

## Article

# Emotional Intelligence and Resilience: Predictors of Life Satisfaction among Mountain Trainers

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**Abstract:** High-level performance in mountain sports would be unlikely unless different emotional factors are taken into account through the analysis of psychological characteristics, such as mood, resilience, or motivation, among many other variables. In this study, 788 people with a sports degree from the Spanish Federation of Mountain Sports and Climbing (FEDME) participated, 75.3% of whom were men and 24.5% of whom were women. The mean age of the participants was 49.8 years ( $\pm 12.8$ ), ranging from 18 to 76 years. The Wong Law Emotional Intelligence Scale (WLEIS-S), the RS-14 Resilience Scale, and the Satisfaction with Life Scale (SWLS) instruments were used. The aim of this research was to determine the relationship between the dimensions of emotional intelligence, resilience, and life satisfaction. The results showed a relationship between several of the dimensions from the instruments used ( $p < 0.01$ ). In terms of gender, higher scores were found for women than for men. The regression model shows that both the dimensions of emotional intelligence [appraisal of own emotions ( $\beta = 0.104$ ;  $p < 0.001$ ); use of emotions ( $\beta = 0.30$ ;  $p < 0.001$ ); emotional regulation ( $\beta = 0.103$ ;  $p < 0.001$ )] and resilience [personal competence ( $\beta = 0.402$ ;  $p < 0.001$ )] are predictors of greater life satisfaction, positively explained by the regression model with 44.1% accuracy. Further proposals should extend the results obtained to the analysis of more sports modalities to provide evidence that would complement those extracted in this research.

**Keywords:** emotional intelligence; mountain sports; life satisfaction; resilience; sport satisfaction

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## 1. Introduction

Mountain sports have experienced a significant growth worldwide, especially in the last decade. A recent study on sports habits in Spain [1] reports that the discipline of sports most practised in 2021 was hiking/mountaineering, with 30.8% of the population where the study was carried out. Such a discipline has a sporting environment with its own characteristics, different from other sports, as well as certain risk conditions in some cases, which may affect the athlete's profile on a physical level but, above all, psychologically [2].

This study involves technicians linked to the Spanish Federation of Mountain and Climbing Sports (FEDME), that is, the only Spanish sports federation that will participate in the Summer Olympics with climbing and in the Winter Olympics with ski mountaineering, which will be the first Olympic discipline in Milan-Cortina d'Ampezzo in 2026. The contribution of this study is to provide the vision of technicians and professionals who work in this sport in the context of the study.

There are still few studies that analyse emotional intelligence (EI), resilience, and its relationship with life satisfaction in mountain sports. EI and resilience are likely to positively affect sporting performance under extreme conditions. Resilience is defined as the ability to present adaptive responses to adverse situations [3]. It is a factor related to emotions, such as optimism, as well as well-being and problem-solving ability [4]. Tabibnia [5] considers that among the usual techniques for increasing resilience is exposure

to nature and the natural environment through hiking in natural areas. The resilience of mountain athletes has been analysed in relation to addiction to mountain sports [6,7], as well as to emotional regulation for better-integrated risk management [8].

EI has been conceptualised by Mayer and Salovey [9] as an ability to perceive, assimilate, understand, and regulate one's own emotions and those of others, in order to promote emotional and intellectual growth. In relation to the concept of EI, Petrides et al. [10] distinguish between two different constructs of EI: EI as a personality trait, and on the other hand, EI as a capability. Among the studies of practitioners of outdoor sports activities, the authors highlight those that employ emotional regulation strategies [11,12], as well as the influence of EI on performance [13] or climbing [14].

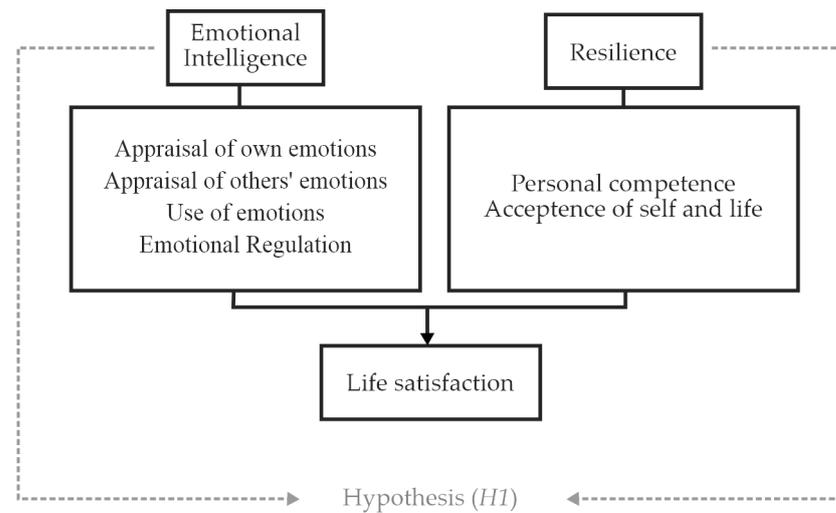
## 2. Literature Review

One of the most productive fields of EI research focuses primarily on providing evidence of the relationship with psychological well-being and life satisfaction, both objective and subjective. Life satisfaction concerns the state of the individuals in which their needs, both objective and subjective, are satisfied [15]. In this regard, the authors highlight some studies that have analysed the relationship between life satisfaction and optimism in mountain sports [16], as well as personality and emotional responses in hikers [17]. In other words, different studies point to the existence of a positive correlation between emotional intelligence as a trait and perceived happiness [18]. On the other hand, from the ability model, some studies based on Spanish mountaineering and climbing athletes shows that emotional clarity and regulation are positively correlated with life satisfaction [11]. Similarly, the dimensions of personal competence and self- and life acceptance mediate the relationship between EI and life satisfaction [19]. It should be considered that attitudes associated with personal emotions determine the variation in subjective well-being to a large extent. Different studies indicates that emotional competencies involve an ability that allows mountain and climbing athletes to orient their thoughts and reflect on their emotions, helping them improve their performance levels [6,7].

