTANDING	Know own hot triggers/scripts		X	X		X					X		X	
	Define emotions and their characteristics		X	X	X	X	X	X	X	X			X	X
	Differentiate moods/traits/disorders/emotions			X	X		X	X		X			X	
	Understand scripts			X	X	X	X				X		X	
	Emotional timeline		X	X	X	X	X	X	X	X	X		X	
	Facial expressions and musculature		X				X	X		X			X	X
	Psychophysiology and emotions		X							X				
	Body messages		X							X			X	X
	Voice and emotions		X							X			X	X
	Emotional and cognitive load				X					X	X			
	Understand bias		X	X			X			X	X		X	
	Mindfulness and attentiveness		X	X	X		X	X		X			X	
	Linguistics and emotions		X							X	X		X	X
	Communication styles (Agg/Pass/Ass)		X	X	X		X	X		X	X		X	X
	Personality and trait theory		X			X	X				X		X	X
	Context (micro and macro)		X			X	X	X		X	X		X	X
	Reflex, Reaction, Response		X	X	X	X	X	X		X	X		X	
	Emotions and the brain		X				X	X		X	X		X	
	Questioning and elicitation										X		X	X
	SNS and ANS		X	X	X	X	X	X		X	X		X	
	Functions of emotions		X	X	X	X	X	X		X	X		X	X
	Micro/macro context impact on self/interactions		X				X	X					X	
	Influencing									X	X		X	X
	Individual differences		X	X	X	X	X	X		X	X		X	X
ROLE/APPLICATION	Leading													
	Relationship Building													
	Developing													
	Supporting													
	Competing													
	Performing													
	Managing													
	Interviewing													
	Negotiating													
	Meeting													
CONTEXT	ROUTINE (NORMAL)													
	PRESSURISED SITUATIONS													
	HIGH STAKE CONFLICT													

Table 34 - Emotionintell taxonomy

This taxonomy is based on a simplified and adapted version of Bloom's (1956) taxonomy of educational objectives, "abbreviated as KUSAP: knowledge, understanding, skill,

application (simulation) and performance" (Lansley, 2016). The skills/knowledge and understanding sections have been populated with content drawn from the detail that was mapped (on the wall mind map) from the models scoped for the literature review (see Section 2.1). This has subsequently been updated following the SME consultation with facets removed that did not secure 80% support (see Section 4.2) in Table 34. This will help guide the development of a curriculum framework for educational, development and review processes and provide a platform for the development of the assessment instruments to establish an *e*-factor measure. Abilities are skills that can be observed with the right form of testing. Knowledge and understanding provide the platform for the transfer of those skills across a wide range of contexts or functions, with different people, including those outlined towards the bottom of Table 34.

The indexing in Table 34 [using an 'x' in the grid to highlight relevance] of the knowledge, understanding and skills against the primary factors illustrates how these elements might be used as a basis for testing (and development). Their relevance *across* the 12 factors and the four quadrants of the *EmotionIntell* model suggests that this might lead to good inter-quadrant correlation. This is yet to be confirmed in research that would need to be carried out beyond this current study (see *Where next* in Section 7.4).

Green, amber and red rows have been added to Table 34 as a prompt to factor features into the EI model that assure the ecological validity of the assessment methodology. Those being measured against EI would need testing in routine, pressurized and high-stake contexts to reflect the range of real-life contexts, as raised earlier in paragraph 9 of Section 3.2.6. This is illustrated against some of the general functional applications from Figure 25, shown here in Figure 8.

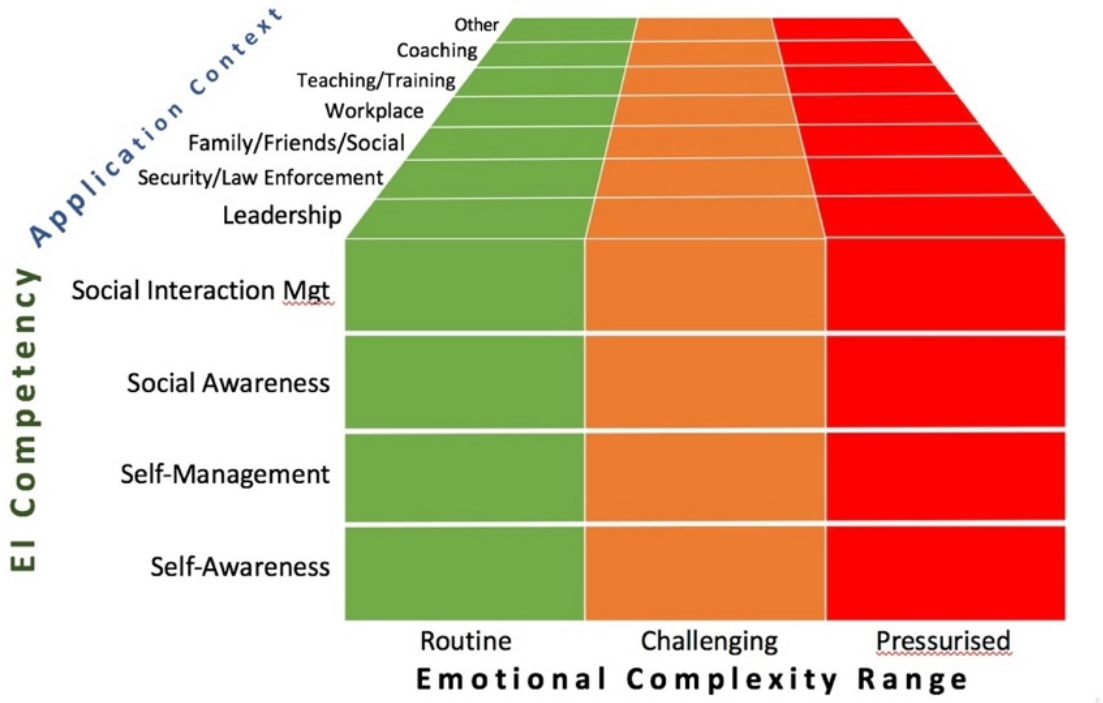


Figure 8 - EmotionIntell functional applications and complexity model

If the 'Leadership' application context is considered, for example, it may be easy for a leader to exhibit good emotion self-management when interacting in a routine situation they have faced before, with a colleague they like, with no time or budget pressures. The ability to regulate one's own emotions, so that our thinking and behaviour are constructive and appropriate, might be less evident during a work-based emergency that has not been encountered before, or where training has not been previously provided.

5.2.7 Traits and other individual differences

Thirty traits, some more correctly labelled as attitudes, beliefs or values, featured in the matrix across the core EI models (see Table 6). These have been extracted, so that duplications can be removed. They are reproduced in Table 35 below.

Individual Differences:	**Traits, Styles, Preferences, Motivations, Drives, Orientations**
Drawn from existing EI Models	Trustworthiness.
	Achievement-orientation.
	Service-orientation.
	Optimism.
	Achievement-drive.
	Initiative.
	Commitment.
	Leveraging-diversity.
	Political-awareness.
	Innovativeness.
	Adaptability.
	Conscientiousness.
	Self-confidence.
	Organisational-awareness.
	Efficiency-orientation.
	Attention-to-detail.
	Social-responsibility.
	Self-regard.
	Self-motivation.
	Self-actualisation
	Independence.
	Adaptability.
	Impulsiveness.
	Self-esteem.
	Trait-happiness.
	Trait-optimism.

Table 35 - Traits extracted from range of EI models

What this reveals is that this aggregation from existing EI models ignores some of the well-known factors from personality models.

It was interesting to note that ***Conscientiousness**** (see below) the only common factor from all those to appear in Table 35, which features in the 27 trait factors across the more widely known personality models. These models include:

- *Eysenck's 3 dimensions* (Eysenck and Eysenck, 1975);
- the *Big Five* (see the evolution of this model in Digman, 1990); and
- *Cattell's 16 Personality Factors* (Cattell, 1983).

These three personality models are broken down below:

Eysenck's 3 dimensions factors:

- introversion versus extroversion;
- neuroticism versus stability; and
- psychoticism versus socialisation.

The *Big Five* factors:

- Openness;
- *Conscientiousness;
- Extraversion;
- Agreeableness; and
- Neuroticism.

Cattell's 16 Personality factors:

- Abstractedness,
- Apprehension,
- Dominance,
- Emotional Stability,
- Liveliness,
- Openness to Change,
- Perfectionism,
- Privateness,
- Reasoning,
- Rule-Consciousness,
- Self-Reliance,

- Sensitivity,
- Social Boldness,
- Tension,
- Vigilance, and
- Warmth.

The current author posits that most of these 27 personality/trait qualities might impact on EI, and therefore, it is suggested that it is strange for trait/mixed EI model creators to ignore most of the factors across this solid base of personality/trait theory and research, and instead, to generate their own mix of trait descriptors.

Personality descriptors and traits are, therefore, much more extensive than these facets of our personality and character that EI model developers have chosen to use.

Our success in managing our own thinking and actions, and managing our interactions with others, in emotion-laden contexts, is also influenced by a multitude of individual differences. The systematic analysis of the literature in Section 3 (Phase I) did not reveal any convincing arguments as to why the ones chosen in each model were selected above the ones that have been left out. In addition, beyond trait theory, the current author argues that other individual differences might impact on social interactions. These include gender; age; culture/family/social values; ethnicity; religious/spiritual beliefs; language; life experiences; LGBT+ identities; special needs; disorders; health issues; group styles; and communication styles. We might also want to account for personality and type indicators from the wider field, such as:

- Control, Inclusion, and Affection - from the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) model, see FIRO Business and FIRO-B Tests, 2020; and
- Thinker, Intuitor, Sensor, Feeler, Judger, Perceiver - from the Myers Briggs Type Indicator (MBTI) model, see The Myers & Briggs Foundation - MBTI Basics, 2020.

The above examples are by no means exhaustive. Some of these are drawn from the popular personality dimensions and scales; some are *personal type* or *style* descriptors; some are biological factors; some demographic; some are identities; and some are simply preferences relating to the way we process information, solve problems and/or relate to

others. In the proposed new model, these factors either become part of the *micro context* (the immediate environment, in other words, the time and place of the interaction) and the *macro-context* (what we each bring with us regarding background, culture, values, beliefs and the other individual differences highlighted in this section). Both are important to social interactions (see Sections 5.2.2 and 5.2.4). Knowledge, awareness, and the reading of these differences, in self and others, can have a significant impact on the success of an interaction. If individuals are fully aware of their preferences and biases, and they can work out the characteristics and preferences of others, in advance or during an emotionally charged (or any) situation, then they might be better able to empathise, pace and flex their emotions and style. Thus, this will help them to engage appropriately with the others' emotions and style, in real-time, towards the goal(s) of the interaction. A person high in emotionally intelligence, therefore, would need to underpin their skills and competences with a broad knowledge and understanding of traits, and other individual differences, so that over time, they are better able to transfer competent EI performance across a range of situations, with a range of individuals.

Some of these preferences could be a key part of our *personality* and they may be so ingrained that they make our responses in emotion-laden situations predictable. That is to say, they form *habits* or *patterns* which are 'hard-wired' by biological factors and/or life experiences. *Personality* has been explained by the American Psychological Association (2018) on their website as:

> ....individual differences in characteristic patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas: One is understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a whole.

The Cambridge Handbook of Personality makes the definition slightly simpler by defining personality as "the set of habitual behaviours, cognitions and emotional patterns that evolve from biological and environmental factors" (Corr and Matthews, 2009:266).

This means that such individual differences would *have* to be factored into any model where one human being is dealing with another and seeking to fully understand the impact and influence of such factors, as part of the wider context, surrounding any specific interactions and interpersonal perceptions.

As noted in Section 5.2.2, the challenge becomes incorporating such vital factors into an EI *ability* model without turning it into another *mixed* model. It was noted in Section 5.2.6 that the solution emerged via the taxonomy matrix, which resulted from the disaggregation exercise (Table 34). In this matrix, the trait and context facets that are incorporated are:

- Knowledge and understanding;
    - Differentiate moods/traits/disorders/emotions
    - Understand bias
    - Communication styles
    - Personality and trait theory
    - Context (micro- and macro-)
    - Impact of context on self/interactions
    - Individual differences.
- Skills (the real-time abilities required to apply this knowledge and understanding);
    - Analyse context
    - Manage own bias
    - Manage context
    - Flex to others' styles and preferences.

To summarise this section the current author reflected on three of the challenges around EI models that were captured in Section 3.2.63.2.6.

1. In paragraph 2 of Section 3.2.6, it was highlighted that "traits and abilities have generally been accepted as inter-relating, yet opposing, constructs (Eysenck, 1994; Zeidner, 1995) and, therefore, should not be mixed as primary factors in an EI model".
2. Paragraph 12 in the same section asks the question, "Which factors should feature as the core of an EI framework - knowledge, skills, abilities, attitudes, traits, or other factors?"
3. Also, in paragraph 9, it was argued that "EI needs to factor in appropriateness of behaviour towards goals within the micro- and macro-context that applies. This includes cultural, personality, and other individual differences".

The approach taken in this development work has resulted in an EI model that addresses these key challenges and questions.

The primary factors in the *Emotionintell* EI model are *abilities*. This model is not contaminated by traits, so it avoids it becoming classified as another mixed model. Yet, unlike current ability models, such as MSCEIT (see Section 3.2.1.8), traits, personality, culture, and other individual differences have not been neglected. These, and other, micro- and macro-context features have been factored into the EI model by means of the knowledge/understanding/skills taxonomy in Table 34. This has been achieved in a way that can now inform related EI development programmes, and can support valid EI assessment methodologies, plus any future design and testing of reliable EI test instruments.

5.3 Implications for next phase and future research

The refinement and finalisation of the *EmotionIntell* model in this phase of the work, including the population of the underpinning taxonomy, presents a SME-validated model and dataset that can be used to inform the type, range and format of assessment methodologies that are appropriate to maximise the chances of developing an assessment instrument (or instruments) beyond this study. The final fourth phase in this thesis (Section 6) outlines the wide range of assessment methodologies that are used in psychological contexts and presents an appropriate assessment methodology. This assessment methodology seeks to support the *Emotionintell* EI model that has resulting from this research, and hopes to address the assessment challenges and the criticisms highlighted in paragraph 8 of Section 3.2.6.

6 EI Assessment Methodology Development (Phase IV)

The final phase of this research project reviews and analyses the range of assessment approaches used in, and beyond, the core EI models, with the aim of presenting what the research suggests is the most appropriate methodology for the EI model that has emerged in Phase III (Section 5). This phase includes three sub-sections:

- Methodology Section – how the data was collected and/or generated and how it was analysed, including anticipated problems and how they were handled;
- Findings Section – the results and the analysis;
- Implications and where next – how these findings feed into the next phase and future research.

6.1 Methodology

This phase draws on the first three phases and analyses the findings against conceptual frameworks and theories relating to assessment methodologies that might be best employed to measure the *EmotionIntell* construct and the related factors and facets in the taxonomy that underpins it. This may be criticised, since a methodology as it does not follow the general approaches in the literature that explore EI factors and assessment methodologies. These general approaches tend to focus on:

- inter-EI-model correlation, and
- alignment under the positive manifold of intelligence with IQ.

The reason for avoiding the first activity is due to the recognition from this study, reinforced by the SME consultation (see Section 4.2.14.2.1), that, up to the time of this study, no widely accepted EI model is judged to be suitable to be classified as an EI equivalent to IQ. EI is "poorly defined and poorly measured" in the words of Murphy (2014b:346). There are multiple models that describe EI qualities using different constructs across a spectrum of abilities and traits (Jordan et al., 2006).

This spectrum of factors in the disparate EI models mean that there is no widely accepted methodology for the measurement of EI. Instead, EI assessment evidence "remains murky…[as] … studies that speak to the issue have used different measures of EI, which are in turn based on different definitions of the construct" (Emmerling and Goleman, 2003:11).

The second focus of much of the literature exploring EI factors and assessment methodologies centres on a condition raised around "correlational criteria" (Mayer et al., 1999a:271), which is still influencing recent research, by citing the claim "that EI should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361; see also Mayer et al., 1999a; and Orchard et al., 2009). Phase IV of this research builds up from a theoretical base to prevent it being derailed by the assertion that EI should positively correlate with IQ, given this assumption that has been questioned by Bay and Lim (2006), who found negative correlations between intelligences (see Paragraph 4 in Section 3.2.6). The current author's confidence with respect to taking this route was strengthened further by the results of the SME survey where a good majority (76.2%) of the SMEs hypothesized that a reliable measure of Emotional Intelligence would have no or low correlation with IQ (Section 4.2.14.2.1).

Although this correlational criterion seems to have originated in the general intelligence field (see Guttman and Levy, 1991), it expanded into the EI research community following the research work around MSCEIT, where the developers offered the positive manifold criterion, almost as a given (see Mayer et al., 1999a). This criterion appears to have been relied on by other researchers (for example, Orchard et al., 2009). Even as recently as 2014, research work exploring the hierarchy and bi-factor models of intelligences [and questioning if EI is a *second-stratum* factor of intelligence] are still leaning on the suggested [three] "correlational criteria" (Mayer et al., 1999a:271), including the criterion "that EI should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361). This criterion tends, therefore, to distance any EI model that is based on traits and not on abilities that have similar cognitive characteristics to IQ. The current author posits that the elevation of this correlation criterion by Mayer et al., (1999a) may have contaminated EI research over the last twenty years, and therefore supports the theoretical approach adopted by the current research.

The analysis of the literature revealed (see Paragraph 2 in Section 3.2.63.2.6) that Petrides and Furnham (2001), the developers of Trait Emotional Intelligence Questionnaires (TEIQue), stated that if trait EI is argued to be a personality construct, then "one should not expect it to strongly correlate with measures of psychometric [IQ] intelligence" (Petrides and Furnham, 2001:437). In another study, EI was found to be "negatively and significantly correlated with Neuroticism, and positively and significantly correlated with Extraversion, Openness, Agreeableness and Conscientiousness"

(Saklofske et al., 2003:707). This means that Petrides and Furnham (2001), major proponents of trait EI models, distance EI from the intelligence construct, and the Saklofske et al.(2003) evidence supports that argument. Any positive correlations tend to relate to second-stratum factors (that is, the selective extraction of similar facets within models), and not to the overall construct with only "some preliminary evidence that EI shows differing relationships with existing second-order factors of intelligence" (MacCann et al., 2014:361).

This is not meant to suggest that there is no correlation or even a negative correlation between the two overall constructs of IQ and EI. Rather, it is a statement that we cannot know this until there is an EI model established, which is judged to define and measure EI *ability* in a way that fits the definition of an *intelligence*. This is an assumption that is also countered by the majority of the SMEs consulted in 2019 during this research. The majority (76.2%) of the SMEs consulted suggested that a reliable measure of Emotional Intelligence would have *no or low correlation* with IQ, for example. Any analysis that uses this as a metric for analysis and evaluation is arguably risky, in consequence.

The methodology, therefore, supports the adoption of a *theoretical basis* for moving forward, to ensure this research around EI assessment methodologies remains centred on conceptual theory and avoids these two potential pitfalls for this research and development work. To summarise, there is a danger of assuming a model and/or its assessment methodology is 'good' because it either:

1. correlates positively with an EI model or assessment instrument that the developer selects; and/or
2. correlates with IQ scores, under the positive manifold assumption challenged in Paragraph 4 of Section 3.2.6.

The methodology has to respect that intelligence is about the *application of ability in context,* and so any assessment has to provide a means of predicting a person's *ability* and real life and work *performance*, not simply by testing their level of knowledge, or ascertaining their own (and/or others') perceptions of their performance, but also by assessing their ability to apply it in a range of contexts. Therefore, the approach taken in this phase of the research follows the subsequent methodological processes:

- Review of the IQ assessment methodology to inform this development work towards an EI equivalent, including a review of the widely accepted measures of IQ, to provide a reference point for this phase of the research.
- Exploration of the conceptual considerations around assessing ability and EI, in order to identify a framework that provides a holistic picture of the components of EI performance. Such a model is deemed necessary to help the current author to conceptualise and analyse:
    - typical behaviour that we may feel we apply;
    - behaviour that we believe to be correct or optimal;
    - performance as it is perceived by others; and
    - actual performance in real life and work contexts.
- This analysis of how assessment approaches, such as self-report, multi-rater and correct answer response mechanisms, can separately, and in combination, help towards the generation of an *e* factor score against the *EmotionIntell* model. This included the necessity for the creation of an *Assessment Triad* model by the current author (see Figure 9 in Section 6.2.3) that can be used as a base for the analysis of the EI assessment methodologies in this Phase IV of this thesis. In this Section the assessment methodology adopted by each of the EI models scoped for this research is analysed and the suitability established for assessment of the components of the EI model outcome of this study.
- EI assessment approaches from the core EI models are then analysed against this conceptual framework and their relative strengths and weaknesses are identified.
- The results of the SME consultation are also factored into the analysis.
- Finally, an assessment approach is proposed that provides the best chance of the *e*-factor score correlating with EI performance, thus giving an ecologically-valid measurement approach for EI that can be relied on.

It is recognized that, beyond this conceptual study, there is then a great deal of work involved in developing any assessment instrument(s), and in the extensive validation and reliability testing of the instrument(s), before *EmotionIntell* can be judged an *e* factor that is an acceptable EI equivalent to IQ.

6.2 Findings

6.2.1 Review of assessment approaches to IQ

The aim of this research is to develop an EI model and assessment methodology that is widely accepted as a reliable measure of EI, in the same way that general intelligence (IQ) is measured (see Section 6.2.1). This section, therefore, presents a summary of the IQ assessment approaches as a base for the development of an assessment methodology.

Intelligence is often seen as a general mental capability to perceive or understand, defined in its purest form as "the ability to acquire and apply knowledge and skills" (Oxford Dictionary, 1989). This capability, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking ability. Instead, it reflects a broader and more profound capability for comprehending our surroundings: catching on; making sense of things; or figuring out what to do. It is worth briefly summarising the IQ history and developments here to ensure the *intelligence* base of EI is not lost.

In the early 1900s, the French psychologist Alfred Binet (1857-1914) and his colleague Henri Simon (1872-1961) set out in Paris to develop a measure that would differentiate between those students expected to be better learners from the students expected to be slower learners. The French government initiated this work following the introduction of a law mandating universal education. The purpose of the research was to identify 'slow' children (those who were 'en retard' or 'late') so that they could benefit from special education programmes, instead of being labelled 'sick' and subsequently sent to the asylum (Nicolas et al., 2013).

Binet and Simon developed what most psychologists today regard as the first intelligence test, with the Stanford-Binet Intelligence Scales (SBIS) now in their fifth edition (Roid, 2003; see also the review by Roid and Pomplun, 2012). SBIS is an American version of Binet's test, developed by Lewis Terman in 1916 at Stanford University. It consists of a wide variety of questions that include the ability to compare items, to construct, repeat and complete sentences. It also challenges test-takers to name familiar objects; define words; and draw and memorise pictures. The fifth edition is designed for children and adults between 2 and 85+ years of age, and is structured around the five factors of "fluid reasoning, knowledge, quantitative reasoning, visual-spatial processing and working

memory…[with] half of the subsets [using] a nonverbal mode of testing" (Janzen et al., 2004:235).

Binet and Simon believed that the questions they asked their students, even though on the surface they were on the surface dissimilar, all assessed the fundamental abilities to understand, reason, and make judgments (Binet and Simon, 1915; Siegler, 1992). Binet and Simon discovered that the correlations among these different types of measures were positive; students who got one item correct were also more likely to get other items correct, even though the questions themselves were very different. Based on these results, the psychologist Charles Spearman (1863-1945) hypothesized that there must be a single underlying construct that all of these *different abilities and skills* items measure. He introduced the *general intelligence factor* or '*g*' (1923), a term that is sometimes used when describing cognitive abilities and general human intelligence. Many psychologists support this generalized intelligence *g* factor that relates to abstract thinking, including the abilities to acquire knowledge; to reason abstractly; to adapt to novel situations; and to benefit from instruction and experience (Gottfredson, 1997; Sternberg, 2003). These researchers claim that people with higher general intelligence learn faster. Since the tests that measure *intelligence quotient* (IQ) centre on verbal and numerical reasoning, it is not surprising that proficiency with language and numbers might then provide the capability to learn efficiently.

Some research divides the *g* factor into the two sub-domains of *fluid intelligence*, which refers to "the capacity to learn new ways of solving problems and performing activities"*,* and *crystallized intelligence*, which is *"*the accumulated knowledge of the world we have acquired throughout our lives" (Salthouse, 2004:141). This suggests that these intelligences must be different, since crystallized intelligence increases with age. For example, older adults are as good as or better than young people in solving crossword puzzles. However, fluid intelligence tends to decrease with age (Horn et al., 1981; Salthouse, 2004).

Other researchers have proposed even more categories or facets of intelligence. L. L. Thurstone (1938) suggested that there were seven clusters of *primary mental abilities*, made up of: *word fluency; verbal comprehension; spatial ability; perceptual speed; numerical ability; inductive reasoning; and memory*. These clusters are similar to the factors in SBIS (which are: *fluid reasoning*; *knowledge*; *quantitative reasoning*; *visual-*

spatial processing; and *working memory*). They might, therefore, be viewed as *types of tests* that are used to ascertain a *g* score, rather than different intelligence constructs. Another advocate of the idea of multiple intelligences is the psychologist Robert Sternberg. Sternberg has proposed a triarchic (three-part) *theory of intelligence* that suggests that people may display more or less *analytical intelligence*; *creative intelligence*; and *practical intelligence* (Sternberg, 1986). Sternberg added in later research (2003) that traditional intelligence tests assess analytical intelligence, in other words the ability to answer problems with a single correct answer. He highlighted that they do not assess creativity (the ability to adapt to new situations and create new ideas) or practicality (for example, the ability to write good memos or to delegate responsibility effectively).

