



Behavioral Economics: its influence on the prediction of sports results

Economía conductual: su influencia en la predicción de resultados deportivos

Dr. Armenio Pérez-Martínez director of the Department of Scientific, Technological and Innovation Research at the Vicente Rocafuerte Lay University in Guayaquil (Ecuador). (aperezm@ulvr.edu.ec) (<https://orcid.org/0000-0002-9491-6938>)

Dra. Aimara Rodríguez-Fernández principal of the Vicente Rocafuerte Lay University of Guayaquil (Ecuador). (airodriguezr@ulvr.edu.ec) (<https://orcid.org/0000-0002-6654-2588>)

Abstract

Behavioral Economics provides valuable knowledges on the operation of economic agents, away from the conception of unlimited rationality. Currently it applied in many areas of social life such as behavioral finance, neuromarketing, public policies, savings, public health, etc. Games activity generates random significant economic results and the number of people who bet grows every year. In this scenario sports predictions must be analyzed from the insight provided by behavioral economics to understand the determinants of the decisions of individuals. The present study aims to analyze the presence of cognitive biases affecting the prediction of sports results. an experiment in theoretical orientation of pre-experimental type was designed with the participation of 66 subjects, who were to make estimates sports scores from 6 scenarios created. It can be concluded that sports predictions operate under the principle of limited rationality, presenting characteristics of intuitive thinking in decisions, as well as the representativeness heuristic and optimism biases, over-inference, hot hand and small numbers. The findings of this pre-experiment point to the presence of excess confidence in previous knowledge, experience and intuition, undervaluation of statistical information and influence of affective components in decisions about sports prediction.

Resumen

La economía conductual aporta valiosos conocimientos sobre el funcionamiento de los agentes económicos, alejándose de la concepción de racionalidad ilimitada. Actualmente se aplica en múltiples áreas de la vida social como las finanzas conductuales, el neuromarketing, las políticas públicas, el ahorro, la salud pública, etc. La actividad de juegos de azar genera importantes resultados económicos y la cantidad de personas que apuestan crece cada año. En este escenario, las predicciones deportivas deben ser analizadas desde el conocimiento que aporta la economía conductual, para comprender las determinantes de las decisiones de las personas. Este estudio pretende analizar la presencia de sesgos cognitivos que influyen en la predicción de resultados deportivos. Se diseñó un experimento de orientación teórica de tipo preexperimental con la participación de 66 sujetos, quienes debían realizar estimaciones de resultados deportivos a partir de seis situaciones hipotéticas creadas. Se puede concluir que las predicciones deportivas operan bajo el principio de la racionalidad limitada, al presentar características del pensamiento intuitivo en las decisiones, así como el heurístico de la representatividad y los sesgos del optimismo, la sobre inferencia, la mano caliente y los pequeños números. Los resultados de este preexperimento apuntan hacia la presencia de un exceso de confianza en el conocimiento previo, la experiencia y la intuición, subvaloración de la información estadística e influencia de los componentes afectivos en las decisiones de predicción deportiva.

Keywords | palabras clave

Economics, behavioral economics, bounded rationality, intuition, cognitive biases, sports economics.

Economía, economía conductual, racionalidad limitada, intuición, sesgos cognitivos, economía deportiva.

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1 Introduction

The conception of homo economicus, a pillar of conventional economic thought, is supported by the theories of rational choice (Abitbol & Botero, 2005; Vidal, 2008) and expected utility (López, 2016), respectively. These theories establish the criterion that man has the ability to correctly analyze the probabilities and benefits of each alternative in a decision of any nature; consequently, he will opt for the option that generates the highest dividends. However, the rational character of the human being has been overestimated in economics throughout its history as a science, surpassing the true potentialities of cognitive and metacognitive processes (Stanovich, 1999); which generates continuous failures in his decisions.

Behavioral economics is a branch that has gained significant space in the contemporary epistemological construction of economic sciences. Therefore, it is impossible to ignore the main results obtained through social experiments and theoretical research, and the consequent epistemological implications for the economy, traditional economic mechanisms such as finance, public policies, consumption, etc.; and the conception of man (Elster, 2002).