Supporting this position, Frochot et al. [20] analysed the satisfaction of practitioners of these mountain sports disciplines and the self-perceived well-being produced by this activity in mountain tourism contexts, finding relationships between them. It has also been shown that outdoor sports activity in a natural environment improves self-esteem and it is more restorative than sports activity in an urban environment [21,22]. Engemann et al. [23] found that the risk of psychological disorders from adolescence to adulthood decreases when there are numerous green spaces near the residence place. The positive effects of EI and resilience, related to life satisfaction, can promote effective coping strategies in adverse situations [19], as can be seen in Figure 1, where the proposed theoretical model is presented.

Based on these considerations, this paper has the following three general objectives: (a) To analyse the reliability and internal consistency of each of the scores, as well as the existence of significant correlations between the dimensions of the instruments considered (WLEIS-S) of EI, (RS-14) of resilience, and (SWLS) for life satisfaction. (b) To determine the existence of mean differences between each of the dimensions of the instruments used and the socio-demographic variables of gender and age. (c) To predict which dimensions explain greater life satisfaction.

EI and resilience are skills that influence the way people manage stress and cope with life's challenges. In the case of mountain and climbing athletes, these skills may be of particular relevance due to the demanding and risky nature of the activities involved in their sport. Overall, the following hypothesis (H1) is proposed: athletes with high levels of EI and resilience are better able to cope effectively and adaptively with challenges and risks, which in turn could lead to greater satisfaction with life.



**Figure 1.** Proposed theoretical model.

### 3. Materials and Methods

#### 3.1. Participants

The sample is made up of 788 people with training in mountain sports, who participated in this study during the year 2022. All these people had a valid sports license from the Spanish Federation of Mountain Sports and Climbing and had taken some formal mountain sports training or federative training throughout their lives. We selected the sample for convenience, in order to ensure that the participants were accessible and suitable for the objectives of this research. The following inclusion criteria were established in the research: that the participants were federated and over 18 years of age; they had experience; they had been active for a significant period of time. With regard to gender distribution, 75.3% were men (593 cases) and 24.5% were women (193 cases), and 2 people (0.3%) considered themselves as belonging to the “other gender” category (non-binary, etc.). The mean age of the participants was 49.8 years ( $\pm 12.8$ ), which ranged from 18 to 78 years.

The sample exceeds the minimum number of subjects necessary to infer the sample size for a confidence level of 95% and an estimation error of 4%. The number of estimated subjects is 598, with the number of subjects in the study sample exceeding this value ( $n = 788$ ).

The number of predictors of life satisfaction in our model is two, the results of the statistical power analysis show a power of 0.948 above 80% and at the 5% significance level to observe R<sup>2</sup> values of less than 10%. Consequently, no problems related to the adequacy of the sample size were found.

#### 3.2. Instruments

In order to carry out the different analyses, the socio-demographic variables of gender and age were included in order to collect relevant information and to analyse the existence of significant differences according to these variables.

The Spanish version of the Wong Law Emotional Intelligence Scale (WLEIS-S) was used to assess EI [18]. It is based on the Wong and Law EI scale (WLEIS-S) [24] and it is made up of 16 items and 4 dimensions, namely intrapersonal perception (evaluation of one’s own emotions), interpersonal perception (evaluation of the emotions of others), assimilation (use of emotions), and emotional regulation. A 7-point Likert-type scale (1 to 7 points) was used, which has validity and reliability in Spanish contexts of ( $\alpha = 0.91$ ). In our study, the reliability of this scale was Cronbach’s  $\alpha = 0.906$  and McDonald’s  $\omega = 0.909$ .

The Spanish version of the Resilience Scale (RS-14) [25], which was made by Wag-nild [26], measures the degree of resilience, considered as a positive personality characteristic that allows the individual to adapt to adverse situations. The RS-14 measures

2 dimensions, namely personal competence (11 items, including self-confidence, independence, decisiveness, resourcefulness, and perseverance) and acceptance of self and life (3 items, namely adaptability, balance, and flexibility and a stable outlook on life). The reliability of this scale was Cronbach's  $\alpha = 0.899$  and McDonald's  $\omega = 0.906$ .

The Satisfaction with Life Scale (SWLS) [27], specifically the version of the Satisfaction with Life Scale by Vázquez et al. [28], was used to assess life satisfaction. It consists of five items where participants must indicate the degree of agreement or disagreement for each of the response options of the instrument. The scale in the Spanish version reports an internal consistency of  $\alpha = 0.82$ . The reliability of this scale was Cronbach's  $\alpha = 0.885$  and McDonald's  $\omega = 0.907$ .

### 3.3. Procedure

The authors followed the ethical guidelines promoted and encouraged by national and international regulations for conducting research with people, following the indications of the Declaration of Helsinki [29]. Informed consent and confidentiality and anonymity of the data obtained were guaranteed for each of the participants. The instruments were administered individually through a Google platform (Google Forms). The approximate response time for each subject was 15 min. This research has the approval of the Human Research Ethics Committee of the University of Jaén (Spain), ID code OCT.22/2 LINE (line of research: "Evaluation of emotions throughout the life cycle").