The drive to quantify and measure general intelligence has resulted in a range of what we know as *intelligence quotient tests* or 'IQ tests'. As well as SBIS, there are several different IQ type intelligence tests in existence, though their content can vary considerably. Some are used with adults, but many are designed or adapted for use with children. Some widely-used intelligence tests, in addition to the Stanford-Binet Intelligence Scale development in 1916, include:

- Wechsler Adult Intelligence Scale (Wechsler, 1955);
- Wechsler Intelligence Scale for Children (Wechsler, 1974);
- Woodcock-Johnson Tests of Cognitive Abilities - first developed in 1977, but see the updated review of version 'IV' in Mather and Jaffe, 2016.
- Kaufman Assessment Battery for Children [aged 2.5 years to 12.5 years] (Kaufman and Kamphaus, 1984);
- Cognitive Assessment System (Naglieri, 1997);
- Universal Nonverbal Intelligence Test (Bracken and McCallum, 1998).

One of the features of intelligence is that it is, rightly or wrongly, often associated with educational institutions and universities, so those who are judged to have a high IQ might often be described as *smart*, *academic* or *scholarly*. However, this provides a little comfort for those who perceive themselves to be non-academics in that the term *academic* can be defined as "not of practical relevance; of only theoretical interest" (Oxford Dictionary, 1989).

IQ is a measure of cognitive abilities, relative to others of a similar age on an IQ test, where the equation used to calculate a person's IQ score is

Mental Age / Chronological Age x 100 (American Mensa, 2019).

The norm of populations tested by IQ tests is 100. Around "70 percent of the population has an IQ between 85 and 115 on most tests" (ibid). A score below 70 is considered below average and indicative of problems with cognitive awareness. Scores "above 115 are generally considered as 'high IQ,' and those above 130 to 132 (depending on the test taken) are usually considered highly gifted and are in the top 2 percent of the population" (ibid).

There are critics of the IQ concept (Gardner, 1983; see also Section 2.3), related mainly to the fact that it neglects other human qualities such as creativity, the arts, manual dexterity and social and emotional intelligence. There have also been suggestions over the past century that society needs to recognise such wider intelligences and their applications, and academic institutions are driving this agenda forward (Gardner and Hatch, 1989). At a simplistic level, the current author posits that an IQ test simply measures how well people do on a specific IQ test, and is not necessarily being an unquestioned measure of their overall intelligence. The research around *Emotional Intelligence* faces similar and other challenges, which are covered in this next section (Section 6.2.2).

6.2.2 Conceptual considerations around assessing ability and EI

The field of developmental and educational psychology is populated with some common but misunderstood dichotomies. *Nature* versus *nurture* is probably the most well-known (see Galton, 1875), though another important conceptual distinction when considering assessment of human behaviour is that between *ability* and *performance* (Langan-Fox et al., 1997). The basic distinction is being able to measure whether someone has the ability (knowledge or understanding of a concept, or a skill), and a task needs to be created for them that should require the application of that underpinning ability for successful completion of the task. This enables the subject's *performance* on the task to be established in order to infer whether they have that knowledge, understanding, and skill, or not. For example, in order to know whether a student knows the principles of algebra, it is useful to set an algebra test, and then measure how well the student applies their knowledge and skills across a range of simulated challenges or questions. It should be noted, however, that for this test to be meaningful, it must be assumed that the algebra test is a good one. Alternatively, the test should allow for the possibility of a student

doing poorly on an algebra test, even though they really *do* know algebra principles, simply because the test is a bad one. However, this would mean the test was meaningless (as it failed to measure what it needed to measure, that is, a student's knowledge and application of algebra). This would be an ecological validity issue in that the test scores failed to correlate with actual real-world performance. It may be useful to consider another example. Aircraft pilots do not automatically progress from the classroom, through the flight simulator, to becoming captains of flights which carry real passengers. They first serve as co-pilots with competent pilots, for a minimum of 1500 hours[24], to ensure they can transfer the abilities practiced and tested in the simulator to a real flight with the stresses, responsibilities and realities of living, breathing, fare-paying passengers on board, at 30,000 feet in the air, through variable climates and conditions.

This notion of transfer of performance is further complicated by the fact that the ability to perform across a range of contexts is difficult to predict from one simulated test. For example, individuals may be unsuccessful many times as they attempt to transfer their performance to new contexts and conditions, before *consistent* success is mastered. In addition, there are the practicalities of time and cost. For instance, a test can often only assess a sample of the likely situations where an individual may need to perform and we may have to infer, maybe from knowledge and understanding, that they can transfer that performance across a range of contexts not yet tested. This is a challenge that has been labelled as *construct under-representation* (Messick, 1995). This refers to a failure to test a person across a whole curriculum or across a wide enough range of applications, though there are counters to this criticism in other publications (see Mayer et al., 2012:405). A car driving test is perhaps a good example of this counterargument. Individuals can successfully pass the test, despite not demonstrating their performance of driving on a motorway, since drivers in the UK are not allowed to drive on a motorway until they have passed their test. Likewise, learner drivers may not have been tested in their ability to control a skidding vehicle in icy or wet conditions, as the weather on the day of their driving test was warm and dry.

If it is acknowledged that our tests might not be perfect, then it might have to be accepted that poor *performance* could be observed when participants are

[24] https://www.pilotcareernews.com/how-to-be-a-pilot/ (Accessed: 26 July 2020).

actually perfectly able (that is, they simply make *a mistake*) and, similarly, the reverse might be the case when there is a *lucky* performance. This distinction between observable performance and underlying competence or intelligence is one that drives the EI field to continually seek better tasks and methods to assess EI intelligence and the competences that underpin the construct. An unfortunate problem here is that EI competence, by definition, cannot always be directly observed. Some EI abilities and qualities are internal processes, such as the ability to sense, perceive and label emotions as they arise. This may involve the individual in cognitive analysis around their conscious perceptions of physiological sensations, plus interpretations of those sensations based on their knowledge of the effect of emotions on the body. The use of task performance might then serve only as an *indicator*, and an assessor may have to observe a person's level of performance and make assumptions about their EI ability relating to sensing, perceiving and labelling their own emotions. The addition of the element of *observation* adds a further complexity, in that observation may contaminate the context around an assessment, even if that is by discrete, expert EI observers who are judging actual performance in real life or work contexts from a distance or via video surveillance, simply by the presence of the observer or the technology. Compromise on assessment output quality is therefore likely, especially when the time and cost implications of the testing process are factored in. This may need the incorporation of some degree of self-report, blended with other assessments to corroborate the claims made by the subject.

It may be more appropriate to investigate what types of tasks produce successful performance, and whether those tasks reflect real-life challenges with practical significance. In the case of algebra students, for example, perhaps what really matters is whether (and in what situations) they can either:

- use algebra in real-world tasks, or
- *judge* whether algebra is being used appropriately by others in real-world tasks.

It could be argued, for example, that only a competent brain surgeon could correctly judge the performance of another brain surgeon performing live (or video-recorded) surgery.

This performance-testing process has been carried out with leadership and management abilities by the current author, using an assessment instrument referred to as 'MAP' (see *Managerial Assessment of Proficiency - MAP2,* 2020). In this assessment process,

subjects are challenged with a series of situations that they might typically face using video-based scenarios of others, interacting and performing in a series of situational judgement tests (SJT), showing samples of a team and their manager interacting over time in a range of contexts. Subjects are tasked to judge the *appropriateness* of the manager's performance towards the *goals* of the interactions within the changing *contexts* over a week in their work life. The correlation between managers ranked by 360-degree average ratings (from at least five of their colleagues, including their superior, peers and direct reports) was compared against their ranking as a result of a score on the 'MAP' instrument (applying Spearman's Coefficient of Rank Order Correlation analysis). Eleven organisations (n=253) were analysed. Correlations were significant and positive, ranging from 0.71 to 0.92. with a mean of 85% (Lansley, 2010). This enabled the instrument to be used for predictive purposes such as recruitment and development planning. It is recognised, of course, that this work focuses on leadership role performance, not intelligence, and it has a restrictive work context, rather than a generic one, though it is referenced here due to its ecological validity strengths.

This still leaves the bridge between transfer from the SJT to the actual context a person lives and works in. This bridge might be strengthened with the addition of peer perception from those populating that real context as a possible way forward for EI. The bridge may not be so huge, if the task is challenging the subject to judge the appropriateness of another's performance in their context, and their responses are compared against reliable subject-matter expert scores. As a result, this then avoids the self-report issues (under the *susceptible to faking* risks – see Paragraph 8 in Section 3.2.63.2.6) of what they themselves might say they *would* do, since the prompt would be about judging the appropriateness (correctness) of what is done by others.

At this stage, based on this breakdown of EI-related performance, it is suggested that EI ability testing may need to include a blend of self-report, SJT and peer perception. It was, therefore, necessary to take a more in-depth look at performance assessment theory, and empirical research, in order to analyse these and other approaches to assessment to check this hypothesis.

6.2.3 EI measurement approaches

It would be natural to assume that the measurement of EI is largely driven by the primary factors being assessed. It is also necessary to explore the basis of the measurement. This

has been conceptualised in this thesis using the assessment triad created by the current author in Figure 9.

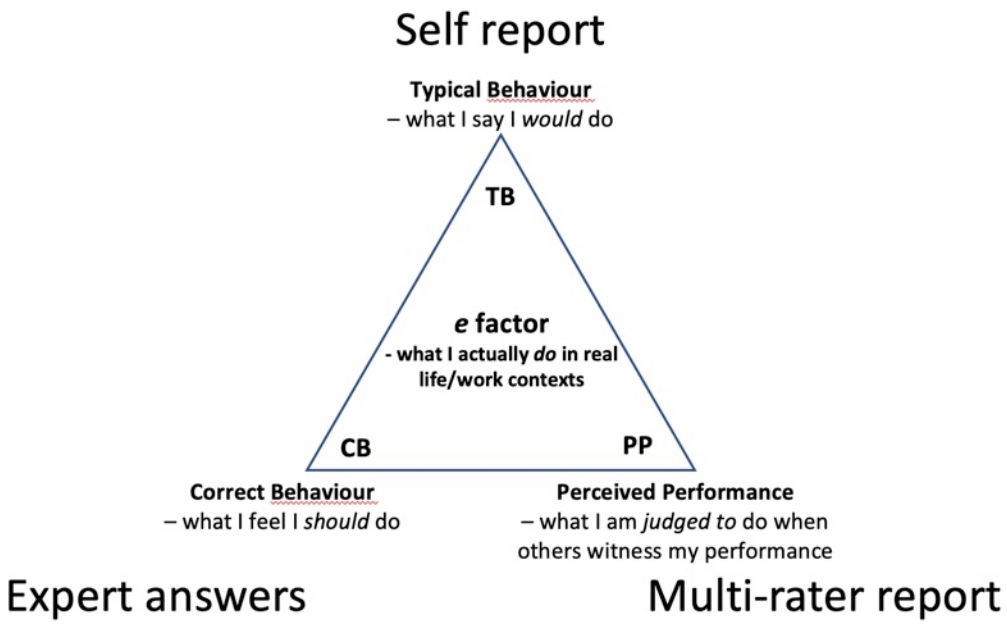


Figure 9 - EI assessment triad

Trait-based psychometrics are largely self-report and, therefore, tend to represent how we believe (or wish to portray) we typically perform or behave (typical behaviour [TB]); what we say we *would do* based on our knowledge and understanding of EI; and our motivations and purposes for completing the assessment instrument. This contrasts with ability-model approaches, where our judgements are compared against the correct answers (correct behaviour [CB]); what we judge that we *should do*, based on expert-established correct answers for EI.

A third dimension in the assessment triad is the perceived performance (PP) of an individual in real-life contexts by others, in other words, what we *are judged* to do. Actual EI performance may be challenging for an individual to judge themselves, especially in emotion-laden contexts and interactions. This is compounded if an individual has low levels of knowledge about what is correct EI behaviour. It is possible that a person is well aware of what they *should do*, but consciously chooses not to do it, which may be due to self-serving or wider goals that may take priority over optimal EI performance at that point. PP can be captured to some extent by 'multi-rater' assessments, drawing on ratings from those we work or live with. This would factor in a person's ability to apply their knowledge and skill in real-life situations and so would be a valuable element in holistic EI

assessment. In seeking to establish the *e* factor (maximal performance across a range of real-life contexts), each of the TB, CB and PP perspectives alone might not therefore guarantee ecological validity and mean that a high EI score on any one dimension will correlate with maximum performance in life and work.

It follows then, taking a theoretical perspective, that a *combination* of these dimensions may provide a useful combination to get as close as possible to an EI (*e* factor) equivalent of the *intelligence* construct (that is, *the ability to acquire and apply knowledge and skills* [see Section 2.2), to assess *emotional intelligence* (that is, *the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals* [see Section 2.2]). This might then provide a useful predictive measure for selection, recruitment, relationships, self-development, education and development processes and reassessment of progress. This then requires an analysis of the assessment instrument *types* for each of the three dimensions.

6.2.4 Stocktake of assessment approaches

When the assessment methodologies of the eight core models are reviewed (see Table 36) it can be seen how they utilise three general approaches:

EI Model	Claimed Model Type	Scoring/Rater Approach
TEIQUE	Trait	Self-Report
ESCi	Mixed	Multi-Rater
ECI 2.0	Mixed	Self-Report +/or Multi-Rater
GOLEMAN	Mixed	Self-Report
EQ-I 2.0	Mixed	Self-Report +/or Multi-Rater
SAARNI	Ability	N/A (no test)
GENOS	Ability	Self-Report +/or Multi-Rater
MSCEIT	Ability	Correct Answer (Expert or Concensus)

Table 36 - Assessment approaches across the core EI models

Although there are no identical test instruments the approaches being used, they tend to fall into the following types:

- Self-report
- Multi-rater
- Correct answer.

These are expanded upon in the next three sub-sections.

6.2.4.1 Self-report

This is basically a questionnaire where perceptions of one's own EI abilities or preferences are scored against the criteria in the tool. The results of self-report tend to represent how a subject believes (or wishes to portray) they typically perform or behave (typical behaviour [TB] in the triad model in Figure 9); what we say we *would do* based on our knowledge and understanding of EI and our motivations and purposes for completing the assessment instrument. Some researchers argue that self-perception is not reliable enough due to the 'susceptibility to faking' element (see Paragraph 8 of Section 3.2.6), unless the tool is simply for personal reflection and development. For example, if one's EI is not excellent, then it may be very difficult for you to judge how well one performs at reading one's own emotions and managing them, since that type of thinking becomes overwhelmed during emotional episodes. From an EI standpoint, this is the same in judging how one reads and interacts with others.

Those working in the more challenging areas of human behaviour (for example, Kahneman et al., 1993; Rosenberg and Ekman, 1994) have concerns about the reliability of self-report relating to our own mental states (such as emotions and pain). Kahneman, et al., (1993) highlighted how experiences from longer ago, and those of a lower intensity, can weaken the accurate self-reporting of pleasure and pain. Rosenberg and Ekman (1994), highlighted the challenges of self-reporting emotions that were not of a high intensity; their findings showing that emotions "may have to reach a minimum level of intensity to overcome problems of symbolic representation in verbal self-report" (1994:224). Although much of this research on emotion has presumed that research subjects can readily report on their subjective experience through questionnaires and interviews, findings from these studies show that most people report only the most recent or most intense of their emotional experiences and that self-report ratings are thus subject to bias.

6.2.4.2 Multi-rater

In the assessment triad, this is the perceived performance (PP) of an individual in real-life contexts by others, or what we *are judged* to do. This is often elicited via a survey or questionnaire that is completed by those who experience your EI performance on an ongoing basis, perhaps at work, in a family or social group, or more generally. In an

organisational setting, this often includes a line manager, a number of peers and some direct reports, which is why this is sometimes referred to as *360-degree feedback*[25]. The individuals each score their perceptions (usually anonymously, and which are paper-based, via interview, or more often now, online) of your EI against the criteria in the tool. These are then averaged into a profile, so that your performance and behaviour can be judged.

Multi-rater assessment alone, though, may be unreliable in that it is perception-based, biased to the norms and values of the raters, and may be contaminated by wider opinions of the person being assessed due to other factors (such as the *halo-effect*, previously referred to in Paragraph 6 of Section 3.2.6). In addition, it is possible that individual differences between subject and raters (for example, traits, personality, culture, life experiences and other values and preferences) will impact upon rater judgements of performance and any perceptions about that performance. This is supported by Freudenthaler and Neubauer's (2005) assertion (see earlier in this section) that subjects' emotional management capacity, that is, their judgement of what is correct behaviour, cannot reliably predict their actual behaviour in emotional situations. Some approaches thus combine self-report and multi-rater data to provide a comparison as to how a person's self-perception differs from the perception of others.

6.2.4.3 Correct answer

This is similar to many answers in IQ tests, or answers within subjects such as mathematics and science, where there is wide agreement on what is the right answer. It is the dimension in the assessment triad (Figure 9) where our judgements are compared against the correct answers (correct behaviour [CB]), and what we judge that we *should do*, based on expert established correct answers for EI. In an EI context, the right answers cannot always be 'calculated' as easily as in an algebra test, and therefore, the right answers need to be dependent upon significant SME agreement or, more controversially (see Maul, 2012), by consensus.. The three approaches to establishing CB that can be found in the general fields of psychology and leadership are discussed below:

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25 *360 Degree Feedback* | *Factsheets* | *CIPD* (2020). Available at: https://www.cipd.co.uk/knowledge/fundamentals/people/performance/feedback-factsheet (Accessed: 26 July 2020).

- **Expert scoring (raw)** - in the expert method, subject-matter experts (SMEs) determine which test answers are correct (right/wrong). Some weight the answers (better/worse). Raw scores are used, meaning that, if you get the maximum of correct responses, you score 100%.

- **Expert scoring (percentile)** – as above, though all those who have taken the test are scored as percentiles, with the highest scorer at 100% and the lowest at 0% (even though the raw range may be from 17% to 93%, for example). A raw score of 93% may be the highest score in the sample group or the overall test population, and that scorer would, therefore, have a percentile score of 100%.

- **Consensus scoring** – is based upon the agreement of a large number of people. For example, if 70 per cent of people felt that a photo was of a very happy person, then the best answer for the photo would be 'happiness'. Alternatively, the 'right answer' is determined by a majority. Roberts, et al. (2001) describe this approach as where a subject:

> …. receives credit for endorsing responses that the group endorses. Thus, if the [majority of a] group agrees that a face (or design, passage of music, etc.) conveys a happy or sad emotion, then that becomes the correct response. This approach assumes that observations for a large number of people can be pooled and can serve as reliable measures."
>
> (2001:202).

Another factor to consider at this point, is the actual design of the instrument, and how the data is collected from the person being measured. The design of these vary again and usually fall into one of the two following broad groups:

1. **Simple questionnaires** – these can be pen and paper exercises, online questionnaires or even by means of a personal interview. They can be right/wrong answers (tick-box style), where a user selects *true* or *false*, or *yes* or *no* to questions on EI knowledge. These are also used in self-report contexts regarding a user's perception of their abilities, whereby a user may be offered a prompt such as 'I am able to control my emotions' and then offered a choice between two given options, such as *yes* or *no*. Alternatively, a user may be prompted to express their preferences or choices along a scale, or between several options which are captured and then correlated against broader themes, qualities and traits into a synthesizing report. These can be presented as raw scores or as percentiles

against a group who have already completed the test by organisation, by geography, or by other demographics (or the whole test population). A variation of the absolute *yes* or *no* type approach is for the user to be presented with multiple options. The two main multiple option types are: multiple-choice – where the user chooses one from three or more options. This may be a choice from alternatives [a, b, c or d?] or by positioning on a scale [for example, low, below average, average, above average, high]; and, multiple-response – this option is similar to multiple-choice, although the user has the option to choose none, one, some or all of the options offered.

2. **Assignments or tasks** – these options present the user with tasks to see how they can assimilate and apply their knowledge and understanding. These tasks include: simulations that replicate, as near as possible, the context where the person is likely to apply skills in real life, such as flight simulators for trainee airline pilots; assignments, written tasks and exercises to test application of knowledge and understanding, though these can be hard to replicate the more challenging contexts faced in real-life interpersonal interactions; situational judgement tests (SJT), employing written scenarios or video vignettes, based on the notion that a competent person can recognise competence performance in others, in context, when they see or hear it; and, observations of a person performing – this task can be considered intrusive and may also contaminate the context. In addition, a great deal of EI performance (for example, self-awareness, self-management, hypothesising about others' behaviour) happens inside the mind and is not outwardly observable.

Some of these designs are self or automatically scored at the end of the test. Others are controlled by the instrument administrators who may have to qualify (often via the test instrument owners) to interpret results and give feedback to users.

The questionnaires, whether they be self-report, multi-rater or a combination, are popular with trait EI models. All the trait and mixed models in the core models scoped for this research use one or both of these to determine the *perception* of EI qualities by the user or his or her peers. Only two of the instruments use self-report. The 'ESCi' model (see Section 3.2.1.2) is framed as a multi-rater tool, despite the fact that it incorporates

self-report within it. Thus, the self-report approach is common to all the trait and mixed models in eliciting the typical behaviour (TB) of the user. In other words, it includes what the user says they *would do*, based on their knowledge and understanding of EI and their motivations and purposes for completing the assessment instrument.

The TB condition has been found to show moderate association "with personality traits but not [be] related to cognitive abilities" (Freudenthaler and Neubauer, 2007:1561), such as via IQ tests, which are assessed against correct answers. By contrast, correct answers (correct behaviour [CB]) approaches "were significantly correlated with cognitive intelligence components but not with personality traits" (ibid:1561) .

Despite these two approaches being applied to the same overall construct of emotional intelligence, the correlation between ability and trait EI models is weak, suggesting that EI has been dissected into two separate constructs (Zeidner et al., 2005; Brackett et al., 2006). This is ratified by the findings that associations between the MSCEIT ability model (Section 3.2.1.8), and the mixed model Bar-On's Emotion Quotient Inventory (Section 3.2.1.5), are rather low, with an intercorrelation score of *0.21* with a $p<.01$ (see Table 1 in Brackett and Mayer, 2003:7), indicating that self-report measures based on a mixed model of EI, and performance measures based on Mayer and Salovey's (1997) EI theory, yield different EI 'scores' for the same person.

There are claimed to be significant conflicts between the relative value of *ability* versus *trait* approaches to measuring EI, with multiple research publications articulating and contrasting these various types of model (Petrides and Furnham, 2001; Matthews et al., 2007; Cherniss, 2010; Jordan et al., 2010). Often, the researchers who develop the EI models go on themselves to design their own assessment instruments to assess individuals against their models (see, for example, Bar-on, Goleman and Mayer et.al. in Table 36). These, as established in this section, often default to the self-report methodologies for their trait/mixed models, which is an approach that may be quick and cost-effective, but is considered to be "susceptible to faking" (Schutte et al., 1998:176; see also Pauls and Crost, 2004:1137).

Emotional Intelligence is defined in this thesis as *the ability to perceive, understand and influence our own and others' emotions across a range of contexts to guide our current thinking and actions to help us to achieve our goals* (see Section 2.22.2). EI is, therefore, an *ability*, not a *self-perception of ability*.

The adoption of an ability assessment methodology, however, needs to consider the criticisms in the research literature. Attempts to measure EI as an *ability* "remain controversial" (Maul, 2012:394), due to perceived problems with the empirical relationships between the competences and the methodologies used to assess them, with claims that "observed associations among them could be explained by common features other than an underlying set of abilities" (ibid:401). It is also clear that "validity evidence for EI measures is lacking because of vague theoretical development for many of the measures and because the content across EI measures varies widely" (Conte, 2005:437).

6.2.5 Analysis of EI assessment approaches

To help map the assessment approaches to inform good analysis, five groups of assessment methodologies have been categorised:

A. **Self-report** – typical performance (TP) representing how a subject believes (or wishes to portray) they typically perform or behave.
B. **Multi-rater** (360 degree) - perceived performance (PP) of an individual in real-life contexts by others (including self-perception).
C. **Questionnaires** (pen and paper/online) - where our responses are compared against the 'correct' answers/behaviour (CB) usually determined by SMEs or the test instrument developers.
D. **Reality Simulations** (for example, SJTs) - where our performance/judgements are compared against the 'correct' behaviour (CB), usually determined by SMEs or the test instrument developers. This includes Emotion Recognition Assessments (of facial expressions, voice, body language, etc.). SJTs can include a range of scenario-based tests, such as situational interviews (oral), written assignments [paper-and-pencil/online] or video-based (Arthur Jr and Villado, 2008).
E. **'On-the-job' assessment** – shadowing a person in a range of real-life contexts, over time, and assessing that performance against 'correct' behaviour (CB), usually determined by SMEs or the assessment criteria/methodology developers. This is what is described in the centre of the triad model (Figure 9) as the *e* factor, in terms of how a person *actually* behaves in work/life.