Behavioral economics is considered to be “an evidence-based discipline focused on the development of empirical research. In this sense, it is not something revolutionary, but rather a return to the type of discipline with an open and intuitive mind” (Tejedor-Estupiñán, 2020, p. 11). Therefore, it focuses attention on the human conditions and characteristics of this social science, providing a more human, committed, complex and interdisciplinary dimension.

According to Matute (2019), the vulnerability of the human mind is the cause of multiple contemporary social problems, associated with public health, energy consumption, violence, etc. The uncertainty under which these decisions are made generates a significant risk that influences the processing of information and enables the implementation of adaptive-evolutionary mechanisms of the human species. Therefore, his main contribution and scientific novelty lies in the discovery of the determinants of the decisions that the human being makes and, consequently, acts on.

The ideas about the presence of failures in the cognitive processes that do not allow the maximum benefit to be achieved, are accepted by a greater number of professionals in the economic sciences; consequently, they propose strategies to influence decisions. According to the contribution of Arenas (2021):

The problem of bounded rationality leads to the fact that, based on biases of availability, representativeness, confirmation of hypotheses, among others, consumers can make decisions that do not maximize their well-being or correspond to the perfect realization of the assumptions of microeconomics. (pp. 6-7)

The scientific literature on behavioral economics, including authors such as Daniel Kahneman, Amos Tversky, Richard Thaler, Cass Sunstein, Dan Ariely, among others, have paid increasing attention to heuristics and cognitive biases, understood as systematic errors in thought, where the individual's judgment deviates from what would be considered desirable from the perspective of accepted norms, or from what is correct in terms of formal logic. Their constant and predictable presence in human decisions and their influence on production, exchange, and consumption processes lead the areas of interest of behavioral scientific research applied to economics. However, its application in other non-economic activities gains more importance every day, where human judgments, evaluations, and decisions have consequences on the results of these actions.

The discovery of heuristics and cognitive biases was due to the creative and disruptive research of Daniel Kahneman and Amos Tversky in the 1970s (Tversky & Kahneman, 1971, 1974), although there was already enough evidence to question the paradigm of rational man beforehand (Katona, 1951; Simon, 1955, 1957). Its rise is due to the interest in understanding the determinants and human functioning within economic relations, trying to predict various behavior patterns. However, these classical authors could not imagine the multiple areas of application of their postulates.

It is important to recognize that all human beings incur cognitive biases and that these are to some extent predictable. The information processing capacity is limited, as well as the concentration of attention in this process. These errors are not random, but are the result of heuristics or mental shortcuts, so they are largely predictable (Kahneman, 2017).

People's responses can be more intuitive and quick than thoughtful and rational at times. Many of these distortions or anomalies have been experimentally studied (Sunstein & Thaler, 2017), demonstrating the possibility of testing behavioral economics theory.

Experimental designs are widely accepted and relevant to the construction of knowledge in the social sciences, specifically in the behavioral sciences. The importance of the application of theoretically oriented experiments lies in recognizing the existence of empirical regularities that affect the conventional explanation about the functioning of economic and social institutions.

An area where knowledge on behavioral economics has been applied is in sports betting (Varela & del Corral, 2019). The prediction of sports results is considered a rational process that depends on the experiences, and information available to the agent at the time of doing it. However, reality points to the diversity of alternatives selected by people in the same situation, calling into question the supposed rationality and optimization of the result.

The objective of this research is to analyze the presence of cognitive biases that affect the prediction of sports results, based on the application of a theoretically oriented experiment designed for this purpose. An applied field research was carried out, with a pre-experimental design, due to the low control of the participants and the variables that can influence the obtained results.

The structure of the research is oriented to the development of a pre-experiment, based on the design of situations so that the participating subjects make decisions based on sports predictions. This allows corroborating the presence of certain heuristics and cognitive biases, contributing to the theoretical foundation of these failures of rationality in this type of prediction.

2 Materials and method

There is an agreement with the authors Arechar, Brandt and Díaz, when they state that experimentation is "one of the main tools that Economics and other Social Sciences have in order to obtain information that allows them to understand, first-hand, people's decisions, including testing interventions in a controlled environment" (2018, p. 1).

