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EFFECT OF SUPERSTITION AND ANXIETY ON CONSUMER DECISION-MAKING IN TRIATHLETES

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ABSTRACT

Aim/Purpose	The aim of the present study is to investigate how pre-game superstition and anxiety can drive the consumption and purchase of sports products and objects by triathletes.
Methodology	We tested our hypotheses via a cross-sectional study on a sample of N=124 triathletes.
Findings	The results of the Structural Equation Modelling provided evidence of our hypothesized relationship between pre-game anxiety and superstition, and cognitive biases. Pre-game anxiety increases the level of incidence of specific cognitive biases characterized by intuitive and implicit thinking, while superstition leads to more rational and personal cognitive biases, which affect their purchasing of sports products before games and competitions.
Impact on Society	The originality of our work stands in the provision of empirical evidence on the role of superstition and anxiety in characterized consumer decision-making of

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triathletes. Theoretically and practically, our results can extend our knowledge of the role of cognitive factors in consumer behaviors among athletes.

Keywords superstition, anxiety, sports performance, consumer behavior, dual-system theory

INTRODUCTION

Triathlon is a multi-sport endurance event that combines three different sports. It begins with swimming, followed by cycling, and concludes with running. Triathlons vary in distance and are known for testing an athlete's stamina, versatility, and transition skills between the different sports. Sport science researchers have approached triathlons focusing on different aspects, e.g., physical and physiological factors, muscular and physical stress (Dengel et al., 1989; O'Toole & Douglas, 1995; Sleivert & Rowlands, 1996), health risks (Gosling et al., 2010), anxiety and self-regulation (Neubauer et al., 2008), and the role of mood and cognition in pre/post-performance (Heazlewood & Burke, 2011). This is due to both the spread of triathlon and the growing economic impact of triathlon, with an increasing number of researchers within the area of consumer behavior addressing it. Wicker et al. (2012) have attempted to explore the economic industry related to the will of practicing triathlon and the practice itself. Within these aspects, researchers have mainly focused on the sports marketing of triathlon, such as sports expenditure and sports activities consumption, identifying the core characteristics of spenders (Epstein et al., 1996; Wicker et al., 2012). For example, previous studies advanced descriptions concerning individual differences as antecedents of sports expenditure of amateur and elite athletes, identifying the triathletes as an economically interesting target group and providing suggestions for managers and marketers (Wicker et al., 2012).

Numerous studies have stressed the importance of studying how internal psychological factors, such as emotions, beliefs, and attitudes, influence the consumption of sports products before competitions. Velasco and Jorda (2020) examined boredom among athletes and its implications on sports management and consumer behavior. They found that boredom significantly influences athletes' preferences for brands and consumption patterns, including the propensity to overconsume and the search for variety in sports-related products (Velasco & Jorda, 2020). Raggiotto's (2020) two-branch model further elaborates on the psychological constructs that drive consumer behavior in extreme sports, such as triathlon. Raggiotto points out that both self-validation and loyalty are critical in motivating extreme sports consumers to deepen their relationships with the brand, which can manifest in increased spending on products and equipment. Increasing knowledge of the predictive factors of consumer choices can provide advantages to sports managers in terms of targeting products. Likewise, addressing these perspectives from the mental and physical training perspective would yield valuable insights for athletes and trainers to reduce the influence of psychological constraints during pre-game and game conditions. Consumer decision-making can be impaired by the incidence of cognitive biases, which have implications even for their general life situations. Cognitive biases refer to the application of irrational or inadequate models that distort how people understand information and make decisions. Their detrimental effects on individual decisions represent an important challenge for triathletes who have to deal with the stressful conditions of competitions.

