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RESEARCH ARTICLE

Public Perceptions on Elite Sport's Societal Outcomes: A Validated Scale in a European Context

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ABSTRACT

Studies have demonstrated the potential positive (e.g., inclusion) and negative (e.g., pollution) outcomes that elite sport has on society. Over the years, the interest in measuring these societal outcomes has grown. This research extends previous studies that emphasize the need for a validated scale to accurately measure public perceptions of elite sport's outcomes on society. The purpose of this study was to validate the Mapping Elite Sport's potential Societal Impact (MESSI) scale in a European context. Using a quantitative research design, the MESSI scale was administered to 10,400 European citizens from seven countries (i.e., Belgium, Czech Republic, Finland, France, The Netherlands, Poland, and Portugal). Confirmatory factor analysis was conducted to assess the validity and reliability of the measurement instrument. Results indicated a psychometrically acceptable 68-item 10-dimension MESSI scale. The European population perceived more positive than negative potential societal outcomes of elite sport. The study confirms that the MESSI scale is a valid, reliable, and robust instrument for measuring the perceptions of the potential positive and negative societal outcomes of elite sport. The use of this scale might provide valuable insights for sport policymakers.

Keywords: High performance sport, population, public perceptions, societal outcomes.

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1. Introduction

Across nations, policymakers are required to legitimise their increasing investments in elite sport (De Bosscher *et al*., 2021). It is argued that elite sport can trigger a wide range of positive societal outcomes, such as inclusion (Næss, 2023), national pride (Mutz & Gerke, 2024), and sports participation (Eather *et al*., 2023). Nonetheless, research also shed light on the negative societal outcomes elite sport can spawn, such as increased alcohol consumption (Bandura *et al*., 2024) or stimulation of unethical conduct (Heerdt & Roorda, 2023). However, the evidence base mapping the potential positive and negative societal outcomes is still scarce and fragmented (De Rycke & De Bosscher, 2021; Funahashi *et al*., 2015). Nevertheless, since the tax-paying population is the primary sponsor of elite sport, these investments should yield additional societal values and benefits for the public (De Rycke *et al*., 2019; Van der Roest & Dijk, 2021). In an attempt to facilitate these societal outcomes of elite sport, Van der Roest and Dijk (2021) argue that taking into account the public's perception of elite sport's societal outcomes is essential.

Despite increasing research, the body of evidence regarding societal outcomes primarily includes mixed and contradictory findings (De Rycke & De Bosscher, 2019). This is often the result of a lack of methodological clarity, as there are a wide range of concepts and definitions used to describe the phenomenon (e.g., societal outcomes, societal impact, public values, societal values, etc.). Several researchers (e.g., Lee *et al*., 2013; Van Bottenburg *et al*., 2012) have attempted to research this complex phenomenon. For example, Lee *et al*. (2013) aimed to capture sport's societal outcomes in five dimensions, including social capital, collective identities, health literacy, well-being, and human

capital. However, the employed assessments vary in format and only investigate part of the (perceived) societal outcomes. The most comprehensive framework is the Mapping Elite Sport's potential Societal Impact' (MESSI) framework, proposed by De Rycke and De Bosscher (2019). An extensive literature review resulted in 391 studies that showed evidence of 79 distinct societal outcome areas of elite sport (47 positive; 32 negative) clustered in 10 dimensions: (i) social equality and inclusion; (ii) collective identity, connection and pride; (iii) ethics and fair play; (iv) feelgood and passion; (v) fans and (media) attraction; (vi) prestige and image; (vii) athletes ability and quality of life; (viii) sport participation and health; (ix) sponsors and commercial activity; and (x) local consumption and living conditions. The authors assume that 'intrinsically, elite sport is neither beneficial nor harmful' (De Rycke & De Bosscher, 2019, p. 486), meaning that every dimension includes both positive and negative outcomes. For instance, elite sports' capacity to boost national pride, but chauvinism, when this sentiment becomes excessive, is encapsulated in the dimension of collective identity, connection, and pride.