The methodology used for this study is based on Miller's (2006) proposal of the theoretical orientation experiment. This has antecedents such as the works of Maurice Allais (1953) and those of Tversky and Kahneman (1974, 1983). Since then, there has been a tradition of conducting field or laboratory experiments to demonstrate and

argue the presence of heuristics and cognitive biases, which are the fundamental theoretical pillar of behavioral economics (Giarrizzo & Maceri, 2019).

Theoretical orientation experiments seek, through an intentionally designed situation, to reconstruct or contrast the validity of a certain theory, theoretical hypothesis, or explanatory mechanism. According to Greenwood (1976), the experimental method is defined based on the following characteristics: it presents a causal hypothesis; uses contrast situations to study theory, and contrast situations are applied under the control of the researcher. "Theoretical orientation experiments aim to reconstruct a certain theory in the laboratory and, in this way, study the effect produced by the explicit manipulation of its different components" (Miller, 2006, p. 98).

The approach of the proposed research is a descriptive pre-experiment, designed in a process of choice context. The pre-experiment was applied since it is not possible to randomly recruit the participants in the groups that will receive the experimental treatments, nor is it possible to control all the variables that influence individual choice (Arechar et al., 2018).

Following the proposal of Miller (2006), the first step is to have a theory whose scope is well defined, pretending that the specifications of the experiment adjust to the scope and conditions of said theory. When analyzing a theory, its confirmation or refutation will depend on the ability to recreate the essential aspects in the experiment.

2.1 Participants

For the development of the study, the participation of three groups of students from the Vicente Rocafuerte Lay University in Guayaquil was requested, as shown in Table 1. The selection of these groups was made based on the criterion of intentionality.

Table 1

Composition of the experimental group

Group of origin	Total people	Voluntary participants	%
Cohort I Masters in Education (2021-A)	23	21	91.3
First Semester in Economics (2021-A)	20	17	85
Fifth Semester in Economics (2021-A)	29	28	96.5
Total	72	66	91.6

The participants became involved in the study by volunteering to collaborate. Therefore, the selection does not correspond to probabilistic criteria, but to the availability and accessibility of the researcher with the subjects, recognizing that this topic is alien to their student interests.

Due to the characteristics of the designed study, sociodemographic variables (age, sex, economic level, etc.) are not recognized, since this research only intends to demonstrate the presence or absence of cognitive biases in sports predictions, regardless of the influence of sociodemographic variables mentioned above. However, for future studies these criteria can be taken into consideration if the aim is to determine the incidence of these in the cognitive biases that influence sports prediction.

2.2 Design

One of the elements to consider in this type of experimental design is its artificial nature, since the researcher constructs the situation that best recreates an existing theory.

The recognition of the internal validity of this type of experiment depends on the adequate relationship established between three essential components: reality, theoretical knowledge and experimental design. It is essential that the theory adequately explains reality, allowing it to be reproduced at the laboratory level (Miller, 2006).

For the design of the theoretical orientation pre-experiment carried out, a sequence consisting of four steps was applied, from the definition of the study to the analysis of the information collected.

2.2.1 Step 1: Study Definition

The definition of the investigation is carried out. The information to be obtained is delimited, from the lines of analysis to the interpretation of the results, as well as the control of the environment. This study aims to demonstrate the influence of cognitive biases in predictions of sports results, through the violation of the principle of invariance (the choice of one element over another will be maintained in any situation that arises), by stating that the selected option is a decision that must be maintained, even if the way in which the information is presented changes (Belaus et al., 2016).

The scientific ideas to be contrasted, based on the theory of behavioral economics, through the design of the research are the following:

- People tend to change their preferences when receiving increasing information about a sporting situation, without changing the initial conditions.
- Intuitive thinking, such as the representativeness heuristic, optimism biases, overinference, hot hand and small numbers, influence decisions about sports predictions, causing people to make decisions that deviate far from the expected results.

Taking into account these scientific ideas, probability estimates are investigated in situations in which chance intervenes, taking predictions of sports results as a context. In front of each situation designed in the reagent, the presence of elements of intuitive thought is evidenced, which guide the person to make mistakes in their decisions.