In the present paper, we consider two common psychological experiences in extreme sports, namely anxiety and superstition (Wakefield et al., 2017), as internal factors that can drive consumer decision-making and the application of irrational and inadequate models (Rudski, 2001; Sierra et al., 2018). On the one hand, these psychological factors have been largely addressed in sports psychology with a specific focus on their functions and outcomes during pre-game and game conditions (Bleak & Frederick, 1998; Domotor et al., 2016; Flanagan, 2013). On the other hand, in the consumer decision-making field, internal factors such as consumption and spending have been studied in terms of their potential to lead to bad or uninformed decisions (Chou & Chang, 2012; Kramer & Block, 2011), due

to the occurrence of cognitive errors (i.e., cognitive biases). This study provides a common framework to explore the role of individual differences in athletes as antecedents of consumer decision-making. This can support marketing knowledge as well as applied interventions to improve the performance of athletes.

REVIEW OF THE LITERATURE

SUPERSTITION AND ANXIETY IN TRIATHLETES' CONSUMER DECISION-MAKING

Drawing on a sports psychology perspective, antecedents of consumer decision-making that might include the application of irrational cognitive models are pre-game anxiety and superstition. These individual components are commonly studied in the research areas of reasoning and decision-making processes (Epstein, 1994; Johansen & Haugen, 2013; Sadler-Smith, 2011). The main interest of academic literature has been to identify the associations between thinking and paranormal beliefs, superstitious behavior, and unscientific reasoning. This suggests that sports athletes who engage in superstition can be prone to cognitive biases that reflect irrational and inadequate models of reasoning. For example, the consumption of sports products can be made based on the personal beliefs and cultural background of the athlete. At the same time, many authors have tried to understand how anxiety could drive information processes and decision-making (Hsee & Kunreuther, 2000; Loewenstein & Lerner, 2002). Indeed, authors have defined the behavioral tendency of making errors based on preference and judgments by the current emotional state engaging in cognitive biases.

First, superstition is largely diffused in both individual and team sports (Bleak & Frederick, 1998; Buhrmann et al., 1982; Flanagan, 2013). Senseless and irrational beliefs emphasized by magical aura affect the thoughts of the athletes, emerge mostly in situations characterized by uncertainty (Vyse, 1997), and lead individuals to take actions based on those personal assumptions (Keinan, 2002; Schippers & Van Lange, 2006; Womack, 1992). People give their actions and objects (i.e., pre-game rituals, clothes, food) useful, special, and magical significance without regard to technical performance and pre-performance routines (Cohn, 1990; Kramer & Block, 2011; Vyse, 1997). These repetitive, formal, and sequential actions serve to give the athletes the illusion of self and situational control. Being occupied in superstition tunes psychological strain, reduces tension, and gives a sense of control and predictability (Bleak & Frederick, 1998; Calin-Jageman & Caldwell, 2014; Damisch et al., 2010; Keinan, 2002; Schippers & Van Lange, 2006; Womack, 1992).

Second, according to the multidimensional model of sports anxiety (Martens et al., 1990), stress competition and general level of anxiety are linked with the demand perceptions of athletes. If there is a failure in responding to these demands and is perceived to be related to a lack of personal capabilities, then athletes will respond with high levels of cognitive and somatic anxiety, which further increases if linked with goals and performance in competitions (Martens et al., 1990). Several factors may contribute to the development of negative thoughts, feelings of apprehension, and tension associated with a high level of activation of the organisms (Martens et al., 1990): goal, task, and performance' severity, their persistence related to sport participation and the context in which athletes are engaged (Patel et al., 2010). Martens et al. (1990) identified three dimensions of anxiety: cognitive, somatic, and self-confidence. While the cognitive dimensions are more related to a decrease in performance, somatic anxiety improves performance when it is at an optimum level but can lead to poor performance when it falls beyond the optimum level for the athlete. Self-confidence refers to the belief that the athlete can face the tasks and performance required by the sport (Rushall, 1992; Weinberg, 1978).