It is necessary to disaggregate EI into its facets, so that each assessment approach can be evaluated against the components, qualities or facets which underpin emotional

intelligence. Seven components have been adapted from the definitions and terminology work (from Table 1) as follows:

1. Knowledge (of concepts and facts)
2. Understanding (the assimilation of knowledge)
3. Skills/Abilities (the deployment of knowledge and understanding in a task)
4. Simulation (using a combination of abilities in hypothetical contexts or situations created to reflect real-life situations)
5. Performance (application of knowledge, understanding, skills and abilities in a real life/work context)
6. Mastery (the ability to apply performance to a high [expert] standard in a full range of contexts that might be expected, over time)
7. Performance moderators/preferences (those idiosyncratic attributes/qualities that can moderate performance/behaviour, including, attitudes, traits/personality, and styles)

These seven components are laid out in a matrix (Table 37), which purposely includes ratings assigned by the current author, based on a four-point scale ('1' representing low value for assessing the component, and up to '4' for high value). These value judgements are based on theoretical concepts (definitions and terminology in Section 2.22.2) and the degree of support/criticism that emerged from the literature review. This also assumes the A-E methodologies are using *good* tests. This prevents it being contaminated by flawed examples or poorly designed versions of these types of tests from the field.

		Assessment Methodology (Type)				
		A	**B**	**C**	**D**	**E**
		Self-report	**Multi-rater (360 degree)**	**Questionnaires - responses agreed by SMEs (pen+paper/online)**	**Reality Simulation (for example, SJT) responses agreed by SMEs**	**On the job(/real-life) shadowing by SMEs**
Outcome	**Component**	**Rating of suitability of test v component: 1= low; 4 = high**				
Concepts/ facts	**Knowledge**	1	2	3	4	2
Knowledge assimilation	**Understanding**	1	2	3	4	2
Deploy	**Skills/Abilities**	1	2	1	4	4
Use	**Application/ Simulation**	1	2	1	4	4
Competence	**Performance**	1	2	1	4	4
Expertise	**Mastery**	1	2	1	4	4
EI Moderators and Preferences	**Attitudes**	2	2	3	2	2
	Traits/ Personality	2	2	3	2	2
	Styles	2	2	3	2	2
	Total	**12**	**18**	**19**	**30**	**26**

Table 37 - Mapping of assessment methodology against components of intelligence

As an example, *Methodology A* (self-report) is based on self-perception. In the quest for a widely accepted EI measure, it would seem futile to resort to a simple self-report methodology, no matter how good the prompts. For instance, if there was an approach against IQ criteria which required individuals to self-report on their own ability, an example of this might be in the numerical reasoning component of an IQ test, such as:

'Are you able to solve simultaneous equations? – Yes or No?'

This would, most likely, be judged unacceptable as a sole instrument that might be used to predict a person's ability to succeed in selection stages for a particular school programme, career route, or job role. As a result, the current author's rating for this would be '1'. That is not to say that it has *no* value. In a developmental context, for example, it may be useful to determine how a person perceives their own abilities. This can be powerful data if it is integrated into and compared with peer reviews (multi-rater) and 'correct' behaviour assessment (SME validated).

It should also be noted in this '1' rating for *self-report* for *knowledge*, that this is not a questionnaire test or examination (that is *Methodology C*, which is rated '3' not a '4' for *Knowledge*). The reason for this is that there are very few absolute *answers* in EI, unlike in mathematics, for example, where this would score a '4').

6.2.5.1 EI self-report examples

To illustrate the self-report approach, samples from three of the core EI model assessment tools (TEIQue, EQ-I and ESCi) from Table 36 are provided below. In the first EI model assessment tool, TEIQue, examples of the (possible) 153 self-report questions include:

- Understanding the needs and desires of others is not a problem for me
- I'm usually able to influence the way other people feel
- I can handle most difficulties in my life in a cool and composed manner.

Individuals indicate their level of agreement on a '1-7 Likert scale' (1 'disagree completely' to 7 'agree completely'). The distributor (Thomas) clearly state on their website that "There are no right or wrong answers" (*Trait Emotional Intelligence Questionnaire (TEIQue)*, n.d.).

Our second examples are taken from the EQ-i assessment instrument from Bar-On (Bar-On, 1997). The original version of the *EQ-i* comprises 133 items in the form of short sentences and employs a 5-point response scale with a textual response format, ranging from "very seldom or not true of me" (1) to "very often true of me or true of me" (5). Examples of such short sentences include the following:

- When I am angry with others, I can tell them about it
- I know how to deal with upsetting problems
- I like helping people.

The responses inform ratings for the subject against the following 15 scales:

1. Self-Regard
2. Emotional Self-Awareness
3. Assertiveness/Emotional Self-Expression
4. Independence
5. Empathy

6. Social Responsibility
7. Interpersonal Relationship
8. Stress Tolerance
9. Impulse Control
10. Reality Testing
11. Flexibility
12. Problem Solving
13. Self-Actualization
14. Optimism
15. Happiness/Well-Being.

There are also four validity indicators:

- Omission Rate (*number of omitted responses*) when it is completed offline
- Inconsistency Index (degree of response inconsistency)
- Positive Impression (tendency toward exaggerated positive responding)
- Negative Impression (tendency toward exaggerated negative responding).

Bar-on (*Reuven Bar-On*, n.d.) also developed 125-item and 51-item versions of *EQ-i.* The 125-item version (labelled *Bar-On EQ-i:125*) generates all of the above-mentioned scale scores, which are generated by the 133-item version except for *Negative Impression*-related scale scores, while the 51-item version (*Bar-On EQ-i:S*) provides only a total EQ score.

Our third set of examples relate to the ESCi instrument (Boyatzis and Taylor, 2000), which consists of 110 items and assesses 12 competences, again using a Likert scale, using statements including the following:

- I recognise my emotions and their effect on others.
- I can keep disruptive emotions and impulses under control.

These and other approaches to EI assessment are explored in depth in a recent critical review relating to the measurement of EI (O'Connor et al., 2019:4) and the researchers sum up the self-report approach with the following statement:

> One disadvantage of self-report measures is that people are not always good judges of their emotion-related abilities and tendencies (Brackett et al., 2006; Sheldon et al., 2014; Boyatzis, 2018). A further disadvantage of self-report, trait-based measures is their susceptibility to faking. Participants can easily come across as high in EI by answering questions in a strategic, socially desirable way. However, this is usually only an issue

> when test-takers believe that someone of importance (e.g., a supervisor or potential employer) will have access to their results. When it is for self-development or research, individuals are less likely to fake their answers to trait EI measures (see Tett et al., 2012). We also [recognise] that the theoretical bases of trait and mixed measures have also been questioned. Some have argued for example that self-report measures of EI measure nothing fundamentally different from the Big Five (e.g., Davies et al., 1998). We will not address this issue here as it has been extensively discussed elsewhere (e.g., Bucich and MacCann, 2019) however we emphasize that regardless of the statistical distinctiveness of self-report measures of EI, there is little question regarding their utility and predictive validity (O'Boyle et al., 2011; Miao et al., 2017).

The points being made here that help guide the current research include the suggestions that: it is difficult to judge one's own EI; self-reporting is open to faking (higher or lower scores to suit the purpose of the assessment; trait-EI may be inferior to established personality/trait measures; and it is risky to rely on self-report measures to predict a person's behaviour or performance in real life or work contexts.

6.2.5.2 Beyond self-report and multi-rater approaches

Questionnaires have their uses, though they tend to only test knowledge and understanding – hence the current author's scoring of '3' for knowledge and understanding, and only '1' for skills and performance components of intelligence. A '4' isn't attributed to knowledge and understanding by the current author in this analysis as the context of these ratings is around EI, where there tends to be less absolute, *correct* answers than in other disciplines such as mathematics, geography, or physics.

Reality simulations (for example, SJT) are rated a '4' for all the application/ability components because SJTs can present scenarios to a subject that require them to *perform* or *apply skills* in a specific situation. The current author also applies a '4' rating to the cognitive components of the EI construct (that is, knowledge and understanding), on the basis that good tests, with *correct* answers having significant agreement from SMEs, could test a person's judgement across a range of contexts, over time. Some researchers disagree and argue that SJTs are measures of a single construct. For example, Sternberg et al. (2000) argued that SJTs, which they sometimes referred to as *practical intelligence tests*, simply measuring a single construct, rather than general cognitive ability. However, these assertions were challenged (Gottfredson, 2003; McDaniel and Whetzel, 2005), with McDaniel and Whetzel (2005) stating that SJTs measure multiple constructs and do "tap... general cognitive ability" (2005:200). SJTs are often designed to assess an applicant's

judgment regarding a situation encountered in the workplace (Weekley and Polyhart, 2006). Whetzel and McDaniel (2009) recommend the use of *knowledge instruction* type questions which ask for a judgement of the correct behaviour (CB) (for example, 'how effective is this response?'), rather than the typical behaviour (TB) (along the lines of, 'what would you normally do?'). This may be, primarily, because their research suggests that "some types of SJTs (i.e., those with knowledge instructions) may be resistant to faking" (2009:199); in other words, it may be easy for a subject to choose what they know to be good practice, rather than what they normally do. This *knowledge instruction* approach might prove to be useful in video-based simulations, where a subject can be challenged to judge whether the behaviour of the character(s) in a vignette (or a series of vignettes) is appropriate in their context. This allows the SJT (using video scenarios) to integrate personalities, history, goals, time and place (and other contextual variables) that might impact on appropriate EI performance.

The better SJTs will use simulations that will be as near as possible to the actual context where performance will be expected. A flight simulator is a good example. Some military tactical training sessions[26] even use 'live-fire' in their simulation training/testing to ensure the stakes are as near as possible to the situations military personnel may face. In management and leadership there are SJTs ranging from mini-assignments to wholistic, video-based simulations like *MAP* (see Section 6.2.2). In this *MAP* assessment process, subjects are challenged over six hours with a series of situations that they might typically face using video-based scenarios of others, interacting and performing in a series of situational judgement tests (SJT). These tests are thirteen short (between five- and fifteen-minute) video vignettes, showing samples of a team and their manager interacting over a week in a range of contexts. Subjects are tasked to judge the *appropriateness* of the manager's performance towards the *goals* of the interactions within the changing *contexts* over a week in their work life. In other words, it relates to 'what they perceive they would do' given the situation. They are tasked to find the 'correct' response (*Is what that person did in that context appropriate, or not?*), regardless of whether that is what they do, or think they would do. When correct SJT

26 Special Forces Training (2020). Available at: https://www.goarmy.com/special-forces/training.html (Accessed: 26 July 2020).

responses use a scoring key that is based on a consensus of *correct response* judgements by SMEs, "the likelihood that the correct answers will be the most transparent options is increased" (Whetzel and McDaniel, 2009:196).

Good SJTs could go further and assess capability to perform in the simulated environments posed and, in addition, determine if the candidate has the knowledge and understanding to transfer that ability across the range of contexts that they may face. There are compromises between quality and cost/time factors, as in car driving lessons and tests. It may not be possible to assess a learner driver in coping with a skidding car in ice and snow due to the weather, or on motorways due to the law, so the assessor (in the UK) will sample-test a learner driver's knowledge and understanding directly, with factual or 'what-if' questions.

Some SJT assessments present respondents with work-related situations and a list of plausible courses of action in a written assignment format. Respondents are asked to evaluate each course of action for either the likelihood that they would perform the action, or the effectiveness of the action. It is claimed that this might weaken the assessment to be little more than a knowledge and understanding test (Whetzel and McDaniel, 2009). Whetzel and McDaniel (2009) provide an illustrative SJT item from a work context from an overview of their research into SJTs:

> You are facing a project deadline and are concerned that you may not complete the project by the time it is due. It is very important to your supervisor that you complete the project by the deadline. It is not possible to get anyone to help you with the work.
>
> A. Ask for an extension of the deadline.
> B. Let your supervisor know that you may not meet the deadline.
> C. Work as many hours as it takes to get the job done by the deadline.
> D. Explore different ways to do the work so it can be completed by the deadline.
> E. On the day it is due, hand in what you have done so far.
> F. Do the most critical parts of the project by the deadline and complete the remaining parts after the deadline.
> G. Tell your supervisor that the deadline is unreasonable.
> H. Give your supervisor an update and express your concern about your ability to complete the project by the deadline.
> I. Quit your job.
>
> (2009:188)

The challenge with simpler written tests such as this is that it is easy to suggest a respondent may sensibly resist scoring by suggesting that 'it depends'. It can depend, for example, on factors such as:

- What are the consequences for doing/not doing the task?
- What is the quality of the relationship you have with the supervisor?
- Whether you plan to leave or stay in the job?
- What reasons the supervisor has for judging that it is 'very important'?
- How many supervisors you have?
- What resources do you have available to you?
- What is the importance to you and the organisation of the competing priorities you are working on?

This can lead to a 'wrong answer' being challenged by a respondent, especially if the consequences of passing or failing the test are significant.

On-the-job (or real-life, non-work) assessment has been rated high ('4') for ability and performance, by the current author, as the way a person actually behaves and performs in a real-life context is what the *e* factor is all about. The challenges with assessing EI performance using this method include:

- Much of what a person 'does' in EI terms is not observable (for example, how a person is sensing and interpreting body sensations; labelling the related emotions; analysing the likely trigger(s); and evaluating options for a behavioural response);
- The situations a person is likely to face so they can be judged in multiple low-, medium- and high-stake contexts, with a range of individuals, across multiple cultures and environments, may take many years and the observation may have to be full time;
- The fact that a person is being observed alters the context. This is known as the observer's paradox, which is a situation in which the phenomenon being observed is unwittingly influenced by the presence of the observer.

That said, the ecological validity of this method could be considered as almost perfect, as performance is assessed in the actual work/life context, hence the score of '4'. A rating of '2' by the current author for knowledge and understanding is influenced by the invisibility of the internal thinking and rationale behind performance/behaviour by a subject. It can

only be inferred. If the observation can capture the responsiveness, consistency and regularity of performance then confidence in such inferences may be stronger. Hence the '2' rating on *knowledge and understanding* for *multi-rater* assessment methodology too, as peers are experiencing the EI behaviour of the subject over time. The '2' for their judgement of ability and performance components is based on the likelihood of peers not being SMEs and, also, there may be some historical relationship issues contaminating peer assessment. Their assessments are perception-based, deriving from their own education and experience of what 'good performance' is, and is most likely relative to their own EI ability levels. Their ratings could also be affected by their historical relationship with the subject and contaminated by the 'halo-effect' which was raised in Paragraph 6 of Section 3.2.6.

Four of the components in the matrix in Table 37 relate to EI moderators and preferences. These are the factors which may impact on a person's ability and performance (see Paragraph 9 of Section 3.2.63.2.6). These have been included as part of *context* in the outline of the components of the EI construct in Table 1Figure 2 - EI Competences 2x2 matrix. The components include attitudes, traits/personality and styles. It has been established (see Paragraph 9 of Section 3.2.63.2.6) that EI needs to factor in appropriateness of behaviour towards goals within the micro and macro *context* that applies. This *context* includes cultural, personality, and other individual differences. This is in line with "a general consensus in favour of the interactionist position that both traits and situations are important influences on behaviour" (Boyle et al., 2008:14–15) and therefore should feature within the assessment methodology for a generic EI model. Self-report and multi-rater approaches are rated '2' by the current author (in Table 37) as they are perception-based and susceptible to faking by the subject (as the responses are about typical behaviour [what a subject says they would do]), given that multi-raters are prone to the same perception subjectivity and contamination from relationship and other biases. The analysis of the trait/personality/attitude/style factors in Section 5.2.20 has revealed that the core EI models scoped for this project ignore most of the well-known factors from established personality models.

It was previously noted (in Section 5.2.2) only one factor (*Conscientiousness*) from all those in the core EI models (see Section 5.2.7), featured in the 27 trait factors used in the more widely known personality models: *Eysenck's 3 dimensions*; the *Big Five*; and *Cattell's 16 Personality Factors*.

These are not rated ‘1’ by the current author (in Table 37), since these approaches benefit from the unique insight an individual has about their own preferences and the experiences of those multi-raters who experience behaviour over time.

Questionnaires that are developed by SMEs (trait/personality psychologists), including the three mentioned here, use a diverse array of facets to arrive at the personality/trait/style types and are, therefore, likely to be a more reliable indicator of these components, and are rated ‘3’ accordingly by the current author (see Table 37). A rating of ‘4’ has been withheld by the current author as such questionnaires are still reliant on self-report about typical behaviour/preferences. As attitudes, styles and personality can only be inferred from observable behaviour (just as with knowledge and understanding), these are also rated ‘2’ by the current author.

If the EI ratings of personality, styles, etc. were carried out by licensed professionals against empirically researched models, then Methodologies C, D and E may perhaps warrant ratings of ‘4’. The current author has nonetheless assigned ‘2’ ratings due to the fact that the trait/personality factors incorporated into the core EI models are not based on established trait-based research.

Having established the ratings for the moderating factors, it becomes necessary to broaden the analysis matrix so that we can factor in:

- Cost/time – typically involved in completing each type of assessment
- Results from the SME survey on these assessment methodologies
- Pros and Cons – in a general sense, drawn from the literature and analysis so far.

This results in the matrix in Table 38.

		Assessment Methodology (Type)				
		A	**B**	**C**	**D**	**E**
		Self report	**Multi-rater (360 degree)**	**Questionnaires - responses agreed by SMEs (pen+paper/ online)**	**Reality Simulation (for example, SJT) responses agreed by SMEs**	**On the job(/real-life) shadowing by SMEs**
Outcome	**Component**	**Rating of suitability of test v component: 1= low; 4 = high**				
Concepts/ facts	**Knowledge**	1	2	3	4	2
Knowledge assimilation	**Understanding**	1	2	3	4	2
Deploy	**Skills/ Abilities**	1	2	1	4	4
Use	**Application/ Simulation**	1	2	1	4	4
Competence	**Performance**	1	2	1	4	4
Expertise	**Mastery**	1	2	1	4	4
EI Moderators and Preferences	**Attitudes**	2	2	3	2	2
	Traits/ Personality	2	2	3	2	2
	Styles	2	2	3	2	2
	Total	**12**	**18**	**19**	**30**	**26**
	Cost/time	Low	Medium	Low	High	Very high
	SME overall judgement of suitability* (%)	69	80.5	59.5	85*	67.4
	Pros	Insight	Multiple Perception	Explore thinking	Integration	Integration
	Cons	Subjective	Norm referenced	Simple recall?	Only assumes Know+Und?	Contamination
	***Question to SMEs was: "Without consideration of cost and difficulty in terms of design and development, to what degree are the following assessment methods appropriate for reliably measuring Emotional Intelligence?**					

Table 38 - Mapping of assessment methodology (with SME ratings)

This expanded matrix allows for the incorporation of SME judgements, a cost/time factor, and a summary of the 'Pros' and 'Cons' (advantages and disadvantages).

6.2.5.3 'Best' methodology regardless of time/cost of assessment

The assessment methodologies have been rank-ordered based on factoring the SME judgements and the sum of the component analysis (see Table 38), since these factors were arrived at without consideration of cost and time limitations:

- Reality Simulations (for example, SJTs) - 85% x 30 = 25.20. Although this scored high at 85%, one approach to reality simulations, Emotion Recognition Assessments (of facial expressions, voice, body language, etc.), achieved very high support at 92.5%.
- 'On-the-job' assessment - 67.4% x 26 = 17.52.
- Multi-rater (360 degree) - 80.5% x 18 = 14.49.
- Questionnaires (pen and paper/online) - 59.5% x 19 = 11.31.
- Self-report - 69% x 12 = 8.28.

6.2.5.4 'Best' methodology with time/cost of assessment factored in

After the cost/time factor is applied, the methodologies can be ranked using a similar 4-point scale of:

1 = Very high

2 = High

3 = Medium

4 = Low.

- Reality Simulations (for example, SJTs) - 85% x 30 x 2 = 50.40.
- Questionnaires (pen and paper/online) - 59.5% x 19 x 4 = 45.24
- Multi-rater (360 degree) - 80.5% x 18 x 3 = 43.47
- Self-report - 69% x 12 x 4 = 33.12.
- 'On-the-job' assessment - 67.4% x 26 x 1 = 17.52.

Self-report is the most common assessment methodology, and which features in all the assessment tools in the core EI models, except for MSCEIT, and yet it ranks fourth in this thesis due to the relatively poor weighting that SME judgement brings to the analysis. 69% of the SMEs support self-report, compared to 85% supporting reality simulations or SJTs. Self-report is often inexpensive (sometimes even free) and is also quick to administer, hence the 4/4 rating. SJTs only scored a 2/4 on cost and time, as they can be more complex in terms of development costs and also take longer to complete by the subjects being assessed.

The same applies to single measures or multiple measures of EI.

> The first option represents the most pragmatic and generally optimal solution because all information about the relevant facets and related measures would usually be located in a single document (e.g., test manual, journal article) or website. Additionally, if a paid test is used it would only require a single payment to a single author/institution [even though a single measure] will not contain the specific set of EI constructs researchers/practitioners are interested in assessing. This will often be the case when practitioners are seeking a comprehensive measure of EI but prefer a freely available measure.
>
> (O'Connor et al., 2019:6).

This highlights the potential effect, and therefore weighting, of time and cost on assessment instrument choice, depending on whether the assessment is being carried out:

a) for purely EI research purposes, perhaps within academic institutions with the subjects being volunteer students, where the outcome of their assessment does not inform a journey for them that has high stakes. Perhaps it involves a small participation fee incentive, or the threat of 'white noise' punishment that will not happen, which is controlled and moderated within ethical controls that prevent research subjects being put at any risk. In which case, low-cost or free (single measure) self-report instruments that are quick to complete might be deemed *good-enough* or attractive; or
b) to provide reliable EI predictive data to decision makers about the EI capabilities of individuals they are selecting for potential corporate work/leadership roles, government agency roles, and academic study/research programmes. In which case, salaries could be upwards of £100k/year for candidates who may be handling million-pound budgets, hundreds of staff, and vast resources in business, or maybe life and death situations in intelligence/military/law-enforcement contexts, for example. The investment of time and cost for reliable, ecologically valid tests might give comfort to such stakeholders; or
c) somewhere between; or
d) an amalgam of these two extremes.

6.2.5.5 Summary

This factoring of features and qualities suggests that *Reality Simulations* (CB) are a strong methodology for assessing EI, even when the perceived higher costs and longer time for completing them are factored in. This is especially the case for Emotion Recognition Assessments (of facial expressions, voice, body language, etc.). In addition, a number of

studies have also been conducted comparing video-based, with written SJTs. Research comparing both media found that a video-based SJT had significantly less adverse impact than a written SJT, and subjects perceived the video-based SJT to have more face validity than the written SJT (Chan and Schmitt, 1997). Richman-Hirsch et al., 2000 found similar results in that students reacted more favourably to a multimedia format of SJT for interpersonal scenarios (conflict resolution skills) than to a written format of the same test. This was confirmed in other research which suggests that, "[f]or predicting interpersonally-oriented criteria, the video-based SJT had higher validity (r = 0.34) than the written version (r = 0.08)" (Whetzel and McDaniel, 2009:195), although the authors added the caveat that "one must weigh the cost of their development in the decision to use such tests. The cost of actors, videographers, studios, etc. may make this expense fairly prohibitive compared to traditional pencil and paper based SJTs" (ibid). Whetzel and McDaniel (2009) conclude their detailed analysis of SJTs by suggesting:

> ....video-based SJTs show a high degree of promise, both in terms of face validity and incremental validity over cognitive ability for predicting performance in high-stakes settings, thus providing additional support for their use.
>
> (2009:195).

This current research, therefore, suggests that *video-based reality simulations* (CB) might be best suited for EI assessment, although in itself, this may not be sufficient.

- Sternberg et al. (2000) argued that SJTs, "measured a single construct distinct from general cognitive ability", and therefore, the addition or integration of a questionnaire into a video-based reality simulation could address that gap. A 'con' (or weakness) of SJTs is that a subject's judgements of *performance* are being assessed in limited scenarios or contexts, and therefore the reader of the results can only really *assume* the subject has the knowledge and understanding to transfer that performance across differing contexts and over time. A subject's performance could, however, have been a lucky, one-off, performance judgement in a familiar (limited) context which has been rehearsed. Testing knowledge and understanding, in addition to SJTs can, therefore, help assessors determine whether the performance they measure within the test can be transferred across the possible future contexts the subject is likely to face (as in the car driving test example referred to in Section 6.2.2).

- Transfer of CB into real work/life can be revealed by multi-rater assessments, as the subject's peers are experiencing the actual EI behaviour of the subject over time. The weakness of the multi-rater approach (subjectivity, bias and relationship influences) are countered, to some degree, if this approach is used in *addition* to CB approaches.
- Two quadrants of the Emotionintell EI model (see Figure 2) relate to *self-awareness* and *self-management*. None of the assessment approaches discussed here can evaluate the bulk of what is happening in these sub-domains, that is, in terms of a subject's internal thinking and rationale behind any observable performance/behaviour. This can only be inferred from what is seen and heard. This then suggests that self-report *has* to feature as part of an assessment approach that is sufficient to deliver the *e* factor.

Gardner (1992) reinforced the point regarding assessment needing a multi-dimensional approach. He argues that the assessment of intelligence should encompass multiple measures. He further argues that to rely on a single IQ score from a WISC-III (Wechsler Intelligence Scale for Children), without substantiating the findings through other data sources, does the individual being tested a disservice and produces insufficient information for those who provide interventions.

The multi-dimensional approach suggested here [*Questionnaires* (CB), *Multi-rater* (PP), and *Self-report* (TB)] gained sufficient support in the analysis, including the SME judgement, to warrant their inclusion.

The current research therefore suggests that holistic assessment of EI requires an assessment methodology that centres on a video-based reality simulation (or SJT), and incorporates [knowledge/understanding] questionnaires, self-report and multi-rater data.

This holistic approach mitigates against the 'cons' (disadvantages) that are outlined in Table 38 as:

- the SJT/Questionnaires offset the subjectivity, norm referencing and faking aspect;
- SJT does not suffer the 'simple recall' risk from questionnaires (that is, memory tests).