The designed experiment does not use incentives (Arechar et al., 2018b; Arechar et al., 2018a). It is recognized that this aspect can influence the results of the study, since performance incentives can affect behavior and decisions, guaranteeing the involvement of the subjects participating in the experiment.

2.2.2 Step 2: Recruitment of participants

To carry out the recruitment of the participants, the invitation was made through email, indicating the link that they could access if they decided to participate in the study. It was made clear that the experiment was completely voluntary and anonymous.

2.2.3 Step 3: Application of the designed reagent

From the moment they access the designed situations reagent, they can answer the questions. No question can be left unanswered. The estimated duration when doing it did not exceed three minutes. Results were automatically recorded, therefore subjects only have to choose their answer option.

2.2.4 Step 4: Information Collection

For the collection of information, the results offered by the Survey Monkey software were used. This allowed performing percentage analyzes and frequency analyzes (mode) for the different situations.

2.3 Materials and instrument

The reagent was built from the hypothetical (but probable) proposal that two teams meet in a Soccer Tournament on the 6th matchday, with the same number of points. It is known that in this sport the victory has a value of 3 points and the tie of 1 point; therefore, for the team to have 9 points in five games, it can only be if: a) they have won three games and lost two games; b) has won two matches and drawn three matches. For both cases, the same number of points is obtained, but with a different sequence of results.

The reagent is composed of six situations and three response options each. The designed situations are based on uncertainty, where chance intervenes. It was placed on the specialized Survey Monkey platform for surveys. The answer options are the same for all six situations:

- Team A beats team B.
- Team B beats Team A.
- Teams A and B tied.

The situations created and their characteristics are as follows:

Situation 1: Teams A and B are playing a soccer tournament. Both teams have 9 points and face each other on the sixth matchday. What do you think will happen? This situation was designed with little information on how both teams obtained the points and without any affective involvement on the part of the participants.

Situation 2: Teams A and B are playing a soccer tournament. Both teams have 9 points and face each other on the sixth matchday. Team A has 3 wins, 0 draws, and 2 losses. Team B has 2 wins, 3 draws, and 0 losses. What do you think will happen? This situation introduces a higher level of information than in the previous situation, therefore the numbers of wins, losses, and ties for each team appear.

Situation 3: Teams A and B are playing a soccer tournament. Both teams have 9 points and face each other on the sixth matchday. Team A has 3 wins, 0 draws, and 2 losses. Team B has 2 wins, 3 draws, and 0 losses. Their results are displayed in the following sequence: Team A: Win-Loss-Win-Loss-Win. Team B: tie-tie-tie-win-win. This situation shows the sequence of the results that the teams obtained; therefore, it contains more information than the previous two situations.

Situation 4: the FAVORITE teams (the team of your choice) and the RIVAL (any other team) are playing a soccer tournament. Both teams have 9 points and face each other on the sixth matchday. What do you think will happen? This situation is similar to situation 1, but elements of affective involvement are introduced to obtain possible

variations in the probabilities of occurrence of the expected result, according to the criteria of the participants.

Situation 5: the FAVORITE teams (the team of your choice) and the RIVAL (any other team) are playing in a football tournament. Both teams have 9 points and face each other on the sixth matchday. Your FAVORITE team has 3 wins, 0 draws, and 2 losses. The RIVAL team has 2 wins, 3 draws, and 0 losses. What do you think will happen? It is related to situation 2, elements of affective involvement are introduced.

Situation 6: the FAVORITE teams (the team of your choice) and the RIVAL (any other team) are playing in a soccer tournament. Both teams have 9 points and face each other on the sixth matchday. Team A has 3 wins, 0 draws, and 2 losses. Team B has 2 wins, 3 draws, and 0 losses. Their results are displayed in the following sequence: Team A: Win-Loss-Win-Loss-Win. Team B: tie-tie-tie-win-win. It is linked to situation 3, there is a higher level of information about the results, and the affective involvement in the response of the subjects is also taken into account.

The web link where the reagent is found is as follows: <https://bit.ly/3GGbTmW>

2.4 Data collection

The data was collected from the information provided by the Survey Monkey program. For the elaboration of the frequency tables, the EXCEL program and its statistical package were used to determine the percentage values and the mode in the analysis of each situation (Morales, 2008).