COGNITIVE BIASES IN TRIATHLETES' CONSUMER DECISION-MAKING

Superstition and anxiety are not related and reflect distinct processes (Bleak & Frederick, 1998; Schippers & Van Lange, 2006). This implies that they can reveal the application of different cognitive

processes in terms of the occurrence of cognitive biases linked to intuitive or rational thought (Epstein, 1991; Hsee & Kunreuther, 2000; Kramer & Block, 2011; Loewenstein & Lerner, 2002; Stanovich et al., 2008, 2014). According to Stanovich et al. (2014), cognitive biases can be categorized as the effects of two separate thinking systems (i.e., System 1 and System 2). These systems have multiple names and different properties. Usually, the two components of the dual system theory are defined as the automatic-intuitive system (S1) and the rational-experiential system (S2) (Evans, 2003; Kahneman, 2003). In the category of System 1, the processing of information is autonomous, dependent on emotion, and under less control by individuals. It is characterized by the encapsulated modules of adaptive learning, impulsive associations, self-regulation, and automatic firing of implicit thought and learning (Stanovich et al., 2014). Examples of cognitive biases of System 1 processes are the Halo Effect (or attribute substitution for an easier question (Kahneman & Frederick, 2002), the Vividness Effect (defaulting to vivid information), the Affection Effect (or the impulsively associative thinking, also known as intellectual laziness (Stanovich et al., 2008)), and the Framing Effect which is largely discussed in heuristic and biases' literature as a choice mediated by the information presentation (Tversky & Kahneman, 1974). Many authors have proposed different definitions of the System 1 features (Bargh, 1994); however, the common characteristics are autonomy and non-optimal responses in decisions with the incidence of the cited processes.

In comparison, the effects involving the autonomous system's inhibitory mechanisms are referred to as System 2 processes. S2 features are the algorithmic and reflective mind (Stanovich et al., 2014), rational thinking and fluid intelligence, individual differences in thinking disposition and goal management concerning open-minded beliefs, and superstition thinking (Evans, 2003; Stanovich et al., 2008, 2014). Examples of S2 are the Confirmation Bias and the Status Quo Biases (Stanovich et al., 2008), which refer to the cognitive effects of internal beliefs marking the information. As one, the Anchoring Bias, a common cognitive bias discussed in the literature, is reported to be the reflection of the internal models of the rationality of one individual.

Ultimately, the automatic system can be driven by the presence of anxiety, while biases related to the rational system can be caused by the presence of superstitious beliefs and rituality (Kramer & Block, 2011). Considering superstition and anxiety as not related (Bleak & Frederick, 1998; Schippers & Van Lange, 2006) and cognitive biases as reflecting one of the two systems (intuitive and automatic system), we can argue that superstition refers to credence and dogmatic beliefs located in the reflective mind, i.e., S2 (Hypothesis 1) while anxiety refers to automatic and associative thinking in the intuitive mind, i.e., S1 (Stanovich et al., 2014) (Hypothesis 2). Based on this analysis, we formulate the following hypotheses:

- H1a:** Superstition (SRQ) will relate to two of the biases considered as cognitive biases of S2.
- H1b:** Superstition will increase the presence of cognitive biases referred to as S2 and S1.
- H2a:** Anxiety (OCSAI) (cognitive and self-confidence) will relate to two of the biases considered as cognitive biases of S1.
- H2b:** Anxiety will increase the presence of cognitive biases referred to as S2 and S1.
- H3:** Cognitive biases will mediate the direct relationship between athletes' perceived performance, superstition, and anxiety.

COGNITIVE BIASES TESTED IN THE PRESENT STUDY

Considering the literature, we selected the following cognitive bias measures: anchoring bias, status quo bias, halo effect, and affection effect. We adapted the cognitive biases tasks to the athletes to assess their information and decision-making processes with regard to their sports product consumption and purchasing.

As described earlier, athletes can have different perceptions about their competition and trial and base their judgment on previous performances and experience, i.e., anchoring bias. We supposed that

the different perceptions of the games are influenced by heuristics and, precisely, by those cognitive shortcuts based on previous information, experience, and internal beliefs (Bunn, 1975; Tversky & Kahneman, 1974).

Status quo bias can be seen in the evaluation process of information, which involves personal beliefs that are not directly linked with the object of choice. Among athletes, specific nutrition and foods are largely diffused. For instance, some athletes prefer specific vitamin supplements over other energetic foods depending on the type of competition. This implies that an athlete's tendency to choose one nutrition instead of another could be driven by the Status Quo bias or the anomaly of repeatedly making the same choice based on internal beliefs (Kahneman et al., 1991).

