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The Contributions of Personality Traits and Emotional Intelligence to Intrapreneurial Self-Capital: Key Resources for Sustainability and Sustainable Development

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Abstract: In the innovative research area of the psychology of sustainability and sustainable development, Intrapreneurial Self-Capital (ISC) constitutes a promising core of resources to face the challenges of the 21st century. This article presents two studies supporting the contribution of trait emotional intelligence to ISC beyond that explained by the three most quoted personality trait models. The Intrapreneurial Self-Capital Scale (ISCS), Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF), Big Five Questionnaire (BFQ), Mini International Personality Item Pool Scale (Mini-IPIP), HEXACO-60, and Eysenck Personality Questionnaire Revised Short Form (EPQ-RS) were administered to 210 first and second year university students (Study 1) and 206 university students in the last three years of undergraduate university studies (Study 2). Hierarchical regression analyses demonstrated that Emotional Intelligence (EI) explained additional variance in ISC beyond that accounted for each of the three personality trait models for both samples. These results should encourage future research within a positive primary prevention perspective in the framework of the psychology of sustainability and sustainable development.

Keywords: intrapreneurial self-capital; personality traits; emotional intelligence; psychology of sustainability and sustainable development

1. Introduction

The term intrapreneurial is a key concept along with entrepreneurial within the organizational psychology literature [1–4] that deserves particular attention [5]. Entrepreneurs have innovative ideas and are engaged in the realization of these ideas by means of their skills and passion to realize their own opportunities, often as a business [6–8]. In contrast, the intrapreneurial person develops their innovative ideas within his/her organization and is engaged in implementing these ideas within the boundaries of their organization, addressing both organizational change and possible organizational conflicts [9].

Building on this, the construct of Intrapreneurial Self-Capital (ISC) [5], developed within a positive primary prevention perspective [10,11], represents a set of resources intended to both promote personal success, and prevent failures in career and life management. Transferring these concepts to career management [12–14], ISC constitutes a resource to address adaptively the requests within a post-modern context and the current fluid world of work [5,15–18]. ISC research has already led to the

development of a new scale to measure this construct [5], and specific training to develop and increase the foundations and impact of ISC [19].

ISC is a higher order construct containing seven sub-constructs: (1) Core self-evaluation as a positive judgment of oneself in terms of self-esteem, self-efficacy, locus of control, and absence of pessimism [20]; (2) hardiness as resistance with its three dimensions of commitment, control, and challenge [21]; (3) creative self-efficacy as one's perception of one's ability to solve problems creatively [22]; (4) resilience as the perceived ability to cope with adversity adaptively and to use adaptive strategies to deal with discomfort and adversity [23]; (5) goal mastery as the perceived ability to continuously develop one's own skills [24]; (6) decisiveness as the perceived ability to make decisions in a timely manner and in any life context [25]; and (7) vigilance as the careful searching for relevant information [5,26]. ISC can therefore be considered as an important characteristic of persons with its core components, helping them to create innovative solutions when confronted with constraints imposed by the current and ever-changing challenging world of work [5].

ISC has further emerged in an association to both hedonic and eudaimonic well-being [27,28]. It could thus represent a foundational underpinning and pathway to addressing some of the challenges proposed in the seventeen UNESCO sustainable goals (United Nations) [29]; number three, which focuses on good health and well-being, and also number eight, relating to decent work and economic growth, considering also its contribution to innovative behaviors [30]. ISC is also considered a promising resource in the framework of the psychology of harmonization [31] that introduced the contribution of sustainability and sustainable development in a preventive perspective [10,11,32,33]. The composite construction of harmony from a psychological perspective includes three principal foci, with oneself, with others, and with nature/the natural world [31]. In this framework, ISC represents a strength that can be energized at an individual level for invigorating generative resources for sustainability regarding oneself, others, and nature/natural word to contribute to the realization of sustainable goals. ISC could thus contribute to the challenges of the psychology of sustainability and sustainable development [34–36] by coping in a creative and constructive manner with the continuous changes of current and future periods. Positive personal capital could then be put into action for the purpose of developing flourishing individuals and their larger communities.

