

# The impact of health crisis on sports consumption – A longitudinal study

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## ABSTRACT

This research identifies the impact of the COVID-19 pandemic and compares it with the pre-pandemic year of 2019 on leisure sports consumption patterns among Spanish families from the gender perspective. The study analyses longitudinal official open massive data collected from the Spanish Family Budget Survey (2019–2020) to create market segmentations based on gender, year, age, and sociocultural level variables. The study's findings reveal stereotypes in leisure sports expenditure based on the gender of the household earner. In 2020, spending on leisure sports increased to a record high of 176%, with spending by men drastically lower and women considerably higher than in 2019.

## 1. Introduction

The arrival of COVID-19 in 2020 triggered significant and unusual changes in family lifestyle and consumption patterns (Vázquez-Martínez et al., 2021; Eger et al., 2021; Truong and Truong, 2022), as well as in leisure and free-time activities. This was particularly acute among women, who took on much of the extra work during the lockdown period (Craig and Churchill, 2021). A problem statement studied in this paper positions that the COVID-19 pandemic had led to an unprecedented situation, with incalculable health, social, and economic consequences (López Cabarcos et al., 2020). This paper focuses on analysing, from a Feminist Theory perspective, economic changes within households, specifically those related to leisure sports, following the arrival of COVID-19. But what happens in an area as masculinized as sport? Sport has been one of the areas significantly altered and affected (Pedersen et al., 2021). This expenditure was historically made by men, since sport is one of the last bastions of patriarchy (Moura, 2021). Was this gender gap maintained during the COVID-19?

As demanded by international organizations (UN, 2002) gender perspective must be incorporated into science in order to understand the impact of this gender binomial (men vs. women) in the different spheres of society, and thus be able to improve the spheres of life and reduce inequalities (Feinberg et al., 2021).

The central argument and context framing the question of this research relates to changes from a gender perspective, bearing in mind,

on one hand, that men would be expected to know more about family spending on leisure sports activities—a pattern seen in the pre-covid period, since the model of hegemonic masculinity is represented by men being in charge of maintaining and sustaining the family (Gutman, 2020), and with muscular bodies cultivated through physical exercise and sports (Halliwell et al., 2011). On the other hand, according to Feminist Theory, taking into account that the hegemonic model of femininity links women to the role of caregivers, responsible for domestic chores, and that additionally women have assumed much of the extra burden of domestic work brought about by the pandemic during the lockdown period (Costoya et al., 2021). They would be expected to spend more of the family budget, and therefore, also on leisure sports activities during the pandemic.

Thus, to fill the gap of insufficient information in academic literature on family spending on leisure sports, this paper aims to analyze the impact of the COVID-19 pandemic and compare it with the pre-pandemic year of 2019 on leisure sports consumption patterns in Spanish households from a gender perspective, given Spain was one of the European countries most affected by the virus and with the strictest lockdown rules in Europe (Pérez-Rodrigo et al., 2021). In order to accomplish this main goal, this study examines the longitudinal official open massive data collected from the Spanish Family Budget Survey (conducted by the National Institute of Statistics (INE)) in Spain during 2019 (pre-pandemic) and 2020 (COVID-19 pandemic year during the “hard” and “soft” periods).

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Consequently, this investigation gives theoretical, empirical, and methodological insights with an interdisciplinary approach into household spending on leisure sports from a gender perspective, thus shaping the economic recovery and leading to new answers and understanding on consumer behavior and economic-decision literature. In this context, discovered factors and applied CHAID technique can help to make improved decisions and provide information on financial modelling for leisure sports providers and leisure sports equipment retailers in the post-pandemic future. CHAID analysis is a statistical technique that is frequently used in market research studies. This method is useful for predicting expenditure, as well as determining their cause-effect relationships. The results obtained from a CHAID analysis are presented in an easy-to-interpret "decision tree" format.

In this context, the authors for this empiric study propose the following research objectives:

RO1. To find out what is the total expenditure of the Spanish households on leisure sports (as dependent variable) before and during the COVID-19 pandemic.

RO2. Following a Feminist Theory (women have allocated more efforts to care and household responsibilities during COVID-19), we intend to show whether the gender as one of the studied independent variables is also confirmed in the economic household expenditure in leisure sports, among the most masculinized areas.

RO3. To uncover diverse sociodemographic (gender, year, age and sociocultural level) as independent variables for the family's main household earner who allocates most of his/her expenditure budget on leisure sports before and during the COVID-19 pandemic in Spain.

The article is organized by following academic canons of the scientific publications: it starts with this introduction; then Section 2 presents the literature review; Section 3 explains applied methodology; Section 4 describes results on household expenditure on leisure sports; Section 5 contextualizes the discussion, comparing it with other scientific studies; Section 6 concludes the theoretical and practical implications. The final Section 7 includes limitations and the future research agenda.

## 2. Literature review

### 2.1. COVID-19 pandemic and habit change for household knowledge: leisure and sports

On March 11, 2020, based on alarming spread of the SARS-CoV-2 virus, the World Health Organization (WHO) officially declared the COVID-19 pandemic (Cucinotta and Vanelli, 2020). This resulted in an unprecedented health and economic emergency with major knowledge implications for households and their economic and social management (Mohapatra, 2021).

During the COVID-19 pandemic, women spent disproportionately more time on household chores and family care than men (Mussida and Patimo, 2021). In addition, women have been more affected than men economically and occupationally, with 24% more likely to lose their jobs and risk of reducing their income by 50%, in countries with a high rate of COVID-19 infections, such as Spain (Dang and Nguyen, 2021).

In the situation created by the pandemic, specifically the lockdown and the requirement to stay at home to limit gatherings, leisure and sport activities were paralyzed (Ratten, 2020; Prentice et al., 2020). People's physical activity reduced by 62.5% (Galali, 2021). Moreover, not only did sports activity decrease during this period, but the consumption of sporting events, with the Tokyo Olympic Games being the first in history to be postponed due to a pandemic (Navarro, 2020). Moreover, sporting events began to be held behind closed doors, with no spectators due to the risk of gathering a large number of people in the same place (Muñiz Domínguez and Vilchis Vélez, 2020).

Therefore, the world of culture and sports has been greatly affected not only during the strict lockdown period but in the subsequent period due to changing leisure sports habits, moving towards activities with a lower risk of contagion (García Sevilla, 2021). In addition, families have

been greatly impacted by these changes in the activities of leisure and sporting activities (Farías and Urra, 2022), with a significant impact on the management of their economic resources (Woods and Butler, 2020). But who assumes these financial changes?

### 2.2. Financial decision making within households

In 1970, in the book "Women's Role in Economic Development" (1970), Ester Boserup first introduced the importance of women's role in the economic development of households and societies. Fifty years later, economic models of household spending continue to show how the social norms described by Feminist Theory affect and influence decision making, especially due to stereotypical perceptions of men and women (Doss and Quisumbing, 2020). Specifically, men are often linked and made visible as farmers/producers and women as caregivers/producers. Studies show that bargaining power within the household is better for women when both men and women make decisions together (Ambler et al., 2021). But financial decision making within the household, influenced by socio-demographic, cultural and religious factors (Abdullah Yusof and Duasa, 2010), causes expenditure to be stereotyped. Even today, in both urban and rural households, women are still in the majority decision makers about household purchases and consumption (Armand et al., 2020). And, despite having lower economic health than men, they show more prudent financial behavior, feeling that their economic situation is less secure and being more concerned about it (Li et al., 2022).

Some historical economic models, such as the one developed by Becker (1981), states that the spouse with more income should probably make the financial decisions within the household. However, this model was criticized by Katz (1997) for its tendency to justify discriminatory allocations within the household on economic grounds. Authors such as Woolley (2003) writes that men with higher incomes exercise greater control. Historically established expenditure models do not incorporate the gender perspective and, therefore, do not allow us to understand how gender stereotypes influence household expenditure patterns (Cepal, 2004). For this reason, the concept of Creative Economy, which is based on sustainable and human growth and not only on exclusive economic growth, has emerged as a response from the feminist movement to the need for women's economic empowerment (Pastrana, 2021).

The transition of women to the world of work has not reversed these patterns, because it is still women who must reconcile their public-work responsibilities with the private-family sphere (Schmidt, 2021). Consequently, families represent unequal enterprises in which there is a gender wage gap (Moreno-Gómez et al., 2022). Therefore, although women have improved their socioeconomic status worldwide, the gender, labor, income and care gap between men and women is still very evident (Li et al., 2022).

### 2.3. Patriarchy, gender stereotypes and families. What does Feminist Theory involve?

Modern-day societies are still anchored in patriarchal structures that use biological differences to construct binary identities (male vs. female), through which social inequalities are established (Rodríguez et al., 2012). It is a system through which the world is "ordered" in a hierarchical and asymmetrical way, where men occupy a privileged place, relegating women to second place (Chesters, 2022). This asymmetry is maintained and structured mainly according to stereotypes through which the identities of men and women are described and prescribed (Block et al., 2022).

Feminist theory and critical feminist theories share many central assumptions. All feminist theories make gender a central focus of inquiry, asking "the woman question." The "woman question" identifies and challenges the omission of women and their needs from the analysis of any societal issue (Wildman, 2007). In this research paper there have

been used general Feminist Theory for the conceptual framework in order to smoothly integrate and connect other studied concepts and analyzed data. Feminist Theory states that gender stereotypes are socially shared beliefs that people should act and occupy a place in the world differently on the basis of their sex (Lawson et al., 2022). Descriptive stereotypes determine how women and men should be: men are designated reason, science and logical, and women aesthetics, sensitivity and "caring" (Lameiras-Fernández et al., 2022). On the other hand, prescriptive stereotypes determining what men and women should do (Kleinert and Mochkabadi, 2021), link men to the public-productive space and women to the private-reproductive sphere (Pastor, 2000). Men are placed in a position of authority—in charge of family management and household repairs—while women are responsible for shopping and childcare (Ramos and Gómez, 2020). And these asymmetries between men and women are still strongly rooted (Wojtasiewicz, 2021).