2.5 Ethical aspects of research

It was determined that the designed situations present a topic without moral implications for people, being in the public domain. The knowledge about soccer and the possibility of predicting the results does not generate contradictions or moral conflicts among the people who participate in the theoretical orientation experiment.

The conditions of anonymity are guaranteed to the participants, since they answer an online survey, in which no personal or socioeconomic data is requested. However, these conditions can become uncontrolled aspects, since it is not possible to control the environment of the subjects when answering the instrument.

3 Results

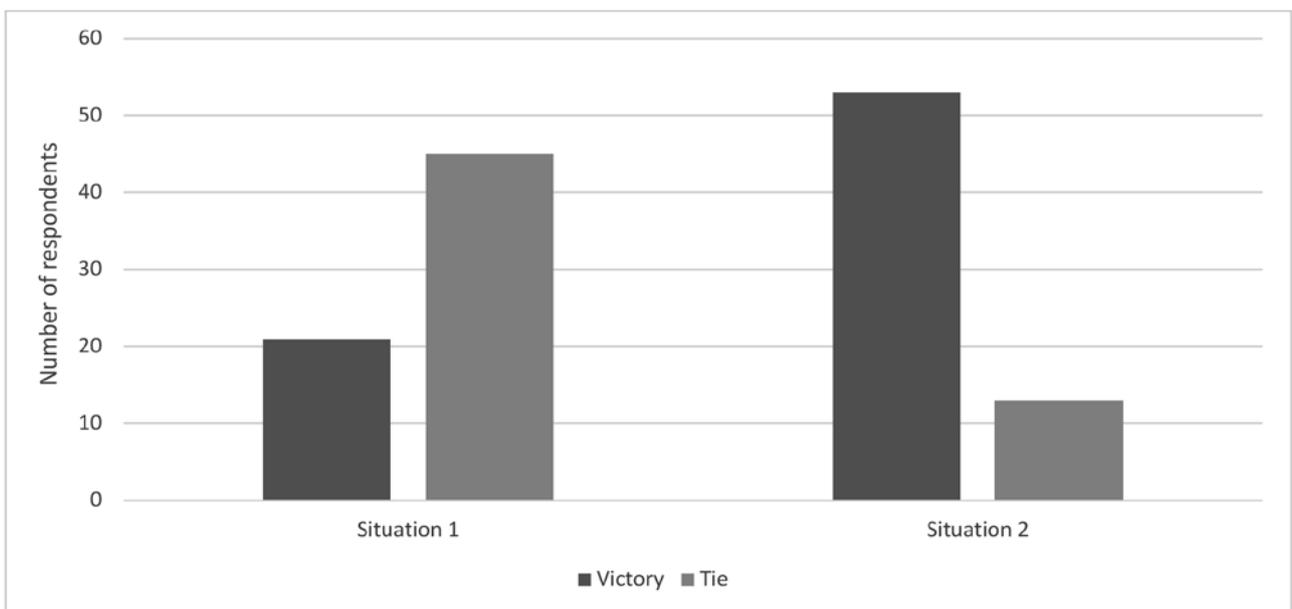
The answers of the 66 students surveyed are collected in table 2. In addition, the percentage analysis and the mode for each of the situations are included.

In the responses to situation 1, a high number of responses can be seen (45 respondents, 68.2%) who indicate a draw as the most likely result when the two teams face each other with the same number of points on the sixth matchday of a tournament; meanwhile, only 21 respondents (31.8%) consider that one of the two teams should win.

In Scenario 2, providing more information about how they obtained the same number of points, significantly increases the number of people who consider a win for one of the two teams (53 respondents, 80.3%) to be more likely than the tie (13 respondents, 19.7%). This result contrasts with that obtained in situation 1, where the majority indicated a tie, as shown in graph 1.