Subsequently, the authors developed two MESSI scales (De Rycke *et al*., 2019; De Rycke & De Bosscher, 2021). In developing their 32-item scale (De Rycke *et al*., 2019), the authors reduced the initial pool of 79 items to 32 items after checking content validity and performing factor analysis. Although the scale explained 71.9% of the variance in the constructed model, it failed to adequately capture all societal outcomes. For instance, the scale missed important information, such as items related to sports participation, a frequently investigated societal outcome (De Cocq *et al*., 2021). Therefore, De Rycke and De Bosscher (2021) used the 73 items (i.e., remaining items after content validity, but before factor analysis) in their follow-up study. The scales were developed for the specific Flemish context[1]. Besides, the researchers used five-point Likert scales, which are often debated in the literature because they might not accurately measure participant responses (Finstad, 2010).

It remains necessary to validate the measurement instrument further to ensure its applicability across studies and cultural contexts (De Cocq *et al*., 2021; De Rycke *et al*., 2019). Therefore, this study aims to validate the Mapping Elite Sport's potential Societal Impact (MESSI) scale in a European population. Building on the extensive 73-item MESSI scale, this study seeks to provide a comprehensive, validated, and reliable instrument that has the potential to enhance our understanding of perceived positive and negative societal outcomes of elite sport. Furthermore, this study offers a valuable instrument for policymakers to legitimise elite sport investments (De Rycke *et al*., 2019). Additionally, understanding public perceptions of elite sport's societal outcomes is crucial, as the public is the main sponsor of elite sport (De Bosscher *et al*., 2021).

2. Method

2.1. Data Collection and Procedure

This study was part of an Erasmus+ Sport project: 'Athletes 4 Society: Empowering The Public Value Of Sport Through Athletes As Role Models'. Ethical approval was granted by the Ethics Committee of Vrije Universiteit Brussel (i.e., coordinator of the project). Data were collected in August 2021 in seven European countries (i.e., Belgium, Czech Republic, Finland, France, The Netherlands, Poland, and Portugal). A research service company was appointed to obtain a representative sample. Participants were recruited based on age, language, gender, and social class. In total, 10,400 participants were invited to participate in the study. The questionnaire was back-to-back translated into six languages (i.e., Czech, Dutch, Finish, French, Polish, and Portuguese) by native speakers in the project's consortium.

After removing unreliable response patterns, the final sample of the study consisted of 10,155 European citizens: Belgium ($n = 1{,}937$), Czech Republic ($n = 1{,}374$), Finland ($n = 1{,}361$), France ($n = 1{,}344$), The Netherlands ($n = 1{,}370$), Poland ($n = 1{,}375$), and Portugal ($n = 1{,}394$). A slight majority of the participants identified as male (51%). Ages varied between 18 and 79 years old ($M = 47$; $SD = 15{,}98$). Most of the participants had no migration background (88%), were full-time employed (50%), and were married or in a relationship (62%).

2.2. Instrument

This study adopted a scale validation procedure as described in previous literature (e.g., Yamaguchi *et al*., 2022). As mentioned, the study builds upon prior research that seeks to measure public perceptions of the societal outcomes of elite sport through the application of the MESSI scale (De Rycke & De Bosscher, 2021; De Rycke *et al*., 2019). Scale items were constructed based on the 73-item MESSI scale. Similar to the study of De Rycke and De Bosscher (2021), bipolar statements were used for each item to measure the perceptions of individuals regarding the potential positive and negative societal outcomes of elite sport. For example: "In general, I perceive that elite sport… (positive

[1] [1]Belgium consists of two parts: (i) Flanders which is the Dutch-speaking northern part, and (ii) Wallonia which is the French-speaking southern part.

statement) encourages young people to do sport themselves versus (negative statement) discourages young people to do sport themselves". In contrast, this study used a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree) instead of a five-point Likert scale. Research indicates that a using seven-point rating scale is more suitable as this (a) improves validity (Taherdoost, 2019), (b) enables participants to express their feelings more adequately (Finstad, 2010), (c) conveys more useful information (Bendig, 1954), and (d) is most accurate and easier to use (Diefenbach *et al*., 1993). Scores with a critical value of 4.5 or higher (cut-off value as used by Hirschfeld and Thielsch (2015)) were considered as a perceived positive outcome of elite sport.