The *halo effect* refers to the individual tendency to evaluate objects and experiences based on one's personal emotions. In athletes, how the competition or performance will be is a general impression that is influenced by their feelings and internal or external thoughts. This tendency to judge performance and competition is given by a specific cognitive effect where people tend to evaluate information and experience based on previous feelings and thoughts (Leuthesser et al., 1995; Nisbett & Wilson, 1977).

The *affection effect* has been added to the questionnaire to assess the individual tendency to be influenced by risk and thoughts of future events. Indeed, the opinions of the athletes about rituals, sports products, prayers, and food are influenced by judging risks and benefits, which are influenced by positive or negative feelings and impressions about specific details. This choice module is similar to the previous biases mentioned, but in this case, individuals are guided by feelings and beliefs that affect perception and cognition. This heuristic is known in academic literature as an effect of the individuals' affection (Hsee & Kunreuther, 2000).

METHODOLOGY

Following our arguments, we designed a cross-sectional study using superstition behavior scales, anxiety sports scales, and cognitive tasks for the assessment of cognitive biases.

We invited triathletes to voluntarily participate in our research by submitting the linked questionnaire on LimeSurvey (Schmitz, 2012). One hundred and twenty-four Italian triathletes (11.3% females) completed and returned the anonymous forms (age average = 40 years, SD=8.51, range between 16 and 65). The education level reported was "high school degree" for 42.7% (N=53) of the participants and a bachelor's degree for the remaining sample. Moreover, we asked the participants to indicate the type of competitions and their performance. One question regarded their usual standings in races with the item – "Splitting a hypothetical ranking of a triathlon race into three parts, tell in which part you usually are" – with the options of 1/3, 2/3, or 3/3. The second question is how much time they take to complete the races: "Choose the time bend where you place more or less in the Olympic triathlon race (thinking the hardest you have done or if you have ever done an Olympic race but only sprint choose a hypothetical time)." Of the total sample, 19% reported to be "high performers," 47% "medium," and 34% "low." Among the males, 18% reported a timed race of <2hrs 15mins compared to a timed race of <2hr 30mins for females. The majority of participants (79%) were in the medium performance range with time ranging from 2hrs 15mins to 3h for males and 2hrs 30mins to 3hrs for females. The remaining 3%, male and female participants, reported a time range of more than 3hrs.

MEASURES

Superstition. The Superstitious Ritual Questionnaire (SRQ) (Bleak & Frederick, 1998) was developed to evaluate the prevalence of superstitious behavior in sports. The questionnaire consists of 42 items divided into seven sections (clothing and appearance, fetishism, preparation, game/competition, team game, team rituals, and prayer). For the present study, the SRQ was modified to accommodate the nature of the sport investigated and the hypotheses. The sections were reduced from

seven to four (clothing and appearance, fetishism, rituals, and rituality) for a total of 33 items. Responses were given on a 5 point Likert scale (from 1 = never to 5 = always). An example of an item is “I am used to wearing a lucky garment” (from 1 = never to 5 = always) (Cronbach’s $\alpha=.847$).

Anxiety. To measure cognitive anxiety and self-confidence, the Competitive State Anxiety Inventory-2 (OCSAI) by Cox et al. (2003) was used. These authors developed the questionnaire to measure competition anxiety and evaluate three levels of anxiety based on their theory, namely, cognitive, somatic, and self-confidence. This questionnaire, which consists of 17 items, measures the same dimensions in two different situations. In one, participants have to imagine being in a quiet situation (OCSAI-1) and the other during a stressful situation (e.g., in a pre-game condition, OCSAI-2). Due to our interest in anxiety during competitions and games, we only utilized the second time submission form. Responses were based on a 5-point Likert scale (from 1 = never to 5 = always). Examples of items are “I feel happy” or “I’m worried about reaching my goal” (from 1 = never to 5 = always). For the Cognitive Anxiety and Self-confidence dimensions, the Cronbach values were respectively Cronbach’s $\alpha=.831$ and Cronbach’s $\alpha=.925$.