Gender stereotypes that characterize hegemonic identities “are reproduced in the practice of sports” (López Rubio, 2021). Female identity subjected to gender stereotypes links the practice of sports for women to the objective of aligning their bodies with the prevailing canons of beauty, of extreme thinness (Kaskan and Ho, 2016), discouraging competitiveness and thus, professional practice. The media themselves, in charge of creating references, reproduce these stereotypes in media coverage, highlighting aspects of sportswomen’s lives such as motherhood and femininity (Adá-Lameiras and Rodríguez-Castro, 2021), because sportswomen break the hegemonic model of femininity (Cooky, 2018) and defy the patriarchal order (MacArthur et al., 2016). Therefore, the world of sport continues to be a space for men who reinforce the stereotype of masculinity (Ramaeker and Petrie, 2019).

Considering that scientific research seeks to occupy a knowledge gap (Toala-Toala and Mendoza Briones, 2019), adding Feminist Theory to scientific research, i.e., analyzing and knowing the reality of women in different areas of society without sexist bias (Piedra, 2019), questioning reality (Ravera and Iniesta Arandia, 2017) is essential to improve scientific excellence (UPF, 2020).

Thus, it is essential to introduce the gender perspective in research for scientific excellence (UPF, 2020) to analyze and understand the reality of women in different areas of society, freeing them from sexist bias (Piedra, 2019).

To sum up, following the established objectives and overall literature

review, authors have created the study conceptual and statistical analysis roadmap in the Fig. 1, where by examining the open massive data obtained from the Spanish National Institute of Statistics, through the spectrum of one-way ANOVA, Kruskal-Wallis test, Mann-Whitney U test, CHAID analysis and Feminist Theory, there have been proposed consumer segments for the retail business in leisure sports expenditures (dependent variable) taking into account independent variables such as gender, year, age and sociocultural level. The assumption of homogeneity of variances was evaluated as part of the preliminary ANOVA analysis. Levene’s test for equality of variances was performed and found to be significant ( $p < 0.05$ ), indicating that the assumption of homogeneity of variances is not met for the current dataset. Therefore, the Kruskal-Wallis test and the Mann-Whitney U test have been applied in the realm of statistical analysis.

### 3. Methodology

The instrumental methodology aims to explain household expenditure on leisure sports from a gender perspective. The CHAID (Chi square Automatic Interaction Detector) analysis technique has been applied to discover the relationship between variables. CHAID design is a type of statistical multivariable technique that initially involves discovering relationships between a categorical response variable (dependent factor) and other categorical predictor variables (independent factors) (Kass, 1980). However, dependent variable can also be continuous in CHAID analysis as stated by Prof. Ratner (2011). In a Family Budget Survey focused on Spanish households’ leisure sports expenditure before and during COVID-19, the "total expenditure on leisure sports" is the dependent variable. The independent variables include the "time period-year" (pre-pandemic and during pandemic) to observe changes and sociodemographic factors like "gender," "age" and "sociocultural level" for the main earner. These independent variables help uncover patterns in spending behaviour, capturing the impact of COVID-19 and sociodemographic differences on leisure sports spending. Analysis of these variables aids in understanding trends, identifying pandemic effects, and assessing how diverse factors shape household spending on leisure sports.

CHAID analysis goes beyond simple descriptive statistics and provides a more in-depth understanding of the relationship between categorical predictors and uncovering complex patterns and interactions of household expenditure on leisure sports from a gender perspective. CHAID analysis is a statistical method used to explore relationships among categorical predictors, revealing interactions within data. Its suitability for specific research objectives mentioned earlier is discussed: RO1 aims to analyze Spanish households’ leisure sports spending before and during COVID-19, using CHAID to segment data based on predictors and uncover behavior changes. RO2 examines gender’s impact on leisure sports spending, using CHAID to identify significant interactions. RO3 aims to uncover sociodemographic factors related to earners’ sports expenditure, utilizing CHAID to pinpoint associations between variables. Strengths include mixed data handling and interaction detection, while weaknesses involve complex trees and causal limitations. Of course, it might also consider implementing complementary techniques like regression analysis or other machine learning methods.

#### 3.1. Participants

For this research paper to accomplish its research objectives, the Family Budget Survey (EPF in Spanish) has been used, as one of the oldest surveys in Spain (since 1958), conducted by the National Institute of Statistics (INE, official website [www.ine.es](http://www.ine.es)). Its objective is to obtain information on the nature and destination of consumption spending, as well as on various characteristics related to the conditions of household life. This official source has a high level of accuracy and completeness, managing and storing massive amounts of data.

Participants from nearly 20,000 randomly selected households are

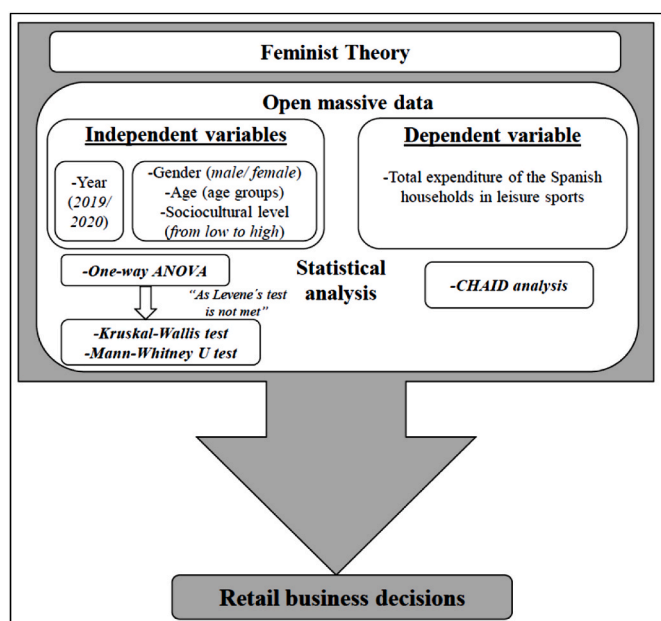


Fig. 1. Conceptual roadmap of the study. Source: own elaboration.

interviewed, who collaborate for two consecutive weeks in each of the two years that remain in the sample for longitudinal analysis. One characteristic of this type of survey is the rotation of informants. Some 20,817 households in 2019 and 19,170 in 2020 were interviewed. The census section is taken as the primary sampling unit and the last the main family residence belonging to said section. Thus, the main household earner is considered to be the member of the household, aged 16 or over and whose regular (not occasional) contribution to the household budget is intended to meet household spending to a greater degree than the contributions of each of the other members (definition by INE).

### 3.2. Instrument

The survey is made up of several forms for families to complete, keeping a detailed account of their income and outgoings ("Household account book") and turning them into questionnaires coded according to a list of codes provided by the INE. They are as follows: Household tab; Household account books; Individual account books; Monthly Benchmark Expenses; Quarterly Benchmark Expenses; Annual Benchmark Expenses and Characteristics of the home and payments of bills and periodic instalments.

Since 2016, the EPF has included the new European classification of consumption ECOICOP (European Classification of Individual Consumption by Purpose).

### 3.3. Sample error and confidence level

The total national sample error of the survey in 2019 is 0.9% and for the leisure sports study 1.74%, with a 95% of confidence level. Thus, for 2020, the total national sample error was 1.03%, but for the leisure sports study it was 2.06% with a 95% the confidence level (INE, 2022).

### 3.4. Non-parametric tests for model robustness: Kruskal-Wallis test and Mann-Whitney U test

As explained at the end of section 2 „Literature Review“, the preliminary ANOVA analysis included an assessment of the assumption regarding the similarity of variances. Levene's test was conducted to determine if the variances were equal, and the results showed significance ( $p < 0.05$ ). This suggests that the assumption of uniform variances is not satisfied for our dataset under consideration. As a result, the statistical analysis employed the Kruskal-Wallis test and the Mann-Whitney U test for model robustness. Therefore, the conditions necessary for the homogeneity of variances are satisfied, and the results of the test can be interpreted with confidence. The dependent variable, "total expenditure on leisure sports," was individually tested with the independent sociodemographic variables such as "gender," "age," and "socio-cultural level" of the primary breadwinner. Additionally, the independent variable "time period-year" was included, distinguishing between pre-pandemic and during-pandemic periods.

### 3.5. Data analysis: CHAID technique

The data analysis of this research has followed different phases to interpret and produce insights about household expenditure on leisure sports from a gender perspective. First off, the sample data has been weighted to make sure that the analysis reflects the population from which it has been drawn at national level. In Spain there are around 18,800,000 households. Secondly, the average number of household members has been calculated, and then the expenditure per capita on leisure sports equipment. Thirdly, this expenditure per capita has been discriminated by sociodemographic characteristics of the household, such as gender, age group and socio-cultural level. Fourthly, a CHAID analysis from a gender perspective has been conducted as a multivariable statistical technique.

The CHAID technique is an appropriate analysis of consumer socio-demographic characteristics with service delivery patterns (Sánchez, 2018), such as sports. CHAID statistical analysis as a methodological approach appears in the literature under various names, including Automatic Interaction Detection, Classification and Regression Tree, Artificial Neural Network and Genetic Algorithm. The segmentation procedure of the CHAID algorithm was first introduced by Kass in 1975 (Díaz-Pérez and Bethencourt-Cejas, 2016). The CHAID algorithm or the "tree analysis" is used to identify segments based on the criterion variable (Kass, 1980). CHAID decision trees are excellent tools for data classification and forecasting, as they provide an effective structure to display one's options in the form of a tree, where one has dependent variables related to independent or predictor variables via the branches of a tree, and all the possible options are displayed in the form of a complete tree, approximating all the relationships (Samar Ali et al., 2019).