In order to make the scale applicable to an international context, focus group discussions with international experts ($N = 14$) and academics ($N = 5$) in the field of elite sport's societal outcomes were carried out to ensure content validity. These focus group discussions led to a number of adaptations: (a) five items were removed due to their close resemblance to other remaining items, thereby measuring identical societal outcomes ('promotes/obstructs human justice'; 'provides athletes with a profound/minimal role model function'; 'enhances/declines health awareness'; 'awards sport organisations through ticketing and licensing a profitable/losing source of income'; 'offers sponsors financial profits/losses'), (b) one item regarding the connecting effect of elite sport was added ('produces athletes and teams with whom people feel connected or identify/dis-like or don't want to be associated with'), (c) to establish a clear distinction between adults and youth, the original item regarding sports participation was divided into two items ('encourages/discourages young people to do sport themselves'; 'encourages/discourages the adult population to do sport themselves'), (d) three items were reclassified under a different dimension as they were found to be incongruent with their initially designated dimension. The item 'preserves/ruins nostalgia and traditions' was transferred from ethics and fair play to happiness and experiences; the item 'boosts/deteriorates the image of sport in general' was transferred from international prestige and political power to fans and media; and the item 'discourages/encourages the use of performance-enhancing drugs among elite athletes' was transferred from athletes' quality of life and competences to ethics and fair play, and (e) enhancement of the formulation of statements and refining linguistic expressions (e.g., the rather vague item 'provides athletes/teams where people can relate to in a positive/negative way' was clarified by explicitly stating the, whether or not important, inspirational effect of role models: 'is important/unimportant for providing inspiring role models for young people').

The final instrument that is used in the current study consisted of 70 items divided over ten MESSI dimensions: social equality and inclusion (6 items); collective identity, connection, and pride (6 items); ethics and fair play (9 items); happiness and experiences (6 items); fans and media (7 items); international image and political power (6 items); athletes' quality of life and competences (7 items); sports participation and inspiration (8 items); economic development and partnerships (7 items); and local consumption and environment (8 items).

2.3. Data Analysis

Confirmatory Factor Analysis (CFA) with maximum likelihood (ML) estimation was performed. It was deemed appropriate to conduct CFA rather than exploratory factor analysis since a priori expectations of the factor structure already existed (Funahashi *et al*., 2015). Prior to data analysis, assumptions were checked, revealing no violations and confirming the dataset's appropriateness. Analysis was completed using the statistical software R. Before performing the CFA, the sample was randomly split into two subsamples. One sample was used as a calibration sample ($n = 5{,}077$) to construct the measurement model, while the other sample was used as a validation sample ($n = 5{,}058$) to validate the measurement model. Six common indices were used to assess the goodness-of-fit: (1) chi-square value (χ^2), (2) Root Mean Square Error of Approximation (RMSEA), (3) Comparative Fit Index (CFI), (4) Tucker Lewis Index (TLI), (5) Standardized Mean Square Residual (SRMR), and (6) the Normed Fit Index (NFI). The acceptable goodness-of-fit threshold for each index was set on χ^2 as non-significant, CFI, TLI, and NFI greater than 0.9, RMSEA less than 0.08, and SRMR less than 0.09 (Hooper *et al*., 2008; Hu & Bentler, 1999; Kline, 2005; Wheaton *et al*., 1977). Three tests were employed to assess convergent validity: (1) construct reliability (CR) must exceed the threshold of 0.6 (Bagozzi & Yi, 1988), (2) average variance extracted (AVE) must exceed the threshold of 0.5 (Fornell & Larcker, 1981), and (3) factor loadings must be significant ($p < .05$) and greater than 0.5 (Fornell & Larcker, 1981). As the software R did not provide CR and AVE values, those values were calculated using procedures outlined by Fornell and Larcker (1981). The reliability of the scale was assessed using Cronbach's α, with a cut-off of 0.7 (Nunnally & Bernstein, 1994). Discriminant validity was investigated using two methods as outlined by previous research (Algesheimer *et al*., 2005; Yamaguchi *et al*., 2022). First, correlations between latent constructs must be significantly less than one. Second, significant chi-square differences must be found between the correlation-constrained model and the unconstrained baseline model.