Cognitive Biases. Anchoring bias was measured by adjusting the item to a common question concerning different triathlon races. An example of an item is: “*You are about to start the Olympic Triathlon: How difficult could it be to deal with 10 km on foot? 2- with 40 km? and with 5?*” (1 = not at all, 5 = very much) (Cronbach’s $\alpha=.870$). Given a reference point, the anchoring task measures are reported a second time to evaluate their judgment over time and how it could be influenced by the anchor given.

The status quo bias was tested by asking athletes to imagine themselves in a pre-game condition and to judge their thoughts about the race based on the food supplements given. An example of an item is: “*You are preparing for a race, and you have the bars/gels/supplements you usually use. How much do you feel ready to face it?*” (1 = not at all, 5 = very much) (Cronbach’s $\alpha=.854$).

The halo effect was assessed with items like: “*You are preparing your pole in the exchange area. You cross an athlete with technical equipment that you think of normal quality. In your opinion, how much do you think could be strong?*” (1 = strongly disagree, 5 = strongly agree) (Cronbach’s $\alpha=.804$).

The affection effect was measured by presenting a scenario where a well-known company of sports products has launched new products, and triathletes have to judge if the products were expensive or make reference to their emotional state. An example of an item used is: “*Jacked has just launched a new costume prototype on the market made of highly technical, resistant, and hydrodynamic materials of the latest generation. The cost is around 200 euros. Do you think this product is objectively expensive?*” (1 = strongly disagree, 5 = strongly agree) ($\alpha=.883$).

DATA ANALYTIC PLAN OR STATISTICAL ANALYSIS

The data was analyzed by conducting a correlation analysis between SRQ, OCSAI dimensions, and cognitive biases to determine relationships between the variables. As suggested in the literature, we computed the cognitive biases by summing the task scores where the higher scores reflected the application of irrational models. The results could be positive or negative, which allowed us to assess the direction of the measure and its prevalence (Parker & Fischhoff, 2005). Then, in order to test the dependencies among the set of variables, we conducted a Structural Equation Model (SEM). We hypothesized a positive covariance between Superstition and Anxiety with the cognitive measures of decision-making in purchasing (H1). We predicted Superstition (SRQ) as related to two of the biases considered as cognitive biases of S2 (H1a, SRQ, and S2). Then, we posited a positive covariance between Anxiety (OCSAI), by its cognitive and self-confidence dimensions, with two of the biases considered as cognitive biases of S1 (H2a, OCSAI, and S1). The level of somatic anxiety was excluded from this study due to its relationship with positive effects on performance.

Then, by the variance observed (S), we estimated the parameter by which SRQ and OCSAI modulate cognitive biases referred to S2 and S1 (H1b, SRQ to S2 biases; H2b, OCSAI to S1 biases). Lower levels of superstition and higher levels of anxiety (cognitive and self-confidence) lead to biases of S1 and

vice versa; higher levels of superstition lead to biases of S2 dimensions considered. Finally, we tested the hypothesis that performance will be predicted by superstition and anxiety with cognitive biases as mediators (H3).

All analyses were conducted with IBM SPSS statistics version 21.1 and its added module AMOS (Arbuckle, 2010).

RESULTS

DESCRIPTIVE STATISTICS

In Appendix A, the means, standard deviations, and correlations of the variables are reported. No significant correlations were found between the individual variables and scales. Age showed a negative correlation with cognitive anxiety and a positive correlation with the level of self-confidence. Moreover, no relevant correlations were observed with performance. Consequently, performance as a dependent variable was excluded from our model, and Hypothesis 3 relating to performance was rejected.