### 3.4. Data Analysis

Descriptive statistics (means and standard deviations) were obtained. The validity, reliability (Cronbach's alpha and Omega coefficient) and internal consistency of each instrument were analysed a priori through confirmatory factor analysis (CFA) to verify the psychometric properties of the questionnaire and to obtain the factor loadings of each item. The normality analysis was carried out by means of multivariate hypothesis testing (being the distribution of the multivariate normal set, each of the marginal variables will meet the criteria of univariate normality, but not vice versa), which resulted in a normal distribution. Consistency was determined according to the computation of the composite reliability coefficient (CR). Convergent validity was verified by calculating the extracted average variance (AVE), where values greater than 0.50 show adequate convergent validity [30]. In relation to the coefficients considered in this study, the Chi-square test ( $\chi^2$ ), the degrees of freedom ( $df$ ), and the CFI, GFI, SRMR, and RMSEA fit indices were used. In this sense,  $\chi^2$  should be understood from the ratio in relation to the degrees of freedom ( $\chi^2/df$ ). The comparative fit index (CFI) calculates the relative fit of the observed model, whose value should be greater than 0.90, indicating a good fit. Similarly, the goodness-of-fit index (GFI), above 0.90, indicates the proportion of variance and covariance of the model data. Similarly, the standardised root mean square residual (SRMR), the standardised means of the residuals, i.e., the difference between the observed and model matrix, being less than 0.10, indicates a good model fit. The root mean square error of approximation per degree of freedom (RMSEA), as a measure of discrepancy, should have results below 0.08 [31]. A 95% confidence level (significance  $p < 0.05$ ) was used in all cases.

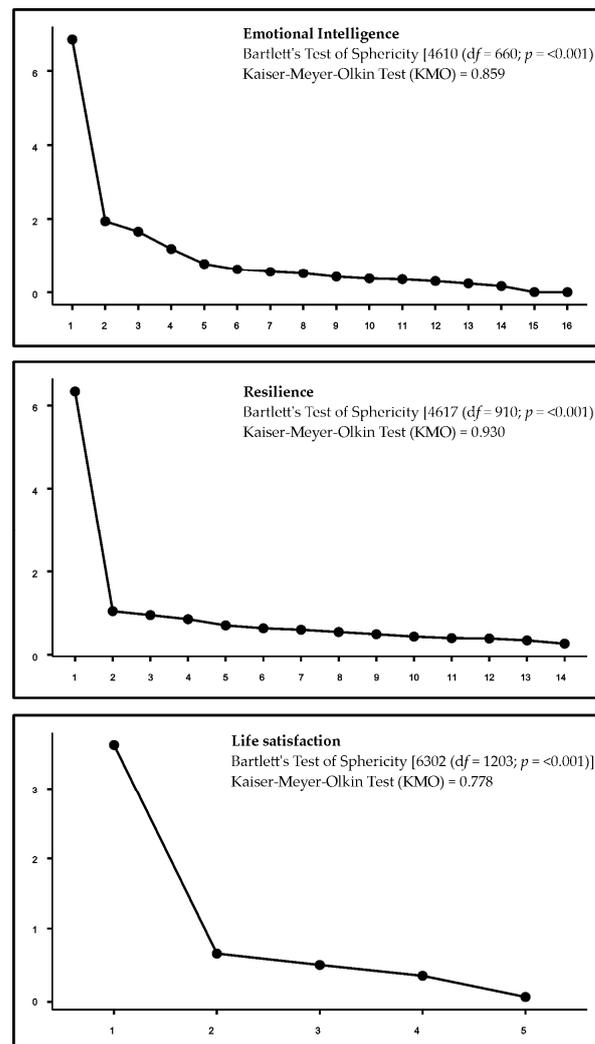
To achieve a better fit for each of the tests, the data were transformed according to their factor loadings [31]. The correlation between the resulting scores of each of the EI dimensions of the WLEIS-S instrument (appraisal of own emotions, appraisal of others' emotions, use of emotions, and emotional regulation); resilience (RS-14) and its dimensions (personal competence and acceptance of self and life), and life satisfaction (SWLS) was analysed with Pearson's  $r$  test. Subsequently, to analyse the differences according to gender (men vs. women), Student's  $t$ -test for independent samples was used. For age, the ANOVA test for independent samples was performed. Finally, to explore the predictive value of the life satisfaction variable, a stepwise regression study was carried out, respectively. In all cases, a 95% confidence level was used (significance  $p < 0.05$ ). The analyses were carried

out using SPSS Statistics (version 25.0. Chicago, IL, USA) and the jamovi software (The jamovi Project, version 1.2. San Francisco, CA, USA).

## 4. Results

### 4.1. Descriptive Results

The descriptive values (central tendency and distribution) of the variables that make up the different instruments are also calculated. Regarding skewness and kurtosis, it has been observed that the EI dimensions, resilience, and life satisfaction dimensions are distributed within the range  $-2$  and  $2$ , according to the criteria established by Bandalos and Finney [32], which presents a good distribution (see Figure 2). The corrected homogeneity index also presents acceptable values above  $0.500$ .



**Figure 2.** Sedimentation graph (emotional intelligence, resilience, and life satisfaction).

Bartlett's statistic and the Kaiser–Meyer–Olkin test of sampling adequacy (KMO) reveal a good fit of the data to be subjected to factor analysis, and taking into account the ordinal nature of the data recording (Likert scale from 1 to 7) of the factor extraction in the Exploratory Factor Analysis (EFA), it is convenient to perform it through the robust estimation of unweighted least squares (ULS) and polychoric matrices.