CHAID is "the most appropriate technique for selecting the more meaningful or important segmentation variable as an intermediate step for benefit segmentation" and "is especially useful for demographic or behavioural data" (Chung et al., 2004). The technique finds the segment with the strongest relationship with the criterion of interest, and the results are easy to interpret as they are represented in a segmentation tree (Legohérel et al., 2015). Similar CHAID algorithm statistical techniques have been applied in studying gender and social differences among Spanish adults in leisure sports habits (Espada Mateos et al., 2018), spending and financial behavior differences among the students from the gender perspective (Khalid and Ismail, 2019), or spending differences between gender and other sociodemographic variables on accommodation in Malaysia (Ismail, 2021). Hence, the CHAID technique is useful when looking for patterns on leisure sports household expenditure from a gender perspective in datasets with sociodemographic categorical variables. CHAID analysis is a rigorous methodology to examine the factors that predict household sports expenditure (participation, performance and interest) among different gender groups on various sociodemographic variables, such as age and socio-cultural level (Svensson et al., 2011).

## 4. Results

### 4.1. Definition of household expenditure on leisure sports

Expenditure related to leisure sports have been grouped by equipment and activities in the following categories according to the INE classification (see Table 1).

The EPF captures expenditures in various leisure categories as it has been displayed in Table 1. "Expenditure 1" covers costs of sizeable outdoor leisure equipment like boats and caravans. Limitations include potential underreporting due to high costs and seasonal variations. "Expenditure 2" relates to indoor leisure equipment such as gym items and pool tables, with biases stemming from space constraints and social desirability. "Expenditure 3" includes expenses on sports, camping gear, and outdoor entertainment equipment along with repairs. Variability in reporting and seasonal spending are potential limitations. "Expenditure

**Table 1**  
Structure of household expenditures on leisure sports.

Total	Leisure sports equipment
Expenditure 1	Large equipment for outdoor leisure (caravans, boats, etc.)
Expenditure 2	Large equipment for leisure in indoor places (gym items, billiards, ping-pong ...)
Expenditure 3	Sports, camping and outdoor entertainment equipment and repairs
Expenditure 4	Recreational and sports services (ATTENDANCE and PARTICIPATION)

Source: INE, 2022.

4" accounts for recreational and sports services costs, encompassing admission and participation fees.

#### 4.2. Evolution of household expenditure on leisure sports

Fig. 2 represents the total leisure sports expenditure of households (millions of €) on a yearly basis since 2006. During 2020, Spanish households spent 3131 million euros on sports. From 2016 to 2019 there was a phase of expansion in leisure sports spending, which dropped in 2020 due to the COVID-19 pandemic.

#### 4.3. Evolution of household expenditure on leisure sports by categories

Analysis by categories has been carried out since 2016 (see Table 2), as mentioned earlier. This is a turning point for expenditure increase. Leisure sports expenditure stood for 0.6% (leisure sports equipment by total annual spending) of total household expenditure in 2020. In 2019, this was 0.98%. At the same time, we can observe that in 2020, spending on large indoor leisure equipment increased to a record high of 176% compared with the previous year, due to “hard pandemic” impact, when the entire Spanish population was confined to their homes for two months in spring (March and April). Thus, the breakdown of leisure sports services expenditure is done by equipment and services (attendance and participation).

In Table 3 we can observe opposite tendencies for large outdoor leisure equipment spending between genders as the main household earners before and during the pandemic year. Males’ expenditure drastically reduced from €179 million in 2019 to €66 million in 2020, but females increased from €31 million to €51 million in the same period. Similarly, “sports, camping and outdoor entertainment equipment and repairs” expenditure decreased among male users, but females kept the same tendency before and during the COVID-19 pandemic. On the other hand, both sexes clearly showed increased expenditure on large indoor equipment in 2020.

#### 4.4. Weighted sample to national level

The purpose of the EPF survey (Familiar Budget Survey) is to study household consumption spending, so the basic units of analysis are households’ private residents in the main family dwelling. In this sense, data has been weighted to correct under-sampling (see Table 4), bearing in mind that in Spain there are around 18,800,000 households.

Table 5 shows a significant relationship between total households’ expenditure and the 2019 and 2020 years of the survey (p-value less than 0.05).

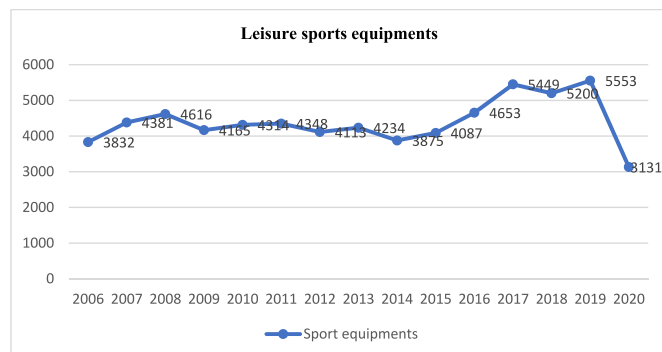


Fig. 2. Total households’ expenditures on leisure sports equipment per year (million €).

Source: elaborated from INE database, 2022.

#### 4.5. Number of household members (average number of people) and expenditure per capita on leisure sports equipment (€)

Once data is weighted, the mean household people and leisure sports expenditure for 2019 and 2020 has been calculated. The results are 2.49 people as average, and €177.62 in 2019 and €116.67 in 2020 of spending on leisure sports equipment (see Table 6).

Table 7 shows that there is a significant relationship between leisure sports equipment and the 2019 and 2020 years of the survey (p-value less than 0.05).

#### 4.6. Expenditure per capita on leisure sports equipment according to the sociodemographic characteristics of the household (€)

At this stage, some sociodemographic analyses have been carried out to measure expenditure on leisure sports per capita. Regarding age groups, households with primary household earners under 40 years old have invested more money in leisure sports equipment for the last two years, with €258.30 in 2019 and €209.40 in 2020 (see Table 8).

In terms of gender, expenditure on leisure sports equipment has been similar for men and women in these years. In 2019, men spent on average €179.18 a year, and women €174.62. In 2020, this was €123.62 for men and €103.49 for women (see Table 9).

Finally, in relation to sociocultural level, Table 10 indicates that households with middle-high sociocultural level have spent more on leisure sports equipment, in both 2019 (€321.08) and 2020 (€213.22).

#### 4.7. CHAID analysis on leisure sports equipment according to sociodemographic variables and gender perspective of the main household earner

CHAID analysis has been applied to identify significant relationships between total expenditure on leisure sports equipment as the dependent variable (prediction), and gender, age group, and sociocultural level as independent variables (predictors). A greater number of nodes make the tree more precise, but also more complex and less general, so the selection of nodes must be selective and critical.

##### 4.7.1. Comparison per year of the survey and gender

Firstly, the CHAID technique has been implemented as explanatory model to analyze household leisure sports expenditure across the year of the survey and gender. The CHAID model has been splitting for validation in 3 nodes.

4.7.1.1. *Kruskal-Wallis and the Mann-Whitney tests: leisure sports expenditure and gender.* Table 11 checks the relationship between leisure sports expenditure and gender. There have been statistically significant differences (p < 0.05) through the Kruskal-Wallis (variable categories) and the Mann-Whitney U test (group of the independent variable), rejecting the null hypothesis.

In Fig. 3 we can observe that in 2019 there was a slight difference between spending on leisure sports equipment between gender, taking in account who is main household earner of the household. Females spent €174 and males €179. On the other hand, in 2020 (the year of the hard pandemic), the overall spending situation changed in the households, and we can see that expenditure variation increased between gender to €20 (females spent €103€ and males €123). We see an important decrease by gender in comparison to pre-pandemic year, which for females was €71 and for males €56.

##### 4.7.2. Comparison per year, gender, and age group

Secondly, the CHAID technique has been implemented as an explanatory model to analyze household leisure sports expenditure in the year of the survey, gender, and age group. The CHAID model has been splitting for validation in 13 nodes.

**Table 2**

Households' expenditure on leisure sports during 2016–2020 (million €) and growing rate 2019/2020.

	2016	2017	2018	2019	2020	% DIF (2019/2020)
<b>Total annual spending</b>	519.732	539.936	555.975	566.393	508.291	−10%
LEISURE AND SPORTS EQUIPMENTS	4.653	5.449	5.200	5.553	3.131	−44%
Large equipment for outdoor leisure (caravans, boats, etc.)	101	167	121	211	117	−45%
Large equipment for leisure in indoor places (gym items, billiards, ping pong ...)	46	43	30	33	91	176%
Sports, camping and outdoor entertainment equipment and repairs	660	733	799	806	709	−12%
Recreational and sports services	3.845	4.505	4.249	4.503	2.214	−51%
Recreational and sports services: ATTENDANCE	860	675	664	565	216	−62%
Recreational and sports services: PARTICIPTION	2.985	3.830	3.584	3.937	1.999	−49%

Source: elaborated from INE database, 2022.

**Table 3**

Households 'expenditure on leisure sports by gender as the main breadwinner (million €).

(million €)	Gender as the primary breadwinner					
			Male		Female	
	Year		Year		Year	
	2019	2020	2019	2020	2019	2020
<b>Total annual spending per household</b>	566.393	508.291	391.509	349.008	174.885	159.283
Large equipment for outdoor leisure (caravans, boats, etc.)	211	117	179	66	31	51
Large equipment for leisure in indoor places (gym items, billiards, ping-pong ...)	33	91	23	62	10	29
Sports, camping and outdoor entertainment equipment and repairs	806	709	578	479	229	229
Recreational and sports services	4.503	2.214	3.132	1.586	1.371	628
Recreational and sports services: ATTENDANCE	565	216	417	169	149	46
Recreational and Sports services: PARTICIPATION	3.937	1.999	2.715	1.417	1.222	582

Source: elaborated from INE database, 2022.