Another major important individual resource is Emotional Intelligence (EI) [18,37,38] that can impact career decisions and success [39]. EI has been described according to two different theoretical frameworks [40]: Ability-based models [41] and trait models [42,43]. In contrast to ability-based models, the trait description has shown the greatest empirical relationship to career relevant factors such as self-evaluation of one's own emotional and social skills [42,43]. In particular trait emotional intelligence (trait emotional self-efficacy) as described by Petrides and Furnham [43] is presented as a constellation of emotional perceptions assessed through questionnaires and rating scales [44] and can be increased through specific training [45,46]. In the research literature, trait emotional intelligence consistently explains incremental variance in criteria reflecting different areas of functioning beyond personality traits [47]. Nevertheless, there has not been empirical research to verify if trait emotional intelligence adds incremental variance beyond that explained by personality traits in relation to the construct of intrapreneurial self-capital. In contrast, the relationships between ISC and the Big Five personality traits has been demonstrated in studies by Di Fabio in which ISC was inversely associated with neuroticism [27,28,48] and positively associated with the other four personality traits, particularly extraversion [27,28]. However, this limited research should be expanded to examine the associations with other personality trait models such as the HEXACO model [49] and Eysenck's [50] three factor model. Different personality trait models could detect different 'shades' of the same personality traits or a more complex constellation of personality traits such as in the case of the HEXACO-60 with the added honesty–humility factor.

In the present study we chose to use the trait EI model developed by Petrides and Furnham [43]. It is a comprehensive description of EI and includes aspects such as emotion expression, emotion regulation, and self-motivation, which are not emphasized in other measures such as the Bar-On [42] inventory.

The two studies presented here with samples of university students in the first two years (Study 1) and the last three years (Study 2) of study tested the hypothesis that trait EI adds incremental variance beyond that accounted for by different personality models in relation to ISC. Two groups of students at two different periods of their university program were chosen to examine the relationship between emotional intelligence and intrapreneurial characteristics.

2. Study 1

2.1. Material and Methods

2.1.1. Participants

Participants in study 1 were 210 university students in the first two years of their degree program (females: 60.48%; males: 39.52%; mean age 20.94, SD = 0.86).

2.1.2. Measures

Intrapreneurial Self-Capital Scale (ISCS) [5]. The ISCS consists of 28 items. Examples of items for each of the first order constructs include: "I am able to deal with most of my problems" (core self-evaluation), "Studying committed to the maximum really pays off in the end" (hardiness), "I am able to improve the ideas produced by others" (creative self-efficacy), "I'm able to achieve objectives despite obstacles" (resilience), "One of my goals in training is to learn as much as I can" (goal mastery), "It's simple for me to decide" (decisiveness), "Before deciding I try to clear my mind about my goals" (vigilance). Items are rated to on a 5-point Likert scale ranging from 1 = strongly agree to 5 = strongly disagree. Cronbach's alpha coefficient was 0.84.

Big Five Questionnaire (BFQ) [51]. The BFQ includes 132 items rated on a 5-point Likert scale ranging from 1 = Absolutely false to 5 = Absolutely true. The Cronbach's alpha coefficients were 0.81 for Extraversion, 0.73 for Agreeableness, 0.81 for Conscientiousness, 0.90 for Emotional stability, and 0.75 for Openness.

Mini International Personality Item Pool Scale (Mini-IPIP) [52,53]. The Mini-IPIP is composed of 20 items with a response format ranging from 1 = Absolutely false to 5 = Absolutely true. It detects five personality factors according to Big Five model. The Cronbach's alpha coefficients are: 0.71 for Extraversion, 0.73 for Agreeableness, 0.72 for Conscientiousness, 0.74 for Neuroticism, 0.72 for Intellect imagination.

HEXACO-60 [49,54]. The HEXACO-60 is composed of 60 items again responded to on a 5-point Likert scale ranging from 1 = Absolutely false to 5 = Absolutely true. Each of the six personality dimensions are assessed with 10 items. The Cronbach's alpha coefficients are: 0.78 for Honesty/Humility, 0.79 for Emotionality, 0.78 for Extraversion, 0.76 for Agreeableness considered the opposite of anger, 0.77 for Conscientiousness, 0.78 for Openness.

Eysenck Personality Questionnaire Revised Short Form (EPQ-RS) [50,55]. The EPQ-RS is comprised of 48 items with a "yes/no" response format. The Cronbach's alpha coefficients were: 0.85 for the Neuroticism, 0.87 for the Extraversion, and 0.81 for the Psychoticism.

Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF) [56,57]. The TEIQue-SF includes 30 items assessing 4 EI traits derived from the 153 item TEIQue and answered on a 7-point Likert scale (1= Completely disagree to 7 = Completely agree). The Cronbach's alpha coefficients were 0.82 for Well-being, 0.80 for Self-control; 0.81 for Emotionality, and 0.82 for Sociability.

2.1.3. Procedure

The questionnaires were administered in group settings by trained psychologists and in accordance with Italian Privacy Law. The order of scale administration was counterbalanced to control the effects of presentation.

2.1.4. Data analysis

Descriptive statistics and Pearson's correlation coefficients were calculated for all measures. Hierarchical regressions were carried out for each of the four personality measures together with trait EI in relation to ISC.

2.2. Results

Descriptive statistics and correlations are presented in Tables 1–4. Hierarchical regression models for each of the four personality trait scales (BFQ, MINI-IPIP, HEXACO-60, EPQ-RS) entered at the first step and trait EI dimensions entered at the second step are reported in Tables 5–8. The four personality measures accounted for between 36 and 48% of the variance with EI adding another 19% to 29%, together accounting for 64% to 69% of the variance in ISC. Referring to Tables 1–4, the ISC is positively related with Extraversion assessed by both the BFQ and the HEXACO-60 and particularly inversely related with the Neuroticism scale of the MINI-IPIP and EPQ. The ISC is correlated with all the four dimensions of the TEIQue-SF, in particular with the Well-being dimension.

Table 1. Descriptive statistics and correlations between Big Five Questionnaire (BFQ), Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF) dimensions, and Intrapreneurial Self-Capital (ISC).

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. BFQ Extraversion	77.73	13.82	-									
2. BFQ Agreeableness	78.58	11.58	0.18 *	-								
3. BFQ Conscientiousness	80.60	16.18	0.15 *	0.14 *	-							
4. BFQ Emotional stability	72.63	18.10	0.49 **	0.39 **	0.13	-						
5. BFQ Openness	79.24	13.86	0.27 **	0.13	0.15 *	0.33 **	-					
6. TEIQue Well-being	30.02	6.61	0.42 **	0.38 **	0.34 **	0.33 **	0.14 *	-				
7. TEIQue Self-control	25.90	5.40	0.28 **	0.19 **	0.22 **	0.43 **	0.09	0.53 **	-			
8. TEIQue Emotionality	39.08	6.90	0.27 **	0.51 **	0.21 **	0.27 **	0.19 **	0.57 **	0.40 **	-		
9. TEIQue Sociability	27.35	5.30	0.31 **	0.13	0.35 **	0.07	0.25 **	0.49 **	0.44 **	0.42 **	-	
10. ISC	97.94	13.20	0.50 **	0.32 **	0.39 **	0.32 **	0.24 **	0.70 **	0.52 **	0.54 **	0.59 **	-

Note: N = 210; * $p < 0.05$; ** $p < 0.01$.

Table 2. Descriptive statistics and correlations between Mini International Personality Item Pool (MINI-IPIP), TEIQue-SF dimensions, and ISC.

	M	DS	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. MINI-IPIP Extraversion	12.37	3.96	-									
2. MINI-IPIP Agreeableness	15.05	3.41	0.12	-								
3. MINI-IPIP Conscientiousness	12.95	3.96	0.21 **	0.22 **	-							
4. MINI-IPIP Neuroticism	11.38	3.79	−0.11	−0.08	−0.17 *	-						
5. MINI-IPIP Intellect imagination	14.45	3.89	0.12	0.29 **	0.13	−0.11	-					
6. TEIQue Well-being	30.02	6.61	0.20 **	0.29 **	0.31 **	−0.45 **	0.14 *	-				
7. TEIQue Self-control	25.90	5.40	0.13	0.12	0.22 **	−0.52 **	0.03	0.53 **	-			
8. TEIQue Emotionality	39.08	6.90	0.16 *	0.49 **	0.24 **	−0.35 **	0.18 *	0.57 **	0.40 **	-		
9. TEIQue Sociability	27.35	5.30	0.08	0.35 **	0.22 **	−0.28 **	0.14 *	0.49 **	0.44 **	0.42 **	-	
10. ISC	97.94	13.20	0.20 **	0.38 **	0.33 **	−0.40 **	0.18 *	0.70 **	0.52 **	0.54 **	0.59 **	-

Note: N = 210; * $p < 0.05$; ** $p < 0.01$.