Table 2*Determination of frequency by response to each question*

Situation	Response	Number of responses	% Of responses	Mode
1	Team A wins	13	19.7	Tie
	Team B wins	8	12.1	
	Tie	45	68.2	
2	Team A wins	24	36.4	Team B wins
	Team B wins	29	43.9	
	Tie	13	19.7	
3	Team A wins	16	24.2	Team B wins
	Team B wins	40	60.6	
	Tie	10	15.2	
4	Team A wins	40	60.6	Team A wins
	Team B wins	21	31.8	
	Tie	5	7.6	
5	Team A wins	24	36.4	Team B wins
	Team B wins	30	45.5	
	Tie	12	18.1	
6	Team A wins	23	34.9	Team B wins
	Team B wins	31	47	
	Tie	12	18.1	

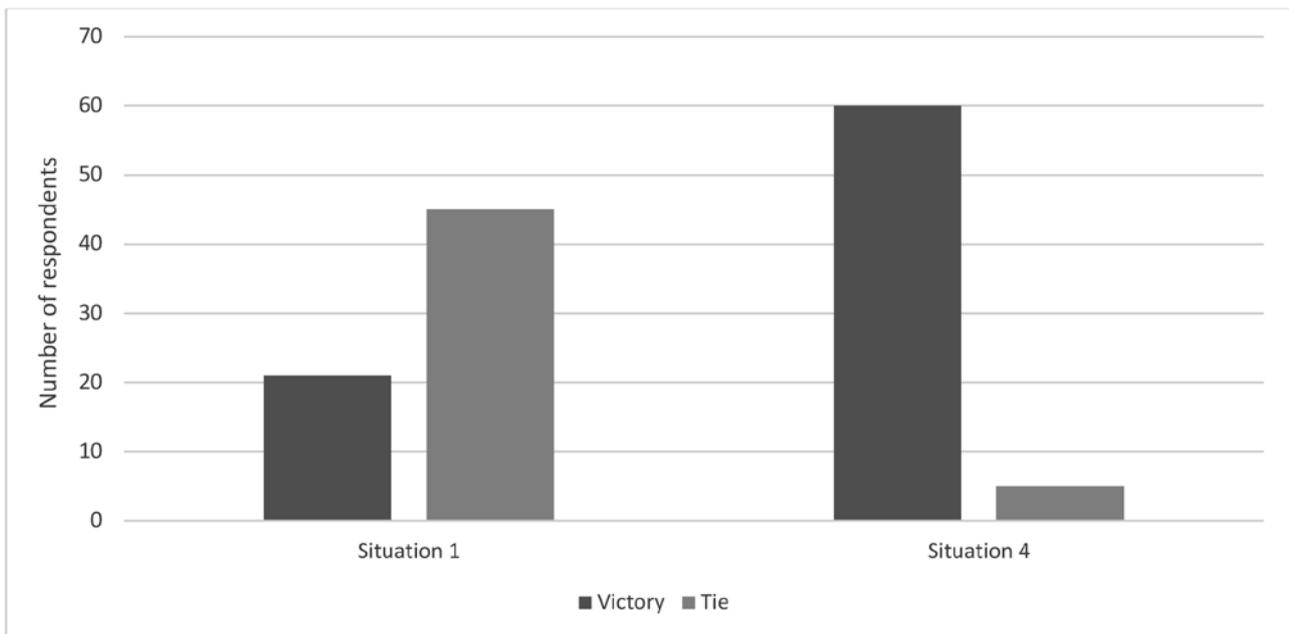
Figure 1*Representation of the responses of the respondents to situations 1 and 2*

In situation 3, the way in which they obtained that number of points is specified, as well as the type of result obtained by each team in each match. The tendency to choose victory as a possible result (56 respondents, 84.8%) as opposed to a tie (10 respondents, 15.2%) continues. It is evident, through the response of 40 respondents (60.6%) that they consider that it is more likely that the team that has not lost any of its previous matches will win the match, than the other team that has had a sequence of victories and losses (16 respondents, 24.2%).

In situation 4, the lack of information is combined with an increase in affectivity. In this case, a significant group of people (40 respondents, 60.6%) believe that the team of their choice should win the match; while only five respondents say that they should tie (7.6%). It is evident that affective involvement causes a large number of responses to shift from a tie being the most likely result, towards the victory of the preferred team as the main response.