TABLE I: Goodness-of-Fit Indices of the CFA

Model fit index	Computed index for calibration sample	Computed index for calibration sample revised	Computed index for validation sample
X^2	X^2 (2300) = 23532.26; $p < .001$	X^2 (2165) = 21995; $p < .001$	X^2 (2165) = 23027.37; $p < .001$
RMSEA	0.043	0.042	0.044
RMSEA 90% CI	0.042–0.043	0.042–0.043	0.043–0.044
CFI	0.931	0.935	0.932
TLI	0.928	0.932	0.929
SRMR	0.039	0.038	0.037
NFI	0.924	0.929	0.926

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; SRMR = Standardised Mean Square Residual; NFI = Normed-Fit Index.

3. Results

3.1. Assessment of the MESSI Scale

3.1.1. Construction of the Measurement Model

Results of the CFA on the calibration sample showed an acceptable fit to the data: χ^2 (2300) = 23532.26, $p < .001$, RMSEA = 0.043 (90% CI [0.042, 0.043]), CFI = 0.93, TLI = 0.93, SRMR = 0.39, NFI = 0.93 (see Table I). The χ^2 is known to be sensitive to sample size (i.e., the Chi-Square statistic nearly always rejects the model when large samples are used; Hooper *et al*., 2008). Therefore, considering the other goodness-of-fit indices was important. Results showed low factor loadings for two variables (i.e., 'induces/counteracts gambling addictions' and 'exposes/safeguards elite athletes to transgressive behaviour'), resulting in the removal of those two items from the measurement model. Subsequently, the remaining 68 items were again subjected to CFA and revealed the following results: χ^2 (2165) = 21994.96, $p < .001$, RMSEA = 0.042 (90% CI [0.042, 0.043]), CFI = 0.94, TLI = 0.93, SRMR = 0.38, NFI = 0.93 (Table I). With the exception of the χ^2, all goodness-of-fit measures met their recommended thresholds. Moreover, factor loadings were significant and ranged from 0.51 to 0.90. Hence, the measurement model on the calibration sample revealed a reasonable fit.

3.1.2. Validation of the Measurement Model

Results of the goodness-of-fit indices revealed that the 68-item 10-dimension measurement model fit the data of the validation sample well: χ^2 (2165) = 23027.37, $p < .001$, RMSEA = 0.044 (90% CI [0.043, 0.044]), CFI = 0.93, TLI = 0.93, SRMR = 0.04, NFI = 0.93 (Table I). Apart from χ^2, the other fit indices reached an acceptable level. Convergent validity was established: (1) CR values of all constructs exceeded the threshold of 0.6 (Bagozzi & Yi, 1988), (2) AVE values of all constructs exceeded the threshold of 0.5 (Fornell & Larcker, 1981), and (3) as shown in Table II, factor loadings were significant ($p < .05$) and ranged from 0.51 to 0.89 (Fornell & Larcker, 1981). The Cronbach's α indices exceeded the recommended threshold of 0.7 for all latent constructs, indicating reliability (Nunnally & Bernstein, 1994). The evidence for discriminant validity was provided in two stages. First, correlations (± two standard deviations) amongst the latent constructs were significantly less than one, with the exception of the correlation between the constructs of happiness and experiences, and fans and media (Bagozzi & Yi, 1988). As previous studies indicated that the dimensions of elite sport outcomes are highly interrelated (e.g., De Rycke & De Bosscher, 2019), the high correlations observed between constructs were considered acceptable. Second, chi-square difference tests between the correlation-constrained model and the unconstrained baseline model were conducted for each pair of latent constructs (a total of 45 tests) and resulted in significant differences for each test (Algesheimer *et al*., 2005). In conclusion, the measurement model of the 68-item MESSI scale was accepted. Results of the CFA can be found in Table II.