Table 3. Descriptive statistics and correlations between HEXACO-60, TEIQue-SF dimensions, and ISC.

	M	DS	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. HEXACO Honesty–Humility	33.44	8.16	-										
2. HEXACO Emotionality	32.90	7.36	0.13	-									
3. HEXACO Extraversion	32.54	6.38	0.13	−0.21 **	-								
4. HEXACO Agreeableness	30.62	7.21	0.27 **	−0.24 **	0.10	-							
5. HEXACO Conscientiousness	34.08	6.52	0.16 *	−0.11	0.35 **	0.01	-						
6. HEXACO Openness to Experience	34.56	6.35	0.21 **	−0.11	0.23 **	0.14 *	0.21 **						
7. TEIQue Well-being	30.02	6.61	0.16 *	−0.25 **	0.60 **	0.03	0.40 **	0.18 **	-				
8. TEIQue Self-control	25.90	5.40	0.11	−0.34 **	0.44 **	0.11	0.36 **	0.06	0.53 **	-			
9. TEIQue Emotionality	39.08	6.90	0.26 **	−0.06	0.42 **	0.10	0.36 **	0.31 **	0.57 **	0.40 **	-		
10. TEIQue Sociability	27.35	5.30	0.10	−0.18 **	0.44 **	0.12	0.36 **	0.14 *	0.49 **	0.44 **	0.42 **	-	
11. ISC	97.94	13.20	0.13	−0.24 **	0.60 **	0.13	0.46 **	0.28 **	0.70 **	0.52 **	0.54 **	0.59 **	-

Note: N = 210; * $p < 0.05$; ** $p < 0.01$.

Table 4. Descriptive statistics and correlations between Eysenck Personality Questionnaire (EPQ), TEIQue-SF dimensions, and ISC.

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.
1. EPQ Extraversion	7.88	2.91	-							
2. EPQ Neuroticism	5.20	3.09	−0.30 **	-						
3. EPQ Psychoticism	3.33	2.79	−0.26 **	0.12	-					
4. TEIQue Well-being	30.02	6.61	0.43 **	−0.55 **	−0.24 **	-				
5. TEIQue Self-control	25.90	5.40	0.26 **	−0.49 **	−0.10	0.53 **	-			
6. TEIQue Emotionality	39.08	6.90	0.33 **	−0.39 **	−0.39 **	0.57 **	0.40 **	-		
7. TEIQue Sociability	27.35	5.30	0.41 **	−0.34 **	−0.12	0.49 **	0.44 **	0.42 **	-	
8. ISC	97.94	13.20	0.44 **	−0.50	−0.26 **	0.70 **	0.52 **	0.54 **	0.59 **	-

Note: N = 210; * $p < 0.05$; ** $p < 0.01$.

Table 5 reports hierarchical regression with the contributions of BFQ (first step; 48% of the variance) and TEIQue-SF dimensions (second step; 21% of the variance) to ISC. The total variance explained for this model is 69%.

Table 5. Hierarchical regression: The contributions of BFQ (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 1 n = 210 University Students First Two Years
	ISC
	β
Step 1	
BFQ Extraversion	0.42 ***
BFQ Agreeableness	0.14 *
BFQ Conscientiousness	0.24 ***
BFQ Emotional stability	0.16 *
BFQ Openness	0.37 ***
Step 2	
TEIQue Well-being	0.42 ***
TEIQue Self-control	0.07
TEIQue Emotionality	0.05
TEIQue Sociability	0.19 ***
R^2 step 1	0.48 ***
ΔR^2 step 2	0.21 ***
R^2 total	0.69 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(9, 200)} = 49.65$ ($p < 0.001$).

Table 6 reports the hierarchical regression with the contributions of MINI-IPIP (first step; 37% of the variance) and TEIQue-SF dimensions (second step; 29% of the variance) together accounting for 66% of the variance in ISC.

Table 7 reports the hierarchical regression with the contributions of HEXACO-60 (first step; 47% of the variance) and TEIQue-SF dimensions (second step; 19% of the variance) to ISC. The total variance explained for this model is 66%.

Table 8 reports the hierarchical regression with the contributions of EPQ (first step; 36% of the variance) and TEIQue-SF dimensions (second step; 28% of the variance) to ISC, accounting for 64% of the variance.