**Table 4**

Weighting of the sample size for 2019 and 2020.

Year of the survey		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2019	18742156	49.9	49.9	49.9
	2020	18845114	50.1	50.1	100.0
Total		37587270	100.0	100.0	

Source: own elaboration.

4.7.2.1. *Kruskal-Wallis and the Mann-Whitney tests: leisure sports expenditure and age group.* Table 12 checks the relationship between leisure sports expenditure and age group. There have been statistically significant differences ( $p < 0.05$ ) through the Kruskal-Wallis (variable categories) and the Mann-Whitney  $U$  test (group of the independent variable), rejecting the null hypothesis.

In 2019 there were significant differences in spending between age groups. We can observe in Fig. 4 that household earners under the age of 40 spent much more than other age groups. There is €144 difference between this age group and the group segment that spent less (over 60 years old). Thus, looking at spending on the leisure sports equipment differences between genders, we find that females over 50 (this study includes two age segments, 51 to 60, and over 60 years) spent visibly more than the opposite gender in this age group.

In Fig. 5 we can clearly observe that the COVID-19 pandemic impacted leisure sports equipment expenditure significantly across all

age groups. The biggest decrease by age groups in comparison with the previous studied year of 2019 is for “between 40 and 50 years,” and is €78. Thus, 2020 show that the female age group for “51–60 years” spent €20 more than males. A similar tendency can be found in the previous studied year.

4.7.3. *Comparison per year, gender, and sociocultural level*

Thirdly, the CHAID technique has been implemented as an explanatory model to analyze household leisure sports expenditure across the year of the survey, gender, and household sociocultural level. The CHAID model has been splitting for validation in 11 nodes.

**Table 6**

Mean of household people and leisure sports expenditures per capita.

Report			
Year of the survey		Number of households (mean)	Leisure sports equipment (per capita)
2019	N	18742156	18742156
	Mean	2.49	177.620
2020	N	18845114	18845114
	Mean	2.49	116.674
Total	N	37587270	37587270
	Mean	2.49	147.064

Source: own elaboration.

**Table 5**

Significance between total households' leisure sports expenditures and years of the survey (2019 and 2020).

ANOVA Table						
		Sum of Squares	df	Mean Square	F	p-value
Leisure sports expenditures* Year of the survey	Between Groups	(Combined) 213949722830.954	1	213949722830.954	115321.749	.000
	Within Groups	69733467987341.100	37587268	1855241.747		
	Total	69947417710172.055	37587269			

Source: own elaboration.

**Table 7**  
Significance between leisure sports equipment and years of the survey (2019 and 2020).

ANOVA Table			Sum of Squares	df	Mean Square	F	P-value
Leisure sports equipment (per capita) * Year of the survey	Between Groups	(Combined)	34903705418.993	1	34903705418.993	102210.510	000
	Within Groups		12835616557697.100	37587268	341488.418		
	Total		12870520263116.092	37587269			

Source: own elaboration.

**Table 8**  
Expenditures on leisure sports equipment per age groups (€).

		Year of the survey					
		2019			2020		
		Leisure sports equipment (per capita)			Leisure sports equipment (per capita)		
		Mean	Dev	N	Mean	Desv.	N
<b>Total</b>	<b>National level</b>	177.620	616.316	20817	116.674	550.764	19170
<b>Age of the primary breadwinner</b>	<b>Less than 40 years</b>	258.297	735.458	3179	209.398	759.745	2726
	<b>Between 40 and 50 years</b>	215.488	588.365	4684	137.936	529.503	4374
	<b>Between 51 and 60 years</b>	168.153	578.241	4926	116.067	612.015	4756
	<b>More than 60 years</b>	114.675	573.773	8028	54.1595	346.179	7314

Source: own elaboration.

**Table 9**  
Expenditures on leisure sports per gender (€).

		Year of the survey					
		2019			2020		
		Leisure sports equipment (per capita)			Leisure sports equipment (per capita)		
		Mean	Dev	N	Mean	Dev	N
<b>Total</b>	<b>National level</b>	177.620	616.316	20817	116.674	550.764	19170
<b>Gender of the primary breadwinner</b>	<b>Man</b>	179.189	586.994	13894	123.629	558.819	12784
	<b>Woman</b>	174.627	668.686	6923	103.490	534.914	6386

Source: own elaboration.

**Table 10**  
Expenditures on leisure sports per sociocultural level (€).

		Year of the survey					
		2019			2020		
		Leisure sports equipment (per capita)			Leisure sports equipment (per capita)		
		Mean	Dev	N	Mean	Dev	N
<b>Total</b>	<b>National level</b>	177.620	616.316	20817	116.674	550.764	19170
<b>Low</b>		62.452	321.312	2450	36.572	225.741	1968
<b>Middle-Low</b>		93.732	351.364	5068	64.946	369.618	4446
<b>Middle-Middle</b>		191.130	609.942	9512	116.943	565.259	9079
<b>Middle-High/High</b>		321.079	921.809	3602	213.223	723.889	3511
<b>Not classified</b>		190.077	646.566	185	173.463	1151.410	166

Source: own elaboration.

4.7.3.1. *Kruskal-Wallis and the Mann-Whitney tests: leisure sports expenditure and sociocultural level.* Table 13 checks the relationship between leisure sports expenditure and sociocultural level. There have been statistically significant differences ( $p < 0.05$ ) through the Kruskal-Wallis (variable categories) and the Mann-Whitney *U* test (group of the independent variable), rejecting the null hypothesis, except to the group of pairs „middle-middle” and „not classified” where it is accepted.

Fig. 6 studies expenditure differences between gender and household sociocultural level in 2019. The results show that the highest spending was among the middle-high household sociocultural level, at €321, and the smallest was among the low sociocultural level, at €62 (difference of €259). Also, when studying the same year by gender, data shows that middle-high level females spent €53 more than males, and the two levels

of “middle-middle” and “low” males spent more than the opposite sex, with a respective difference of €17 for the “middle-middle” and €27 for the “low” level.

Also, 2020 left its impact on the studied variables in the combination of gender and household sociocultural level. Fig. 7 shows that the biggest decrease in expenditure compared with 2019 was among “middle-high” level, with a total of €109. On the other hand, we can observe that data shows that “middle-middle” and “middle-high” level females in this year spent less on leisure sports equipment compared with the pre-pandemic year of 2019, with the largest difference among the “middle-high” level between genders, where females spent €65 less.

**Table 11**  
Kruskal-Wallis test and Mann-Whitney *U* test for “Leisure sports expenditure” and “gender”.

Kruskal-Wallis test		Sig.	Null hypothesis	Decision
Leisure sports expenditure per capita	Gender of primary breadwinner	0.00	Spending distribution is the same between the categories	Rejected
Mann-Whitney <i>U</i> test for group pairs		Sig.	Null hypothesis	Decision
Group A	Group B			
Male	Female	0.00	Spending distribution is the same between the two groups	Rejected

Source: own elaboration.

4.7.4. *Kruskal-Wallis and the Mann-Whitney tests: leisure sports expenditure and the year*

Table 14 checks the relationship between leisure sports expenditure and the year. There have been statistically significant differences ( $p < 0.05$ ) through the Kruskal-Wallis (variable categories) and the Mann-Whitney *U* test (group of the independent variable), rejecting the null hypothesis. All CHAID figures (from 3 to 7) were divided across the years 2019 and 2020, spanning the periods before and after the pandemic.

5. Discussion

This study analyses Spanish household spending related to leisure and sports, following Feminist Theory, during the COVID-19 pandemic in order to understand how households have responded to a global pandemic and to work on future predictions at economic and social level. As a first conclusion of this study, in 2020, during the “hard” year of the pandemic in Spain, total expenditure of the Spanish households dropped 10% (between 2020 and 2019). According to Baker et al. (2020), the arrival of COVID 19 caused significative changes in household spending, with a 40% increase in the first two weeks of March and a 25–30% decrease in the second two weeks of March. Therefore, the pandemic has impacted all aspects of life, socially, emotionally and economically, and changed consumer purchase intentions and habits (Romera del Castillo, 2021; Park et al., 2022) and household spending

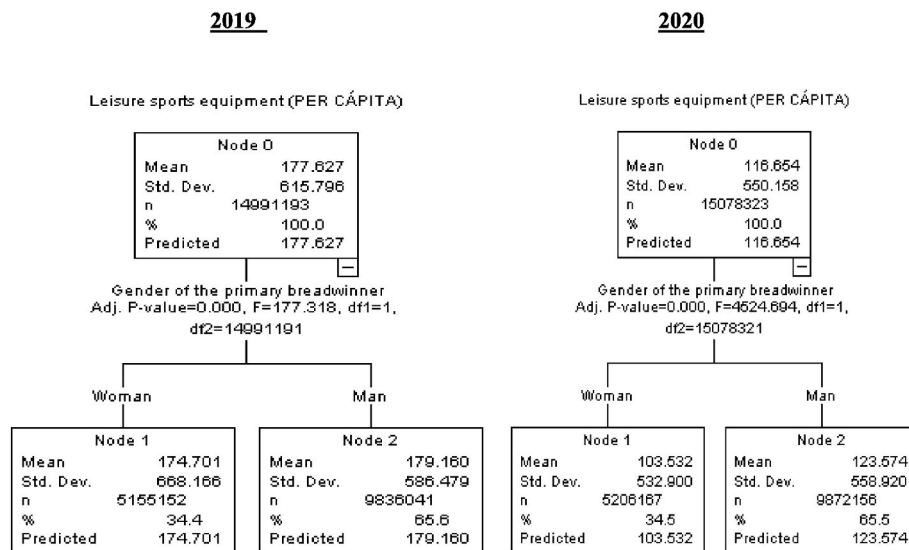
patterns (Roll et al., 2022), but “the 2020 time period does appear different from the 2008 and 2001 periods of economic distress” (Parker et al., 2023), disproportionately affecting women around the world (Miranti et al., 2022).