TABLE II: Factor Loadings, Construct Reliability, Average Variance Extracted, Cronbach's Alpha, Means, and Standard Deviations for the Validation Sample (n = 5,058)

	Constructs and items	Mean	SD	β	CR	AVE	α
	Social equality and inclusion	**4.7**	**1.6**		**0.91**	**0.62**	**0.91**
Item 1	Brings people of different religions, cultures, and origins closer **together** versus pushes people of different cultures and origins **further apart**	4.9	1.6	0.83			
Item 2	Increases social **equality** versus increases social **inequality**	4.7	1.5	0.82			

TABLE II: Continued

	Constructs and items	Mean	SD	β	CR	AVE	α
Item 3	Stimulates the **inclusion** of people with disabilities versus stimulates the **exclusion** of people with disabilities	4.9	1.6	0.79			
Item 4	**Narrows** the gap between poor and rich people versus **widens** the gap between poor and rich people	4.2	1.6	0.69			
Item 5	Promotes gender **equality** versus promotes gender **inequality**	4.6	1.6	0.77			
Item 6	**Combats** racism versus **triggers** racism	4.8	1.6	0.80			
	Collective identity, connection, and pride	**5.1**	**1.5**		**0.94**	**0.72**	**0.94**
Item 7	**Creates** a sense of national identity and belonging versus **counteracts** a sense of national identity and belonging	5.1	1.5	0.86			
Item 8	Makes people feel **proud** of their country versus makes people **ashamed** of their country	5.3	1.5	0.87			
Item 9	**Increases** the chance of social contact versus **reduces** the chance of social contact	5.1	1.4	0.85			
Item 10	Creates **more togetherness** versus creates **less togetherness**	5.1	1.5	0.88			
Item 11	Leads to a certain form of **love for your country** versus leads to **extreme chauvinism/nationalism**	4.9	1.6	0.74			
Item 12	Produces athletes and teams with whom people **feel connected/**identify versus produces athletes and teams with whom people **dis-like/don't want to be associated with**	5.1	1.4	0.88			
	Ethics and fair play	**4.8**	**1.5**		**0.95**	**0.66**	**0.95**
Item 13	Encourages behaviour that is **ethically** sound versus encourages behaviour that is **unethical**	4.9	1.5	0.86			
Item 14	Encourages people to **play fair** versus encourages people to **chea**t	5.0	1.5	0.86			
Item 15	Provides an opportunity for **peaceful expression/protest** versus provides an opportunity for **insurrection/rebellion**	4.8	1.4	0.82			
Item 16	Promotes **integer/honest** behaviour outside sport versus promotes **corrupt/dishonest** behaviour outside sport	4.9	1.5	0.87			
Item 17	Encourages a form of competitiveness that is **desirable** versus encourages a form of competitiveness that is **undesirable**	5.0	1.5	0.85			
Item 18	**Counteracts** aggression/violence versus **initiates** aggression/violence	4.7	1.6	0.80			
Item 19	Promotes a lifestyle among young people that is **decent** (as it should be) versus promotes a lifestyle among young people that is **offensive**	5.0	1.5	0.86			
Item 20	**Discourages** the amateur use of performance-enhancing drugs versus **encourages** the amateur use of performance-enhancing drugs	4.5	1.7	0.69			
Item 21	**Discourages** the use of performance-enhancing drugs among elite athletes versus **encourages** the use of performance-enhancing drugs among elite athletes	4.4	1.7	0.69			
	Happiness and experiences	**5.1**	**1.5**		**0.95**	**0.76**	**0.95**
Item 22	Provides **pleasure/joy** versus provides **disappointment/sorrow**	5.2	1.5	0.88			
Item 23	Provides experiences that are **unique** versus provides experiences that are **common**	5.1	1.5	0.86			
Item 24	**Increases** overall happiness/well-being versus **decreases** overall happiness/well-being	5.1	1.4	0.88			
Item 25	Creates **passion/enthusiasm** versus creates **dullness/boredom**	5.2	1.5	0.89			