Secondly, the authors assess whether the data assume the assumption of normality with Mardia's multivariate test to contrast the skewness and kurtosis of the observed variables, which shows that the data follow a normal distribution. The assumptions

of multicollinearity, homogeneity, and homoscedasticity are analysed to verify that the resulting distribution meets the criteria of dependence between variables.

From the data obtained with each of the instruments (Table 1), confirmatory factor analysis (CFA) is performed to verify the validity and internal structure of each item. Critical Z-score values using a 99% confidence level (standard deviations) will determine a small *p*-value to reflect a statistically significant spatial structure in the data.

**Table 1.** Factor loadings (WLEIS-S).

Latent Factor	Indicator	$\alpha$	$\omega$	Estimate	SE	Z	<i>p</i>	$\beta$	AVE	CR
Appraisal of own emotions	Item 1	0.901	0.904	0.731	0.0306	23.9	<0.001	0.756	0.653	0.889
	Item 2	0.897	0.900	0.808	0.0272	29.8	<0.001	0.879		
	Item 3	0.898	0.901	0.790	0.0285	27.7	<0.001	0.839		
	Item 4	0.903	0.907	0.531	0.0348	15.3	<0.001	0.533		
Appraisal of others' emot.	Item 5	0.904	0.908	0.731	0.0362	20.2	<0.001	0.690	0.601	0.854
	Item 6	0.904	0.908	0.895	0.0358	25.0	<0.001	0.817		
	Item 7	0.908	0.911	0.589	0.0375	15.7	<0.001	0.566		
	Item 8	0.902	0.907	0.792	0.0323	24.5	<0.001	0.809		
Use of emotions	Item 9	0.903	0.907	0.740	0.0408	18.1	<0.001	0.606	0.644	0.874
	Item 10	0.901	0.905	0.916	0.0409	22.4	<0.001	0.715		
	Item 11	0.897	0.902	1.095	0.0340	32.2	<0.001	0.910		
	Item 12	0.897	0.902	1.065	0.0334	31.8	<0.001	0.904		
Emotional regulation	Item 13	0.897	0.901	0.803	0.0328	24.5	<0.001	0.744	0.621	0.856
	Item 14	0.896	0.899	1.085	0.0274	39.7	<0.001	1.000		
	Item 15	0.896	0.899	1.079	0.0273	39.6	<0.001	0.999		
	Item 16	0.897	0.901	0.731	0.0306	23.9	<0.001	0.756		

Note: SE, standardised error; Z, Z-value at estimation; *p*, *p*-value of Z-estimate;  $\beta$ , standardised estimate; AVE, average variance extracted; CR, critical ratio.

The factor loadings for the items on the EI scale (WLEIS-S) had an adequate fit [33],  $\chi^2/df = 3.259$ , with CFI = 0.973, SRMR = 0.0380, and RMSEA = 0.067. The reliability of this scale was Cronbach's  $\alpha = 0.906$  and McDonald's  $\omega = 0.909$ .

The factor loadings for the items on the Resilience Scale (RS-14), presented an adequate fit [33];  $\chi^2/df = 2.967$ ; with CFI = 0.911; SRMR = 0.046; RMSEA = 0.078 (See Table 2). The reliability of this scale was Cronbach's  $\alpha = 0.899$  and McDonald's  $\omega = 0.906$ .

**Table 2.** Factor loadings (RS-14).

Latent Factor	Indicator	$\alpha$	$\omega$	Estimate	SE	Z	<i>p</i>	$\beta$	AVE	RC
Personal competence	Item 1	0.894	0.901	0.522	0.0300	17.4	<0.001	0.589	0.613	0.885
	Item 2	0.892	0.899	0.601	0.0314	19.2	<0.001	0.635		
	Item 3	0.891	0.899	0.762	0.0392	19.4	<0.001	0.642		
	Item 4	0.886	0.894	0.792	0.0326	24.3	<0.001	0.759		
	Item 5	0.897	0.903	0.645	0.0427	15.1	<0.001	0.523		
	Item 6	0.893	0.900	0.477	0.0272	17.5	<0.001	0.591		
	Item 7	0.895	0.902	0.563	0.0338	16.6	<0.001	0.566		
	Item 8	0.886	0.893	0.827	0.0319	25.9	<0.001	0.792		
	Item 9	0.892	0.899	0.549	0.0282	19.5	<0.001	0.642		
	Item 10	0.890	0.898	0.708	0.0329	21.5	<0.001	0.694		
	Item 11	0.889	0.895	0.616	0.0257	24.0	<0.001	0.751		
Acceptance of self and life	Item 12	0.900	0.905	0.656	0.0450	14.6	<0.001	0.529	0.545	0.811
	Item 13	0.888	0.896	0.922	0.0391	23.6	<0.001	0.813		
	Item 14	0.898	0.904	0.578	0.0415	13.9	<0.001	0.505		

Note: SE, Standardised error; Z, Z-value at estimation; *p*, *p*-value of Z-estimate;  $\beta$ , standardised estimate; AVE, average variance extracted; CR, critical ratio.

The factor loadings for the items of the Life Satisfaction Scale (SWLS), presented an adequate fit [33]:  $\chi^2/df = 3.041$ ; with CFI = 0.963; SRMR = 0.034; RMSEA = 0.068. The reliability of this scale was Cronbach's  $\alpha = 0.885$  and McDonald's  $\omega = 0.907$  (See Table 3).