A holistic approach also has the following advantages:

- drawing on a subject's self-insight (self-report);
- multiple perspectives from those who experience real-life/work application of EI behaviour (multi-rater);
- exploration of a person's knowledge and understanding; and
- integration and application of all these through the SJT methodology.

6.2.5.6 Overlaying the assessment methods onto the theoretical assessment triad

When this is added to the EI assessment triad (in Figure 9), the updated triad is presented as Figure 10.

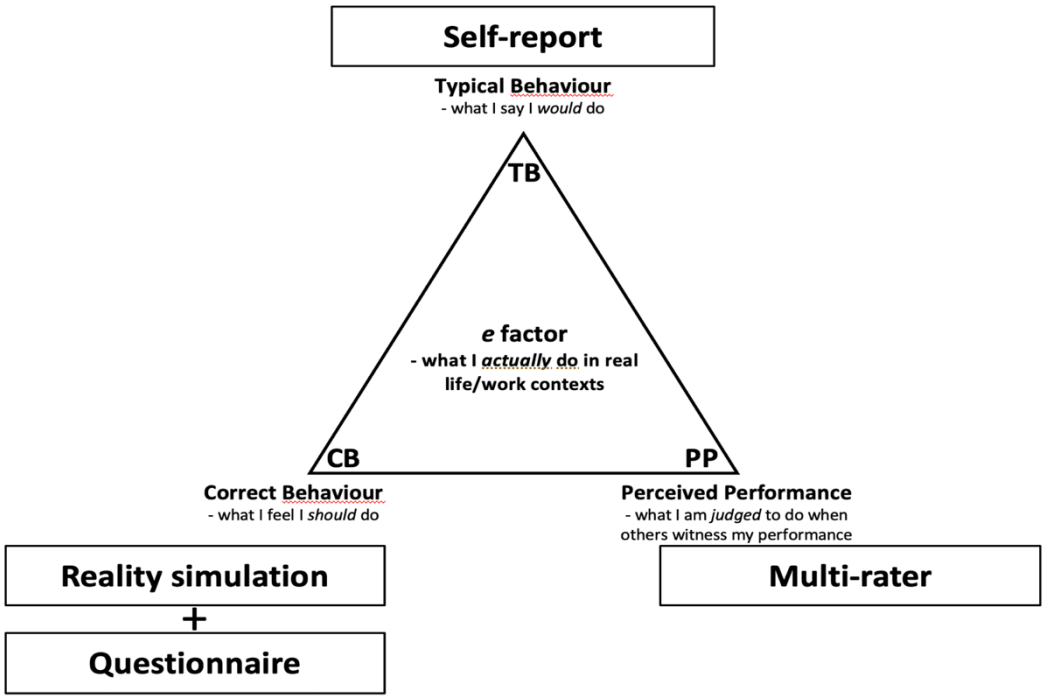

Figure 10 - EI assessment triad (incorporating methodologies)

The four assessment methodologies, when mapped onto this triad in the four boxes, illustrate how their combination might create a composite result that might be highly predictive of the *e* factor, in other words, what a subject is *actually* likely to do in real life/work contexts. This could only be validated after the assessment instrument(s) has/have been created and validated through empirical research.

The last column in Table 39 is populated to suggest an *e* factor instrument should adopt assessment methodologies A, B, C and D (Self-report, Multi-rater, Questionnaires and Reality-simulation) in line with the findings in this section.

		EI Core Model (7 from 8 as SAARNI has no assessment instrument)						
		C	A	AB	A	AB	AB	ABCD
		MSCEIT	TEIQue	ESCi Eci 2.0	GOLEMAN	Eq-I 2.0	GENOS	*e* factor
Outcome	**Component**	**Components addressed by EI Model assessment methodology**						
Concepts/ facts	**Knowledge**	Y	N**	N**	N**	N**	N**	Y
Knowledge assimilation	**Understanding**	Y	N**	N**	N**	N**	N**	Y
Deploy	**Skills/ Abilities**	Y	N	N	N	N	N	Y
Use	**Application/ Simulation**	N	N	N	N	N	N	Y
Competence	**Performance**	N	N	N	N	N	N	Y
Expertise	**Mastery**	N	N	N	N	N	N	N
EI Moderators and Preferences	**Attitudes**	N	Y	Y	Y	Y	Y	Y
	Traits/Personality	N	Y	Y	Y	Y	Y	Y
	Styles	N	Y	Y	Y	Y	Y	Y

Table 39 - EI assessment methodology analysis matrix

It can be seen in Table 39 that none of the existing EI assessment approaches address all the components and outcomes that underpin EI. Indeed:

- MSCEIT uses questionnaires only (C) based on expert answers in one of its two assessment options (the other being consensus-based);
- TEIQue and GOLEMAN use self-report only (A);
- ESCi, ECi 2.0, Eq-i 2.0 and GENOS use a combination of self-report (A) and multi-rater (B);
- The eight-core EI model (SAARNI) has no assessment instrument associated with it.

The current author has added the rating judgement of 'N' (= 'No') for the six trait/mixed models (see Table 39), suggesting they do not assess the *knowledge* and *understanding*

components of EI. This is because the questionnaires used either elicit-only subjective perceptions by the subject and/or provide no evidence that 'correct answers' are validated by SMEs above and beyond the decisions made by the developers themselves. MSCEIT, on the other hand, assesses correct responses for knowledge, understanding and ability components and these are claimed to be validated by an SME group (see the next section [Section 6.2.6], where this claim is reviewed). MSCEIT fails, however, to factor in the moderating characteristics of traits/personality, styles and attitudes, whereas the six mixed/trait models all addressed this to a greater or lesser extent.

The six mixed/trait models all elicit self- or peer-perception of some aspect of attitudes, traits/personality/styles and, therefore, are assigned a 'Y' (Yes), though the caveat to this rating by the current author suggests this rating needs to be treated with caution, since none of them apply established, comprehensive approaches to personality profiling as in *Eysenck's 3 dimensions*, the *Big Five*, and *Cattell's 16 Personality Factors*. None of the core EI models employ assessment methodologies that assess EI performance in a real or simulated context. As MSCEIT was the only core EI assessment approach which claimed to measure *ability*, this approach, and the model that underpins the MSCEIT instruments, is analysed in further detail below.

6.2.6 MSCEIT

In light of the assessment methodology presented in this thesis, the current author reflected back on the MSCEIT[27] model that has led the way with ability EI. It was highlighted earlier that the MSCEIT model itself is not without its design problems, as highlighted in Section 3.2.1.8. Likewise, there are also challenges with regards to its assessment methodology.

MSCEIT uses a combination of eight tasks which are organised against the four-branch model, as illustrated in Table 40.

[27] The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is an ability-based test designed to measure the four branches of the EI model of Mayer and Salovey.

Level	Abilities and indicators			
General	Emotional intelligence (EI)			
Areas	'Experiential EI' is the ability to perceive, respond, and manipulate emotional information without necessarily understanding its meaning		'Strategic EI' assesses ability to understand and manage emotions without necessarily experiencing the feelings of emotion	
Branches	The ability to 'perceive emotions' in faces and pictures	'Facilitating thought' by cognitive processing of emotions	'Understanding emotions' and how they blend and change over time	'Managing emotions' by using feelings to create better outcomes
Tasks	Faces: For each of four photographs of faces, participants must rate the presence of five emotions from 1 (no emotion) to 5 (extreme emotion) Pictures: For each of six pictures participants must rate the presence of five emotions from 1 to 5	Sensations: For each of five statements, participants are asked to make three judgments about the similarity of an emotion to a physical sensation from 1 (not alike) to 5 (alike) Facilitation: For each of five scenarios, participants must rate the helpfulness of three different moods from 1 (not useful) to 5 (useful)	Blends: Participants answer 12 multiple-choice questions assessing which combinations of emotions form complex emotions Changes: Participants answer 20 multiple-choice questions assessing which emotions are related to particular situations	Management: For each of 5 scenarios, participants rate the mood-management of actions from 1 (very ineffective) to 5 (very effective) Relations: For each of five scenarios, participants must rate the effectiveness of three responses from 1 (very ineffective) to 5 (very effective)

Table 40 - Overview of the eight MSCEIT assessment tasks (adapted from Mayer et. al. - 2003)

It was revealed in the literature review and analysis (in Section 2) that the MSCEIT developers adopted two approaches to scoring, the first being *consensus scoring*[28]. This is critiqued in the extant literature with one researcher pointing out that

> ....the consensus-based scoring method employed by the MSCEIT has drawn considerable controversy (e.g., Barchard and Russell, 2004; Brody, 2004; Keele and Bell, 2009; O'Sullivan, 2007)
>
> (Maul, 2012:396).

In the consensus-scoring approach, the subject's score is based on the responses from the percentage of the population tested who chose the same option as the subject. Although this might be a popular response, it may also be incorrect. In the MSCEIT consensus method, high scores are achieved if everyone else chooses the same response, and someone with a very high EI would be able "to provide a response to an item that is non-consensual and correct. By contrast, responses to the MSCEIT can only be correct if they are consensual" (Brody, 2004:234).

The MSCEIT team seem appear to be moving away from this approach and towards their second methodology of *expert* scoring. The *expert* scoring methodologies used in MSCEIT are, however, questioned due to unclear identification of the qualification criteria for the

[28] Consensus scoring: the score assigned to each response depends on the proportion of a group of sample respondents who selected that answer.

SMEs. It is stated that "the sample comprised 21 volunteer members of the International Society for Research on Emotion (ISRE) at their conference in 2000" (Maul, 2012:395), which appears to imply that the SME selection might have been an opportunistic random collection of researchers/academics. The MSCEIT developers attempted to counter that criticism with this 'rebuttal':

> Maul suggested that perhaps the experts were not very expert. The group of 21 individuals consisted of 10 men and 9 women (2 did not identify their gender); all were members of the International Society for Research on Emotion, whose expertise involved research and scholarship on emotions. The group included 16 professors and lecturers, 2 "researchers," and 2 doctoral students (and one non-identified) with a median age of 38.
>
> (Mayer et al., 2012:404)

An earlier study by the developers confirmed this. The authors stated that "Twenty-one experts, 10 male and 11 female, from eight Western countries, participated. The sample of experts had a mean age of 39.38 (SD 6.44; range 30–52); no data about their ethnicity were collected." (Mayer et al., 2003:99).

This tended to reinforce Maul's inference that these were academics rather than experts. The only other counter from the developers was that "their level of agreement as to answers was also higher than that in the general sample" (Mayer et al., 2012:404). In the original study the developers

> ....examined the differences between answers identified by the experts and by the general consensus. We correlated the frequencies of endorsements to the 705 responses (141 items; x five responses each) separately for the general consensus group and the expert consensus group and obtained a correlation of r(705)_.908.
>
> (Mayer et al., 2003:99).

This argument weakens the *expert* claims by the developers, in the sense that the responses from the 21 academics from the conference were not significantly different than the general consensus group. The group of 2,112 individuals making up the norms in the *consensus* population appear to be students of academic researchers, as they are described by the developers as "individuals tested by independent investigators in 36 separate academic settings from several countries" and the investigators "had submitted documentation of their research qualifications and a detailed plan of their intended research" (Mayer et al.,2003:99). This comparison might also be judged unreliable given that educational levels and cultural differences were not controlled for: the experts were

mainly professors and lecturers from Western countries, and the general population of 2,112 students were:

> …. educationally diverse, with 0.6% reporting not completing high school, 10.3% having completed only high school, 39.2% having completed some college or university courses, 33.7% having completed college, and 16.1% holding master's level or higher degrees. The group was ethnically diverse as well, with 34.0% Asian, 3.4% Black, 2.0% Hispanic, 57.9% White, and 2.3% other or mixed ethnicity.
>
> (Mayer et al., 2003:99).

Brody also suggests that "a person who has expert *knowledge* of emotions may or may not be expert in the *ability* that is allegedly assessed by the test [*italics* emphasis added]", as well as arguing that the MSCEIT tool only tests "knowledge of emotions but not necessarily the ability to perform tasks that are related to the knowledge that is assessed" (Brody, 2004:234).

What the majority of the student population that make up the norm for the scoring database (or the consensus from the 21 'experts' engaged for the MSCEIT research) say about emotions may simply represent lay theories which, although popular, may still be incorrect. The ability to identify a fake smile could be a good example of this. Fiori et al. (2014:10) suggest that "this task is challenging for all but a restricted group of emotion experts. In this case a 'correct' answer should be modelled on the few that can spot fake emotions, not on the modal answer in the total sample". Fiori et al.'s (2014) study therefore concluded with the statement that their "analysis has shown that the MSCEIT's items may capture differences in individuals only when such individuals are positioned at the low end of the EI trait distribution. For the other individuals (medium and high in EI) variation in the scores does not reflect true variation in EI" (2014:10).

Additional criticism, centred around *correct answer* determination, has been levelled at MSCEIT by Brody (on a similar tack as his critique of the selection of SMEs), claiming that, unlike tests of cognitive ability, the MSCEIT tests knowledge of emotions, but not necessarily the ability to perform tasks that are related to the knowledge that is being assessed. Brody (2004) posits that a person who has expert knowledge:

> ….may or may not be expert in the actual ability that is allegedly assessed by the test. A person may know the correct answer to a question about the appropriate way of responding to the grief of a bereaved person. Such a

> person may or may not be skilled in the actual performance of the task of comforting a bereaved person.
>
> (2004:234).

The main argument is that, even though someone knows how they should behave in an emotionally laden context, it does not necessarily follow that the person could actually carry out the associated behaviour in the real world, especially in a high-stake context. There are also problems with what Messick (1995) labels as *construct under-representation* and *construct-irrelevant variance*. It is widely recognized that most tests (for example, IQ tests, car driving tests) only assess a sample of the curriculum, an argument that Mayer et al. (2012:405) used to counter Maul's (2012) substantial critique of MSCEIT. To be fair, it is also acknowledged by Mayer et al. in the same 2012 paper, both that there are "technical imperfections that are a part of any real-life form of measurement", and also acknowledging "that improvements in ... MSCEIT ... measurement ... are desirable" (ibid:407).

One of the problems with the four-branch model of MSCEIT is in the way it groups the abilities as a basis for the task assessment. The 'Perceiving Emotions' branch in Table 40 uses tasks that focus on perception of emotions in others, yet this is only part of the perception skillset. Perceiving our own emotions appears to be neglected when it is considered that this is (largely) about our ability to sense and label emotions as they arise. This is achieved by noticing the physiological sensations and changes in our bodies, whereas perceiving emotions in others is about paying attention to multi-channel data (see Archer and Lansley, 2015) from others, in real-time, through our eyes and ears, to help us to make decisions about how we progress an interaction with others. This MSCEIT *perception* cluster is tested by tasks that deal with one part of the overall skillset (images of faces), further complicated by the use of photographs (not video), so baseline appearance and changes from that baseline make judgements difficult. In addition, there are some potential construct-irrelevances in the second task of assessing emotions in artwork or landscapes, though this has little to do with EI and the ability to *perceive emotions* in self and others. The reasoning behind this is because interpretation and affect responses to such stimuli are subjective, they are based on individual differences and life experiences that may be triggered within us. As such, there could be no 'expert' right answer. Other researchers have raised similar concerns on this MSCEIT branch in that the "description of the Perceiving Emotions branch refers to the Perception of Emotions in 'objects, art, stories, and other stimuli'; emotion is a property of conscious

beings, and therefore strictly speaking cannot be present in these stimuli" (Maul, 2012:398). Maul (2012) also critiques two of the other branches and argues that:

> ....it is not clear what is meant by "appreciat[ing] such emotional meanings" in the description of the Understanding Emotions branch. "Appreciate" could refer to having awareness or knowledge of something or could indicate valuing (and in particular having gratitude for) something. The phrase "emotional meanings" is also ambiguous, as "meanings" could refer to communication (e.g., the meanings of words and phrases about emotions), or the causes of something (e.g., the meaning of one's heart rate increasing in the presence of spiders), or personal significance, among other possibilities. With respect to the Managing Emotions branch, it is not clear what is meant by "personal understanding and growth"; this is a subjective phrase that could have any number of interpretations.
>
> (2012:398)

As Phase I revealed, the challenge for any in-depth analysis of the MSCEIT competences is the lack of evidence of a structured, detailed taxonomy between the four *branches*, the *skills*, and the eight tasks (Section 3.2.1.8); this is not resolved by the descriptors of the sub-skills in Table 23 or their later refinement of the sub-skills within the four branches (Mayer et al., 2016:294). This leaves researchers having to reverse engineer the *tasks*, and the questions in the assessment instrument, to try to establish what the taxonomy detail might be. Let's consider two skills in this regard:

- "Understand complex feelings: simultaneous feelings of love and hate, or blends such as awe as a combination of fear and surprise."
- "Emotions are sufficiently vivid and available that they can be generated as aids to judgement and memory concerned feelings."

One issue, with respect to the first bullet point is that most EI scientists [63%] agree that *love* and *hate* are not emotions (Ekman, 2016:32). For example, Ekman (2003a:202) argues that love is more about "attachments [, often to] a specific other person", which can be rich with a range of emotions. The issue with respect to the second bullet point is that this is a complex statement rather than a clear skill or ability.

A further challenge relating to ecological validity is around what is deemed the right or wrong answer to questions like those employed in MSCEIT when *context* is limited. An example could be when a user is asked to decide how useful moods, such as tension, surprise and joy might be when meeting the in-laws for the very first time (Mayer, 2002). Firstly, there could be arguments about *surprise* and *joy* being emotions rather than

moods, given that most researchers agree that these are emotions (Ekman, 2016). Similarly, the lack of context may prompt a highly skilled EI respondent to decide that 'it depends', leaving them unable to respond regarding *usefulness*. If the meeting with the in-laws was after a runaway marriage, then *tension* may be more relevant and empathic to reflect the possible emotions of the people involved. If the meeting was sudden and unexpected, then *surprise* may emerge naturally or, if the news of the meeting was shared in secret by the respondent's partner, *surprise* might be adopted to disguise that knowledge. *Joy* might also be useful or not, depending on how the in-laws themselves might be feeling about the meeting.

6.2.7 Other assessment approaches

Although the following six assessment instruments are outside the scope of the eight core models being analysed, they are, nevertheless, summarised here, since they are ability-based and due to their potential value of therefore informing assessment instrument design development beyond this study.

6.2.7.1 Geneva Emotional Competence Test (GECo)

The developer of the Geneva Emotional Competence Test (GECo) model adds to the theoretical arguments here by claiming that:

> ....despite widespread support for the idea of measuring EI as an ability based on Mayer and Salovey's model, only a few performance based EI tests have been developed. I argue that both the original and updated ability EI model provide little guidance for a theory driven generation of items and their scoring, as the functions and processes associated with high and low EI are not specified in enough detail.
>
> (Schlegel, 2016:1).

The Geneva Emotional Competence Test (GECo) model is an online-only performance-based test to measure individual differences in Emotional Intelligence (EI). The test comprises 110 items and requires about 50 minutes to complete. It incorporates the *consensus* scoring approach that was criticised in MSCEIT and may be subject to some of the same criticisms. This weakens the tool being accepted as an IQ equivalent, given the argument (supported by this research) that it needs to be based on right/wrong answers (see 3.2.1.8, Maul, 2012:396 and also 6.2.3).

Objective, empirical validity studies are likely to emerge when this tool has been more widely used and tested. At present, these reasons and its newness explain why it has been excluded as a key influencer within this research project.

6.2.7.2 STEU and STEM

The developers of *Situational Test of Emotional Understanding* (STEU) and *Situational Test of Emotion Management* (STEM) argue that "MSCEIT is empirically rather than theoretically keyed, such that EI scores do not have a strong theoretical background" (MacCann and Roberts, 2008:540). They offer two approaches (outlined below) which they believe can address the MSCEIT weaknesses. Their instruments were felt worthy of consideration, here, as they are both claimed to be based on correct response with STEU following a questionnaire approach and STEM "developed in line with the SJTs paradigm" (MacCann and Roberts, 2008:542).

The *Situational Test of Emotional Understanding* (STEU) measures the ability to understand emotions taking a theoretical approach to determine the correct response (MacCann, 2006; MacCann and Roberts, 2008). MacCann and Roberts (2008). The developers selected Roseman and Smith's (2001) model of the emotions system, as the basis for construction of a standards-scored test of emotional understanding. There are 42 items in total covering 14 emotions over abstract, personal-life and work-life contexts. Participants are presented with a short verbal description of an emotional situation and are asked to select, out of five emotions, the one emotion that the situation is most likely to give rise to. For example: "Xavier completes a difficult task on time and under budget. Xavier is most likely to feel" (select one emotion from five options). *Pride* is scored as the correct answer, according to a standards-based scoring system derived from Roseman and Smith's (2001) appraisal theory (2001). This approach suffers the same challenges as highlighted with the written questionnaires earlier (see Section 6.2.5), namely, that a respondent may sensibly resist scoring by suggesting that 'it depends'.

The *Situational Test of Emotion Management* (STEM) measures the ability to manage emotions and is administered in multiple-choice format (MacCann, 2006; MacCann and Roberts, 2008). There are 44 items: 12 covering fear; 18 covering anger; and 14 covering sadness. Twenty-one of the items involve a personal life context and twenty-three involve a work-life context (MacCann and Roberts, 2008). Participants are presented with a verbal description of an emotional situation and asked to select the one most effective

way of managing the situation, from a total of four options. An example item is the following:

> Jacob is having a large family gathering to celebrate him moving into his new home. He wants the day to go smoothly and is a little nervous about it. What action would be the most effective for Jacob? The four possible responses are:
>
> (a) talk to friends or relatives to ease his worries;
> (b) try to calm down, perhaps go for a short walk or meditate;
> (c) prepare ahead of time so he has everything he needs available; and
> (d) accept that things aren't going to be perfect, but the family will understand, and he should prepare ahead of time, so he has everything he needs available.

Although STEM is scored against expert judgements, this approach suffers the same challenges as highlighted around written SJTs (see Section 6.2.5); namely, that the context is too simplistic to have confidence in what the *correct* answer might be.

STEM leans on SME ratings and the selection of SMEs was carried out in line with Matthews et al.'s (2002) criteria. Matthews et al. (2002) proposed multiple domains of expertise for emotion management. Relevant experts might include people with (a) academic knowledge of emotions; (b) experience in professions geared toward emotional healing (for example, counselling, psychiatry, psychotherapy, and possibly some forms of religious leadership); or (c) professions related to understanding and managing people's relationships and goals (for example, human resource–related careers and life coaches). They also identify an EI research consortium, including professionally trained psychologists holding masters' degrees or the equivalent, or life coaches with experience in counselling or psychology.

As it is multiple-choice (one from four options), a score of 25% is possible by chance. The developers also highlight that there is not one correct answer with three incorrect answers. Instead, they state that more than one course of action might be acceptable and so the responses are shown to be weighted, probably based on SME response data.[29] This would need to be factored into the decisions based on test results (by end-users).

[29] see https://www.academia.edu/9477533/Test_Protocol_The_Situational_Test_of_Emotion_Management_STEM

6.2.7.3 JACBART, METT and SETT

JACBART [Japanese and Caucasian Brief Affect Recognition Test], the Micro-Expression Training Tool [METT] and the Subtle Expression Training Tool [SETT] are three test instruments that test a person's skill in matching basic emotions to facial expressions using online applications. These test instruments align with the highest SME score (92.5% agreement) for what is termed Emotion Recognition Assessments (of facial expressions, voice, body language, etc.). Ekman, along with his co-writers, has focused an enormous amount of work on facial expressions of "basic emotions", finding cultural invariance in the expression and recognition of these emotions (Ekman et al., 1987; Ekman, 1992b; Ekman and Keltner, 1997). Part of this work was the development of specific rules and coding relating to muscular changes that affected facial expressions in the form of the Facial Action Coding System (FACS; Ekman and Friesen, 1978; Ekman, 1997). More recently, individual difference measures and associated training tools have been created out of this research, including Matsumoto et al.'s JACBART [Japanese and Caucasian Brief Affect Recognition Test] (2000); and Ekman's Micro-Expression Training Tool [METT] and Subtle Expression Training Tool [SETT] (2003b). The general approach with the facial expression instruments is to present images of facial expressions for a short period of time (around 1/25th of a second) and challenge the tool user to assign an emotion to the face, usually from a list of surprise, anger, sadness, happiness, fear, contempt and disgust.

Similarly, a measure of emotion recognition in vocal expression samples with definitive right and wrong answers was created (Banse and Scherer, 1996; Scherer et al., 2001). In the 2001 Scherer et al. study, participants had to rate all stimuli on each of five emotion scales from 0 (not at all) to 6 (intense) with the emotions joy/happiness, sadness, anger, fear, and disgust. In addition, they had to judge the 'naturalness' of the stimulus presented on a scale from 0 to 6.

Although these are well researched skill-building/testing simulations, they only sample one small facet of the abilities that make up the EI construct.

6.2.7.4 Who decides on what is the correct responses in any subsequent assessment instruments?

This question falls outside the focus of this current research, although it is clear that this will be one of the key challenges for those developing assessment instruments. Decisions, for example, around which emotions are selected for the core of an EI instrument will be at the centre of such work, and so is briefly explored here to illustrate how SMEs can be employed, in the same way that this study engaged SMEs for the model and assessment methodology.