TABLE II: Continued

	Constructs and items	Mean	SD	β	CR	AVE	α
Item 26	Provides a sense of **success** versus provides a sense of **failure**	5.1	1.5	0.88			
Item 27	**Preserves** nostalgia/traditions versus **ruins** nostalgia/traditions	5.1	1.4	0.85			
	Fans and media	**5.1**	**1.5**		**0.90**	**0.70**	**0.93**
Item 28	Makes society more **attractive** versus makes society more **unattractive**	5.0	1.4	0.88			
Item 29	Is something to **love** versus is something to **hate**	5.2	1.4	0.87			
Item 30	Spawns **positive sport heroes** versus spawns **negative/wrong sport individuals**	5.3	1.5	0.89			
Item 31	Provides **interesting** news versus provides **uninteresting** news	5.1	1.5	0.86			
Item 32	**Increases** the general knowledge of what sport is versus **decreases** the general knowledge of what sport is	5.2	1.4	0.87			
Item 33	**Boosts** the image of sport in general versus **deteriorates** the image of sport in general	5.0	1.6	0.63			
	International image and political power	**4.8**	**1.4**		**0.87**	**0.59**	**0.90**
Item 34	**Stimulates** globalization versus **hinders** globalization	4.9	1.4	0.73			
Item 35	**Strengthens** international prestige of a country versus **diminishes** international prestige of a country	5.2	1.4	0.87			
Item 36	**Enhances** the popularity of politicians versus **lessens** the popularity of politicians	4.2	1.4	0.51			
Item 37	Initiates **peace** versus initiates **war**	5.0	1.4	0.81			
Item 38	**Positively** affects the image of a country city or neighbourhood versus **negatively** affects the image of a country city or neighbourhood	5.2	1.4	0.87			
Item 39	Makes political leaders **gain** power versus makes political leaders **lose** power	4.3	1.4	0.51			
	Athletes' quality of life and competences	**4.8**	**1.5**		**0.86**	**0.59**	**0.90**
Item 40	Leads for most athletes to a life in the **spotlights** versus leads for most athletes to a life in **anonymity**	5.1	1.4	0.74			
Item 41	Provides athletes with a **high** quality of life (well-being) versus provides athletes with a **low** quality of life (well-being)	4.9	1.4	0.76			
Item 42	Provides elite athletes with **valuable** knowledge and skills versus provides elite athletes with **invaluable/useless** knowledge and skills	5.0	1.4	0.85			
Item 43	Puts pressure on elite athletes to perform in that is **desirable** versus puts pressure on elite athletes to perform in that is **undesirable**	4.7	1.6	0.73			
Item 44	Provides elite athletes with **good health** versus provides elite athletes with severe **health issues** (e.g., through injuries/overexertion)	4.5	1.6	0.73			
Item 45	Ensures that elite athletes are **happy** after their sporting careers versus ensures that elite athletes are **unhappy** after their sporting careers	4.7	1.5	0.78			
	Sports participation and inspiration	**5.0**	**1.4**		**0.95**	**0.69**	**0.95**
Item 46	Is **important** to provide inspiring role models for young people versus is **unimportant** to provide inspiring role models for young people	5.2	1.5	0.85			
Item 47	Makes the public **more** physically active versus makes the public **less** physically active	5.1	1.3	0.85			
Item 48	**Encourages** young people to do sport themselves versus **discourages** young people to do sport themselves	5.3	1.4	0.86			
Item 49	**Encourages** the adult population to do sport themselves versus **discourages** the adult population to do sport themselves	5.0	1.4	0.86			