**Table 3.** Factor loadings (SWLS).

Latent Factor	Indicator	$\alpha$	$\omega$	Estimate	SE	Z	p	$\beta$	AVE	CR
Life satisfaction	Item 1	0.835	0.859	1.157	0.0292	39.7	<0.001	0.901	0.598	0.862
	Item 2	0.859	0.894	0.796	0.0355	22.4	<0.001	0.696		
	Item 3	0.836	0.860	1.146	0.0290	39.5	<0.001	0.998		
	Item 4	0.858	0.896	0.753	0.0354	21.3	<0.001	0.668		
	Item 5	0.918	0.922	0.839	0.0547	15.3	<0.001	0.512		

Note: SE, standardised error; Z, Z-value at estimation; p, p-value of Z-estimate;  $\beta$ , standardised estimate; AVE: average variance extracted; CR, critical ratio.

To analyse each of the variables observed between all the dimensions that make up the model (See Table 4), the correlation matrix (Pearson's  $r$ ) was developed together with the descriptive statistics (means and standard deviations) and the reliability of the scores (Cronbach's alpha and omega coefficient), with the highest correlation established between personal competence and use of emotions ( $r(784) = 0.680$ ;  $p < 0.001$ ), personal competence and acceptance of self and life ( $r(784) = 0.683$ ;  $p < 0.001$ ), and acceptance of self and life and life satisfaction ( $r(784) = 0.611$ ;  $p < 0.001$ ), with a statistically significant relationship in the rest of the variables.

**Table 4.** Internal consistency, mean, standard deviation and the Pearson's  $r$  correlation.

Variable	$\alpha$	$\omega$	M (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Appraisal of own emotions (1)	0.849	0.864	5.99 ( $\pm 0.78$ )	-						
Appraisal of others' emotions (2)	0.876	0.887	5.46 ( $\pm 0.83$ )	0.403 ***						
Use of emotions (3)	0.847	0.860	5.60 ( $\pm 1.03$ )	0.548 ***	0.314 ***					
Emotional regulation (4)	0.853	0.867	5.54 ( $\pm 1.01$ )	0.524 ***	0.331 ***	0.471 ***				
Personal competence (5)	0.838	0.845	5.98 ( $\pm 0.68$ )	0.602 ***	0.470 ***	0.680 ***	0.562 ***			
Acceptance of self and life (6)	0.838	0.853	5.67 ( $\pm 0.88$ )	0.550 ***	0.330 ***	0.628 ***	0.634 ***	0.683 ***		
Life satisfaction (7)	0.857	0.869	5.23 ( $\pm 1.04$ )	0.471 ***	0.309 ***	0.509 ***	0.445 ***	0.611 ***	0.537	-

Note: (1) M: mean; SD: standard deviation. (2) \*\*\*  $p < 0.001$ .

#### 4.2. Differences According to Socio-Demographic Variables

To determine the difference in means in relation to the gender variable, the Student's  $t$ -test for independent samples was used (see Table 5).

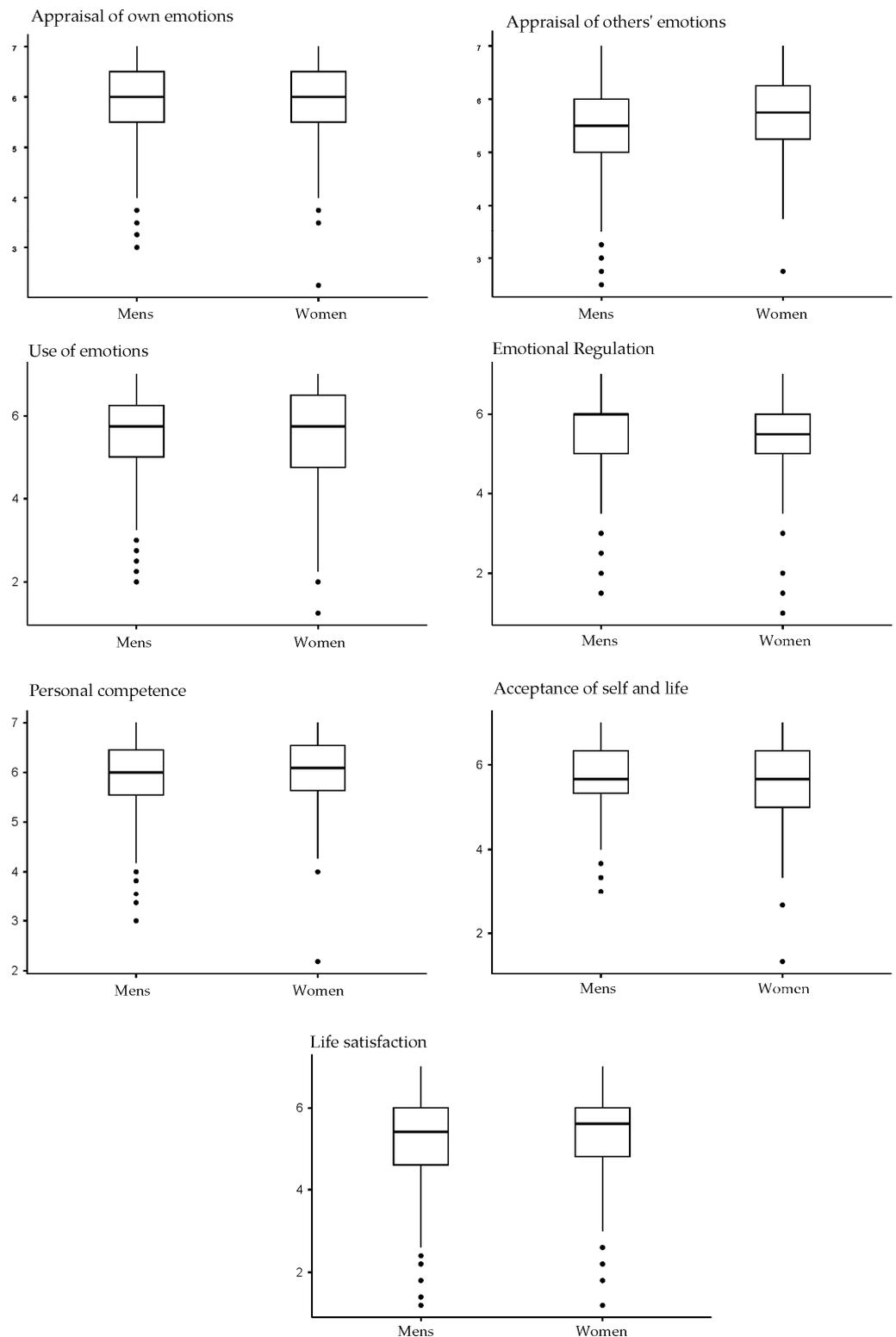
**Table 5.** Differences in means according to gender (Student's  $t$ -test).