Table 6. Hierarchical regression: The contributions of MINI-IPIP (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 1 n = 210 University Students First Two Years
	ISC
	β
Step 1	
MINI-IPIP Extraversion	0.13 *
MINI-IPIP Agreeableness	0.27 ***
MINI-IPIP Conscientiousness	0.18 **
MINI-IPIP Neuroticism	−0.33 ***
MINI-IPIP Intellect imagination	0.11
Step 2	
TEIQue Well-being	0.49 ***
TEIQue Self-control	0.10
TEIQue Emotionality	0.03
TEIQue Sociability	0.23 ***
R^2 step 1	0.37 ***
ΔR^2 step 2	0.29 ***
R^2 total	0.66 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(9, 200)} = 42.37$ ($p < 0.001$).

Table 7. Hierarchical regression: The contributions of HEXACO-60 (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 1 n = 210 University Students First Two Years
	ISC
	β
Step 1	
HEXACO Honesty–Humility	0.04
HEXACO Emotionality	−0.19 **
HEXACO Extraversion	0.44 ***
HEXACO Agreeableness	0.02
HEXACO Conscientiousness	0.24 ***
HEXACO Openness to Experience	0.15 **
Step 2	
TEIQue Well-being	0.40 ***
TEIQue Self-control	0.05
TEIQue Emotionality	0.05
TEIQue Sociability	0.23 ***
R^2 step 1	0.47 ***
ΔR^2 step 2	0.19 ***
R^2 total	0.66 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. TEIQue = Trait Emotional Intelligence Questionnaire. $F_{(10, 199)} = 40.83$ ($p < 0.001$).

Table 8. Hierarchical regression: The contributions of EPQ (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 1 n = 210 University Students First Two Years
	ISC
	β
Step 1	
EPQ Extraversion	0.28 ***
EPQ Neuroticism	−0.40 ***
EPQ Psychoticism	−0.14 *
Step 2	
TEIQue Well-being	0.44 ***
TEIQue Self-control	0.09
TEIQue Emotionality	0.06
TEIQue Sociability	0.26 ***
R^2 step 1	0.36 ***
ΔR^2 step 2	0.28 ***
R^2 total	0.64 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(7, 202)} = 53.42$ ($p < 0.001$).

3. Study 2

3.1. Material and Methods

3.1.1. Participants

Study 2 participants were 206 university students in the final three years of their degree program (females: 56.80%; males: 43.20%; mean age 24.29, SD = 1.38).

3.1.2. Measures

Participants completed the same measures described in the Study 1 and include the following scales: ISCS [5]; BFQ [51]; Mini-IPIP [52,53]; HEXACO-60 [49,54]; EPQ-RS [50,55]; TEIQue-SF [56,57].

3.1.3. Procedure

As in the previous study, the questionnaires were administered in groups by a trained psychologist and in accordance with Italian Privacy Law. The order of administration of the questionnaires was counterbalanced to control the effects of presentation.

3.1.4. Data analysis

Descriptive statistics and Pearson correlation coefficients were calculated for all measures. Hierarchical regressions were carried out for each of the four personality measures together with trait emotional intelligence dimensions to determine their relationship to ISC.

3.2. Results

Descriptive statistics and correlations are reported in Tables 9–12. Hierarchical regression analyses entered each of the four personality trait scales (BFQ, MINI-IPIP, HEXACO-60, EPQ-RS) at the first step followed by trait EI dimensions at the second step and are presented in Tables 13–16. The four personality measures accounted for between 30% and 49% of the variance with EI adding another 16% to 21% resulting in the overall personality—EI models accounting for 51% to 65% of the variance in ISC.

Tables 9–12 show correlations of ISC with the four personality trait scales (BFQ, MINI-IPIP, HEXACO-60, EPQ-RS) and the TEIQue-SF dimensions. Among personality traits, the ISC is particularly correlated with Extraversion on both the BFQ and HEXACO scales and again inversely related with Neuroticism detected with MINI-IPIP and EPQ. The ISC is correlated with all the four dimensions of the TEIQue-SF, in particular with the Well-being dimension.

Table 9. Descriptive statistics and correlations between BFQ, TEIQue-SF dimensions, and ISC.