TABLE II: Continued

	Constructs and items	Mean	SD	β	CR	AVE	α
Item 50	Urges people to adopt a **healthier** lifestyle versus urges people to adopt an **unhealthier** lifestyle	5.1	1.5	0.87			
Item 51	Motivates people to project a **realistic** body image versus motivates people to project an **unrealistic** body image	4.6	1.4	0.75			
Item 52	**Inspires** people to volunteer versus **prevents** people from volunteering	4.7	1.4	0.76			
Item 53	Encourages people to adopt the **positive skills and behaviours** of elite athletes versus encourages people to adopt the **negative skills and behaviours** of elite athletes	4.9	1.4	0.85			
	Economic development and partnerships	**5.0**	**1.4**		**0.93**	**0.65**	**0.93**
Item 54	Gives our economy a **positive boost** versus gives our economy the **negative impulse**	4.9	1.4	0.83			
Item 55	Provides the business world a **strong** form of advertising versus provides the business world a **weak** form of advertising	5.0	1.4	0.80			
Item 56	Gives the media a **profitable** source of income versus gives the media a **loss-making** source of income	5.3	1.4	0.76			
Item 57	**Boosts** the sports industry versus **hinders** the sports industry	5.2	1.4	0.82			
Item 58	**Sparks** scientific research and innovative projects versus **dampens** scientific research and innovative projects	4.9	1.4	0.80			
Item 59	**Encourages** companies and people to commit to charity versus **discourages** companies and people to commit to charity	4.8	1.4	0.81			
Item 60	Regularly portrays sponsors in a **positive** way versus regularly portrays sponsors in a **negative** way	5.0	1.4	0.83			
	Local consumption and environment	**4.6**	**1.5**		**0.92**	**0.58**	**0.92**
Item 61	**Increases** general consumption versus **decreases** general consumption	4.9	1.3	0.65			
Item 62	Provides **good** quality job opportunities versus provides **bad** quality job opportunities	4.7	1.4	0.64			
Item 63	Leads to **more** tourism versus leads to **less** tourism	5.0	1.4	0.73			
Item 64	Leads to new (sports) infrastructure that is **valuable** for the population versus leads to new (sports) infrastructures that is of **no use** to the population	4.8	1.5	0.82			
Item 65	Has an impact on the environment that is **positive/beneficial** versus has an impact on the environment that is **negative/harmful**	4.4	1.6	0.79			
Item 66	Leads to (years of) investments that are **justifiable** versus leads to (years of) investments that are **irresponsibly high**	4.5	1.6	0.83			
Item 67	**Positively** affects the living conditions of residents in the neighbourhood of an elite sporting event/infrastructure versus **negatively** affects the living conditions of residents in the neighbourhood of an elite sporting event/infrastructure	4.5	1.5	0.81			
Item 68	Leads to costs in organising elite sporting events that are **justifiable** versus leads to costs in organising elite sporting events that are **unjustifiable/irresponsibly high**	4.2	1.6	0.79			

3.2. Public Perceptions of Elite Sport's Societal Outcomes

European citizens generally perceived more positive than negative outcomes of elite sport. The most positive outcomes were perceived on 'happiness and experiences' ($M = 5.2$, $SD = 1.5$), 'fans and media' ($M = 5.1$, $SD = 1.5$), and 'collective identity, connection and pride' ($M = 5.1$, $SD = 1.5$). On an item

level, the most positive perceptions were perceived on 'spawns positive sports heroes' (item 30; $M = 5.3$, $SD = 1.5$), 'encourages young people to do sport themselves' (item 48; $M = 5.3$, $SD = 1.4$), and 'makes people feel proud of their country' (item 8; $M = 5.3$, $SD = 1.5$). The most negative outcomes were perceived on the dimensions 'local consumption and environment' ($M = 4.6$, $SD = 1.5$), 'social equality and inclusion' ($M = 4.7$, $SD = 1.6$); and 'ethics and fair play' ($M = 4.8$, $SD = 1.5$).