There are a wide range of theorists who initially disagreed as to the number and type of emotions that exist (Tomkins, 1968; Izard, 1971, 1993; Plutchik and Conte, 1997). When the time comes, subsequent to the current research, to attempt to resolve the issue of whether, and which, emotions are 'basic' (see Ekman, 1992a, 1992b; Izard, 1992; Turner and Ortony, 1992 for debate around this particular issue), there is the hope that 'right' answers can be established and agreed upon by the SMEs who validate any EI assessment instrument development. Research progresses and develops over time, so the SME consultation and research behind 'correct response' data would need to be current. Fifty years ago, it was argued by Ekman, Friesen, and Ellsworth (1972) that there were six emotions: joy, sadness, fear, anger, surprise, and disgust, and their research might then have been be used as a representative sample of basic emotions. Such emotions are contained in models within the last thirty years, and most have evidence of cross-cultural expressive similarity, and neurological correlates (Ekman et al., 1987; Panksepp, 1992). A more recent research study by Ekman (2016), however, explored this again by engaging 248 SMEs, with a moderately high response rate of 60%. Ekman's (2016) research showed only "high agreement about five emotions (all of which were described by both Darwin and Wundt)[30]: anger (91%), fear (90%), disgust (86%), sadness (80%), and happiness (76%). Shame, surprise, and embarrassment were endorsed by 40%–50%" (2016:32).

The same research included data on other emotions though they drew substantially less support. They include "guilt (37%), contempt (34%), love (32%), awe (31%), pain (28%), envy (28%), compassion (20%), pride (9%), and gratitude (6%)" (Ekman, 2016:32).

A similar consultation exercise would be necessary across the EI curriculum with a, similarly, validated SME panel, to inform the design and development of emotional situations for video-based, SJT-centred, assessment instrument design.

[30] The sources referred to in this extract from Ekman's (2016) SME survey are, Darwin (1909), and Wundt (in Titchener, 1921).

6.3 Implications for future research

Once the new EI model and the assessment methodology proposed in this thesis is accepted, the next stage of research would have to focus on each specific measure, and create assessment instruments that together assess across the components of Emotionintell, as outlined in Figure 7. Over time, this would allow for the development of even more accurate and valuable assessments of EI to apply the taxonomy underpinning Emotionintell (see Table 34) to contexts, functions, values, and outcomes which are valued by organisations and wider society. The future research is summarised in the 'What is next?' Section of the Conclusion in Section 7.4.

The results of such a cumulative programme of research would help to address the concerns raised by the critics of EI research, as summarised in Section 3.2.6. It should also provide good evidence to support the inclusion of individual differences, traits, and other qualities that moderate EI performance and behaviour, within an ability model, to provide what is hoped to be an *e* factor measure for EI.

7 Conclusion

The two research questions established at the start of this project (see Section 1.2) were:

1. Can a generic framework of abilities be identified or developed so as to be widely accepted as a reliable measure of emotional intelligence (EI) in the same way that general intelligence is measured (IQ)?
2. To what extent can a single assessment methodology reliably assess adults against such a model?

On the first part of the first research question, the current author has revealed (see Section 4.2.1) that no generic EI model is in existence that is widely accepted as a reliable measure of emotional intelligence (EI). It has been revealed that a generic, widely accepted, definition of emotional intelligence does not seem to exist either (Zeidner et al., 2008). This thesis therefore introduces a new definition (Section 2.2.2), and a new EI model *EmotionIntell* (see Section 5.2). The current author posits that *EmotionIntell,* an ability-based EI model, incorporating a detailed underpinning taxonomy (see Section 5.2), addresses the first research question positively.

On the second research question, the current author suggests (see Section 6.2.5.5) that a single assessment methodology *cannot* reliably assess adults against such a model. This thesis posits, in Section 6.2.5.6, that assessment of the whole EI construct requires a combination of four assessment methodologies, centred on a video-based reality simulation approach that incorporates [knowledge/understanding] questionnaires, self-report and multi-rater data.

The current author suggests that the main strength of this research is the introduction of *Emotionintell*, a *new* ability EI model and an assessment methodology, developed on a firm conceptual base, that includes:

- a clear definition of EI (see Section 1.1) drawn from empirical research, that is supported by a significant number of subject-matter experts (see Section 4.2.2);
- adherence to the four sub-domains of EI (see Section 2.3 content around Figure 2);
- a commitment to abilities (not traits) as primary factors, so the resulting EI model can be classified as an intelligence (see Paragraph 12 of Section 3.2.6);

- isolation of non-ability factors from the primary factors, while integrating traits and other individual differences into the taxonomy framework to reflect the moderating effect they have on EI performance/behaviour (see Section 5.2.7);
- ability descriptors that are neutral of values, specific contexts and applications to enable the *Emotionintell* model to be applied across multiple sectors (see Paragraphs 6, 7, and 9 of Section 3.2.6);
- a comprehensive model of twelve abilities, across four domains, that factor context into that *Emotionintell* model (see Section 5.2.5 and Figure 7);
- disaggregation of the primary ability factors into the knowledge, understanding and skills that underpin them, as an integrated taxonomy that can support the creation of associated learning and assessment processes (Section 5.2.6 and Table 34);
- adoption of a research-driven methodology for performance-focused assessment, that has been evidenced, in a parallel leadership field, to have ecological validity (see Section 6.2.2 and Figures 11 and 12).

- a contribution to the field of knowledge, through this thesis that has distilled the main challenges that have faced EI over the last twenty years (at Section 3.2.6), and addressed them by combining: analysis of the relevant research literature; a dataset of the findings from extensive SME consultation; with, the creation of the *Emotionintell* EI model and a related assessment methodology (in the next Section 7.1).

7.1 Addressing the twelve research challenges

The results of the mapping and the analysis of the literature that needed to be addressed by the current research are outlined in Section 3.2.6 as twelve key challenges (statements, questions or arguments). They are summarised and re-presented here, followed by an explanation by the current author of how this thesis addresses each challenge.

7.1.1 Primary factors in EI models that consist of a mix of abilities and traits interfere with the aspiration for EI to be classified as an intelligence (see Section 3.2.6 – Challenge 1):

This challenge was centred around the problem that traits and abilities have generally been accepted as interrelating yet opposing constructs and therefore should not be mixed as primary factors in an EI model (Eysenck, 1994; Zeidner, 1995). We have seen from Section 3.2.1 that the majority of the core EI models in this study have traits as part of the primary factors, which does not help those EI models to be classified as intelligence measures. This is because judgements and assessments about traits usually depend on perceptions of them by self and others, and they tend to indicate individual preferences and attitudes (for example, *Self-esteem*, and *Trait happiness* from the TEIQue model in Section 3.2.1.1).

This thesis highlighted another approach that two more recent studies presented (Hughes and Evans, 2018; Vesely Maillefer et al., 2018). These studies were part of a collection of 28 studies, brought together under a special collection on Trait Emotional Intelligence (Pérez-González et al., 2020), and suggested that a combination of constructs within the overall EI construct may collectively help traits to have a place in EI measurement. They suggest a theoretical framework where trait EI, ability EI, plus *emotion regulation* (see the research by Hughes and Evans, 2018), or *emotion information processing* (see the study by Vesely Maillefer et al., 2018), can blend these major constructs, and provided some evidence supporting the usefulness of this approach "in predicting EI-related outcomes" (Vesely Maillefer et al., 2018:1). The current author suggests that this approach is simply a wider *mixed* model that still contaminates the EI model (as argued by Eysenck, 1994; and Zeidner, 1995) and still interfere with the goal to have EI classified as an intelligence. This, therefore, does not help to address this challenge.

The *Emotionintell* model incorporates twelve primary factors which are all ability-based (see Section 5.2.5); this therefore enables this EI model qualify as an *intelligence,* in the way *intelligence* is defined in this study (that is "the ability to acquire and apply knowledge and skills" (see Section 2.2). Traits are, however, not neglected, as they are in the ability model MSCEIT (see Section 3.2.1.8). This challenge of incorporating traits into an ability model is addressed in this thesis in Section 5.2.2, where the *context*, that features in the 3x3 EI model (see Figure 6) brings in the moderating effect of *traits*/*personality* on EI performance. This was the point made by Hughes and Evans (2018:10-12) as to how traits might be integrated into an ability model without creating another mixed model construct, and this 3x3 model provided a theoretical placeholder that supported the development of *Emotionintell* in this current research. The mechanism

used for ensuring the traits and personality factors are achieved in this *Emotionintell* model was achieved by incorporating them into the essential knowledge, understanding and skills (see Sections 4.2.4 and 4.2.5) that underpin the twelve primary ability competences for assessment and development purposes. The SME consultation revealed that 100% of the SMEs believed that *abilities* need to feature in the primary EI factors. There was a majority of SMEs (53.5%) who felt that *ability* factors only should be primary, with 46.5% of the SMEs suggesting the primary factors should be *mixed* (abilities and traits). None of the SME respondents felt that traits alone should be the primary factors in an EI model.

The twelve abilities within *Emotionintell* were judged by the SMEs to be necessary for those who have high Emotional Intelligence, with a highly significant mean of 95.7% across the twelve competences. There was a range of 7% across the agreement scores for the twelve abilities (93% to 100%) with a standard deviation from the mean of 2.395% (see these results in the dataset included at Appendix 3), revealing the consistency of the high SME evaluations of these abilities. The twelve primary factors were, arguably, seen to be sufficient too, as no additional factors were proposed by the SMEs.

7.1.2 Trait EI and personality correlate (see Section 3.2.6 - Challenge 2):

It is accepted by the current author that trait EI and personality have been shown to correlate in several studies. One study (referred to in Section 2.3) suggests that EI was found to be "negatively and significantly correlated with Neuroticism, and positively and significantly correlated with Extraversion, Openness, Agreeableness and Conscientiousness" (Saklofske et al., 2003:707).

As trait/mixed EI models all include traits in their primary factors (see Section 3.2.2), it might be expected that scores on a trait EI instrument *will* correlate with personality measures, especially if both scores resulted from only self-report. As *Emotionintell* is an *ability* model, this finding has limited relevance to the core EI model presented.

7.1.3 There is a need to untangle the domains of emotion from cognition to distinguish EI from IQ (see Section 3.2.6 - Challenge 3):

Some of the core EI models include factors which suggest abilities that might be more cognitive than emotional (for example: *adaptability*, *achievement drive* and *initiative* [Section 3.2.1.4]; and, *problem solving* and *reality testing* [Section 3.2.1.5]). An EI model

might then be criticised for assessing cognitive abilities rather than emotional skills. For example, a person's decision-making ability in interactions could be strong, either "because their cognitive processing skills are generally better… [or/and] because they are open to their own and others' emotional reactions" during the decision-making process (Mayer and Geher, 1996:91).

The challenge, here, is not one that is easily solved as emotion and cognition are not easily separated. Neurobiologists revealed in a special research topic 3.2.1.3 that the brain is an integrated organ and research shows that the domains of cognition and emotion are not disconnected processes or physical zones in the brain. "Put simply, fear, joy, attention, working memory, and other psychological constructs cannot be mapped to isolated brain regions because no one region is both necessary and sufficient" (ibid:11). It is known that thinking can trigger emotions and "emotional cues, emotional states, and emotional traits can strongly influence key elements of on-going information processing, including selective attention, working memory, and cognitive control" (ibid:16). This 'untangling' challenge, however, lies beyond the scope of this study. That said, the current author filtered out purely cognitive factors in the matrix-based analysis (by not including them in the synthesised factors in Table 25). This ensured that the abilities that survived the analysis and synthesis work within this study are primarily about *emotional intelligence*, which is defined in this thesis as 'the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals' (Section 2.2).

7.1.4 Assumptions have been asserted that EI should positively correlate with IQ and this assumption has been used to support or critique EI model research (see Section 3.2.6 - Challenge 4):

There are claims that the strength of a model depends on a positive correlation between EI and IQ since they measure the same overall construct of intelligence "demonstrating the positive manifold (that is, consistent positive correlations) found among intelligence tests" (Orchard et al., 2009:322). The current author posits that this assumption might be flawed. Generic IQ (known as 'g') and EI, may not correlate positively. They might not correlate at all or could even be negatively correlated. We do not know. What we do know is that high academic achievement correlates with high IQ at a level somewhere between 'moderate to strong' (Jencks, 1979; Herrnstein and Murray, 1994; Fischer et al., 2018). Does that 'smartness' make us less receptive, attentive and empathic towards the

inputs and perspectives of others? Until an e-factor measure of EI is developed it in not possible to correlate EI with IQ.

This current research has generated evidence (see Sections 2.2; 4.2.3 and 6.1) that raises serious questions against the assumption that all intelligences "should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361). The current author argues, in Sections 2.2 and 6.1, that EQ models should not, therefore, be supported or criticised because they meet or breach this element of the "correlational criteria" (Mayer et al., 1999a:271) that suggests that EQ should positively correlate with IQ. An interesting finding (see Section 4.2.3) revealed that a good majority (76.2%) of the SMEs hypothesized that a reliable measure of Emotional Intelligence would have *no* or *low* correlation with IQ, thereby directly countering the positive correlation theory. Only 21.4% felt that there would be a high, positive correlation. A few of the SMEs (2.4%) felt that there would be a high, inverse correlation. This significant SME response suggests that researchers need to be cautious of taking this criterion at face value, especially when presented by the developers of one of the few EI models (MSCEIT) that seem to address that criterion.

7.1.5 Trait EI and IQ do not correlate (see Section 3.2.6 - Challenge 5):

Petrides and Furnham (2001) the researchers behind the Trait Emotional Intelligence Questionnaires (TEIQue), state that if trait EI is argued to be a personality construct, then "one should not expect it strongly to correlate with measures of psychometric [IQ] intelligence" (2001:437). Reinforcement of this trait EI versus IQ disconnect is supported at a wider level by the weak correlations found between personality traits and [general] intelligence (Ackerman and Heggestad, 1997).

Having seen that trait EI and personality measures correlate to some degree (see Paragraph 7.1.2 above), and noting the *Petrides and Furnham* (2001:437) and the *Ackerman and Heggestad* (1997) admissions referenced in this challenge, that claim that *Trait EI* and *IQ* do not correlate, seems to be an argument that can be accepted based on current trait EI models. In addition, as *Emotionintell* is an ability-based model, this current research is not directly impacted by this conclusion, apart from supporting the approach taken to keep traits out of the primary factors (see Section).

7.1.6 Subjective EI judgements might be influenced by a judgement that someone is a nice person and vice versa (see Section 3.2.6 – Challenge 6):

There may be assumptions by EI raters that a high EI score means we are a *nice person*, and vice versa. This bias is known as the 'Halo-Effect', which is the tendency for an impression created in one area to influence opinion in another area. Early studies by Thorndike (1920a) highlighted this bias in a military context (see Paragraph 6 in Section 3.2.6). Conversely, just as an immoral, narcissistic person could attain and misuse a high IQ, the same applies to EI. This thesis has highlighted (Section 3.2.6) that some people may wish to develop EI to serve less socially acceptable, selfish motives. This may mean that *openness*, *win-win intent*, *wellbeing*, and other prosocial qualities, although socially desirable, should not feature in an *e*-factor framework. Consequently, it seems desirable that a generic EI model needs to remain neutral of positive and negative value-laden bias.

The current author identified that this challenge would be a little controversial on several fronts (see Section 5.2.3):

a) There is a theme across EI research for EI models to be a tool to encourage well-being, happiness, co-operation, and positive relationships. This is evidenced by reviewing Table 24 where these terms are included and inferred across the core EI models (illustrative examples being: *Trait happiness* in TEIQue [3.2.1.1]; *Teamwork and Collaboration* in both the ECI 2.0 model [3.2.1.3], and the Goleman model [3.2.1.4]).
b) This association also introduces the risk of the 'halo-effect' bias raised in the challenge.
c) There is a fear that EI abilities have a 'dark-side' and can be used to manipulate others (see Davis and Nichols, 2016; and Kilduff et al., 2010). One of the SMEs even added a caution around the word *influence* in the Emotionintell primary factors, saying "Influencing can be equal to manipulation, and can lead to dark and dangerous places" (see Section 4.2.11).

The current research accepted the challenge with regards to a) and b) above with *Emotionintell* being *value-neutral* (see Section 5.2.3), whereby the abilities were simply aligned with what behaviour is *appropriate* to *context* and *goals* of those involved (self and others). This may be considered competitive advantage over another person in business, sport, or poker, though the EI model should not judge or reject such applications if it is to be truly generic. SME support for this *value-neutral* approach might

be inferred by the significant support from the SMEs for the current author's definition of EI (see Section 4.2.2), and also their support for the twelve *value-neutral* abilities of *Emotionintell* that "were judged by the SMEs to be necessary for those who have high Emotional Intelligence, with a highly significant mean of 95.7% across the twelve competences" (see Section 4.2.6).

The 'dark-side' comment at c) above, is addressed in Sections 3.2.6 (Paragraph 6) and Section 5.2.3. The current author respects both the concern and dangers around abuse of EI skill, though argues in those sections that, as in leadership, an EI model should not force only positive values and ethics on the user, though it is hoped (by the current author) that this and other EI models will be applied towards making the world more compassionate and safe.

7.1.7 Some EI models are context-specific and this may restrict transfer of use across a range of application (see Challenge 7 from Section 3.2.6).

IQ is context-independent, and it is often used by organizational gatekeepers to filter and select individuals for education and carer pathways. A generic *e*-factor for EI would, therefore, need to be equally context-independent and, as far as practically possible, should be free from specific, restrictive or contaminating frames such as leadership, management, team building, worker, well-being, and organizational awareness (the primary contexts of EI models [see Table 6 - Overview of EI models within the scope of this study), so as to enable independent application across contexts. The extant research literature supports this challenge, including the assertion that researchers need to demonstrate that the construct of EI "has some value as a basis for predicting, explaining and influencing behavior[*sic*] across some reasonable range of relevant situations" (Murphy, 2014b:344).

As covered in Paragraph 7.1.7 above, the EI model that is the core output of this current research, *Emotionintell*, is values-neutral. It is also sanitised of any other context-specific restrictions such as *leadership* and *workplace,* as is evidenced by the primary factors (see Section 4.2.6 and also Figure 7). This generic approach, that the current author is keen to protect, will allow users of *Emotionintell* to apply the model to their own research and application contexts (see Section 5.2.4) across diverse disciplines.

7.1.8 Self-report EI assessment can be faked (see Section 3.2.6 - Challenge 8):

Any assessment methodology needs to be fit for purpose. The self-report, multi-rater, consensus, and expert scoring approaches, as adopted by the developers of the core EI models (see Sections 6.2.3 and 6.2.4), all have their strengths and flaws (see Section 6.2.5). The research and analysis in Sections 6.2.4 revealed the weaknesses of self-reporting, that are widely published and highlighted in this challenge, that they are *susceptible to faking*, and the *positive bias* effect (see Pauls and Crost, 2004).

This then presents a key challenge for the following reason. Two quadrants of the *Emotionintell* EI model (see Figure 7) are to do with *self-awareness* and *self-management*; these sub-domains are covered by all eight of the core EI models in this study (see Table 24). These quadrants are also central [underlining added] to the definition of EI that was adopted within this thesis (that is, 'the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals' (Section 2.2)). Whilst some behavioural outputs of *self-awareness* and *self-management* processes can be observed, (for example, an extremely angry person might be observed taking a deep breath and pausing in order to interrupt an escalating argument that is on the verge of inappropriate aggression or violence). The challenge is that an observer (who might be an EI assessor, or maybe a person asked to carry out peer-review as part of a multi-rater exercise) might make the wrong assumption about why the person withdrew: it might be a constructive *self-management* ability relating to anger to address an injustice; or it could be a withdrawal motivated by fear where such passivity might be counter to developing a constructive relationship with another person (if this was actually the goal). These EI processes and abilities happen internally (that is, in the mind). In this way, it would be reasonable to claim that a combination of knowledge tests, SJTs or peer assessments, without self-report, might fail to evaluate the bulk of what is happening in these sub-domains. In other words, a combination of assessment approaches may be necessary to evaluate a subject's performance/behaviour, as well as their internal thinking and rationale behind any observable performance/behaviour. Otherwise such EI abilities can only be inferred from what is seen and heard.

This thesis then posits that self-reporting *has* to feature as part of an assessment approach that is sufficient to deliver the *e* factor, despite the weaknesses of *susceptible to faking*, and the *positive bias* effect (see Pauls and Crost, 2004). The EI assessment

methodology presented in this thesis (Section 6.2) incorporates triangulation across the EI assessment model in Figure 9 with a blend of four approaches, as shown in Figure 10. This introduces a corroborating feature to insulate against the self-report weaknesses. The assessment methodology presented in this thesis (see Section 6.2.5) therefore includes:

1. assessment of a person's knowledge and understanding (tests);
2. testing the integration and application of a person's knowledge and understanding through video-based simulations that reflect the real-world (SJT);
3. elicitation of multiple perspectives from those who regularly experience the real-life/work application of EI behaviour by the subject (multi-rater);
4. drawing on a subject's self-insight (self-report).

This includes self-reporting, whilst providing a means of isolating any self-assessment that conflicts with the other dimensions. This will help inform reliability of the integrated assessment results (if the subject being assessed scores low in Elements 1,2 and 3 above, whilst rating themselves high), then this could highlight either faking, for impression management purposes, or maybe a level of EI that is so low that the subject is unable to competently judge correct EI behaviour or performance. Both of these results would be valuable: a) for the individual (for development and career choices); b) for researchers; and, for any education/employment gatekeepers using the EI score to make decisions around entry into their organisations. Conversely, a subject who scores highly on all four facets of the assessment process would have a great deal of confidence in their own EI abilities, as would the education/employment gatekeepers. Extensive test development work, and empirical research using those tests, beyond the current thesis (see Section 7.4), would serve to test and evaluate the high levels of predictive and ecological validity that the current author hypothesises will result from this multi-faceted approach that includes self-report. The current author does not, however, underestimate the cost of producing such a high-quality assessment instrument, nor the time needed for a person to complete the assessment, though this thesis did factor time and cost into the analysis in Section 6.2.5.4 (entitled, *'Best' methodology with time/cost of assessment factored in*).

7.1.9 EI needs to factor in appropriateness of behaviour towards goals within the micro and macro context that applies (see Section 3.2.6 – Challenge 9):

The challenge was around the need for researchers and developers to include cultural, personality, and other individual differences in an EI model. Section 3.2.6 explored research by Brody (1988), Cherniss, 2010, and Jordan et al., 2010, around the topic of *context*. This is summed up by the claim that there is "a general consensus in favour of the interactionist position that both traits and situations are important influences on behaviour" (Boyle et al., 2008:14–15). The definition adopted for this research [underlining added for emphasis] provides this focus (that is, 'the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals' (Section 2.2)). This definition was also supported by 76.7% of the SMEs (see Section 4.2.2).

For the varied environments we face in life and work, it was also highlighted, in Section 3.2.6, that attention is needed towards the idea that most of us can be emotionally intelligent when things are going well, though any assessment has to predict EI performance and behaviour in emotionally charged, high-stake contexts too, in order for the model to achieve this ecological validity. The conceptual model at Table 34 (see also Figure 8) illustrates this point with a green/amber/red classification.

The original 2x2 EI model (see Figure 2), that reflected earlier EI models, was deemed by the current author to be insufficient as a basis for the Emotionintell development, as it neglected micro-context (traits and other individual differences of the self and others), and also macro-context (culture, time and place factors) that may impact on EI performance (see Sections 5.2.2 and 5.2.4). The conceptual base of EI was, therefore, widened into a 3x3 model (Figure 6), adding in *context* as a factor, in addition to *self* and *other,* that an individual needs to have *awareness* and *understanding*, plus the ability to *influence*, during interactions with others. This *context* feature respects the moderating effect of *personality* on EI performance that Hughes and Evans highlighted (2018:10-12) and provided a placeholder for how traits can be integrated into the EI ability model resulting from this research, without creating another mixed-model construct. This has not been done before. The two ability models, MSCEIT (3.2.1.8) and SAARNI (3.2.1.6), from the core EI models scoped for this study, did not factor *context* (including *traits*) into their frameworks. *Emotionintell* not only builds this into its conceptual base with the 3x3

model (Figure 6), but it also factors context and traits into the underpinning taxonomy for practical development and assessment of EI abilities (see Sections 5.2.6 and 5.2.7).

7.1.10 Can EI be developed (see Challenge 10 from Section 3.2.6):

Intelligence is often deemed to be fixed relative to age when thinking about IQ (see Section 6.2.1). The question raised here is whether that is the case for EI.

There was significant support (95%) from the SMEs behind the belief that Emotional Intelligence can be developed in people, with a minority (n=2) suggesting that EI is fixed. This may be based on an assumption of EI and IQ concept alignment, transferring the claim that IQ is fixed relative to age (see Section 1). This research has generated evidence (see Sections 2.2; 4.2.3 and 6.1) that raises serious question against this 'EI equals IQ' correlational assumption (see Section 7.1.4), and therefore care is needed in any transfer of understandings from the IQ world (for example, that IQ might be fixed) to the EI construct. It may be the case that *Emotionintell* helps to evidence the SME judgements about *learnability* (95% of the SMEs support this), and perhaps, in turn, this may help to support research in the IQ and wider *intelligence* field. If EI can be developed, which many feel that it can (Higgs and Dulewicz, 2016), then we may need to redefine all intelligences as 'learnable'.

7.1.11 Conflict between EI model development and commercial test instrument interests (see Section 3.2.6 – Challenge 11):

The current author was interested in how scientists might handle the ethics and conflict of interests when reviewing new approaches and defending their own models under the non-disclosure agreements they may hold with commercial producers and distributors of assessment instruments based on their models. The fact that there are clear alliances between researchers and commercial test producers, as evidenced in Table 6 - Overview of EI models within the scope of this study), was a serious concern for the current author at the start of this study. Those concerns included:

- To what degree might non-disclosure agreements limit the openness in the SME survey?
- How would the *trait* and *mixed* schools of researchers react to an attempt to argue a case for *abilities* to be the primary factors in an EI model?