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. BFQ Extraversion	75.01	9.43	-									
2. BFQ Agreeableness	79.01	8.73	0.15 *	-								
3. BFQ Conscientiousness	80.40	9.86	0.27 **	0.26 **	-							
4. BFQ Emotional stability	68.49	11.05	0.13	0.19 **	0.07	-						
5. BFQ Openness	81.94	10.32	0.34 **	0.53 **	0.42 **	0.18 **	-					
6. TEIQue Well-being	29.51	6.06	0.40 **	0.26 **	0.08	0.21 **	0.22 **	-				
7. TEIQue Self-control	24.55	5.61	0.26 **	0.11	0.11	0.55 **	0.26 **	0.43 **	-			
8. TEIQue Emotionality	40.08	6.51	0.05	0.44 **	0.21 **	0.19 **	0.24 **	0.48 **	0.27 **	-		
9. TEIQue Sociability	26.98	5.46	0.46 **	0.16 *	0.12	0.13	0.29 **	0.48 **	0.30 **	0.35 **	-	
10. ISC	96.44	12.81	0.55 **	0.28 **	0.38 **	0.37 **	0.48 **	0.60 **	0.55 **	0.34 **	0.43 **	-

Note: N = 206; * $p < 0.05$; ** $p < 0.01$.

Table 10. Descriptive statistics and correlations between MINI-IPIP, TEIQue-SF dimensions, and ISC.

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. MINI-IPIP Extraversion	11.65	2.85	-									
2. MINI-IPIP Agreeableness	14.73	3.20	0.14	-								
3. MINI-IPIP Conscientiousness	12.78	3.10	0.11	0.27 **	-							
4. MINI-IPIP Neuroticism	11.93	3.15	−0.10	−0.29 **	−030 **	-						
5. MINI-IPIP Intellect imagination	14.77	2.82	0.10	0.30 **	0.09	−0.07	-					
6. TEIQue Well-being	29.51	6.06	0.30 **	0.38 **	0.27 **	−0.41**.	0.12	-				
7. TEIQue Self-control	24.55	5.61	0.17 *	0.21 **	0.32 **	−0.53 **	0.04	0.43 **	-			
8. TEIQue Emotionality	40.08	6.51	0.09	0.48 **	0.23 **	−0.37 **	0.21 **	0.48 **	0.27 **	-		
9. TEIQue Sociability	26.98	5.46	0.28 **	0.19 **	0.08	−0.18 *	0.27 **	0.48 **	0.30 **	0.35 **	-	
10. ISC	96.44	12.81	0.16 *	0.33 **	0.31 **	−0.47 **	0.20 **	0.60 **	0.55 **	0.34 **	0.43 **	-

Note: N = 206; * $p < 0.05$; ** $p < 0.01$.

Table 11. Descriptive statistics and correlations between HEXACO-60, TEIQue-SF dimensions, and ISC.

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. HEXACO Honesty–Humility	34.26	7.18	-										
2. HEXACO Emotionality	31.05	6.79	0.17 *	-									
3. HEXACO Extraversion	32.15	5.68	0.32 **	−0.16 *	-								
4. HEXACO Agreeableness	30.40	6.09	0.25 **	−0.07	0.39 **	-							
5. HEXACO Conscientiousness	34.16	6.22	0.55 **	−0.10	0.34 **	0.27 **	-						
6. HEXACO Openness to Experience	34.67	7.12	0.47 **	−0.17 *	0.42 **	0.37 **	0.38 **						
7. TEIQue Well-being	29.51	6.06	0.18 **	−0.11	0.51 **	0.13	0.24 **	0.25 **	-				
8. TEIQue Self-control	24.55	5.61	0.04	−0.25 **	0.35 **	0.15 *	0.12	0.14 *	0.43 **	-			
9. TEIQue Emotionality	40.08	6.51	0.23 **	−0.11	0.28 **	0.22 **	0.24 **	0.24 **	0.48 **	0.27 **	-		
10. TEIQue Sociability	26.98	5.46	0.02	−0.11	0.38 **	0.02	0.13	0.21 **	0.48 **	0.30 **	0.35 **	-	
11. ISC	96.44	12.81	0.18 *	−0.24 **	0.53 **	0.22 **	0.42 **	0.26 **	0.60 **	0.55 **	0.34 **	0.43 **	-

Note: N = 206; * $p < 0.05$; ** $p < 0.01$.

Table 12. Descriptive statistics and correlations between EPQ, TEIQue-SF dimensions, and ISC.