Variables	Men ( $n = 591$ )	Women ( $n = 193$ )	$t_{(784)}$	p	Effect ( $d$ )	95% CI	
	M (SD)	M (SD)				Lower	Upper
Appraisal of own emotions	5.98 ( $\pm 0.75$ )	6.00 ( $\pm 0.84$ )	-0.337	0.706	-0.0313	-0.15169	0.1028
Appraisal of others' emotions	5.38 ( $\pm 0.84$ )	5.70 ( $\pm 0.74$ )	4.664	<0.001 ***	-0.3867	-0.45136	-0.1840
Use of emotions	5.64 ( $\pm 0.96$ )	5.46 ( $\pm 1.20$ )	2.182	0.029 *	0.1809	0.01864	0.3529
Emotional regulation	5.60 ( $\pm 0.97$ )	5.36 ( $\pm 1.08$ )	2.888	0.004 **	0.2394	0.07705	0.4041
Personal competence	5.96 ( $\pm 0.66$ )	6.00 ( $\pm 0.73$ )	-0.638	0.524	-0.0529	-0.14745	0.0751
Acceptance of self and life	5.70 ( $\pm 0.84$ )	5.57 ( $\pm 0.97$ )	1.853	0.064	0.1537	-0.00800	0.2786
Life satisfaction	5.21 ( $\pm 1.01$ )	5.31 ( $\pm 1.11$ )	1.139	0.255	-0.0944	-0.26762	0.0711

Note: (1) M: mean; SD: standard deviation. (2) \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . (3) The statistical effect size is expressed as Cohen's  $d$  value.

The results (see Table 5 and Figure 3) indicate that there are only significant differences in the following EI variables: use of emotions ( $t_{784} = 2.182$ ;  $p < 0.001$ ); emotional regulation ( $t_{784} = 2.888$ ;  $p < 0.05$ ), where the scores obtained are higher in men than in women; appraisal of others' emotions ( $t_{784} = 4.664$ ;  $p < 0.05$ ), where the scores are higher in women. There

are also significant differences in the resilience variable, namely acceptance of self and life ( $t_{784} = 1.853; p < 0.05$ ), with higher values in men.



**Figure 3.** Mean differences according to gender (men vs. women) in each dimension.

Three age intervals (18–37 years, 28–57 years, and 58–76 years) were established in order to test the homogeneity of the covariance matrices for the variable age of the participants, and ANOVA tests were carried out (see Table 6 and Figure 4). The criteria

established in the Survey of Sports Habits in Spain 2022 [1] published by the Spanish Ministry of Culture and Sport were established, grouped into three age ranges.

**Table 6.** Differences in means according to age (ANOVA).

Variable	18–37 Years M (SD)	38–57 Years M (SD)	58–76 Years M (SD)	$F_{(2-784)}$	$p$	Effect $\eta^2$
Appraisal of own emotions	5.84 ( $\pm 0.80$ )	5.98 ( $\pm 0.80$ )	6.09 ( $\pm 0.69$ )	5.036	0.007 **	0.012
Appraisal of others' emotions	5.51 ( $\pm 0.86$ )	5.43 ( $\pm 0.83$ )	5.47 ( $\pm 0.79$ )	0.563	0.570	0.001
Use of emotions	5.46 ( $\pm 1.13$ )	5.54 ( $\pm 1.07$ )	5.77 ( $\pm 0.83$ )	6.196	0.002 **	0.013
Emotional regulation	5.63 ( $\pm 0.91$ )	5.51 ( $\pm 1.04$ )	5.51 ( $\pm 1.00$ )	0.864	0.422	0.002
Personal competence	6.06 ( $\pm 0.62$ )	5.96 ( $\pm 0.70$ )	5.94 ( $\pm 0.68$ )	1.643	0.195	0.004
Acceptance of self and life	5.59 ( $\pm 0.95$ )	5.65 ( $\pm 0.89$ )	5.74 ( $\pm 0.82$ )	1.522	0.220	0.004
Life satisfaction	5.22 ( $\pm 1.07$ )	5.16 ( $\pm 1.11$ )	5.36 ( $\pm 0.87$ )	3.191	0.042 *	0.007

Note: (1) M: mean; SD: standard deviation. (2) \*  $p < 0.05$ , \*\*  $p < 0.01$ . (2) The effect size is expressed as the Eta squared value ( $\eta^2$ ).