In response to research objective RO1, this research shows that spending on leisure sports fell by 44% in 2020 compared with the previous year. It is important to note that spending on leisure sports equipment has occupied an important part of Spanish household expenditure over the last 15 years, reaching a peak in 2019, the last pre-pandemic year, at €5.553 billion (total household expenditure in 2019 was €566.393 billion, so leisure sports equipment represented 1% of this total (INE, 2022)). Thus, also a longitudinal study of the effects of COVID-19 on tourism and leisure purchasing intentions and consumption patterns in Greece was done by Pappas (2023) who stated that the socioeconomic effects of COVID-19 should not be considered in the short-term but should be considered for a long-term continuation.

In response to RO2 on whether gender inequalities in sport expenditure are maintained, firstly, this research study shows the evident increase, by 176%, in indoor leisure sports expenditure. According to Maugeri et al. (2020) physical activity decreased during COVID-19, and for men decreased significantly, for social and competitive reasons, while women used to practice sport at home. Therefore, men in 2019 practiced more sport outside than at home, and since in 2020 they were unable to go out, spending on sport decreased. Women in 2019 were already practicing sport at home, therefore, this large increase in spending is not an expense for them but for the family. This, according to Feminist Theory, shows an increase in women’s poverty and greater inequality for women compared to men (Escalante and Maisonnave, 2022).

But the gender gap is not only in indoor spending, but it is evident in outdoor activities, where men reduced their spending and women increased it during COVID-19. This study confirms that women spent more money than men on outdoor equipment for individual and group leisure sports activities during the pandemic year. Following the Feminist Theory and according to Simone De Beauvoir crisis situations, such as the one experienced with COVID-19, increase inequalities between men and women (Durygin, 2021).

Therefore, this study shows that women assume more responsibilities in caring for the general welfare of the family during COVID pandemic, in relation with leisure and sport, one of the most masculinized areas of society. This overburdened of women in times of crisis as COVID pandemic, may accelerate their mental and physical



**Fig. 3.** CHAID leisure sports equipment per year and gender.  
Source: own elaboration.



**Table 12**  
Kruskal-Wallis test and Mann-Whitney *U* test for “Leisure sports expenditure” and “age”.

Kruskal-Wallis test		Sig.	Null hypothesis	Decision
Leisure sports expenditure per capita	Age of primary breadwinner	0.00	Spending distribution is the same between the categories	Rejected
Mann-Whitney <i>U</i> test for group pairs		Sig.	Null hypothesis	Decision
Group A	Group B			
Less than 40 years	<b>Between 40 and 50 years</b>	0.02	Spending distribution is the same between the two groups	Rejected
Less than 40 years	<b>Between 51 and 60 years</b>	0.00	Spending distribution is the same between the two groups	Rejected
Less than 40 years	<b>More than 60 years</b>	0.00	Spending distribution is the same between the two groups	Rejected
Between 40 and 50 years	<b>Between 51 and 60 years</b>	0.00	Spending distribution is the same between the two groups	Rejected
Between 40 and 50 years	<b>More than 60 years</b>	0.00	Spending distribution is the same between the two groups	Rejected
Between 51 and 60 years	<b>More than 60 years</b>	0.00	Spending distribution is the same between the two groups	Rejected

Source: own elaboration.

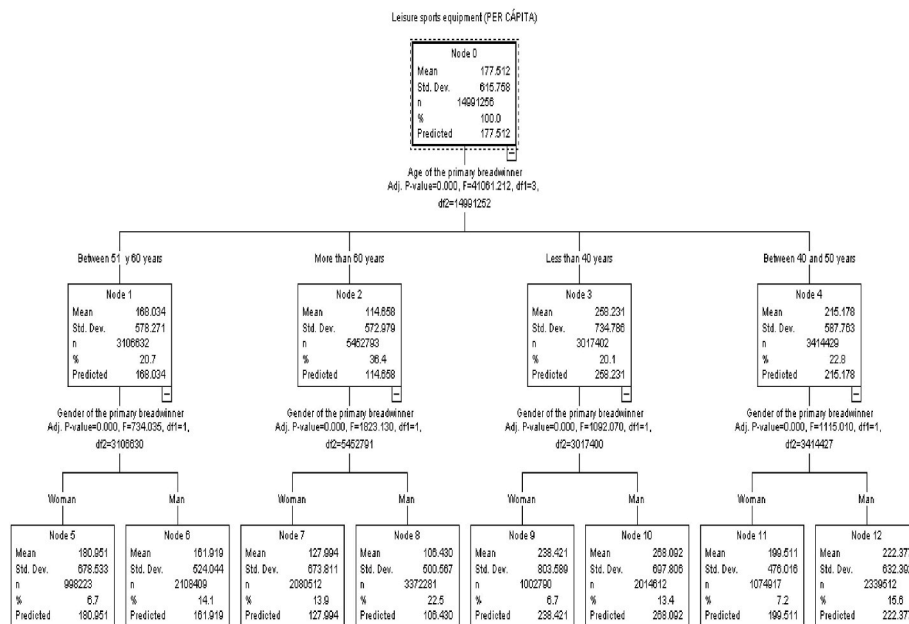
exhaustion and their long-term post-pandemic recovery and affect the overall functioning of society. Studies show how men’s well-being changed less compared to women’s during health crisis (Choi et al., 2021) and women were at particular risk of having their well-being diminished during the pandemic (Feinberg et al., 2021).

In response to RO3 on the sociodemographic variables (age and socio-cultural level). Firstly, in relation to age, the results of the study

reveal that in the pre-pandemic year of 2019, spending on leisure sports followed the traditional view among those under 40 and up to 50 years old, with those under 40 being those who spend the most, following the patriarchal model. According to Feminist Theory, sport has been linked to the stereotype of masculinity, as opposed to femininity, thus discouraging its practice by girls, a dynamic that continues to be maintained (Coletti et al., 2021). In 2020, data shows that the pandemic affected all age segments pressuring spending on leisure sports equipment to decrease, and only women aged 51–60 years maintained the trend of the previous year by spending more than their representatives of the opposite sex. Thus, with the onset of COVID-19, women continue to spend more on household responsibilities, in an age bracket in which they are mothers of teenage children (INE, 2021), also due to the social pressure to maintain vitality and a “young” appearance even in times of health crisis. In this context, Brakus et al. (2022) show similar results on the “social pressure” to look young and attractive among older women. Studies show the bombardment of older women with idealized images of youth that condition their lives (Mair et al., 2015). Interestingly, study done by Peluso et al. (2021) indicate that older age female consumers were less affected psychologically by the COVID-19 pandemic. Thus, they developed more optimistic view on the near future and were inspired to spend more on environmentally sustainable goods and products that improved their wellbeing and health conditions.

The results obtained in relation to expenditure and the socio-cultural level of individuals show that the lower income level have lower expenditure on leisure sports equipment. This shows the reality of a social class that struggles to buy food and other basic items to support the family (Anderton et al., 2021), with sport and physical activity relegated to second place. Sociocultural level presents a stereotypical existence in leisure sports spending in the pre-pandemic year of 2019 and during pandemic in 2020, with women spending more than men when income levels are higher. Studies reveal that women are more health conscious than men, and when socioeconomic factors allow, they spend more (Sass et al., 2021). Therefore, a higher-level increases women’s participation in decision making on the use of income (Osanya et al., 2020). Also because of their role as caregivers, since, as femininity is presented as weak and fragile in the face of masculinity, society

**2019**



**Fig. 4.** CHAID leisure sports equipment per year, gender, and age group.  
Source: own elaboration.

2020

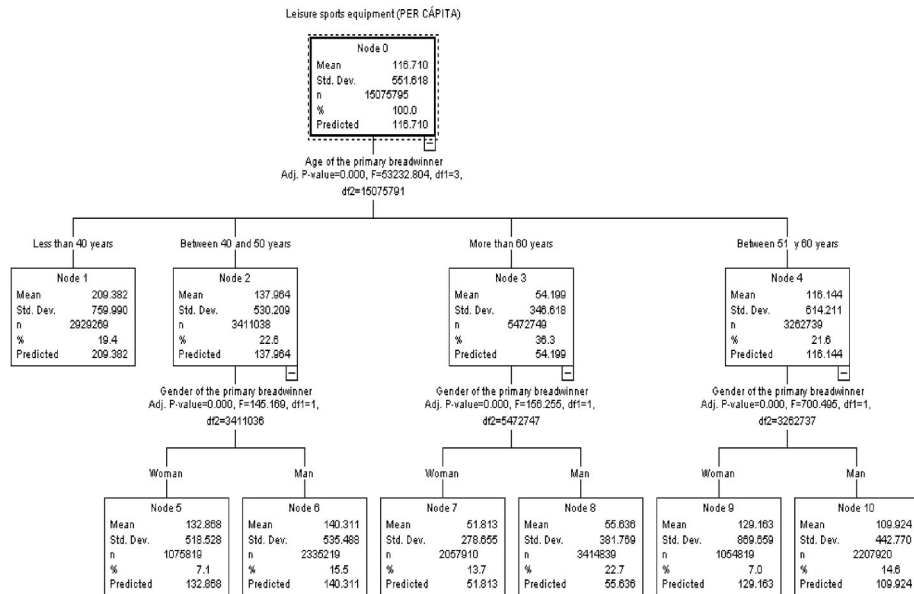


Fig. 5. CHAID leisure sports equipment per year, gender, and age group. Source: own elaboration.

conditions women to participate in activities and actions that reaffirm their femininity (Cárcamo et al., 2021), such as caring for the family, even in areas as masculinized as sports. However, the data from this study shows that the lower the income level, the more men spend on sports equipment, following the traditional role of hegemonic masculinity as the household earner (Dery and Amoah, 2022). As Ford et al. (1995) have already said, a more patriarchal society encourages less joint decision-making and more husband dominance.