	M	*DS*	1.	2.	3.	4.	5.	6.	7.	8.
1. EPQ Extraversion	7.96	3.07	-							
2. EPQ Neuroticism	5.98	3.12	−0.27 **	-						
3. EPQ Psychoticism	3.56	2.18	−0.03	0.03	-					
4. TEIQue Well-being	29.51	6.06	0.45 **	−0.41 **	−0.07	-				
5. TEIQue Self-control	24.55	5.61	0.18 **	−0.54 **	−0.04	0.43 **	-			
6. TEIQue Emotionality	40.08	6.51	0.19 **	−0.37 **	−0.22 **	0.48 **	0.43 **	-		
7. TEIQue Sociability	26.98	5.46	0.33 **	−0.36 **	−0.01	0.48 **	0.48 **	0.27 **	-	
8. ISC	96.44	12.81	0.23 **	−0.54 **	−0.08	0.60 **	0.48 **	0.30 **	0.35 **	-

Note: N = 206; * $p < 0.05$; ** $p < 0.01$.

Table 13 reports the hierarchical regression with the contributions of BFQ (first step; 49% of the variance) and TEIQue-SF dimensions (second step; 16% of the variance) to ISC, explaining a total 65% of the variance.

Table 13. Hierarchical regression: The contributions of BFQ (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 2 n = 206 University Students Last Three Years
	ISC
	β
Step 1	
BFQ Extraversion	0.39 ***
BFQ Agreeableness	0.01
BFQ Conscientiousness	0.17 **
BFQ Emotional stability	0.27 ***
BFQ Openness	0.23 **
Step 2	
TEIQue Well-being	0.32 ***
TEIQue Self-control	0.21 ***
TEIQue Emotionality	0.04
TEIQue Sociability	0.02
R^2 step 1	0.49 ***
ΔR^2 step 2	0.16 ***
R^2 total	0.65 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(9, 196)} = 39.51$ ($p < 0.001$).

Table 14 reports the hierarchical regression with the contributions of MINI-IPIP (first step; 32% of the variance) and TEIQue-SF dimensions (second step; 20% of the variance) to ISC. The total variance explained for this model is 52%.

Table 14. Hierarchical regression: The contributions of MINI-IPIP (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 2 n = 206 University Students Last Three Years
	ISC
	β
Step 1	
MINI-IPIP Extraversion	0.13 *
MINI-IPIP Agreeableness	0.12 *
MINI-IPIP Conscientiousness	0.18 **
MINI-IPIP Neuroticism	−0.37 ***
MINI-IPIP Intellect imagination	0.13 *
Step 2	
TEIQue Well-being	0.33 ***
TEIQue Self-control	0.25 ***
TEIQue Emotionality	0.06
TEIQue Sociability	0.16 **
R^2 step 1	0.32 ***
ΔR^2 step 2	0.20 ***
R^2 total	0.52 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(9, 196)} = 23.05$ ($p < 0.001$).

Table 15 reports the hierarchical regression with the contributions of HEXACO-60 (first step; 40% of the variance) and TEIQue-SF dimensions (second step; 19% of the variance) to ISC. The total variance explained for this model is 59%.

Table 15. Hierarchical regression: The contributions of HEXACO-60 (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 2 n = 206 University Students Last Three Years
	ISC
	β
Step 1	
HEXACO Honesty–Humility	0.13
HEXACO Emotionality	−0.20 **
HEXACO Extraversion	0.40 ***
HEXACO Agreeableness	0.00
HEXACO Conscientiousness	0.36 ***
HEXACO Openness to Experience	0.06
Step 2	
TEIQue Well-being	0.28 ***
TEIQue Self-control	0.27 ***
TEIQue Emotionality	0.01
TEIQue Sociability	0.11 *
R^2 step 1	0.40 ***
ΔR^2 step 2	0.19 ***
R^2 total	0.59 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(10, 195)} = 27.91$ ($p < 0.001$).

Table 16. Hierarchical regression: The contributions of EPQ (first step) and TEIQue-SF dimensions (second step) to ISC.