- How might the dominant MSCEIT ability model developers react to another ability EI model emerging into the research field?
- How much will these, and other, conflicts of interests contaminate or influence opinions and reviews, not only by the SMEs within this study, but also the editors and reviewers of journal articles submitted by the current author beyond the current thesis?

Most researchers cited in this thesis openly declare their commercial interests as, for example, Mayer et al., (2016) do, by stating that they "receive royalties from Multi-Health Systems on sales of the… MSCEIT and MSCEIT-YRV" (Mayer et al., 2016:298). Indeed, reputable publishers of empirical research insist on this type of disclosure. Researchers may also have the additional pressure (from developers, distributors and users) to produce cost-effective, quick assessment approaches, rather than more substantial instruments that might be expensive; could take a long time to complete; and may be difficult to produce. A counter for this would be that the idea of a compromise between 'good enough' and 'time and cost'. In addition, once a reliable measure is developed there may be a need for studies that identify (or create) a simple 'test' that is easy to administer, that produces the same or similar results for the same individual. See also the notes about self-report in the earlier section (Section 7.1.8).

A surprising outcome of this study (for the current author) was the objectivity and professionalism that emerged from the SME judgements and comments. Researchers, who the current author suspected might be heavily tied into commercial contracts, provided data and comments that the current author judged to be objective, and (from the SME comments – see Section 4.2.11) seemed to be energised by a commitment to scientific research and development within the EI field. The overall comments from some of the SMEs (see Section 4.2.11) fuelled the energy and commitment behind this study, including these SME comments from that section:

- You are taking on a very challenging task and I hope you are successful. Success will be difficult to measure since there are many voices in the field today and some very strong beliefs and opinions. Good luck.

- A new ability model which integrates awareness of communication changes across multiple channels I believe would be an excellent step forward. This work is much needed.
- This is important work. Good luck!

These also reminded the current author of his responsibility to recognise and isolate any bias from his own studies and alliances from entering into the analysis and development work. This is considered in Section 8.

7.1.12 EI primary factors (Section 3.2.6 – Challenge 12):

The challenge in the world of mixed EI models is to decide which factors should feature as the core of an EI framework. This challenge is addressed in Section 7.1.1, whereby an EI model that is aspiring to be classified as an intelligence *must* have abilities as its primary factors. This was a clear aim for the current research (see Section 1.3). This thesis reveals (in Section 4.2) that 100% of the SMEs believe that *abilities* need to feature in the primary EI factors too. The *Emotionintell* model delivers this ability focus in this thesis (see Section 5.2.5).

It should be noted that there was a slight majority of 53.5% of the SMEs who felt that ability factors should be primary, with 46.5% suggesting that the primary factors should be *mixed* (abilities and traits), though none of the SMEs felt that *traits* alone should be the primary factors. This did not surprise, or distract, the current author, since the majority of the core EI models are mixed models, with MSCEIT being one of only a few *ability* model outliers.

7.2 Summary and some surprising findings

This research and development work has highlighted the twelve challenges raised in Section 3.2.6 following the analysis of the literature, and then revisited them here in Section 7.1, with links back into the current thesis, the new EI model, and the SME dataset to evidence how the new EI model deals with each challenge. The significance and impact of these findings, in the context of the EI research literature, is explored in the *Discussion* section (see Section 7.5).

There were three main surprises that emerged during this research project. These were:

1. The consultation revealed that 83.7% of the SMEs did not believe a generic Emotional Intelligence assessment model already existed that provides a reliable

measure of EI, which parallels the way IQ tests measure general intelligence (see Section 4.2.1). At that time (April 2019), 90.7% of the SMEs believed that it was feasible to create a generic Emotional Intelligence framework and assessment model that parallels the generic IQ model. It is hoped that this project goes some considerable way in supporting their beliefs;

2. There was a realisation that *no* EI model could be found that is based only on *trait* factors (see Section 3.2). This is despite the claims that there are EI models labelled as trait models across the literature. One EI model, TEIQue (see Section 3.2.2) is even titled 'Trait Emotional Intelligence' in the 'TEI' part of its abbreviation label. The SME consultation revealed that 100% of the SMEs believed that *abilities* need to feature in the primary EI factors (Section 4.2.3). The current author felt that the trait model advocates within the SMEs might reject the inclusion of abilities, especially as abilities are often about 'correct answers' which cannot be assessed using the simpler, less expensive self or peer perception (see Section 6.2.5);
3. Support from the SMEs regarding the idea that an EI measure and an IQ measure might not correlate was interesting. This was a surprise since the current author believed that the general acceptance of the "correlational criteria" (Mayer et al., 1999a:271) would have swayed researchers towards that belief. A good majority (76.2%) of the SMEs hypothesized that a reliable measure of Emotional Intelligence would have no or low correlation with IQ (Section 4.2.1).

7.3 Limitations

This thesis captures the process and findings designed to address the research questions established at the outset, resulting in an EI model and an assessment methodology. There are, however, areas where this thesis may attract some criticism.

Some may feel that the project might have delivered one or more assessment instruments, perhaps applying those to a range of cross-cultural/cross-sector groups, correlating the scores with successful EI performance. The current author could have developed the same EI model and followed the trend of other researchers by developing a simple self-report test against the model. The current author did not set out to do that, but was committed, instead, to finding or developing *an EI model*, and an *assessment methodology*, that would stand up to being classified as an *intelligence*, in the same way

that IQ does. IQ *cannot* use preferences and self-report or self-perception (nor peer assessment [multi-rater]) to deliver scores that might be relied on for decisions about education and career pathways for, or by, individuals. The systematic analysis of the literature did not reveal an EI model that satisfied these criteria, and 83.7% of the SMEs agreed that none existed (Section 4.2.1). The current author, therefore, created one (see Figure 7 and Section 5.2.5). The 'Where next' Section (7.4) outlines how this thesis might be a platform for future research and development work that can build on the current thesis.

The selection of SMEs in the primary ability EI model has been heavily criticised (see Section 3.2.1.8). The current author, therefore, took care in selecting the SMEs for this work. That said, some may argue that the membership of CREIO (Consortium for Research on Emotional Intelligence in Organizations) does not reflect the global population of EI experts, though establishing that wider population would perhaps require considerable research in itself. As this was not the focus of this study, it was not undertaken. It is recognised that assumptions had to be made about the CREIO membership and ethnic diversity. The assumption is that the wide geographical base of the membership (see Table 28 - Geographical spread of Respondents and Survey Group) *should* draw on individual SMEs from across ethnic groups in those continents. Although this may be a reasonable assumption, the current author felt that it would have been helpful to invite SME respondents to provide demographic data, whilst still being able to assure the respondents of their anonymity. As the response rate was 41.3%, this means that 61 of the 104 population did not respond and, as such, some may challenge the survey on the basis of a non-response bias (that is, people are unwilling or unable to respond to a survey due to a factor that makes them differ greatly from people who do respond). By building in anonymity and ethical controls, the current author was keen to encourage EI model researchers and developers to contribute from across the opinion spectrum in order to minimise non-responses that might contaminate the results.

The acceptability of this 41.3% response level would need to be considered against factors such as the 14-day response window which was established, though busy workloads or holidays may have impacted on this response rate. The current author was, however, comfortable with the trade-off of risking fewer responses, for what may seem a short survey period, against the desire to minimise inter-expert collusion across this fairly close community of CREIO members, who may meet on EI projects, at conferences and

via social media. The time constraint also enabled responses to be captured that were fairly synchronous. The current author recognised that conflicts of interest might make it difficult for experts to respond objectively, or at all, as some of those invited might have been unable to participate as they were bound by confidentiality, commercial and/or non-disclosure agreements with commercial EI tool providers and other related entities. If that was the case, then there was no reason that that restriction would be skewed in any way to bias the results.

Some may consider that the survey could also be contaminated by the wording of the questions and by the design of the survey. Care was taken to avoid this by engaging the three project supervisors in the draft surveys. Comments from the SMEs about the survey did not raise this as an issue (see Section 4.2.11). The final questionnaire is included as Appendix 2 to allow wider inspection and judgement on this aspect of the research. The full dataset of responses (responders anonymised with unique reference numbers) is also included (Appendix 3 in Section 15) to enable verification and scrutiny by readers of this thesis, and which also allows the dataset to be used by other researchers.

The current author has been cognisant of his personal friendship and business association with Dr Paul Ekman over the last ten years (the current author is CEO of Paul Ekman International plc, which is a joint venture taking Dr Ekman's research into applications, including high-stake contexts). He is, therefore, aware that the evolving EI model is centred around the earlier 2x2 EI grid in Figure 2 that Ekman's research contributed towards. The current author of this thesis engaged the University Supervisory team in these reflections and believes that any bias of the study due to this association with Dr Ekman has been removed, although this is ultimately for others to decide. The consultation with SMEs (which did not include Ekman) is a key population to check the significance of the support for this 2x2 grid approach outside the current author's relationship with Dr Ekman. In fact, the current research built a critique of the 2x2 model and, as a result, a new 3x3 model evolved (see Figure 6) as a conceptual step forward, that guided the current research, and may support research by others in the EI field in the future. It should also be acknowledged that this literature review only considered research published in English. There may, however, have been some significant studies produced in other languages than English that fell outside the scope of this current research.

7.4 Where next

The EI model is complete (Section 5.2) and the assessment methodology is established (Section 6.2). The current author suggests that four steps for future research and development, to enable this model to be deployed, might be as follows:

Step 1: Develop the actual assessment instruments and tests based on the EI model and assessment methodology. These need to include the production of video-based reality simulations, incorporate knowledge/understanding questionnaires, and integrate self-report and multi-rater data as outlined by Figure 10 and detailed in Section 6.2. Early in this thesis (see Section 3.2.1.1), it was highlighted that Petrides (2011:659) posed two questions for anyone developing an ability measure framework:

i) Is it based on truly veridical scoring criteria (as opposed to novelty psychometrics)?
ii) Does it provide comprehensive coverage of the sampling domain of the construct (as opposed to a handful of convenient facets)?

The second question will need to be in mind during the assessment instrument design. The first question relies on good design and the validation in the next 'Step 2'.

Step 2: Establish 'correct responses' for these tests using SMEs whose credibility and judgments stand up to scrutiny. The model adopted for Section 4 (Phase III) of this study is deemed a reliable approach, where significant agreement (80%+) across a large group of cross-cultural SMEs is required for a 'correct response' to be established. It is suggested by the current author that a similar approach might be adopted in the future development of any assessment test instruments.

Step 3: Test and validate the assessment instruments across wide cultural, demographic, and functional contexts to determine the degree to which the EI scores against the *Emotionintell* model (see Section 5.2.5) correlate with success. Success would need to encompass successful performance and application of EI in the workplace, in social settings (family/friends/wider society), for personal well-being, and in life generally.

Step 4: Adaptation of the model to 3-year-old to 11-year-old children, so that EI skills might be introduced as a fourth core subject in UK (and other) schools (in addition to Reading, Writing and Arithmetic). This is the current author's ultimate driving goal that motivated this research. It was a desire to find, or build, an EI model that is reliable enough to form a foundation to build EI skills into early-years learning and development. The current author's hope is to leverage this thesis to make a difference around well-being, empathy, compassion, and social-interaction skills that children can take through adolescence into adulthood.

The current author estimates that creating and validating this assessment instrument equates to approximately seven year's work. As a result, this is being considered as a postdoctoral project, whereby the research and development funding (estimated at 0.75m GBP) is already being scoped and sourced by the current author.

7.5 Discussion

The current author suggests that the significance of the findings of this study, against the backdrop of the current EI literature, lies in four main areas:

1) This thesis offers *Emotionintell*, a product outcome that the current author hopes may be judged an innovative ability EI model developed on a 'back-to-basics', firm, theoretical foundation, whilst drawing on existing EI models and research. It is based on *abilities*, which will support the aim of EI being classified as an *intelligence*. It also provides a detailed underpinning taxonomy (including traits) mapped against the 12 primary factors that enable the creation of development routes and assessment test instruments in the future.
2) This thesis challenges a major core assumption that researchers have relied on, around "correlational criteria" (Mayer et al., 1999a:271), with the claim "that EI should show positive manifold with other established tests of intelligence" (MacCann et al., 2014:361). The assertion that EI should positively correlate with IQ is an assumption that has been questioned in the current research (see Paragraph 4 in Section 3.2.6). The current author's confidence, to challenge this assumption, was strengthened by the results of the SME survey where the majority (76.2%) of the SMEs hypothesized that a reliable measure of Emotional Intelligence would have no or low correlation with IQ (Section 4.2.1).
3) This research is transparent with the inclusion of elements that the current author was unable to source from the literature associated with the EI models scoped for this study:
    a) A fully populated factor analysis matrix (Appendix 1 in Section 11);
    b) The survey questionnaire used with SMEs (Appendix 2 in Section 12);
    c) The full dataset from the SMEs for verification of the results (Appendix 3 in Section 13);
    d) Open, critical analysis of the popular ability, mixed and trait EI models, with inclusion of the commercial context and associations across eight core EI models.
4) The assessment methodology does not sacrifice quality (potential for good predictive and ecological validity) for only cost and time factors. It does not default to simple self-report and/or multi-rater approaches adopted by all of the core EI model assessment instruments, except MSCEIT (see Section 6.2.4), although cost and time

are factored in, and considered, in the overall evaluation of assessment methodologies (see Section 6.2.5).

The decision to take an *ability* route (for EI primary factors) is a decision that evolved early during this research (see Sections 4.2.3 and 5.2.1). This may be controversial and may open this study to criticism, though the current author argues, in three sections of the thesis in particular (Sections 4.2.3 and 5.2.1), that EI *has* to be based on ability, if the EI construct is to be recognised as an intelligence. This criticism is expected due to the extensive research and development work that has been carried out around trait EI models and mixed EI models. The eight core models that met the scoping criteria in Section 2.1 consisted of only three ability models (33%), whereas the other five were mixed/trait models. A similar distribution resulted from two general Google searches for "trait emotional intelligence" and "ability emotional intelligence" with 134,000 and 31,600 results respectively.[31]

The current author argues that this shift towards abilities being central to EI models is necessary (see Sections 4.2.3 and 5.2.1 for the arguments and evidence) to address the underlying aim of this project, that is to test the hypothesis that this new EI model can be judged positively as an *intelligence* by the EI research community and beyond. From the current author's perspective, the challenges and complexities that have been holding EI back have been outlined in the literature review (Section 2), and also detailed in the analysis in Phase I (Section 3) of this thesis. The decision to test this hypothesis in Phase II (Section 4), through the SME consultation process, was carried out to open up this research to objective peer-review, since the 104 SMEs included proponents and developers of the mixed and trait models. The SMEs were offered the opportunity to challenge or support the arguments, definitions, and concepts within this study. In addition, setting a 'super-majority' agreement level of 80% for that consultation exercise (see Section 4.1), rather than a simple majority of 50% plus, was judged by the current

[31] www.google.com search accessed on 12 June 2020 – note this does not necessarily mean the results represented the focus of the source, as EI research often included both types of EI model. It is merely an indicator.

author to be a good way to ensure that the peer-review support, where that is realised, is deemed significant.

On a wider note, the efforts to clarify definitions during the early analysis also led to the change in the title of this study from how it was first conceived. It was initially entitled *A Critical Comparative Study of Current Emotional Intelligence (EI) Models: towards an emotional skills and competences inventory and valid assessment methodology*. The limitation that the term *skills* and *competences* raised were deemed to be unhelpful in driving towards a generic EI model. In addition, it emerged during the early study stages that the term *inventory* is more associated with tests than constructs or models and was therefore best avoided, especially as it is often claimed to be the type of test where '*there are no right or wrong answers*' [32]. This led to the study being simply retitled, *Emotionintell: a generic Emotional Intelligence model*.

The SME responses relating to EI that guided this current research, are offered as a dataset (Appendix 3 – SME responses) within this study to support future research. The literature review did not reveal any other EI model developers who opened themselves up to scrutiny by 104 SMEs (recognised as SMEs by a third party, not by the current researcher) in the design and validation of an EI model.

The current author's decision to incorporate an SME consultation phase was taken for three main reasons:

1. As this is a critical analysis and development study that aimed to develop a new EI model, the current author wanted to invite expert opinion from around the world, and from those across the trait-ability model schism, into this research, so that the results and conclusions could be objectively scrutinised. This ensured the outcome was open to evaluation by experts drawn from the EI community of practice;

2. The global mix of the experts would also be expected to expose the EI approach in this research to evaluation from EI experts across diverse continents and cultures;

[32] https://www.britannica.com/science/psychological-testing/Tests-versus-inventories

3. This consultation with experts (conducted in 2019) was designed to help the current author to open up the study to the latest thinking, and possibly those involved with unpublished research and practice.

In summary, the benefits of choosing this group is that it is likely that many have spent their careers researching and applying EI models and related assessment instruments. This might then help to provide objective scrutiny from those heavily involved in the EI field. The limitations around the SMEs and the consultation process are addressed in Section 1.

It might have been easy for the current author to bow to the popularity of traits, by incorporating some of the common traits from the eight core models (see Table 6) into the primary ability factors. This was resisted to avoid any drift into another *mixed* EI model. It is clear from the comprehensive factor-mapping of the core EI models in Table 24 that the majority of the EI models recognise the appeal of traits within an EI model. For example, five of the eight models include traits. That would, however, have perpetuated the degenerative, diverging research pathway highlighted in the Introduction (Section 1) and, therefore, would have not survived peer-review. Likewise, it would have also conflicted with the SME opinion, captured in this study, that *abilities* must feature in EI primary factors (see Section 4.2.3). In addition, it might have led to the model failing to then being accepted as an *intelligence* (see Challenges in paragraphs 2, 4, 5 and 10 in Section 3.2.6). This would have been compounded by the methodology of assessment, if the fourth phase of this study (Section 6) had defaulted to focusing the assessment only on the *self*- or *peer*-perception scoring used in all trait and mixed models.

The findings in this research around assessment methodologies suggested that: the self-report methodology does not result in a reliable measure of emotional intelligence due to bias and faking risks (see Section 6.2.5); and, no single test measures all aspects of EI (see Table 38 and Section 6.2.5). As is the case with IQ measures, which mostly consist of a collection of assessment instruments (see Section 6.2.1). This research project suggests a combination of assessment instruments might be required, and argues that holistic assessment of EI requires an assessment methodology that centres on '*video-based reality simulation, and incorporates [knowledge/understanding] questionnaires, self-report and multi-rater data'* (see Section 6.2.5, and Table 38). The combination and mix of

assessment approaches may seem ambitious, but it has been used before in a leadership context (see 'Managerial Assessment of Proficiency' in Section 6.2.2). The current author sees no reason that this approach cannot be successful when adapted and applied to this *Emotionintell* EI model so as to provide a firm platform for the *e* factor.

8 Declaration of interests and Ethics

The current author declares that this research has been conducted within the discipline of a PhD, jointly supported by the Emotional Intelligence Academy and Manchester Metropolitan University. The current author has been a stakeholder and Director of Paul Ekman International plc since 2010, working closely with Dr Paul Ekman to help widen global access to Ekman's research via educational EI programs.

The current author has no commercial or financial relationships relating to any EI model or EI assessment instrument stakeholders, including any of those featured in this project. It must be declared that although Ekman offers no EI models and tools, he does offer specific online tools for assessing facial expressions of emotion on his own website, Paul Ekman Group LLC[33], though the current author has no shares or benefits from that company, or the sale of those tools.

The work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis) and it is not under consideration for publication elsewhere.

The current author can confirm that this research has been 'approved unconditionally' under Manchester Metropolitan University's Academic Ethics Procedures and the University's Guidelines on Good Research Practice by the 'Independent Scrutiniser for PGRs RD1 Scrutiniser, Faculty Head of Ethics for staff'. Full details were supplied to participants and written informed consent was obtained from all participants. Copies of ethical approval, consent forms, details and policies available on request.

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[33] https://www.paulekman.com/micro-expressions-training-tools/

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11 Appendix 1 – EI Model Mapping Matrix (over 3 pages)

EI Model Type	EXTRAPOLATED FATORS FROM CORE MODELS (Blue/Green = Ability/Mixed Model source)				ABILITY BASED		
Ei Measurement Tool					EMOTIONINTELL (Draft data only)		12
Assessment methodology						TBC. (context/values neutral)	
Domains	COMMON FACTORS/COMPETENCIES (BOLD = occuring three or more times across EI Core models))			TRAITS etc (extracted)	COMPETENCES/SKILLS (WITH UNDERPINNING SKILLS/ KNOWLEDGE/ UNDERSTANDING))	APPLICATIONS (TASKS)	STYLES/ ATTITUDES/ TRAITS
SELF AWARENESS				SELF ESTEEM		Treatment of these TBC via Research. ——— Interviewing Relationship-building Meeting Leading Managing Developing Supporting Negotiating Competing Performing	Treatment of these (drawn from other models) TBC via Research. ——— Trustworthiness. Achievement-orientation. Service-orientation. Achievement-drive. Optimism. Initiative. Empathy(3 lvl)*. Compassion. Commitment. Leveraging-diversity. Political-awareness. Innovativeness. Adaptability. Conscientiousness. Self-confidence. Organisational-awareness. Efficiency-orientation. Attention-to-detail. Social-responsibility. Self-regard. Self-motivation. Self-actualisation Independence. Adaptability. Impulsiveness. Self-esteem. Trait-happiness. Trait-optimism.
		EMOTIONAL SELF AWARENESS x2	PERCEIVING EMOTIONS x2	SELF REGARD	PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR		
	EMOTIONAL SELF AWARENESS x3	EMOTIONAL REASONING	ACCURATE SELF ASSESSMENT x2	SELF CONFIDENCE	IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS		
		EMOTIONAL SELF AWARENESS	UNDERSTANDING EMOTIONS	INDEPENDENCE	APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO CONTEXT AND GOALS		
				SELF ACTUALISATION			
SELF MANAGEMENT				SELF MOTIVATION			
				ACHIEVEMENT ORIENTATION			
	STRESS MANAGEMENT	IMPULSE CONTROL	EMOTIONAL SELF CONTROL	IMPULSIVENESS	INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE		
	SELF CONTROL	EMOTIONAL SELF CONTROL	MANAGING EMOTIONS	ADAPTABILITY	ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE		
	EMOTIONAL EXPRESSION	EMOTIONAL SELF MANAGEMENT (AT WORK)	EMOTION REGULATION	CONSCIENTIOUSNESS	INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS		
	LEVERAGE EMOTIONAL SELF-EFFICACY TO ACHIEVE RESULTS			OPTIMISM/HAPPINESS			
				INITIATIVE			
SOCIAL AWARENESS				POLITICAL AWARENESS			
	SOCIAL AWARENESS	(EMOTION PERCEPTION)	EMOTIONAL AWARENESS OF OTHERS	ORGANISATIONAL AWARENESS	READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS		
	DISCERN OTHERS' EMOTIONS BASED ON SITUATIONAL CUES	*(UNDERSTANDING EMOTIONS)*	(EMOTIONAL REASONING)	SERVICE ORIENTATION	DISCERN OTHERS' EMOTIONS BASED ON CONTEXT		
		TRAIT EMPATHY	(FACILITATING THOUGHT)	SOCIAL RESPONSIBILITY	APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO CONTEXT AND GOALS		
				LEVERAGING DIVERSITY			
SOCIAL INTERACTION MANAGEMENT							
				CHANGE CATALYST			
	COMMUNICATION	INTERPERSONAL RELATIONSHIPS	EMPATHY	RELATIONSHIPS	ENGAGE OTHERS APPROPRIATE TO THE CONTEXT AND GOALS		
	COLLABORATION AND COOPERATION	CONFLICY MANAGEMENT	ASSERTIVENESS	LEADERSHIP	INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS		
	BUILDING BONDS	INFLUENCE	EMOTIONAL MANAGEMENT OF OTHERS (AT WORK)	TEAMWORK AND COLLABORATION	INFLUENCE OTHERS TOWARDS GOALS		
				TRAIT HAPPINESS			
				COACH AND MENTOR			
SELF MOTIVATION							