Statistically significant differences were found in the EI dimensions appraisal of own emotions ( $F_{(2-784)} = 5.036$ ;  $p = 0.007$ ) and use of emotions ( $F_{(2-784)} = 6.196$ ;  $p = 0.002$ ), with higher values for older participants (58–76 years). Significant differences were also found for life satisfaction ( $F_{(2-784)} = 3.191$ ;  $p = 0.042$ ).

Tukey's HSD test shows significant differences between participants in the range of 58–76 years of age. The effect size is small in all cases ( $\eta^2$ ).

#### 4.3. Linear Regression Model (Step-by-Step)

To determine the degree of functional relationship between the variables, a linear regression analysis was carried out, including life satisfaction as a dependent variable together with the rest of the research variables, which were entered step by step following the theoretical model proposed (see Table 7).

**Table 7.** Linear regression analysis from the dependent variable Life satisfaction.

Model	Life Satisfaction				
	B	$\beta$	t	$R^2$ Corrected	p
Step 1					
Appraisal of own emotions	0.629	0.471	14.959	0.221	<0.001 ***
Step 2					
Appraisal of own emotions	0.553	0.414	12.150	0.237	<0.001 ***
Appraisal of others' emotions	0.179	0.142	4.184		<0.001 ***
Step 3					
Appraisal of own emotions	0.321	0.240	6.533	0.319	<0.001 ***
Appraisal of others' emotions	0.130	0.104	2.202		<0.001 ***
Use of emotions	0.350	0.345	9.727		<0.001 ***
Step 4					
Appraisal of own emotions	0.238	0.178	4.657	0.340	<0.001 ***
Appraisal of others' emotions	0.104	0.083	2.573		<0.001 ***
Use of emotions	0.304	0.300	8.330		<0.001 ***
Emotional regulation	0.189	0.183	5.138		<0.001 ***
Step 5					
Appraisal of own emotions	0.139	0.104	2.828	0.441	<0.001 ***
Use of emotions	0.132	0.130	3.361		<0.001 ***
Emotional regulation	0.106	0.103	2.946		<0.001 ***
Personal competence	0.614	0.402	9.549		<0.001 ***

Note: (1) \*\*\*  $p < 0.001$ .