Figure 2

Representation of the answers of the respondents to situations 1 and 4



Analyzing the answers to situation 5, it can be seen that a tie continues to be the least likely result (12 respondents, 18.1%). The answers indicate that the affective factor lost its importance due to the increase in evidence, since 24 respondents (36.4%) consider that the team of their choice can win, while 30 respondents (45.5%) do not consider it so.

When examining the answers to situation 6, it can be seen that the figures of those who consider that the team of their choice can obtain a positive result (23 respondents, 34.9%) remain lower than those who consider that they will not be able to win (31 respondents, 47.0%).

4 Discussion and conclusions

The experiment shows that it is not possible to predict the decision with a high degree of reliability, due to the existence of multiple criteria that the subjects use to

determine their prediction. From the study of the obtained results, it has been possible to observe the presence of different heuristics and cognitive biases, which corroborates the theory that supports them. However, it is necessary to recognize, within the limitations of this study, the size of the sample, its application in groups of university students, which influences its external validity, since this study may present this type of research bias.

In the case of situation 1, 45 respondents (68.2%) consider that both teams should tie, this result being higher than the option that states that one of them should win (21 respondents representing 31.8%). However, those surveyed do not recognize that a draw is the less statistically obtained result in football matches.

The outcome of a football match depends on many factors. For Vega (2010) in a statistical study of the nine most frequent results in the history of the Spanish League, only 2 correspond to draws: 1-1 and 0-0, the remaining 7 being decisions in favor of one of the teams. Out of a total of 14,937 games, 3,994 games (26.7%) ended in a draw and 10,943 games (73.3%) ended in a win for one of the teams.

According to Subirán (2018), of the 24,679 games played in the history of the Spanish League until December 2018, the most frequent result (2,891; 11.7%) is a 1-0 victory. According to the specialized football outlet Veinte Minutos (2018), in the European Champions League until 2018, decisions in favor of one of the teams (806) are more common than draws (548).

In the history of the Soccer World Cups until 2010, the most obtained results are: 1-0 (18.8%), 2-1 (14.5%), 2-0 (11%) and 1-1 (9.8%) (Tover, 2014). It can be stated that victory is the most likely outcome in that type of tournament.

Therefore, the heuristic of representativeness can be appreciated, where the response options are chosen by similarity and not by probability; one works by stereotype, but the statistical conditions are ignored in this case (Tversky & Kahneman, 1974). According to Pérez and Rodríguez (2021): “the possibility that a person belongs to a group or category is judged based on some characteristic, then that person is attributed more characteristics of that class or category” (p. 433). Similarity (tie in points, tie in results) and the illusion of validity (there is coherence between the expected result and the initial conditions) are recognized as determinants of representativeness.

In situation 2 two significant elements can be assessed. On the one hand, the difference with situation 1, since the draw as the most likely result has decreased drastically, from 68.2% to 19.7%. This variation is due to the fact that more information is provided on how these teams obtained the points. The other element under analysis is the choice that team B would win the match (43.9%), since it is the team that has not lost, according to the description of situation 2. The excessive optimism bias is revealed (unjustified belief about the occurrence of a phenomenon, stability of a sequence, etc.) by the subjects who have made this prediction. In addition, in situation 2, the biases of small numbers (propensity to make estimates from small-sized samples) and overinference (assumption about the impossibility of manifesting a result that has not appeared or maintaining one that has not appeared) can be seen, while considering that it is the team with the most chances of winning, as well as that winning is more likely than drawing (Attorresi et al., 2008).

In situation 3, despite the fact that the mode indicates that B continues to be the team that should win the match, the number of people has increased: 29 respondents (43.9%) in situation 2 and 40 respondents (60.6%) in situation 3. The sequence shown has a decisive influence on the result since team B has not lost yet, its last two results are victories; while team A alternates victory and defeat, and according to the sequence team A should lose after the last victory. In addition, from the possible biases of excess

optimism, overinference and small numbers, shown in situation 2, it is possible to appreciate the hot hand bias (persistence of positive streaks, negating statistical probabilities) (Gilovich et al., 1985; Koehler & Conley, 2003; Paul et al., 2014).