EI Model Type	ABILITY BASED							
Ei Measurement Tool	**MSCEIT (prev. MEIS)**		**16**	**GENOS EI**	**7**	**SAARNI**	**8**
Assessment methodology		Expert or consensus (Leadership focused)		MULTIRATER (focus on Workplace)		N/A (focus on well-being)	
Domains	**Sub groups of 'skills' ref: Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), Emotional development and emotional intelligence: Educational implications (pp. 3-34). New York: Harper Collins.**	**COMPETENCES/ SKILLS**	**STYLES/ ATTITUDES/ TRAITS**	**COMPETENCES/ SKILLS**	**STYLES/ ATTITUDES/ TRAITS**	**COMPETENCES/ SKILLS**	**STYLES/ ATTITUDES/ TRAITS**
SELF AWARENESS	PERCEIVING EMOTIONS IN OWN STATES, FEELINGS THOUGHTS						
	UNDERSTAND COMPLEX FEELINGS: SIMULTANEOUS FEELINGS OF LOVE AND HATE, OR BLENDS SUCH AS AWE AS A COMBINATION OF FEAR AND SURPRISE	**PERCEIVING EMOTIONS**		**EMOTIONAL SELF AWARENESS**		**AWARENESS OF OWN EMOTIONAL STATE**	
	LABEL EMOTIONS AND RECOGNISE RELATIONS AMONG THE WORDS AND THE EMOTIONS THEMSELVES, SUCH AS RELATION BETWEEN LIKING AND LOVING			**EMOTIONAL REASONING**		**USE COMMON EMOTION/EXPRESSION VOCABULARY**	
	RECOGNISE LIKELY TRANSITIONS AMONG EMOTIONS, SUCH AS THE TRANSITION FROM ANGER TO SATISFACTION, OR FROM ANGER TO SHAME	**UNDERSTANDING EMOTIONS**					
SELF MANAGEMENT	EMOTIONS PRIORITISE THINKING BY DIRECTING ATTENTION TO IMPORTANT INFORMATION						
	EMOTIONS ARE SUFFICIENTLY VIVID AND AVAILABLE THAT THEY CAN BE GENERATED AS AIDS TO JUDGEMENT AND MEMORY CONCERNED FEELINGS						
	EMOTIONAL MOOD SWINGS CHANGE THE INDIVIDUAL'S PERSPECTIVE FROM OPTIMISTIC TO PESSIMISTIC, ENCOURAGING MULTIPLE POINTS OF VIEW	**FACILITATING THOUGHT**		**EMOTIONAL SELF MANAGEMENT (AT WORK)**		**USE SELF REGULATION STRATEGIES FOR ADAPTIVE COPING WITH ADVERSIVE OR DISTRESSING EMOTIONS**	
	EXPRESS EMOTIONS ACCURATELY AND EXPRESS NEEDS RELATING TO THOSE FEELINGS	**MANAGING EMOTIONS**		**EMOTIONAL EXPRESSION**			
	EMOTIONAL STATES DIFFERENTIALLY ENCOURAGE SPECIFIC PROBLEMS APPROACHES SUCH AS WHEN HAPPINESS FACILITATES INDUCTIVE REASONING AND CREATIVITY			**EMOTIONAL SELF CONTROL**		**LEVERAGE EMOTIONAL SELF-EFFICACY TO ACHIEVE RESULTS**	
	STAY OPEN TO FEELINGS, BOTH THOSE THAT ARE PLEASANT AND THOSE THAT ARE UNPLEASANT						
	ENGAGE OR DETACH FROM AN EMOTION DEPENDING UPON ITS JUDGED INFORMITAVENESS OR UTILITY						
SOCIAL AWARENESS							
	IDENTIFY EMOTIONS IN OTHER PEOPLE, DESIGNS, ARTWORK (MULTICHANNEL)	***(PERCEIVING EMOTIONS)***		**EMOTIONAL AWARENESS OF OTHERS**		**DISCERN OTHERS' EMOTIONS BASED ON SITUATIONAL CUES**	
	DISCRIMINATE BETWEEN ACCURATE/INNACCURATE OR HONEST/DISHONEST EXPRESSIONS OF FEELING	***(UNDERSTANDING EMOTIONS)***		**(EMOTIONAL REASONING)**			
	INTERPRET THE MEANINGS THAT EMOTIONS CONVEY REGARDING RELATIONSHIPS, SUCH AS THAT SADNESS OFTEN ACCOMPANIES A LOSS	**(FACILITATING THOUGHT)**					
SOCIAL INTERACTION MANAGEMENT							
	MANAGE EMOTION IN ONESELF AND OTHERS BY MODERATING NEGATIVE EMOTIONS AND ENHANCING PLEASANT ONES, WITHOUT REPRESSING OR EXAGGERATING INFORMATION THAT THEY MAY CONVEY					**BE EMPATHIC TO OTHERS' EMOTIONAL EXPERIENCES**	
		(MANAGING EMOTIONS)		**EMOTIONAL MANAGEMENT OF OTHERS (AT WORK)**		**USE SELF PRESENTATION STRATEGIES THAT DISTINGUISH BETWEEN INNER STATES AND OUTWARD EXPRESSION IN SELF AND OTHERS**	
	REFLECTIVELY MONITOR EMOTIONS IN RELATION TO ONESELF AND OTHERS, SUCH AS RECOGNISING HOW CLEAR, TYPICAL, INFLUENTIAL AND REASONABLE THEY ARE						
						COMMUNICATE EMOTIONS TO MANAGE RELATIONSHIPS	
SELF MOTIVATION							

EI Model Type	MIXED MODELS										TRAIT BASED		Hay 1996
Ei Measurement Tool	EQI 2.0 BAR-ON	15	GOLEMAN(1998)	25	GOLEMAN(ECI 1.0). **later to ECI2.0)	19	ESCI (BOYATZIS+GOLEMAN) 2017	12	TEIQUE (2009)	15	None Found	N/A	FROM MCBER SCALED COMP DICTIONARY 1996
Assessment methodology	SELF-REPORT +/or MULTIRATER. (focus on Wellbeing)		SELF-REPORT. (Focus on Leadership).		SELF-REPORT and MULTIRATER. (Focus on Leadership).		SELF-REPORT and MULTIRATER. (Focus on Leadership).		SELF-REPORT (Context neutral)				18
Domains	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	COMPETENCES/ SKILLS	STYLES/ ATTITUDES/ TRAITS	MIXED
SELF AWARENESS													
	EMOTIONAL SELF AWARENESS		EMOTIONAL AWARENESS		EMOTIONAL SELF-AWARENESS		EMOTIONAL SELF-AWARENESS		EMOTION PERCEPTION				
			ACCURATE SELF ASSESSMENT		ACCURATE SELF-ASSESSMENT								
				SELF CONFIDENCE		SELF CONFIDENCE							SELF CONFIDENCE
SELF MANAGEMENT													
	IMPULSE CONTROL		SELF CONTROL		SELF CONTROL		EMOTIONAL SELF CONTROL						
	EMOTIONAL EXPRESSION			TRUSTWORTHINESS				ADAPTABILITY	EMOTION REGULATION	ADAPTABILITY			
	PROBLEM SOLVING	STRESS TOLERANCE		CONSCIENTIOUSNESS		CONSCIENTIOUSNESS			STRESS MANAGEMENT	IMPULSIVENESS			ANALYTICAL THINKING
	REALITY TESTING	HAPPINESS		ADAPTABILITY		ADAPTABILITY							CONCEPTUAL THINKING
				INNOVATIVENESS									
SOCIAL AWARENESS		SOCIAL RESPONSIBILITY							(EMOTION PERCEPTION)				
				POLITICAL AWARENESS		ORGANISATIONAL AWARENESS		ORGANISATIONAL AWARENESS	SOCIAL AWARENESS				ORGANISATIONAL AWARENESS
				SERVICE ORIENTATION		SERVICE ORIENTATION			TRAIT EMPATHY				CUSTOMER SERVICE ORIENTATION
				LEVERAGING DIVERSITY									ORGANISATIONAL COMMITMENT
SOCIAL INTERACTION MANAGEMENT			EMPATHY		EMPATHY		EMPATHY						INFORMATION SEEKING
			COMMUNICATION		COMMUNICATION		COMMUNICATION						IMPACT AND INFLUENCE
			INFLUENCE		INFLUENCE		INFLUENCE						DIRECTIVENESS
	EMPATHY		DEVELOPING OTHERS	LEADERSHIP	DEVELOPING OTHERS	LEADERSHIP	COACH AND MENTOR		ASSERTIVENESS				DEVELOPING OTHERS
	INTERPERSONAL RELATIONSHIPS		CONFLICY MANAGEMENT	CHANGE CATALYST	CONFLICY MANAGEMENT	CHANGE CATALYST	CONFLICY MANAGEMENT		EMOTION EXPRESSION	RELATIONSHIPS			INTERPERSONAL UNDERSTANDING
	ASSERTIVENESS		BUILDING BONDS		BUILDING BONDS				EMOTION MANAGEMENT				RELATIONSHIP BUILDING
			COLLABORATION AND COOPERATION										FLEXIBILITY
			TEAM CAPABILITIES		TEAMWORK AND COLLABORATION		TEAMWORK						TEAMWORK AND COOPERATION
								INSPIRATIONAL LEADERSHIP					TEAM LEADERSHIP
SELF MOTIVATION		SELF REGARD		ACHIEVEMENT DRIVE		ACHIEVEMENT ORIENTATION		ACHIEVEMENT ORIENTATION		SELF ESTEEM			ACHIEVEMENT ORIENTATION
		SELF ACTUALISATION		COMMITMENT						SELF MOTIVATION			
		INDEPENDENCE		INITIATIVE		INITIATIVE				TRAIT HAPPINESS			INITIATIVE
		OPTIMISM		OPTIMISM				POSITIVE OUTLOOK		TRAIT OPTIMISM			INTEGRITY

12 Appendix 2 – SME Questionnaire

Copy of CREIO Emotional Intelligence Survey

Welcome to the Emotional Intelligence Subject Matter Expert Survey (SMEQ1)

Dear CREIO Colleague
I recognize you as a subject matter expert on Emotional Intelligence because you have been accepted as a Member of CREIO against its criteria.

I really appreciate your support and personal input into the following questionnaire to help steer and guide the final stages of this research project which will be published this year. I accept that your input will largely be your personal opinion. I value that, as I know your opinion is based on your own extensive studies, research and experience.

All participant responses will be aggregated, anonymized and protected in line with normal ethical and confidentiality processes. As this work is being completed within the ethics framework of a PhD (see here) I ask that you first complete the Consent Questions below before proceeding.

In return for your support, I will make the anonymised dataset that results from this survey, and the published report available directly to you for your own reference. Please contact me on cliff@lansley.net if you have any questions about this work.

Thank you.

Cliff Lansley.

* 1. I have read and understand the Subject Matter Expert Information Sheet relating to this survey (see here)

☐ Yes

* 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the researcher.

☐ Yes

* 3. I understand that my responses will remain anonymous.

☐ Yes

* 4. I agree to take part in this research project.

☐ Yes

Copy of CREIO Emotional Intelligence Survey

General principles and definitions.

* 5. Do you believe it is feasible to create a generic Emotional Intelligence framework and assessment model that parallels the generic IQ model?

- ◯ Yes
- ◯ No

* 6. Do you believe a generic Emotional Intelligence assessment model already exists that provides a reliable measure of EI that parallels the way IQ tests measure general intelligence?

- ◯ Yes
- ◯ No

Please name that model

* 7. There are numerous definitions of **'Emotional Intelligence'**. Could you generally support the following definition which has attempted to capture the core of all the other definitions?
"Emotional Intelligence is the ability to perceive, understand and influence our own and others' emotions, across a range of contexts, to guide our current thinking and actions, to help us to achieve our goals."

- ◯ Yes
- ◯ No

If 'no', how would you change the definition to be acceptable to you?

* 8. There are numerous definitions of '**Ability**'. Could you generally support the following definition which has attempted to capture the core of all the other definitions?
"Ability is the possession of the means or skill to do something."

- ◯ Yes
- ◯ No

If 'no', how would you change the definition to be acceptable to you?

* 9. There are numerous definitions of '**Trait**'. Could you generally support the following definition which has attempted to capture the core of all the other definitions?
"Trait is a distinguishing quality or characteristic, typically one belonging to a person."

- ◯ Yes
- ◯ No

If 'no', how would you change the definition to be acceptable to you?

* 10. There are numerous definitions of '***Competency***'. Could you generally support the following definition which has attempted to capture the core of all the other definitions?
"Competency - the ability to do something successfully or efficiently."

- ◯ Yes
- ◯ No

If 'no', how would you change the definition to be acceptable to you?

* 11. What do you believe should be the primary factors for a generic Emotional Intelligence model?

- ◯ Traits
- ◯ Abilities
- ◯ Mixture of traits and abilities

Other?/Comments?

* 12. To what degree would you hypothesize that a reliable measure of Emotional Intelligence might correlate with IQ?

- ◯ High positive correlation
- ◯ High inverse correlation
- ◯ No or low correlation

Comments:

* 13. Do you believe Emotional Intelligence can be developed in people?

- ◯ Yes
- ◯ No
- ◯ Don't know

Comments:

* 14. ***Empathy*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 15. ***Conflict management*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 16. ***Optimistic*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 17. ***Customer Orientation*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 18. ***Organisational awareness*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 19. ***Influence*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 20. ***Self-Control*** *(emotion)* is best classified as a...

Skill or Ability	Trait
◯	◯

* 21. ***Extroversion*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 22. ***Conscientiousness*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 23. ***Agreeableness*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 24. ***Openness to experience*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 25. ***Neuroticism*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 26. ***Self-confidence*** is best classified as a...

Skill or Ability	Trait
◯	◯

* 27. ***Achievement-orientation*** is best classified as a...

Skill or Ability	Trait
◯	◯

Copy of CREIO Emotional Intelligence Survey

Emotional Intelligence - underpinning knowledge/understanding, skills and competencies.

Please confirm your agreement or disagreement that each of the following 'knowledge/understanding, skills and competency' components should be present as a positive feature in an Emotional Intelligence model. The aim here being to identify what components should/should not be included in a EI model so that a model and a taxonomy can be built that would help develop individuals with high EI).

* 28. This facet of knowledge/understand (i.e. 'theory') is necessary for those who have high Emotional Intelligence. Each one preceded by "The ability to state/describe...."

	Strongly agree	Agree	Disagree	Strongly disagree
Individual differences (general/cultural)	○	○	○	○
Personality and trait theory	○	○	○	○
Emotions and their characteristics	○	○	○	○
Functions of emotions	○	○	○	○
How moods, traits and disorders differ from emotions	○	○	○	○
Impact of disorders on emotions/behavior	○	○	○	○
Our own hot triggers	○	○	○	○
How psychological scripts and formed and can affect emotions	○	○	○	○
How responses differ from reactions and reflexes	○	○	○	○
Emotional load	○	○	○	○
Cognitive load	○	○	○	○
The emotional timeline from trigger through to response	○	○	○	○
Facial expressions and association with emotions	○	○	○	○
Psychophysiology and association with emotions	○	○	○	○
Biometric/technical measurement of effects of emotion on the body	○	○	○	○
Emotions and the brain measurements (e.g. fMRI/EEG)	○	○	○	○

	Strongly agree	Agree	Disagree	Strongly disagree
Body language and association with emotions	○	○	○	○
Voice (e.g. pitch/volume/tone) and association with emotions	○	○	○	○
Verbal content and association with emotions	○	○	○	○
Interactional/conversation style and association with emotions	○	○	○	○
Psychological biases, and their impact on self and interactions with others	○	○	○	○
Mindfulness and attentiveness	○	○	○	○
Communication styles (e.g. passive, aggressive, assertive)	○	○	○	○
Neuroscience as it applies to emotions	○	○	○	○
Questioning and elicitation methods	○	○	○	○
Influencing others	○	○	○	○
Workings of the autonomic nervous system (SNS/PNS)	○	○	○	○
Stress (causes and effects)	○	○	○	○
Effect of interactional context (time/place/conditions/etc)	○	○	○	○

Additional elements (please specify) and/or comments?

* 29. This facet of skill (i.e. 'ability') is necessary for those who have high Emotional Intelligence. Each one preceded by "The ability to...." (in respect to appropriateness to goals and context).

	Strongly agree	Agree	Disagree	Strongly disagree
Be attentive and mindful in the moment	○	○	○	○
Adopt a mindset of curiosity rather than judgement during interactions	○	○	○	○
Practice contemplative meditiation	○	○	○	○

	Strongly agree	Agree	Disagree	Strongly disagree
Label emotions in self as they arise	○	○	○	○
Anticipate and manage hot triggers	○	○	○	○
Manage moods	○	○	○	○
Interrupt emotional reactions	○	○	○	○
Regulate our own emotions	○	○	○	○
Suppress our own emotions when appropriate to minimise burnout	○	○	○	○
Be empathic towards others	○	○	○	○
Analyse and manage interactional context	○	○	○	○
Analyse and consider wider context (culture/general)	○	○	○	○
Manage/change context when appropriate	○	○	○	○
Establish baseline behavior in others	○	○	○	○
Manage own bias	○	○	○	○
Engage emotions to support activity	○	○	○	○
Read facial expressions and their possible association with emotions	○	○	○	○
Read psychophysiology signals and their possible association with emotions	○	○	○	○
Interpret biometric/technical measurement signals and their possible association with emotions	○	○	○	○
Interpret brain measurements (e.g. fMRI/EEG) and their possible association with emotions	○	○	○	○
Read body language signals and their possible association with emotions	○	○	○	○
Read voice signals (e.g. pitch/volume/tone) and their possible association with emotions	○	○	○	○

	Strongly agree	Agree	Disagree	Strongly disagree
Read verbal content and its possible association with emotions	○	○	○	○
Read interactional/conversation style and its possible association with emotions	○	○	○	○
Read multi-channel data from others simultaneously and determine its possible association with emotions	○	○	○	○
Generate and test hypotheses from multi channel data relating to emotions	○	○	○	○
Be assertive when appropriate	○	○	○	○
Recognise and flex personal styles to styles/preferences of others to help meet the goals of interactions	○	○	○	○
Use effective questions and elicitation approaches to suit goals	○	○	○	○
Engage others	○	○	○	○
Mirror, pace and lead others to support the goals of the interaction	○	○	○	○
Influence others	○	○	○	○
Review and evaluate own emotional intelligence	○	○	○	○
Influence the interactional context (time/place/conditions/etc) as/if needed	○	○	○	○

Additional elements (please specify) and/or comments?

* 30. This competency (i.e. integration of knowledge/understanding/skill/ability) is necessary for those who have high Emotional Intelligence. Each one preceded by "Able to..." (in respect to general 'real-life' context). Please suggest deletions/alternatives/edits in the comments section below as appropriate.

	Strongly agree	Agree	Disagree	Strongly disagree
1. PERCEIVE AND LABEL OWN EMOTIONS AS THEY OCCUR	○	○	○	○

	Strongly agree	Agree	Disagree	Strongly disagree
2. IDENTIFY AND ANTICIPATE TRIGGERS FOR OWN EMOTIONS	○	○	○	○
3. APPRAISE APPROPRIATENESS OF INITIAL EMOTIONAL REACTIONS TO GOALS	○	○	○	○
4. INTERRUPT INITIAL THOUGHTS AND OWN EMOTIONAL REACTIONS WHERE APPROPRIATE	○	○	○	○
5. ADOPT STRATEGIES TO REGULATE OWN EMOTIONS WHERE APPROPRIATE	○	○	○	○
6. INITIATE AND ENGAGE EMOTIONS TO SUPPORT GOALS	○	○	○	○
7. READ OTHERS' EMOTIONAL SIGNALS ACROSS MULTIPLE COMMUNICATION CHANNELS	○	○	○	○
8. HYPOTHESISE ABOUT OTHERS' EMOTIONAL SIGNALS	○	○	○	○
9. APPRAISE OPTIONS FOR OWN ACTIONS RELATIVE TO GOALS	○	○	○	○
10. ENGAGE OTHERS APPROPRIATE TO GOALS	○	○	○	○
11. INTERACT APPROPRIATELY TO ANALYSE AND UNDERSTAND OTHERS	○	○	○	○
12. INFLUENCE OTHERS TOWARDS GOALS	○	○	○	○

Please suggest deletions/alternatives/edits here as appropriate.

Copy of CREIO Emotional Intelligence Survey

Emotional Intelligence - Assessment Methodology

These last questions relate to your view on the relative appropriateness of a range of assessment methodologies (that are currently employed in the EI field) in reliably measuring Emotional Intelligence.

* 31. Without consideration of cost and difficulty in terms of design and development, to what degree are the following assessment methods appropriate for reliably measuring Emotional Intelligence?

	No value	Low value	High value	Very valuable	Don't know
1. Knowledge and understanding tests (written/online)	○	○	○	○	○
2. Implicit Association/Belief Tests (assesses the relative strength of positive and negative associations test-takers have for a range, or opposing, ideas)	○	○	○	○	○
3. Emotion Recognition Assessments (of facial expressions, voice, body language, etc)	○	○	○	○	○
4. Self-Report (self-assessment questionnaires)	○	○	○	○	○
5. Multi-Rater (assessment by others/peers via questionnaires)	○	○	○	○	○
6. Situational Judgement Tests (case study/written/video vigniettes) against 'expert' scoring	○	○	○	○	○
7. Situational Judgement Tests (case study/written/video vigniettes) using 'own typical response' scoring	○	○	○	○	○
8. Assessment Centres (tasks/activities performed with expert assessment)	○	○	○	○	○

	No value	Low value	High value	Very valuable	Don't know
9. Sustained observation and expert assessment of the subject(s) in real life contexts	○	○	○	○	○

Other methodologies/Comments:

Copy of CREIO Emotional Intelligence Survey

Thank you!

I appreciate your time and consideration in completing this survey.
I will be analysing the data in April 2019 for inclusion into the wider research.
Please let me know below if you would like copies of your own data, the collated dataset and/or the report that follows.

To validate you as a Subject Matter Expert and member of CREIO please can you complete the following identity demographics. This questionnaire is encrypted and protected by myself only. Your name will be detached from the data that you have submitted and stored safely against a Unique Identifying Number that only I can cross-reference. The data is controlled under GDPR and its seven key principles:
-Lawfulness, fairness and transparency
-Purpose limitation
-Data minimisation
-Accuracy
-Storage limitation
-Integrity and confidentiality (security)
-Accountability.
If you have any questions about the security of your data please contact me directly at cliff@lansley.net.
Completion of this final section also confirms whether you would like copies of the dataset and reports once anonymized.

* 32. What is your first name(s)?

* 33. What is your surname(s)?

34. Please can you indicate whether you have any interests or allegiance to one or more existing EI models or assessment instruments?

- ◯ Yes
- ◯ No
- ◯ Prefer not to say
- ◯ If 'Yes' please specify (optional)

* 35. Would you like a copy of your own data from this survey?

- ◯ Yes please
- ◯ No thank you

* 36. Would you like a summary of the dataset that results from this survey?

- ◯ Yes please
- ◯ No thank you

* 37. Would you like a copy of the reports(s)/publications that emerge from this research work?

- ◯ Yes please
- ◯ No thank you

38. I would appreciate any overall feedback, tips, encouragement or criticism that may help or guide me with this research work.