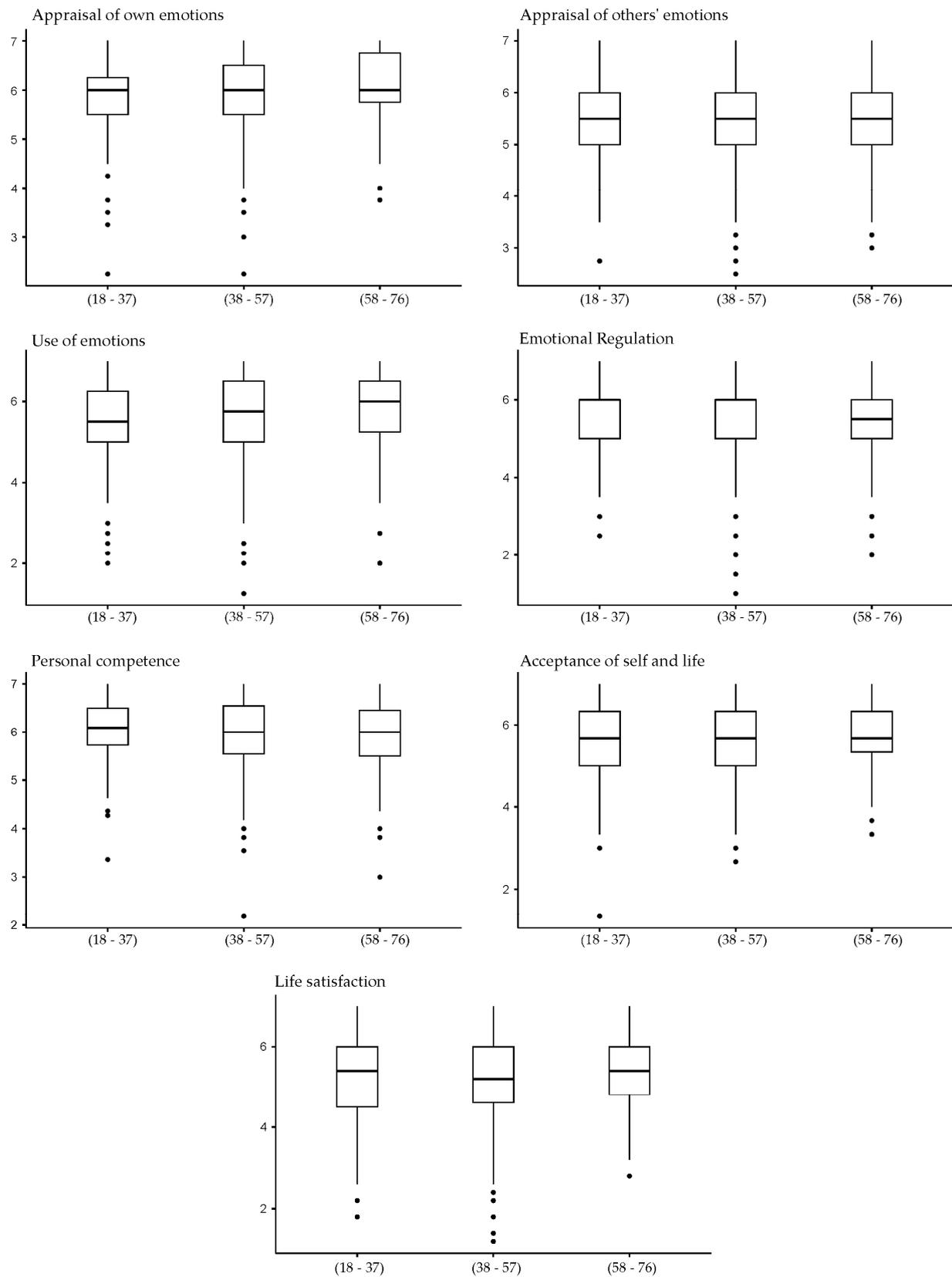


Figure 4. ANOVA according to age in each dimension.

The main contribution is distributed as follows: appraisal of own emotions ( $\beta = 0.104$ ;  $p < 0.001$ ); use of emotions ( $\beta = 0.30$ ;  $p < 0.001$ ); emotional regulation ( $\beta = 0.103$ ;  $p < 0.001$ ); personal competence ( $\beta = 0.402$ ;  $p < 0.001$ ), which present an adequate level of significance and explain positively the regression model with an accuracy of 44.1%. The evaluation of others' emotions was significant in the initial steps of the analysis, but then lost its significance. Similarly, the variable acceptance of self and life did not enter the regression model.

## 5. Discussion

The aim of the research was to evaluate the relationship between each of the dimensions of EI (appraisal of own emotions, appraisal of others' emotions, use of emotions, and emotional regulation), resilience (personal competence, acceptance of self and life), and life satisfaction; furthermore, we aimed to analyse these associations according to gender and age in mountaineers and climbers who have taken some formal training in this discipline. The results showed a statistically significant correlation between EI, resilience, and life satisfaction, which is consistent with different studies that highlight the benefits of physical activities in the mountains as generators of positive emotions [20,34] and greater satisfaction with life. This statement is confirmed by studies already conducted on emotions [35], where physical exercise is a key factor in the increase in serotonin and dopamine that affects emotional state and psychological well-being [21,36]. Some studies show that satisfying basic psychological needs increases task involvement and effort, which favours internal motivational states [37,38]. Other authors [20] analysed satisfaction with mountain sports and the well-being that this activity produces, achieving similar results.

The results demonstrate significant differences between each of the dimensions of the instruments considered and the socio-demographic variable of gender. The results show higher values for women than men in two of the dimensions of EI, on the emotional self-perception and on the other ones, and also in the dimension of resilience, personal competence, and life satisfaction. However, these results should be taken with caution, as the proportion is higher for women than for men. Other authors corroborate these results as women practice mountain activities less than men, data that are consistent with global sport statistics [39,40]. Similarly, Salmela-Aro et al. [3] show that women manage their emotions slightly better than men, in agreement with Acebes et al. [41]. Other studies, such as that of Doyle and Thompson [42], corroborate in their research on stereotypes and EI, with better data in men, although they argue that these results may be conditioned by stereotypes generated over time.

In relation to age, significant differences were found in older participants. This is corroborated by other studies that argue that as people progress through the different stages of life, different physical, psychological, and social changes occur [43], which have an impact on their well-being. Older people may have greater control, emotional maturity, and adaptive response than middle-aged people. Similarly, older people use emotional regulatory strategies depending on the obstacles they face [44].

Regarding regression analysis, the dimensions that predicted greater life satisfaction were appraisal of own emotions, use of emotions, emotional regulation, and personal competence, i.e., people with high levels of EI are more aware of their emotions and have more developed skills to manage them effectively, which in turn can help them better adapt to difficult situations [45]. In addition, resilience and EI may contribute to greater life satisfaction. The most resilient people can face and overcome challenges more easily, and this can help them feel more confident and able to achieve their goals, which in turn may contribute to greater well-being [18]. The influence of EI on performance in mountain and climbing sports seems to be demonstrated [13,14].

## 6. Conclusions

This research has some limitations. Firstly, it is a descriptive cross-sectional study, which implies that causal relationships between variables cannot be estimated, as well as the bias of dealing with mountain and climbing sportsmen and women nationwide. Secondly,

although the sample is large, it is necessary to extend it, as well as to be able to carry out longitudinal or generational studies. Thirdly, the number of participants, mostly men, may have influenced the results found, so caution should be exercised when generalizing these data to the general population. Fourth, the use of structural equations (SEM) would be advisable. SEM would allow more complex relationships between variables to be modelled, and multiple latent variables could be included. In addition, SEM enables the assessment of measurement validity and reliability, and the examination of causal relationships between each of the dimensions, which is not possible with a regression model. Finally, it is suggested that the evaluation of social desirability be considered for future research.

Consistent with the results obtained, the authors point out that each of the dimensions of EI and resilience are variables of psychological adjustment associated with well-being [46], which is key to personal and social growth [47], adaptive processes, and personal competence [48].

The results of this research make two main contributions: on the one hand, it shows a statistical relationship between the dimensions of EI, resilience, and life satisfaction in mountain and climbing athletes that reinforces the proposal to analyse the emotional benefits and development of strategies for the development of EI and resilience; on the other hand it suggests the need to extend the benefits at an early age and, more specifically, in the training of practitioners of this discipline. Likewise, this study points to the need to increase the number of studies that contribute to responding to the questions related to gender, emotional competencies, and sports performance in mountain and climbing disciplines.

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