4. Discussion and Conclusion

Given the scarce and fragmented evidence base regarding public perceptions of the societal outcomes of elite sport (De Rycke & De Bosscher, 2021; Funahashi *et al*., 2015), this study aimed to provide a validated and reliable instrument to assess public perceptions of the societal outcomes of elite sport. Accordingly, this paper advances the limited knowledge and extends the existing evidence base regarding the potential positive and negative societal outcomes of elite sport. Previous studies (De Rycke & De Bosscher, 2021; De Rycke *et al*., 2019) lacked validation, were constrained to a specific context (i.e., Flanders), and investigated partial societal outcomes, omitting crucial details concerning specific societal outcomes (e.g., sports participation).

This 68-item MESSI scale represents the ten dimensions of the MESSI framework proposed by De Rycke and De Bosscher (2019), emphasizing that a holistic (i.e., all potential outcomes) perspective on elite sport's outcomes on society is appropriate. Moreover, this scale adopted a multidimensional approach wherein both positive and negative tendencies related to the same construct were measured simultaneously (Lee *et al*., 2013). Such a multidimensional approach is essential and highly valuable, as recent research indicates that elite sport does not exclusively yield positive outcomes (Balk & Veldman, 2023). Furthermore, this study provided a representation of Northern (e.g., Finland), Southern (e.g., Portugal), Eastern (e.g., Poland), and Western (e.g., Belgium) Europe, making the instrument suitable for cross-country comparison and generalisability.

From a practical perspective, the study provides a tool for policymakers to effectively assess public perceptions of elite sport's societal outcomes. This is essential, as there is still a lack of understanding regarding the societal values and outcomes of elite sport and their potential benefits for the population (Maennig & Vierhaus, 2016). Accordingly, policymakers can proactively address the values of the population to enhance positive and reduce negative societal outcomes while simultaneously justifying their elite sport investments to taxpayers (De Bosscher *et al*., 2021) and evaluate the public support of enacted policies (De Rycke *et al*., 2019; Ohmann *et al*., 2006).

This study also has limitations. First and foremost, perceptions can be subjective, biased, and potentially inaccurate (Sant & Mason, 2015; Taks *et al*., 2020). Hence, caution is advised when interpreting perceptions. Second, the study employed a cross-sectional research design. However, research showed that perceptions can be influenced by momentums in sport, such as the Olympic Games or scandals (e.g., Calciopoli Scandal in Italian football; Buraimo *et al*., 2016). Elling *et al*. (2014) demonstrated that elite sport only triggers short-term changes, such as increased pride, while Helsen *et al*. (2022) argued that perceptions can change over time. Therefore, future research can adopt longitudinal research designs to examine the influence of time effects on perceptions. Third, the present study did not consider demographic and socio-psychological variables that might potentially influence individuals' perceptions. Prior research has shown that interest in elite sport (Hallmann *et al*., 2013), consumption of elite sport (De Rycke *et al*., 2019), gender (Hallmann *et al*., 2013), migration background (De Rycke & De Bosscher, 2021), trust in policymakers (Funahashi *et al*., 2015), and athletes as role models (Hallmann *et al*., 2020) might influence perceptions. Balk and Veldman (2023) emphasized clarifying the perspective from which these outcomes are evaluated. The perception of whether a societal outcome is positive or negative depends on the target audience, as well as the societal and psychological contexts and trends in which individuals are embedded. To illustrate, one group might perceive a particular aspect of elite sport positively (e.g., watching a sports game brings happiness, involves alcohol consumption, and loud cheering), while another group might see it negatively (e.g., considering it a disturbance). Therefore, future studies might focus on the influence of social trends and socio-psychological factors on public perception. Finally, this study was limited to a European context, affecting the generalisability of the findings to a global context. Future research should aim to validate the scale for broader, universal (e.g., Asia, North America) application.

In sum, this study aims to validate the MESSI scale in a European context. Study findings support the content, convergent, discriminant validity, and reliability of a ten-dimension 68-item MESSI scale. Study findings established a foundation for generalisability and comparison across contexts while providing a practical tool to map and evaluate the potential societal outcomes of elite sport among the population.

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Conflict of Interest

The authors do not have any conflict of interest to disclose.

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