HYPOTHESES TESTING

Given the correlations of SRQ, OCSAI, and cognitive biases, we computed the standardized scores to the hypotheses and model testing, represented in Appendix B. According to Schreiber et al. (2006), we patterned SRQ and OCSAI as latent factors with three observed variables for superstition (Appearance, Ritual, and Rituality) and the two of OCSAI (Cognitive Anxiety and Self-Confidence) with a single indicator to the cognitive biases latent variables tested with two observed variables per group: S2 (Anchoring and Status Quo) and S1 (Halo Effect and Affection Effect). We tested the variance between SRQ and OCSAI, which was null. The variables considered were standardized to estimate the reliability of the interaction. For cognitive biases, the path from latent variables to their corresponding observed variable was equal to the square root of the reliability of the observed score. Appendix B reports the three models tested. In the hypothetical model 1, we considered all the possible interactions between variables with a fit index that suggested an acceptable model [$\chi^2(34.64, df=24, p=.64)$; GFI=.94; RMSEA=.060; CFI=.90.2]. Based on our Hypotheses 1a, 1b, 2a, 2b, and 3, not all the moderation effects have been found significant. Hypotheses 1a and 2a were partially confirmed. The relationship between SRQ and S2 showed a significant correlation but not with S1. Vice-versa, the relationship between OCSAI and S1 and S2 was significant in both groups of observed variables (H1a and H2a). The second hypothesis has been confirmed by the null variance between SRQ and OCSAI. Therefore, we tested a second model (Model 2), keeping only the moderating effect of the OCSAI with S1 and S2 while the SRQ with S2. This interaction path elimination resulted as an increment of acceptable index: [$\chi^2(35.37, df=25, p=.82)$; GFI=.941; RMSEA=.058; CFI=.91]. While the chi-squared increased, we found a small reduction in GFI and RMSEA. According to the guidelines of Schreiber et al. (2006), we tested a third model (Model 3), eliminating the moderating effect of SRQ to S1 and OCSAI to S2. This attempt resulted in more linearity with literature and produced an increment of index and coefficients [$\chi^2(35.44, df=26, p=.10)$; GFI=.941; RMSEA=.054; CFI=.92]. The GFI, RMSEA, and CFI parameters were acceptable, according to Leung and Tan (2018). In the final model, the latent variables, SRQ and OCSAI, resulted in positive correlations with S2 ($\beta=.36, p=.03$) and with S1 ($\beta=.40, p=.28$) and the covariance between SRQ and OCSAI was null, ($\beta=.03, p=.63$).

CONCLUSION

The study aimed to understand how consumer decision-making can be influenced by the relationship between superstitions and anxiety (Bleak & Frederick, 1998; Block & Kramer, 2009; Kramer & Block, 2011; Schippers & Van Lange, 2006), considered as important cognitive factors elicited during the pre-game experiences of athletes. We found that superstition elicits rational cognitive biases while

anxiety leads to more intuitive cognitive biases, which is reflected in the purchasing of sports products.

Triathletes are prone to physical and muscular stress, risk-taking, and difficult competition, but there are also many other variables that underscore their psychophysical conditions. Feelings, emotions, anticipatory thoughts, and stressful situations force the cognitive processes of athletes, leading them to make systematic errors and automatic decisions. The cognitive pressure of high demands of games and sports is not necessarily related to consumption, but in the case of anxiety and superstition, we see the likelihood of athletes being engaged in fallacious cognition of purchasing as guided by their personal beliefs or emotion appraisals (Epstein, 1991). Consumers' choices are important in the area of offers, marketing fields (Mullin et al., 2014; Wicker et al., 2012), and demands. Understanding athletes' choices between one or more objects offers several implications for the same athletes, trainers, and marketers. As argued, competitions and high-pressure activities are related to the high impact of emotional demands and chronic attention on unrealistic beliefs and emotional appraisals, which influence purchasing and pre-competition behavior.

In the present study, we addressed the gap concerning how triathlon competition can affect the consumer behavior of athletes by increasing superstition and anxiety, which in turn leads to specific cognitive biases. Then, we contribute to the literature by providing evidence about the relationship between anxiety superstition and branding for athletes. However, the non-significant results with performance resulted in an important limitation to our study. Future research might focused more on the nature of the construct and design studies incorporating specific measures regarding the performance expectations considering the evidence in all the scientific fields mentioned in this study (Bleak & Frederick, 1998; Block & Kramer, 2009; Cox et al., 2003; Epstein, 1991; Johnson, 2006; Kramer & Block, 2011; Renfree et al., 2014; Schippers & Van Lange, 2006; Stanovich et al., 2014; Wicker et al., 2012). Through more studies, significant insights will be gained to sustain the demands of athletes, specifically elites (Flanagan, 2013), who are generally more at risk of stressful experiences, given their constant training and competition.