In terms of prior research on family budget surveys, there similarities of our study with past work include sociodemographic factors influencing spending behavior, resembling Chen et al. (2020) medical expenditure study. Our pandemic-focused investigation aligns with Hazuchova et al. (2020) research on external factors impacting food budgets. This consistency underlines sociodemographic factors as determinants of spending behaviors. Contrasts arise from Ulusoy and Yolcu (2014) education spending research, highlighting recreational activity nuances. The pandemic's unique influence on sports spending differentiates our study from those focused on food or education.

With regards to previous investigations on particular family budgets on leisure sports, Paar et al. (2021) examine sports consumption habits in households across Hungary, Poland, and Germany. The authors utilize also both non-parametric (Mann-Whitney test, Kruskal-Wallis test) and parametric (*t*-test, ANOVA) methods to analyze the relationship between sociodemographic factors, physical activity variables, and sports spending.

These contrasts emphasize diverse spending drivers and the need to recognize domain-specific factors. Consequently, this investigation gives theoretical, empirical, and methodological insights with an interdisciplinary approach into household spending on leisure sports from a gender perspective, thus shaping the economic recovery and leading to new answers and understanding on consumer behavior and economic-decision literature. The investigation's gender-focused approach reveals disparities in spending patterns, igniting nuanced discussions on equality and targeted interventions in academia and beyond.

## 6. Conclusions

These longitudinal study results show a change in household

consumption habits during the stable socioeconomic year of 2019 and in times of the COVID-19 health crisis in 2020, with a 176% increase in sport and leisure spending with a greater impact on women, making gender stereotypes more visible. Moreover, our research paper presents gender inequalities in leisure sports expenditure depending on household breadwinner's age and sociocultural level. The findings suggest that there is an urgent need to decrease or equalize overall female responsibilities in the household and expenditure, as they take on the biggest part of the family' (and extended family's) care and overall physical and mental well-being in "peace" times and problematic periods, taking in account that their responsibility is not limited only to housekeeping but also a full-time job in the labor market.

As well, this research article proposes some theoretical and practical implications. Regarding the theoretical implications, there should be mentioned that this is one of the few academic articles, which studies family budget expenditures on leisure sports in a light of the Feminist Theory. Thus, adding some new theoretical insights to the academic literature related to (1) a family budget economic decision-making, (2) feminist studies and (3) crises impact on economic decisions, taking into account that this paper uses data from that COVID-19 "hard" pandemic period. Equally, the applied CHAID multivariable technique for using official massive open data from the Family Budget Survey in Spain, can serve as a paradigm for other researchers in social sciences for exploring society changes and impacts for making informed decisions, as well as identifying market trends.

Concerning the practical contributions and policies, this study on gender differences in family expenditure on leisure sports, on the one hand, can serve for official institutions to deepen knowledge and being able to apply different inclusive politics in times of social, economic, and political changes and turbulences, paying special attention to the gender issues. And on the other hand, the findings on expenditure on leisure sports can provide better understanding and insights for more efficient market segmentations for retail businesses. Taking into account that the expenditure in leisure sports for outdoor equipment increased for females as breadwinners for making this kind of economic decision not only on individual level but for all the family. Thus, leisure sports marketers should consider adapting not only marketing messages on "competition basis" as it is usually for male breadwinners, but create

**Table 13**  
Kruskal-Wallis test and Mann-Whitney *U* test for “Leisure sports expenditure” and “socio-cultural level”.

Kruskal-Wallis test		Sig.	Null hypothesis	Decision
Leisure sports expenditure per capita	Sociocultural level of primary breadwinner	0.00	Spending distribution is the same between the categories	Rejected
Mann-Whitney <i>U</i> test for group pairs		Sig.	Null hypothesis	Decision
Group A	Group B			
Low	Middle-Low	0.00	Spending distribution is the same between the two groups	Rejected
Low	Middle-Middle	0.00	Spending distribution is the same between the two groups	Rejected
Low	Middle-High	0.00	Spending distribution is the same between the two groups	Rejected
Low	High	0,00	Spending distribution is the same between the two groups	Rejected
Low	Not classified	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Low	Middle-Middle	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Low	Middle-High	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Low	High	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Low	Not classified	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Middle	Middle-High	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Middle	High	0.00	Spending distribution is the same between the two groups	Rejected
Middle-Middle	Not classified	0.49	Spending distribution is the same between the two groups	Accepted
Middle-High	High	0.04	Spending distribution is the same between the two groups	Rejected
Middle-High	Not classified	0.00	Spending distribution is the same between the two groups	Rejected
High	Not classified	0.00	Spending distribution is the same between the two groups	Rejected

Source: own elaboration.

marketing messages that transmit leisure sports (1) as a way to connect with family members and friends and disconnect from the life as “competition” and “just-in-time” lifestyle, (2) that empowers equally “girls” and “boys” (Toffoletti and Thorpe, 2018) or (3) includes some inclusive policy ideas or stereotype “breaking”. Also traditionally, females are considered as “caregivers” of family and those who care for overall wellbeing. Thus, this aspect and our study results could serve for leisure sports equipment producers to use raw materials or rethink all the production-consume-dispose process that it could have less negative impact on natural resources and production employees working conditions. In sum, leisure sports equipment production companies (especially big ones) can improve its brand image by including these Corporate Social Responsibility (CSR) concerns and thus, increase

selling numbers from the gender perspective. In addition, the findings reveal that older and from higher socio-cultural level females spend more on leisure sports. Therefore, the results can be interpreted as two-side sword, on one hand it proves the existence of a social pressure on older women to “look young”, but on the other hand it can show that older ladies want to stay vital and young, and taking care of their physical and mental well-being is a way to prolong a healthier and better life compared to their opposite gender, with their role as caregivers and more health conscious. In this context, leisure sports equipment producers and marketers, and leisure sports organizers should consider important changes what happen with females during and after the menopause, as it affects and changes diverse aspects of females’ body and overall wellbeing. Although, talking and introducing openly different “aspects” of menopause in our society’s daily life is still taboo and stigma (Berry, 2022). Leisure sports equipment producers, retailers and organizers by understanding females’ menopause changes and adapting equipment and activities to their “new” needs and challenges, could increase sales and satisfy more this sociodemographic market segment.

### 7. Limitations and future research agenda

Despite the many advantages of this study from the data origin and collection point of view, as it is based on an official data obtained from the Family Budget Survey carried out by the Spanish National Institute of Statistics, there may be some limitations. The national survey is conducted on a yearly basis and so the data processing and analysis take a long time period that does not include new and everchanging realities. Also, the survey includes only standardized questions, which do not allow for profound analysis and comparison from gender perspective and other behavior or attitude-based existences. To address potential limitations and biases in leisure sport expenditure data, the EPF employs a mix of direct household note-taking and personal interviews over two weeks. This helps gather information on bill payments, monthly, quarterly, and annual expenses. Biases like memory recall, underreporting, and availability bias can affect accuracy. Therefore, when analyzing similar surveys in leisure categories beyond the EPF, it’s vital to consider survey methods, demographics, and biases. The EPF tackles these biases by ensuring confidentiality, adjusting for income bias, and year-round data collection for high-cost outdoor gear. Indoor leisure spending is captured through inclusive questioning and validation techniques. Clear definitions and seasonal data collection minimize inconsistencies in outdoor equipment expenses. The survey improves data quality for recreational services by inquiring about frequency, ensuring anonymity, and representing diverse activities. Prioritizing transparency, confidentiality, inclusivity, and validation methods enhances accuracy and reliability in capturing leisure sports spending patterns.

For these reasons, further research could include other study variables and also add open data from the official European Union country surveys, which would enable to widen scope of the study. Expanding the study’s focus could enrich it by considering additional variables such as demographics, regional economics, and cultural influences on leisure spending. Incorporating these factors could provide nuanced insights into spending patterns. Moreover, the study’s scope could be broadened by integrating open data from official European Union surveys. This cross-national data would enable comparisons across diverse economic and social contexts, yielding a comprehensive view of leisure expenditure trends. By combining existing research with EU-wide datasets, future research agenda could identify patterns, differences, and outliers, resulting in a more nuanced understanding of leisure spending dynamics across Europe.

Moreover, future research should also focus on enriching the understanding of leisure sports spending patterns. Cultural influences on spending behavior, cross-cultural comparisons, and the enduring impacts of COVID-19 are key areas for exploration. Analyzing how cultural norms and values shape leisure sports choices, along with investigating

2019

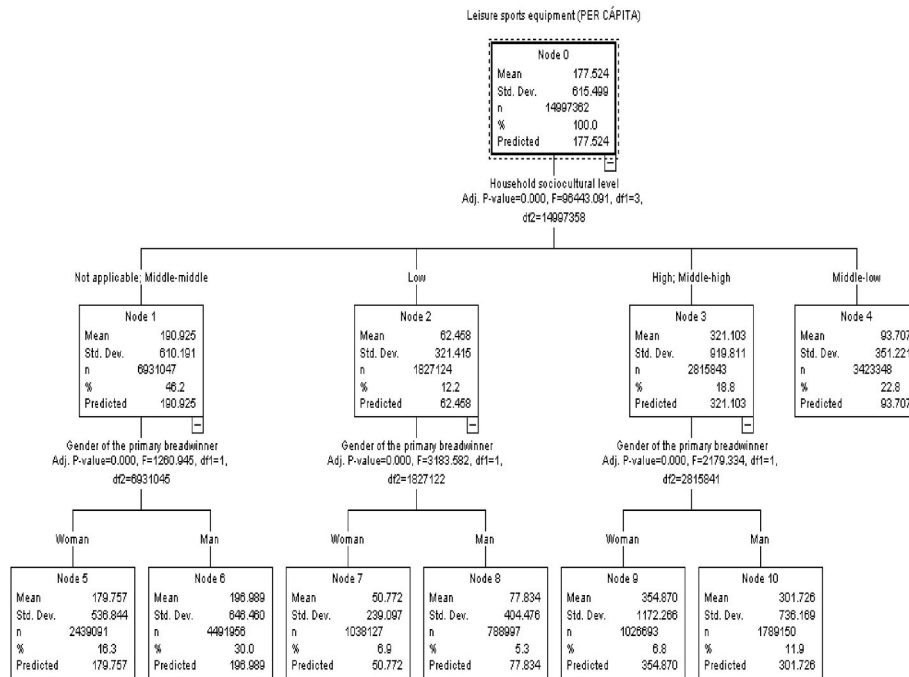


Fig. 6. CHAID leisure sports equipment per year, gender, and household sociocultural level. Source: own elaboration.