	Study 2 n = 206 University Students Last Three Years
	ISC
	β
Step 1	
EPQ Extraversion	0.09
EPQ Neuroticism	−0.52 ***
EPQ Psychoticism	−0.07
Step 2	
TEIQue Well-being	0.38 ***
TEIQue Self-control	0.24 ***
TEIQue Emotionality	0.04
TEIQue Sociability	0.14 *
R^2 step 1	0.30 ***
ΔR^2 step 2	0.21 ***
R^2 total	0.51 ***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. $F_{(7, 198)} = 30.62$ ($p < 0.001$).

Table 16 reports the hierarchical regression with the contributions of EPQ (first step; 30% of the variance) and TEIQue-SF dimensions (second step; 21% of the variance) to ISC. The total variance explained for this model is 51%.

4. Discussion

Both studies examined the contribution of the three most often used trait personality models, employing four of the more commonly used scales, together with trait EI to determine their relationship with ISC. All data were obtained from Italian university students in the first two years (Study 1) and last three years (Study 2) of their degree program. Results clearly showed that while personality traits from all three measures were the strongest predictors of ISC, trait EI added further significant incremental variance for both group of students.

As reported in previous research [27,48], the personality factors of all three models contributed significantly to ISC. The similarity of the contribution from each personality scale is not unexpected since the three measures share similar trait descriptions with the exception of the psychoticism scale of the EPQ-R and the Honesty–Humility scale of the HEXACO model. This is a robust finding as it should be recalled that the correlations between similarly named scales (e.g., Extraversion) are not 'perfect' while still capturing the overarching description shared by each personality trait. Further, the pattern of coefficients was mostly similar for the two university student samples. Neuroticism was generally associated with ISC suggesting that individuals with a higher ISC also appear to perceive themselves as more able to control emotions and impulses [27,28]. Extraversion and Conscientiousness were also related to ISC underscoring that intrapreneurial individuals seem to have more interest in their external world in terms of interactions and relationships with other people as well as appearing to present as more persevering and scrupulous.

Previous findings [37] have shown that EI contributes added variance to that accounted for by personality in individual differences research. A key finding of both studies reported here is that that trait EI added incremental variance beyond that accounted for by the major personality traits. Regarding the relationships between TEIQue and ISC, the well-being dimension of the TEIQue was associated with ISC in both groups, suggesting a generalized sense of well-being (extending from past achievements to future expectations) for those individuals who feel themselves as more positive, happy, and fulfilled. Furthermore, the relationship between the ISC and the sociability dimension of the TEIQue appears to reflect that individuals with higher ISC describe themselves as more confident and comfortable in social interaction, have good listening skills, and can communicate clearly and confidently with people. Furthermore, associations with the Self-control dimension of the TEIQue and ISC emerged in Italian university students in the last years of study, highlighting a healthy degree of control over urges and desires and external pressures and stress in relation to ISC. These results showed that personality traits assessed by the three, five, and six factor models together with trait EI are not redundant constructs in relation to ISC, highlighting the contribution of trait EI as a promising factor beyond the now well established personality traits [45,53,54,58].

Notwithstanding the findings from these two studies, the following limitations should be noted. The studies were conducted with two groups of Italian university students who were not necessarily representative of the Italian population. Future research should therefore include university students from different geographical areas in Italy but also carried out on different target groups (for example, high school students or workers) as well as conducted in other national contexts. Another limitation is that these results could be affected by common method bias due to the cross-sectional design of the studies and the use of self-report measures.

Notwithstanding these limitations, the findings add to the existing literature on ISC and its associations with both personality traits and trait EI. If the results of these two studies continue to be confirmed in future research, this would add further support to their importance in both selecting for and developing these characteristics in relation to particular jobs. There is evidence that EI can be enhanced through specific training [45,59] and from a primary prevention perspective [10,11,32,33],

it would appear beneficial to foster trait EI as a means of further increasing ISC among young adults. Specific training to enhance the different dimensions of EI [45,59] and further develop different aspects of the construct (e.g., intrapersonal, interpersonal, managing of emotions, and adaptive use of emotions) are clearly linked to individual intrapreneurial characteristics.

Adding to the psychology of sustainability and sustainable development [34–36] and complementing the sustainable development goals described by the United Nations [29], the findings from this study would appear to have implications for enhancing the resources required by university students to adaptively face the challenges and transitions [60] that have become the essence of work in the 21st century and in human interaction. ISC thus represents a core of adaptive resources in the post-modern era, favoring sustainable development in contexts of common changes and transitions, and encouraging innovative solutions for a more sustainable construction of career and life paths.

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