Excessive optimism is considered as “the strategy of positively distorting the expectation of the future” which can influence the containment of these problems (Torres-Salazar et al., 2020, p. 64). Among the reasons for the presence of this cognitive bias is that “it occurs because people do not review their preliminary assessments sufficiently after obtaining new information, and thus, they do not realize to what extent their estimates are erroneous” (Pérez & Rodríguez, 2021, p. 434).

It is necessary to remember that these biases tend to manifest themselves in situations of uncertainty, where chance plays an important role, such as the results of a soccer match. Their presence indicates that in situations where, despite the level of information, the result will depend on what happens in the game, it is possible that the subjects base their predictions on the presence of streaks, excessive optimism, and analysis of small samples of previous results (Bernoulli, 1954).

Situation 4 shows the same information about the previous results as situation 1, the condition introduced is that one team is preferred by the respondent. In this situation the majority of respondents see victory as the most likely outcome (61 respondents). This difference is due to the fact that there is greater personal involvement, which indicates that the affective aspects influence the predictions of the subjects about sports results, although they have previously decided that a tie is more likely to happen (45 respondents, situation 1).

This finding confirms the results of other sports betting research (Kahneman & Tversky, 1979; Sunstein & Thaler, 2017). For their part, referring to the effect of affective processes on decisions, Pérez and Rodríguez (2020, p. 511) have pointed out that: “Decisions are influenced by affection and emotions; information is more effective if it is endowed with emotional content”.

It is also verified that 40 respondents (60.6%) selected the result that their favorite team wins, this being the only situation where mode points towards this option. When reviewing what happens in situations 5 and 6, where the mode confirms that the most likely result according to the respondents is that the rival team wins, it is considered that the affective elements play a more influential role in situations where there is not enough information.

In situation 5, a similar result to situation 2 was obtained in terms of the prediction of the respondents. This confirms the presence of the cognitive biases noted above. At the same time, the possible influence of the affective aspects did not modify the result obtained in situation 2. In this situation, the evidence points to the determining role of the cognitive elements over the affective ones to the extent that the information increases and with it, the presence of cognitive biases.

In situation 6, very similar results were obtained to the responses of situations 2 and 5; however, the number of respondents who consider that the rival team should win decreases, when compared to situation 3 (31 of 40 respondents). The presence of cognitive biases is maintained, highlighting the distorting role that streaks of results and the analysis of small samples can have. Regarding the role of affectivity, although the result is not higher, it does indicate that the respondents in situation 6 (23 respondents, 34.9%) give more value to the favorite team than in situation 3 (16 respondents, 24.2%).

In general, it can be analyzed that a draw is only the selected result (situation 1) when there is little information and the respondents undervalue the importance of sports statistics and overvalue the similarity and the illusion of validity of correspondence between premises and results.

Other heuristics and cognitive biases appear throughout the different situations, confirming the presence of intuitive thinking. Among the elements found are: the heuristic of representativeness, the bias of optimism, the bias of overinference, the bias of the hot hand, the bias of small numbers. The effect of affective aspects on predictions is also noted, especially in situations with little information.

Like other elements resulting from this research, it is considered necessary to continue delving into the presence of these heuristics and cognitive biases, as well as their manifestations in determining human behavior in situations of uncertainty. In the case of behavioral economics, it is possible to carry out new experiments in strictly economic situations, for which it would be necessary to have monetary incentives to achieve maximum involvement of the respondents in the benefits and results of the experiment.

It can be concluded that sports predictions operate under the principles of limited rationality, by presenting characteristics of intuitive thinking. It can be appreciated that people minimize the importance of previous and significant information, prioritizing their own knowledge and interpretations of situations. This conclusion has implications for behavioral economics theory, confirming their fundamental finding, providing opportunities for the exploration of other heuristics and cognitive biases in predicting outcomes in various sports.

It has been verified the modification of the predictions of the respondents by the increase of the information and of the affective component. Therefore, the principles of dominance and invariance were not fulfilled, as manifested by behavioral economics theory.

The results of this theoretically oriented pre-experiment indicate the presence of overconfidence in previous knowledge, experience and intuition, underestimation of statistical information and influence of affective components in decisions about sports prediction.

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