Even though our study revealed interesting results and one important limitation with regard to performance, there are a few limitations that call for attention and can direct future studies. First, the sample composition limits the possibility of generalizing our results. The total sample consisted of triathletes of Italian origin, with a predominantly larger percentage of males. Increasing the number of subjects will lead to better statistical power to reach the relations and test the model, considering performance as the antecedent of superstition and anxiety. Also, only focusing on triathletes does not guarantee to have the same results in other types of sports. To solve these limitations, future studies are recommended to include athletes from different nations to ensure that specific social norms do not influence the results of the research. It is also desirable to involve a larger number of athletes from different types of sporting specialties and with more equal representation between men and women. Another limitation that stems from self-reported data is social desirability bias, especially for the answers provided by the athletes to items relating to participants' cognitive biases. It is possible that athletes might have under/or over-reported cognitive biases in an attempt to understate/or overstate these behaviors. Future studies could deal with this limitation by incorporating some indirect measures or even behavioral observations that are less susceptible to social desirability bias, such as reaction time tasks.

To conclude, several studies in sports psychology have been conducted concerning physical and physiological factors, muscular and physical stress, anxiety and self-regulation, mood, cognition, pre/post-performance, health risks during competition, and decision-making as it relates to performance. However, viewing sports through the lens of economic demands and offers can advance our understanding, which is valuable both for general and applied knowledge. As we have emphasized, the field of superstition and anxiety in consumption behavior is timely and relevant. This is especially

true in the case of athletes who have to be considered as specific individuals where several factors interact. Even if more steps need to be done in order to gain more in-depth knowledge, this study provided a suggestive initial insight into the consumer psychology of athletes.

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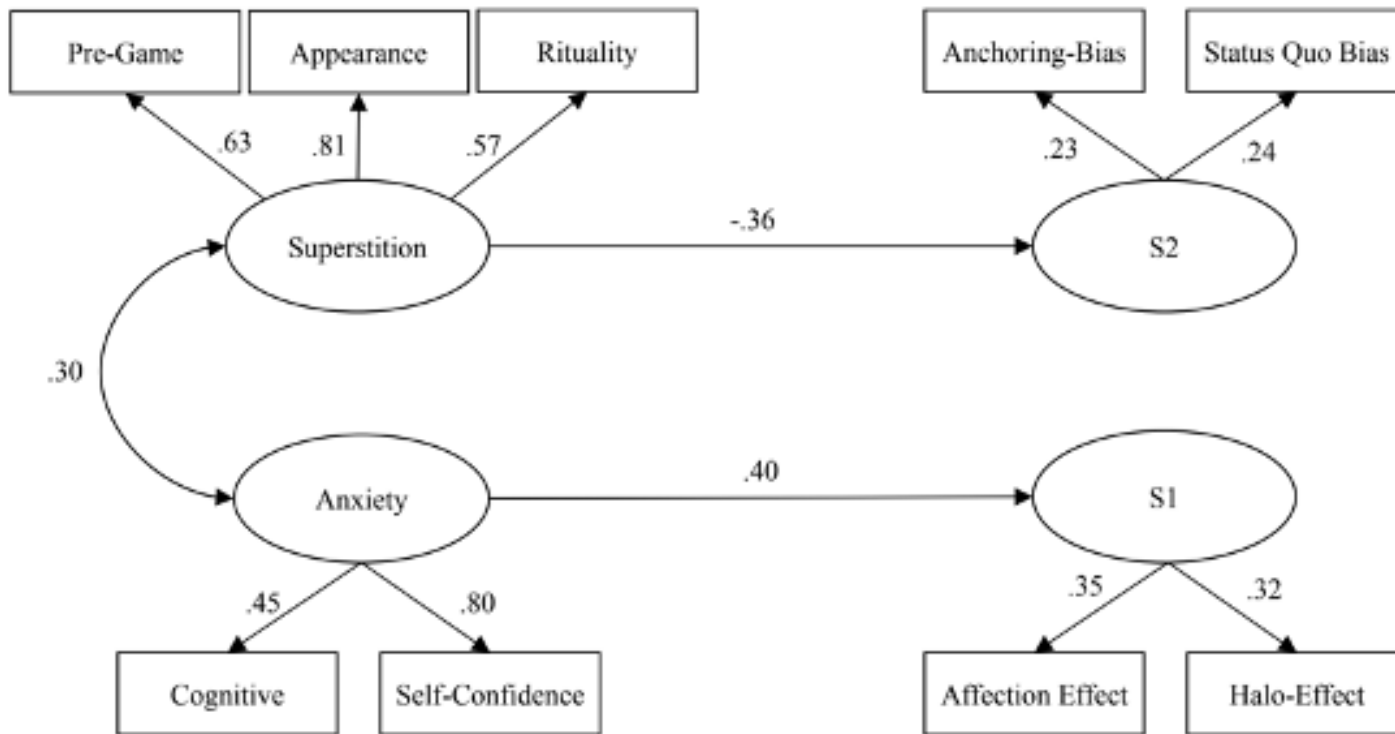
APPENDIX A. CORRELATION MATRIX OF THE VARIABLES WITH MEANS AND STANDARD DEVIATION IN THE SECOND COLUMN