2020

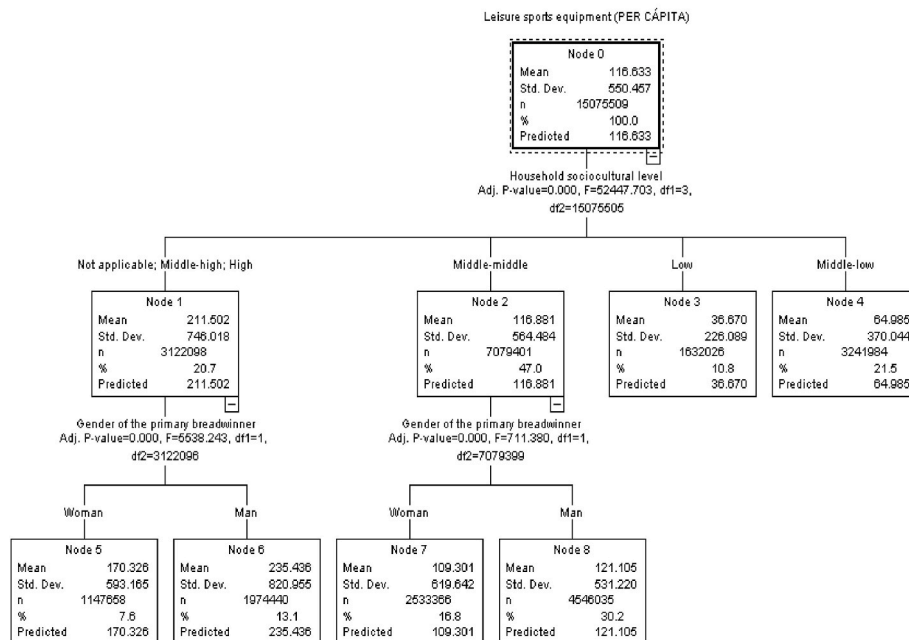


Fig. 7. CHAID leisure sports equipment per year, gender, and household sociocultural level. Source: own elaboration.

pandemic-induced shifts in spending due to remote work and digital leisure, could provide valuable insights. Longitudinal studies tracking spending changes before and after the pandemic could inform policy and industry responses to disruptions.

**Declaration of competing interest**

The authors state that there is not any conflict of interest. This research paper hasn't received any financial support and the used data in this research project is available for everybody.

**Table 14**

Kruskal-Wallis test and Mann-Whitney *U* test for “Leisure sports expenditure” and “year of the survey”.

Kruskal-Wallis test		Sig.	Null hypothesis	Decision
Leisure sports expenditure per capita	Year of the survey	0.00	Spending distribution is the same between the categories	Rejected
Mann-Whitney <i>U</i> test for group pairs		Sig.	Null hypothesis	Decision
Group A	Group B			
2019	2020	0.00	Spending distribution is the same between the two groups	Rejected

Source: own elaboration.

## Data availability

Dataset is available online at the INE website (open massive data).

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jretconser.2023.103656>.