13 Appendix 3 – SME responses

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
URN	Region	I have rea	I understa	I understa	I agree to	Do you be	Do you believe a ge		There are numerous		There are numerous		There are numerous		There are numerous	What do you believe		To what degree wou		Do you bel
		Yes	Yes	Yes	Yes	Response	Response	Please na	Response	If 'no', hov	Response	If 'no', hov	Response	If 'no', hov	Response	If 'no', hov	Response	Other?/Co	Response	Comment	Response
1		1	1	1	1	1	2		1		1		1		1		2		1		1
2		1	1	1	1	2	2		1		1		1		1		3		3		1
3		1	1	1	1	1	2		1		1		1		1		3		1		1
4		1	1	1	1	1	2		1		1		1		1		2		3		1
5		1	1	1	1	1	2		1		1		1		1		2		1		1
6		1	1	1	1	1	1		2		1		2		2		3		3		1
7		1	1	1	1	2	2		2		2		2		2		3		3		1
8		1	1	1	1	1	1		2		2		1		1		3		3		1
9		1	1	1	1	1	2		1		1		1		1		2		3		1
10		1	1	1	1	1	2		1		1		1		1		3		3		1
11		1	1	1	1	1	2		1		1		1		1		3		3		1
12		1	1	1	1	1	2		1		1		1		1		2		3		1
13		1	1	1	1	1	2		1		1		1		1		2		1		1
14		1	1	1	1	1	2		2		1		1		1		3		1		1
15		1	1	1	1	1	1		1		1		1		1		3		1		1
16		1	1	1	1	1	2		1		1		1		1		3		3		1
17		1	1	1	1	1	1		2		2		2		2		2		3		2
18		1	1	1	1	1	2		2		1		2		2		2		3		1
19		1	1	1	1	1	1		1		2		1		2		2		3		1
20		1	1	1	1	1	2		2		1		1		1		3		3		1
21		1	1	1	1	1	2		1		1		1		1		2		3		1
23		1	1	1	1	1	2		1		1		1		1		2		3		1
24		1	1	1	1	1	2		1		1		1		1		3		1		2
25		1	1	1	1	1	2		1		1		1		1		3		3		1
26		1	1	1	1	1	2		1		1		2		2		3		3		1
27		1	1	1	1	1	2		2		1		1		1		3		2		1
28		1	1	1	1	1	2		1		1		1		1		2		3		1
29		1	1	1	1	1	2		1		1		1		1		2		3		1
30		1	1	1	1	2	2		1		1		1		1		2		3		1
31		1	1	1	1	1	2		1		1		1		1		2		3		1
32		1	1	1	1	1	2		1		1		2		1		3		3		1
33		1	1	1	1	1	2		1		1		1		1		2		3		1
34		1	1	1	1	1	2		1		1		1		1		2		1		1
36		1	1	1	1	1	2		1		1		1		1		2		3		1
37		1	1	1	1	1	2		1		1		1		1		2		3		1
38		1	1	1	1	1	1		2		2		2		2		2		3		1
39		1	1	1	1	2	2		1		1		1		1		2		3		1
40		1	1	1	1	1	2		1		2		1		1		3		3		1
41		1	1	1	1	1	2		1		1		1		1		2		3		1
42		1	1	1	1	1	1		1		1		1		1		3		1		1
43		1	1	1	1	1	2		1		1		1		1		2		3		1
44		1	1	1	1	1	2		2		2		2		2		3		3		1
45		1	1	1	1	1	2		1		2		2		2		3		1		1
	Mean	1	1	1	1	1.09302	1.83721		1.23256		1.18605		1.2093		1.2093		2.46512		2.51163		1.04651
	Mode	1	1	1	1	1	2		1		1		1		1		2		3		1
	Median	1	1	1	1	1	2		1		1		1		1		2		3		1
	Range	0	0	0	0	1	1		1		1		1		1		1		2		1
	StDev	0	0	0	0	0.2939	0.37354		0.42746		0.39375		0.41163		0.41163		0.50468		0.85557		0.21308
																Trait	0	High pos	9		
					No	4	36		10		8		9		9	Ability	23	High Inv	1	No	2
					Yes	39	7		33		35		34		34	Mix	20	No/low cor	32	Yes	41
					Total	43	43		43		43		43		43		43		42		43
																Trait	**0.0%**	**High pos**	**21.4%**		
					No	**9.3%**	**83.7%**		**23.3%**		**18.6%**		**20.9%**		**20.9%**	**Ability**	**53.5%**	**High Inv**	**2.4%**	**No**	**5%**
					Yes	**90.7%**	**16.3%**		**76.7%**		**81.4%**		**79.1%**		**79.1%**	**Mix**	**46.5%**	**No corr**	**76.2%**	**Yes**	**95%**

B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
URN	lieve Emo	Empathy	Conflict n	Optimisti	Customer	Organisat	Influence	Self-Cont	Extrovers	Conscient	Agreeable	Openness	Neurotici	Self-confi	Achievem
	Comment	Response	Response	Response	Response	Response	Response	Response	Response	Response	Response	Response	Response	Response	Response
1		1	1	0	0	0	1	1	0	1	0	1	0	1	0
2		0	1	0	0	1	1	1	0	1	0	0	0	0	0
3		1	1	0	1	1	1	1	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0
5		1	1	0	0	0	1	1	0	0	0	0	0	0	0
6		1	1	0	1	1	1	1	0	0	0	0	0	0	0
7		0	1	0	0	0	1	1	0	0	0	0	0	0	0
8		1	1	0	1	1	1	1	0	0	0	0	0	0	0
9		1	1	0	0	0	1	0	0	0	0	0	0	0	0
10		1	1	0	1	1	1	1	0	1	1	0	0	1	0
11		1	1	0	0	1	1	1	0	0	0	0	0	0	0
12		1	1	1	1	1	1	1	0	0	0	0	0	0	0
13		1	1	0	1	1	1	1	0	0	0	0	0	0	0
14		1	1	0	0	0	1	1	0	1	0	0	0	0	0
15		1	1	0	0	0	1	1	0	0	0	0	0	0	0
16		1	1	0	0	0	1	1	0	0	0	0	0	0	0
17		0	0	1	1	1	1	1	0	0	0	0	0	0	0
18		1	1	1	0	0	1	1	0	0	0	0	0	0	0
19		1	1	0	1	1	1	1	0	0	0	0	0	0	0
20		1	1	0	0	0	1	1	0	0	0	0	0	0	0
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1
23		0	1	0	1	1	1	1	0	0	0	0	0	0	0
24		0	0	0	0	0	1	1	0	0	0	0	0	0	0
25		1	1	0	1	1	1	1	0	0	0	0	0	0	0
26		1	1	0	1	0	1	1	0	0	0	0	0	0	0
27		0	1	1	1	1	1	1	1	1	1	1	1	1	1
28		1	1	0	0	1	1	1	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0
30		1	1	1	1	0	1	1	0	0	0	0	0	0	0
31		1	1	0	1	0	1	1	0	0	0	0	0	0	0
32		1	1	0	0	0	1	1	0	0	0	0	0	0	0
33		0	0	0	0	0	1	1	0	0	0	0	0	0	0
34		0	1	1	1	1	1	1	1	1	1	1	1	1	1
36		1	1	0	1	1	1	1	0	0	0	0	0	0	0
37		1	1	0	1	0	1	1	0	0	0	0	0	0	0
38		1	1	1	1	1	1	1	0	0	0	0	0	0	0
39		1	1	0	0	0	1	1	0	0	0	0	0	0	0
40		0	1	1	0	0	1	0	1	1	1	0	1	1	1
41		0	1	0	1	1	1	1	0	0	0	0	0	1	1
42		1	1	0	0	0	1	1	0	0	1	0	0	0	0
43		1	1	1	0	0	1	0	0	1	1	0	1	1	1
44		1	1	0	1	1	1	1	0	0	0	0	0	0	0
45		1	1	0	0	0	1	1	0	0	0	0	0	0	0
		0.72093	0.88372	0.23256	0.48837	0.46512	0.95349	0.88372	0.09302	0.2093	0.16279	0.09302	0.11628	0.18605	0.13953
		1	1	0	0	0	1	1	0	0	0	0	0	0	0
		1	1	0	0	0	1	1	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		0.45385	0.32435	0.42746	0.50578	0.50468	0.21308	0.32435	0.2939	0.41163	0.37354	0.2939	0.32435	0.39375	0.3506
	Ability	72.1%	88.4%	23.3%	48.8%	46.5%	95.3%	88.4%	9.3%	20.9%	16.3%	9.3%	11.6%	18.6%	14.0%
	Trait	27.9%	11.6%	76.7%	51.2%	53.5%	4.7%	11.6%	90.7%	79.1%	83.7%	90.7%	88.4%	81.4%	86.0%

B	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
URN	ent-orient	This facet of knowledge/understand (i.e. 'theory') is necessary for those who have high Emotional Intelligence. Each one preceded by "The ability to state/describe...."																												
		Individual	Personali	Emotions	Functions	How mod	Impact of	Our own	How psyc	How resp	Emotiona	Cognitive	The emot	Facial ex	Psychoph	Biometric	Emotions	Body lang	Voice (e.g	Verbal co	Interactio	Psycholo	Mindfulne	Communi	Neuroscie	Questioni	Influencin	Workings	Stress (c	Effect of
1		3	3	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	3	2	2	1	1
2		1	2	1	1	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
3		2	1	1	1	1	2	2	3	2	1	1	1	1	1	3	2	1	1	1	1	1	2	2	1	2	1	1	1	1
4		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
5		2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	3	2	2	2	2	2	2	2
6		1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1	1	2	1	1
7		2	3	2	1	2	3	3	2	2	3	3	2	2	1	3	3	3	2	3	2	3	3	3	2	4	3	2	2	2
8		1	2	2	2	3	2	1	2	3	2	2	2	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	2	1
9		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
10		1	3	1	2	3	3	1	3	3	1	1	3	1	3	3	3	3	3	3	3	2	2	2	3	3	2	3	2	2
11		1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1
12		1	1	1	1	2	2	1	1	2	2	2	2	1	2	3	3	1	2	2	1	2	2	2	3	2	2	2	2	2
13		2	2	1	2	2	3	2	2	2	2	2	2	3	1	1	1	2	2	2	2	2	3	3	2	2	2	1	1	1
14		1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	1	2	1	2	1	1
15		1	2	1	2	2	2	3	3	2	3	2	2	1	2	2	2	2	3	2	2	2	2	2	2	1	1	2	2	2
16		2	3	1	2	2	2	1	1	1	2	2	1	1	1	3	3	1	2	2	2	2	1	2	3	2	1	2	1	2
17		2	2	1	1	2	2	2	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	1	2	1	1
18		1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	1	2	1	2	1	1
19		4	4	1	1	1	4	1	1	1	1	1	2	3	2	2	2	3	3	2	3	2	1	3	1	4	4	1	1	4
20		1	3	2	1	2	2	1	2	1	2	2	2	1	2	2	3	1	1	1	2	2	2	2	2	2	2	2	2	2
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
23		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
24		1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	2	2	1	3	1	1
25		1	2	1	2	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	2	3	3	3	2	2
26		2	2	2	1	3	2	1	2	2	1	1	1	1	1	3	3	1	1	1	1	1	1	1	2	2	1	2	1	1
27		1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	3	1	1	1	1	1
28		1	2	1	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2	2	3	1	1	2	3	3	3	3	2	2
29		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
30		2	1	2	3	2	2	3	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
31		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
32		1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	1	2	1	2	1	1
33		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
34		2	2	1	1	2	2	2	1	1	1	1	1	1	1	3	3	2	1	2	2	2	2	1	2	1	1	2	1	1
36		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
37		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
38		3	3	1	1	3	3	1	3	2	1	4	3	1	2	2	2	1	1	2	2	2	2	1	2	3	2	2	1	2
39		3	3	1	1	1	1	1	1	1	2	2	1	1	1	2	2	1	1	1	1	2	1	1	2	2	2	2	1	1
40		2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	3	2	2
41		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
42		2	2	1	1	1	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2
43		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
44		2	4	1	2	2	1	1	2	2	1	3	1	1	2	4	4	1	1	1	2	1	3	2	4	3	2	4	1	2
45		2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	1	1	1	1	3	3	1	2	2	3
		1.51163	1.7907	1.16279	1.30233	1.51163	1.62791	1.39535	1.51163	1.46512	1.44186	1.5814	1.51163	1.30233	1.39535	2.16279	2.25581	1.34884	1.39535	1.44186	1.46512	1.46512	1.46512	1.46512	2.06977	1.88372	1.55814	2.04651	1.37209	1.46512
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
		1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	2	1	2	1	1
		3	3	1	2	2	3	2	2	2	2	3	2	2	2	3	3	2	2	2	2	2	2	2	3	3	3	3	1	3
		0.73589	0.91439	0.37354	0.51339	0.66805	0.75666	0.62257	0.66805	0.59156	0.62877	0.76322	0.5925	0.599	0.58308	0.65211	0.62079	0.61271	0.62257	0.58969	0.63053	0.54984	0.702	0.63053	0.59343	0.87856	0.76539	0.57543	0.48908	0.66722
	4	1	2	0	0	0	1	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	2	1	1	0	1
	3	3	8	0	1	4	4	3	4	2	3	4	2	3	2	10	12	3	3	2	3	1	5	3	6	8	4	5	0	1
	2	13	12	7	11	14	16	11	14	16	13	14	18	7	13	27	27	9	11	15	14	18	10	14	31	16	13	32	16	15
	1	26	21	36	31	25	22	29	25	25	27	24	23	33	28	5	3	31	29	26	26	24	28	26	5	17	25	5	27	26
	Total	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
	S Agree	60.5%	48.8%	83.7%	72.1%	58.1%	51.2%	67.4%	58.1%	58.1%	62.8%	55.8%	53.5%	76.7%	65.1%	11.6%	7.0%	72.1%	67.4%	60.5%	60.5%	55.8%	65.1%	60.5%	11.6%	39.5%	58.1%	11.6%	62.8%	60.5%
	Agree	30.2%	27.9%	16.3%	25.6%	32.6%	37.2%	25.6%	32.6%	37.2%	30.2%	32.6%	41.9%	16.3%	30.2%	62.8%	62.8%	20.9%	25.6%	34.9%	32.6%	41.9%	23.3%	32.6%	72.1%	37.2%	30.2%	74.4%	37.2%	34.9%
	Both	**90.7%**	**76.7%**	**100.0%**	**97.7%**	**90.7%**	**88.4%**	**93.0%**	**90.7%**	**95.3%**	**93.0%**	**88.4%**	**95.3%**	**93.0%**	**95.3%**	**74.4%**	**69.8%**	**93.0%**	**93.0%**	**95.3%**	**93.0%**	**97.7%**	**88.4%**	**93.0%**	**83.7%**	**76.7%**	**88.4%**	**86.0%**	**100.0%**	**95.3%**

B	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ
URN		This facet of skill (i.e. 'ability') is necessary for those who have high Emotional Intelligence. Each one preceded by "The ability to...." (in respect to appropriateness to goals and context).																																	
	elements	Be attenti	Adopt a m	Practice (	Label em	Anticipate	Manage m	Interrupt	Regulate	Suppress	Be empat	Analyse a	Analyse a	Manage/c	Establish	Manage o	Engage e	Read facil	Read psy	Interpret	Interpret	Read body	Read voic	Read vert	Read inte	Read mul	Generate	Be assert	Recognise	Use effec	Engage o	Mirror, pa	Influence	Review a	Influence
1		1	2	2	1	1	1	1	1	3	1	1	2	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1	2	2	1	2	2	1	2
2		2	2	3	2	2	3	3	2	3	1	2	2	2	2	1	3	3	3	3	3	2	2	2	2	3	3	2	3	2	2	3	3	1	2
3		2	3	2	2	1	2	1	2	3	1	1	2	2	1	2	2	1	2	4	3	2	1	2	2	2	2	1	2	1	2	2	2	2	1
4		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	2	1	1
5		2	2	3	2	2	2	2	2	2	1	2	1	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	1	2	2	2	3	2
6		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7		3	3	4	2	2	2	3	3	3	2	1	2	2	2	3	2	2	1	3	3	2	1	2	2	3	2	2	2	2	1	3	3	2	2
8		1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1
9		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10		1	2	3	3	1	1	2	1	3	1	1	1	1	1	1	1	1	3	3	3	2	3	3	3	2	2	2	2	2	1	2	1	2	2
11		1	1	2	1	1	2	2	2	3	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	2
12		2	2	2	2	1	1	2	1	3	2	2	2	2	1	1	3	1	2	3	3	1	1	2	2	1	2	2	1	1	1	2	2	1	2
13		2	2	3	2	2	2	3	2	2	1	1	1	2	1	1	1	3	1	1	1	2	1	2	2	1	1	1	2	2	2	1	1	1	2
14		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	3	1	1	1	1	1	1	1
15		2	2	2	2	2	2	3	2	2	1	1	1	2	2	1	1	1	1	2	2	2	1	2	3	2	1	2	1	2	2	1	1	1	1
16		1	1	3	1	1	2	1	1	2	2	2	2	2	1	2	1	2	1	2	3	1	2	2	2	2	1	1	1	1	2	2	1	1	2
17		1	1	2	2	1	2	1	1	1	1	2	2	2	2	1	1	2	2	2	2	1	1	1	1	1	2	2	2	2	2	1	1	1	1
18		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19		1	2	4	1	1	1	1	1	4	3	4	4	4	1	1	4	2	4	3	3	1	1	1	3	3	3	3	3	3	1	3	2	1	2
20		2	1	3	3	2	3	3	3	3	1	2	1	2	2	1	2	2	2	3	3	1	1	1	2	2	2	2	2	2	1	3	3	1	3
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24		1	1	2	1	2	2	1	1	2	1	1	1	1	1	2	1	1	1	2	3	1	1	1	1	3	3	1	1	2	1	1	2	1	2
25		1	1	3	2	2	2	2	1	3	1	2	2	2	2	1	1	2	2	2	3	2	2	2	2	1	2	2	2	2	1	2	2	2	2
26		1	1	2	2	1	2	3	2	4	2	2	2	1	2	1	1	1	1	4	4	1	1	1	1	1	2	2	1	2	1	2	1	2	1
27		1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1
28		1	1	3	3	3	2	2	1	2	1	3	2	3	3	1	1	1	1	2	3	1	1	2	2	2	2	3	3	2	1	2	3	2	1
29		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30		1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
31		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34		2	2	2	1	1	2	1	1	2	1	1	1	1	1	1	2	1	1	3	3	2	1	2	1	1	1	1	1	1	1	2	1	1	1
36		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38		1	2	3	1	1	1	2	1	2	2	2	3	3	3	3	1	1	1	3	3	1	1	2	2	2	3	1	1	2	1	2	2	1	2
39		2	1	1	1	1	1	1	1	2	1	1	2	2	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	2	2	1	2	2	1
40		2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
41		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42		1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	2
43		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
44		2	2	4	1	2	2	2	2	2	1	1	2	2	3	2	1	1	2	4	4	1	1	1	2	1	2	3	2	2	2	2	2	1	2
45		1	1	2	2	1	1	1	1	3	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	3	3	1	1	1	1	1	1	1
		1.30233	1.39535	1.95349	1.44186	1.30233	1.46512	1.51163	1.32558	1.88372	1.2093	1.4186	1.44186	1.53488	1.48837	1.27907	1.39535	1.34884	1.39535	2.37209	2.53488	1.27907	1.2093	1.39535	1.48837	1.51163	1.65116	1.4186	1.46512	1.48837	1.23256	1.5814	1.53488	1.23256	1.44186
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	2	1	1	1	1	1	1	1	1
		2	2	3	2	2	2	2	2	3	2	3	3	3	2	2	3	2	3	3	3	1	2	2	2	2	2	2	2	2	1	2	2	2	2
		0.51339	0.58308	0.95002	0.62877	0.51339	0.59156	0.73589	0.56572	0.93119	0.46589	0.66306	0.66556	0.73513	0.66805	0.54883	0.69486	0.61271	0.69486	0.75666	0.66722	0.45385	0.46589	0.5407	0.6314	0.70279	0.71991	0.62612	0.63053	0.55085	0.42746	0.66306	0.66722	0.47994	0.54782
4		0	0	3	0	0	0	0	0	2	0	1	1	1	0	0	1	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3		1	2	9	3	1	2	6	2	10	1	1	1	3	4	2	2	3	2	14	21	0	1	1	3	5	6	3	3	1	0	4	4	1	1
2		11	13	14	13	11	16	10	10	12	7	13	14	14	13	8	10	9	10	22	18	12	7	15	15	12	16	12	14	19	10	17	15	8	17
1		31	28	17	27	31	25	27	31	19	35	28	27	25	26	33	30	31	30	4	2	31	35	27	25	26	21	28	26	23	33	22	24	34	25
Total		43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
S Agree		72.1%	65.1%	39.5%	62.8%	72.1%	58.1%	62.8%	72.1%	44.2%	81.4%	65.1%	62.8%	58.1%	60.5%	76.7%	69.8%	72.1%	69.8%	9.3%	4.7%	72.1%	81.4%	62.8%	58.1%	60.5%	48.8%	65.1%	60.5%	53.5%	76.7%	51.2%	55.8%	79.1%	58.1%
Agree		25.6%	30.2%	32.6%	30.2%	25.6%	37.2%	23.3%	23.3%	27.9%	16.3%	30.2%	32.6%	32.6%	30.2%	18.6%	23.3%	20.9%	23.3%	51.2%	41.9%	27.9%	16.3%	34.9%	34.9%	27.9%	37.2%	27.9%	32.6%	44.2%	23.3%	39.5%	34.9%	18.6%	39.5%
Both		**97.7%**	**95.3%**	**72.1%**	**93.0%**	**97.7%**	**95.3%**	**86.0%**	**95.3%**	**72.1%**	**97.7%**	**95.3%**	**95.3%**	**90.7%**	**90.7%**	**95.3%**	**93.0%**	**93.0%**	**93.0%**	**60.5%**	**46.5%**	**100.0%**	**97.7%**	**97.7%**	**93.0%**	**88.4%**	**86.0%**	**93.0%**	**93.0%**	**97.7%**	**100.0%**	**90.7%**	**90.7%**	**97.7%**	**97.7%**

B	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE
URN		This competency (i.e. integration of knowledge/understanding/skill/ability) is necessary for those who have high													Without consideration of cost and difficulty in terms of design and development, to what degree are th									Please can you indi		Would yo	Would yo	Would yo	I would ap
	elements	1. PERCE	2. IDENTI	3. APPRA	4. INTERP	5. ADOPT	6. INITIAT	7. READ (	8. HYPOT	9. APPRA	10. ENGA	11. INTER	12. INFLU	Please su	1. Knowle	2. Implici	3. Emotio	4. Self-Re	5. Multi-R	6. Situati	7. Situati	8. Assess	9. Sustair	Other me	Response	If 'Yes' pl	Response	Response	Response	Open-End
1		1	1	1	1	1	1	1	1	1	1	1	2		2	2	3	2	2	4	4	2	4		1		2	1	1	
2		2	1	2	2	1	2	2	3	2	2	1	1		2	2.5	3	2	3	2.5	2.5	2	3		2		2	1	1	
3		2	1	2	1	1	2	1	1	2	2	2	2		3	3	2.5	2	2	3	3	2	3							
4		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	2	
5		2	2	2	2	2	2	2	2	2	2	2	2		3	3	3	2	4	2	2	2	3		2		2	2	2	
6		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	2	
7		2	2	2	2	3	3	1	2	3	2	2	3		2	2	3	3	4	3	2	4	4		2		1	1	2	
8		1	1	1	1	1	1	1	1	1	1	1	1		1	3	3	2	4	2	2	4	4		1		2	2	1	
9		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
10		3	1	3	1	1	1	1	3	1	3	1	2		2	2	2	3	3	4	4	4	4		0		2	1	1	
11		1	1	1	2	1	1	1	2	2	1	1	2		4	4	3	3	4	4	4	2	3		2		1	1	1	
12		1	1	2	2	1	3	1	2	2	1	2	2		2.5	3	3	3	3	2.5	2.5	3	4		2		2	1	1	
13		2	2	2	2	2	2	1	1	1	1	2	2		2	3	2	3	3	3	3	2	3		2		1	1	1	
14		1	1	1	1	1	1	1	1	1	1	1	1		2	3	3	2	2	3	2.5	3	4		2		2	1	1	
15		2	1	2	2	2	1	2	2	2	2	2	2		4	4	4	4	3	2	3	2	4		1		1	1	1	
16		1	1	1	1	1	1	1	2	1	2	1	1		2	3	4	3	4	4	3	2.5	4		0		2	1	1	
17		2	1	2	1	1	1	2	2	2	1	1	1		3	2	4	4	3	4	3	4	4		0		1	1	1	
18		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
19		1	1	2	1	1	3	1	2	2	2	2	3		2	1	3	1	2	3	2	3	4		1		2	2	2	
20		3	1	1	2	1	2	1	2	3	3	1	3		4	3	3	2	2	1	3	2	3		2		1	1	1	
21		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
23		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
24		1	1	2	1	1	1	1	2	1	1	1	1		4	3	4	3	3	3	3	3	4		2		1	1	1	
25		1	1	2	1	1	1	1	2	2	2	2	2		2	3	3	3	2.5	3	2	3	3		2		2	1	1	
26		1	1	2	3	2	1	1	2	2	2	2	1		2	3	4	3	2	2	3	4	4		2		1	1	1	
27		1	1	1	1	1	1	1	1	1	1	1	1		2	2	4	2	3	4	3	2	4		2		1	1	1	
28		2	1	1	2	2	2	1	2	2	2	1	2		3	3	4	4	3	4	3	4	3		2		1	1	1	
29		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
30		2	2	2	2	3	2	3	3	2	2	3	2		2	2	2.5	2.5	3	2.5	2	3	3		1		2	1	1	
31		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
32		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
33		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
34		1	1	1	1	1	2	1	1	2	2	1	1		2	3	4	3	2	4	3	3	4		0		1	1	1	
36		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
37		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
38		1	1	1	1	1	1	1	2	2	3	2	2		4	4	4	2	4	3	3	3	4		1		1	1	1	
39		1	1	1	1	1	1	1	1	2	2	2	2		4	3	2.5	4	2.5	4	2.5	3	3		1		2	1	1	
40		2	2	2	2	2	2	2	2	2	2	2	2		1	1	2	2	2	2	3	2	3		2		1	1	1	
41		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
42		1	1	1	1	1	1	1	1	1	1	2	2		4	2.5	4	4	4	3	4	4	4		1		1	1	1	
43		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	2		2		1	1	1	
44		1	1	1	2	2	1	1	1	2	2	2	1		1	2	4	2	3	3	2.5	3	4		2		1	1	1	
45		1	1	1	1	1	1	1	1	1	1	1	1		2	2	3	2	3	3	2	3	4		2		1	1	1	
		1.32558	1.11628	1.37209	1.32558	1.25581	1.34884	1.16279	1.48837	1.48837	1.48837	1.37209	1.48837		3.01163	2.76744	3.47674	3.10465	3.27907	3.33721	3.19767	2.59302	3.09302		1.61905		1.28571	1.07143	1.11905	
		1	1	1	1	1	1	1	1	1	1	1	1		4	3	4	4	4	4	4	2	4		2		1	1	1	
		1	1	1	1	1	1	1	1	1	1	1	1		3	3	4	3	3	4	3	2	3		2		1	1	1	
		2	1	2	2	2	2	2	2	2	2	2	2		3	3	2	3	2	3	2	2	2		2		1	1	1	
		0.56572	0.32435	0.53556	0.52194	0.53865	0.61271	0.43261	0.6314	0.5925	0.6314	0.53556	0.6314		1.06059	0.63946	0.67218	0.90999	0.78908	0.81446	0.76485	0.75794	0.86778		0.66083		0.45723	0.26066	0.32777	

4	0	0	0	0	0	0	0	0	0	0	0	0	4	21	3	25	19	21	23	18	7	18	
3	2	0	1	1	2	3	1	3	2	3	1	3	3	4	28	12	10	12	11	13	11	11	
2	10	5	14	12	7	9	5	15	17	15	14	15	2	14	8	3	12	8	5	7	24	14	
1	31	38	28	30	34	31	37	25	24	25	28	25	1	3	2	0	1	0	1	0	0	0	
Total	43	43	43	43	43	43	43	43	43	43	43	43	Total	42	41	40	42	41	40	38	42	43	
S Agree	72.1%	88.4%	65.1%	69.8%	79.1%	72.1%	86.0%	58.1%	55.8%	58.1%	65.1%	58.1%	V Valuable	50.0%	7.3%	62.5%	45.2%	51.2%	57.5%	47.4%	16.7%	41.9%	
Agree	23.3%	11.6%	32.6%	27.9%	16.3%	20.9%	11.6%	34.9%	39.5%	34.9%	32.6%	34.9%	Valuable	9.5%	68.3%	30.0%	23.8%	29.3%	27.5%	34.2%	26.2%	25.6%	
Both	**95.3%**	**100.0%**	**97.7%**	**97.7%**	**95.3%**	**93.0%**	**97.7%**	**93.0%**	**95.3%**	**93.0%**	**97.7%**	**93.0%**	**Both**	**59.5%**	**75.6%**	**92.5%**	**69.0%**	**80.5%**	**85.0%**	**81.6%**	**42.9%**	**67.4%**	