	M(SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Gender	1.11(.32)														
2. Age	39.60(8.51)	-.12													
3. Education	3.68(1.86)	.08	-.02												
4. Job	3.79(1.93)	-.07	-.07	.11											
5. Performance 1	1.86(.71)	-.08	.19*	-.03	-.02										
6. Performance 2	1.87(.44)	-.13	.16	-.03	-.07	.41**									
7. Cognitive Anxiety	2.45(.66)	.13	-.20*	.02	.14	.21*	.08								
8. Self-confidence	3.24(.81)	-.13	.34**	-.04	-.14	-.09	-.10	-.39**							
9. Superstition Appearance	1.55(.39)	.06	-.09	.06	-.13	-.095	-.24**	.14	-.01						
10. Superstition Pre-game	1.92(.50)	-.20	-.10	-.06	.02	.09	-.16	.21*	.04	.42**					
11. Superstition Prayer	1.38(.53)	.01	-.04	.13	-.07	-.02	-.14	.09	.01	.54**	.34**				
12. Anchoring Bias	.40(.35)	.04	.03	-.07	.01	.18*	-.12	-.04	-.07	.03	.12	.16			
13. Status Quo	.96(.70)	-.05	.07	-.04	-.03	-.14	-.11	-.28**	.21*	.11	.11	-.01	.03		
14. Affection Effect	1.17(.91)	.07	-.04	.05	.07	-.11	-.16	.11	-.23*	.14	-.04	-.03	.04	.08	
15. Halo Effect	.59(.57)	-.10	-.09	.03	.09	.01	-.06	.04	-.28**	-.11	.06	-.05	.19*	.05	.29**

Note. Gender: 0 = woman. 1 = men; Education: 1 = Elementary school; 2 = Lower general secondary education; 3 = Higher general secondary education; 4 = Preparatory vocational education; 5 = Higher professional education; 6 = Bachelors' degree; 7 = Masters' degree; 8 = Ph.D.; 9 = Other. Job: 1 = Labourer; 2 = Employee; 3 = Manager; 4 = Business Owner; 5 = Entrepreneur; 6 = Student; 7 = Homemaker; 8 = Freelance; 9 = Retired; 10 = Unemployed; 11 = Other.

* $p < .05$. ** $p < .01$.

APPENDIX B. HYPOTHESIS AND MODEL TESTED



AUTHORS



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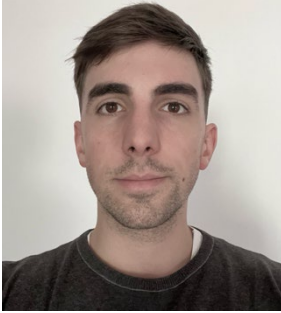
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