## References

- Abdullah Yusof, S., Duasa, J., 2010. Household decision-making and expenditure patterns of married men and women in Malaysia. *J. Fam. Econ.* 31 (3), 371–381. <https://doi.org/10.1007/s10834-010-9200-9>.
- Adá-Lameiras, A., Rodríguez-Castro, Y., 2021. Analysis from a gender perspective of the olympic games on twitter. *Eur. Sport Manag. Q.* 1–17. <https://doi.org/10.1080/16184742.2021.1910965>.
- Ambler, K., Doss, C., Kieran, C., Passarelli, S., 2021. He says, she says: spousal disagreement in survey measures of bargaining power. *Econ. Dev. Cult. Change* 69 (2), 765–788.
- Anderton, R., Botelho, V., Consolo, A., Da Silva, A.D., Foroni, C., Mohr, M., Vivian, L., 2021. The impact of the COVID-19 pandemic on the euro area labour market. *ECB Econ. Bull. Art. 8*. [https://www.ecb.europa.eu/pub/economic-bulletin/article/s/2021/html/ecb.ebart202008\\_02~bc749d90e7.en.html](https://www.ecb.europa.eu/pub/economic-bulletin/article/s/2021/html/ecb.ebart202008_02~bc749d90e7.en.html). (Accessed 2 March 2023).
- Armand, A., Attanasio, O., Carneiro, P., Lechene, V., 2020. The effect of gender-targeted conditional cash transfers on household expenditures: evidence from a randomized experiment. *Econ. J.* 130 (631), 1875–1897. <https://doi.org/10.1093/ej/ueaa056>.
- Baker, S.R., Farrokhnia, R.A., Meyer, S., Pagel, M., Yannelis, C., 2020. How does household spending respond to an epidemic? Consumption during the 2020 COVID-19 pandemic. *Rev. Asset Pric. Stud.* 10 (4), 834–862. <https://doi.org/10.1093/rapstu/raaa009>.
- Becker, G., 1981. *A Treatise on the Family*. Harvard Univ. Press, Cambridge.
- Berry, E., 2022. Why is menopause still a taboo subject? <https://newsroom.unsw.edu.au/news/health/why-menopause-still-taboo-subject>. (Accessed 24 August 2023).
- Block, K., Gonzalez, A.M., Choi, C.J., Wong, Z.C., Schmader, T., Baron, A.S., 2022. Exposure to stereotype-relevant stories shapes children’s implicit gender stereotypes. *PLoS One* 17 (8), e0271396. <https://doi.org/10.1371/journal.pone.0271396>.
- Boserup, E., 1970. *Women’s Role in Economic Development*. George Allen & Unwin, London.
- Brakus, J.J., Chen, W., Schmitt, B., Zaranonello, L., 2022. Experiences and happiness: the role of gender. *Psychol. Market.* 39, 1646–1659. <https://doi.org/10.1002/mar.21677>.
- Cárcamo, C., Moreno, A., Del Barrio, C., 2021. Girls do not sweat: the development of gender stereotypes in physical education in primary school. *Hum. Aren.* 4, 196–217. <https://doi.org/10.1007/s42087-020-00118-6>.
- Cepal, N.U., 2004. Understanding poverty from a gender perspective. *Asuntos de género*. In: *Serie Mujer Y Desar.* vol. 52. <https://repositorio.cepal.org/handle/11362/5926>. (Accessed 2 March 2023).
- Chen, C., Song, J., Xu, X., Zhou, L., Wang, Y., Chen, H., 2020. Analysis of influencing factors of economic burden and medical service utilization of diabetic patients in China. *PLoS One* 15 (10), e0239844. <https://doi.org/10.1371/journal.pone.0239844>.
- Chesters, J., 2022. Understanding the persistence of occupational sex segregation in German labour markets: how gender attitudes shape young women’s occupational aspirations. *J. App. Youth Stud.* 5 (1), 55–73. <https://doi.org/10.1007/s43151-021-00065-1>.
- Choi, I., Kim, J.H., Kim, N., Choi, E., Choi, J., Suk, H.W., Na, J., 2021. How COVID-19 affected mental well-being: an 11-week trajectories of daily well-being of Koreans amidst COVID-19 by age, gender and region. *PLoS One* 16 (4), e0250252. <https://doi.org/10.1371/journal.pone.0250252>.
- Chung, K.Y., Oh, S.Y., Kim, S.S., Han, S.Y., 2004. Three representative market segmentation methodologies for hotel guest room customers. *Tourism Manag.* 25 (4), 429–441. [https://doi.org/10.1016/S0261-5177\(03\)00115-8](https://doi.org/10.1016/S0261-5177(03)00115-8).
- Coletti, J.T., Allan, V., Martin, L.J., 2021. Reading between the lines: gender stereotypes in children’s sport-based books. *Women Sport Phys. Activ J.* 29 (1), 1–11. <https://doi.org/10.1123/wspaj.2020-0036>.
- Cooky, C., 2018. Gender, sport and media between the mid-1980s and early 2000s: developments, trajectories and transformations. In: *The Palgrave Handbook of Feminism and Sport, Leisure and Physical Education*. Palgrave Macmillan, London, pp. 133–147.
- Costoya, V., Echeverría, L., Edo, M., Rocha, A., Thailinger, A., 2021. Gender gaps within couples: evidence of time re-allocations during COVID-19 in Argentina. *J. Fam. Econ.* 43 (2), 1–14. <https://doi.org/10.1007/s10834-021-09770-8>.
- Craig, L., Churchill, B., 2021. Working and caring at home: gender differences in the effects of COVID-19 on paid and unpaid labor in Australia. *Fem. Econ.* 27 (1–2), 310–326. <https://doi.org/10.1080/13545701.2020.1831039>.
- Cucinotta, D., Vanelli, M., 2020. WHO declares COVID-19 a pandemic. *Acta Biomed.: Atenei Parm.* 91 (1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>.
- Dang, H.A.H., Nguyen, C.V., 2021. Gender inequality during the COVID-19 pandemic: income, expenditure, savings, and job loss. *World Dev.* 140, 1–10. <https://doi.org/10.1016/j.worlddev.2020.105296>, 105296.
- Dery, I., Amoah, S.T., 2022. Disrupting hegemonic masculinity(ies): unpicking urban men’s livelihood survival strategies in Ghana. *J. Mens Stud.* 0 (0) <https://doi.org/10.1177/10608265221095487>.
- Díaz-Pérez, F.M., Bethencourt-Cejas, M., 2016. CHAID algorithm as an appropriate analytical method for tourism market segmentation. *J. Destin. Market. Manag.* 5 (3), 275–282. <https://doi.org/10.1016/j.jdmm.2016.01.006>.
- Doss, C.R., Quisumbing, A.R., 2020. Understanding rural household behavior: beyond Boserup and Becker. *Agric. Econ.* 51 (1), 47–58. <https://doi.org/10.1111/agec.12540>.
- Durygin, M., 2021. Simone de Beauvoir and a period of transition. *Pros. (Paris)* 51 (1–3), 85–191. <https://doi.org/10.1007/s11225-020-09513-x>.
- Eger, L., Komarkova, L., Egerova, D., Micik, M., 2021. The effect of COVID-19 on consumer shopping behaviour: generational cohort perspective. *J. Retailing Consum. Serv.* 61, 1–11. <https://doi.org/10.1016/j.jretconser.2021.102542>, 102542.
- Escalante, L.E., Maisonnave, H., 2022. Gender and Covid-19: are women bearing the brunt? A case study for Bolivia. *J. Int. Develop.* 34 (4), 754–770. <https://doi.org/10.1002/jid.3603>.
- Espada Mateos, M., Martín Rodríguez, M., Jiménez Díaz-Benito, V., Moscoso, D., Jiménez Beatty, J.E., Rivero Herráiz, A., 2018. Leisure sports habits in Spanish adults: gender and social differences. *OBETS Rev. Cien. Sport* 13 (2), 495–513. <https://doi.org/10.14198/OBETS2018.13.2.02>.
- Farías, Á.D.R., Urrea, R.G., 2022. Funcionalidad familiar y autoestima en adolescentes durante la pandemia por COVID-19. *Rev. PSIDIAL: Psic. Diál. Saberes* 1 (1), 1–18. <https://doi.org/10.5281/zenodo.5852508>.
- Feinberg, M.E., Mogle, J., Lee, J.K., Tornello, S.L., Hostetler, M.L., Cifelli Bai, S., Hotez, E., 2021. Impact of the COVID-19 pandemic on parent, child, and family functioning. *Fam. Process* 61 (1), 361–374. <https://doi.org/10.1111/famp.12649>.
- Ford, J.B., LaTour, M.S., Henthorne, T.L., 1995. Perception of marital roles in purchase decision processes: a cross-cultural study. *J. Acad. Market. Sci.* 23 (2), 120–131. <https://doi.org/10.1177/0092070395232004>.
- Galali, Y., 2021. The impact of COVID-19 confinement on the eating habits and lifestyle changes: a cross sectional study. *Food Sci. Nutr.* 9 (4), 2105–2113. <https://doi.org/10.1002/fsn3.2179>.
- García Sevilla, S., 2021. Los cambios en los hábitos de ocio durante la crisis del covid-19 y la opinión de los estudiantes sobre la docencia online. PhD thesis. Universidad de Valladolid. <https://uvadoc.uva.es/handle/10324/51402>. (Accessed 2 March 2023).
- Gutman, J., 2020. Mitos sociales de la masculinidad hegemónica tradicional. *Rev. Symp.* 1, 57–67. <https://www.revistasymploke.com/revistas/SymplokeEGN1.pdf?page=57>. (Accessed 2 March 2023).
- Hazuchova, N., Antosova, I., Stavkova, J., 2020. Food wastage as a display of consumer behaviour. *J. Comp.* 12 (2), 51–66. <https://doi.org/10.7441/joc.2020.02.04>.
- Halliwell, E., Malson, H., Tischner, I., 2011. Are contemporary media images which seem to display women as sexually empowered actually harmful to women? *Psychol. Women Q.* 35 (1), 38–45. <https://doi.org/10.1177/0361684310385217>.
- INE, 2021. Average Age at Childbearing by Order of Birth According to Nationality (Spanish/foreign) of Mother. <https://www.ine.es/jaxiT3/Datos.htm?t=1579>. (Accessed 2 March 2023).
- INE, 2022. Total Expenditure and Average Expenditure of Households. <https://ine.es/jaxiT3/Tabla.htm?t=10680&L=1>. (Accessed 2 March 2023).
- Ismail, R., 2021. Visitors’ spending on accommodation: a segmentation model using two-step CHAID analysis. *Turk. J. Comp. Math. Ed. (TURCOMAT)* 12 (3), 602–612. <https://doi.org/10.25115/eea.v39i10.5341>.
- Kaskan, E.R., Ho, I.K., 2016. Microaggressions and female athletes. *Sex. Roles* 74 (7–8), 275–287. <https://doi.org/10.1007/s11199-014-0425-1>.
- Kass, G., 1980. An exploratory technique for investigating large quantities of categorical data. *App. Stat.* 29 (2), 119–127. <https://doi.org/10.2307/2986296>.
- Katz, E., 1997. The intra-household economics of voice and exit. *Fem. Econ.* 3 (3), 25–46. <https://doi.org/10.1080/135457097338645>.
- Khalid, K., Ismail, R., 2019. Spending profiles of sultan idris education university undergraduates: a CHAID-based segmentation. *Int. Bus. Ed. J.* 12, 39–52. <https://doi.org/10.37134/ibej.vol12.4.2019>.

- Kleinert, S., Mochkabadi, K., 2021. Gender stereotypes in equity crowdfunding: the effect of gender bias on the interpretation of quality signals. *J. Technol. Tran.* 47, 1–22. <https://doi.org/10.1007/s10961-021-09892-z>.
- Lameiras-Fernández, M., Rodríguez-Castro, Y., Adá-Lameiras, A., 2022. El cuerpo del delito. La cosificación de sexual de las mujeres. Tirant lo Blanch, Barcelona.
- Lawson, M.A., Martin, A.E., Huda, I., Matz, S.C., 2022. Hiring women into senior leadership positions is associated with a reduction in gender stereotypes in organizational language. *Proc. Natl. Acad. Sci. USA* 119 (9), e2026443119. <https://doi.org/10.1073/pnas.2026443119>, 1–11.
- Legoherel, P., Hsu, C.H., Dauce, B., 2015. Variety-seeking: using the CHAID segmentation approach in analyzing the international traveler market. *Tourism Manag.* 46, 359–366. <https://doi.org/10.1016/j.tourman.2014.07.011>.
- Li, W., Urakawa, K., Suga, F., 2022. Are social norms associated with married women's labor force participation? A comparison of Japan and the United States. *J. Fam. Econ.* 1–13. <https://doi.org/10.1007/s10834-021-09815-y>.
- López Cabarcos, M.A., Ribeiro Soriano, D., Piñeiro Chousa, J., 2020. All that glitters is not gold. The rise of gaming in the COVID-19 pandemic. *J. Innov. & Know.* 5, 289–296. <https://doi.org/10.1016/j.jik.2020.10.004>.
- López Rubio, A., 2021. Percepción de estereotipos de género asociados al deporte, la educación física y las actividades de fitness en estudiantes aragoneses de secundaria. Master Thesis. Universidad de Zaragoza. <https://zaguan.unizar.es/record/107493#>. (Accessed 2 March 2023).
- MacArthur, P.J., Angelini, J.R., Billings, A.C., Smith, L.R., 2016. The dwindling Winter Olympic divide between male and female athletes: the NBC broadcast network's primetime coverage of the 2014 Sochi Olympic Games. *Sport Soc.* 19 (10), 1556–1572. <https://doi.org/10.1080/17430437.2016.1159193>.
- Mair, C., Wade, G., Tamburic, S., 2015. Older women want to look good despite media pressure to look young. *Int. J. Aging Soc.* 5 (1), 1–10. <https://doi.org/10.18848/2160-1909/CGP/v05i01/35129>.
- Maugeri, G., Castrogiovanni, P., Battaglia, G., Pippi, R., D'Agata, V., Palma, A., Di Rosa, M., Musumeci, G., 2020. The impact of physical activity on psychological health during Covid-19 pandemic in Italy. *Heliyon* 6 (6), e04315. <https://doi.org/10.1016/j.heliyon.2020.e04315>, 1–8.
- Miranti, R., Sulistyanningrum, E., Mulyaningsih, T., 2022. Women's roles in the Indonesian economy during the COVID-19 pandemic: understanding the challenges and opportunities. *Appl. Artif. Intell.* 58 (2), 109–139. <https://doi.org/10.1080/00074918.2022.2105681>.
- Mohapatra, S., 2021. Gender differentiated economic responses to crises in developing countries: insights for COVID-19 recovery policies. *Rev. Econ. Househ.* 19 (2), 291–306. <https://doi.org/10.1007/s11150-020-09512-z>.
- Moreno-Gómez, J., Gómez-Araujo, E., Ferrer-Ortiz, D., Pena-Ruiz, R., 2022. Gender perspective of parental role model influence on nascent entrepreneurs: evidence from Colombia. *Europ. Research Manag. Bus. Econ.* 28 (1), 100156. <https://doi.org/10.1016/j.edeen.2021.100156>, 1–8.
- Moura, E.S., 2021. "I can't because I Am a man": masculinity, manhood, and gender equality in sport for development. *Sociol. Sport J.* 39 (3), 1–9. <https://doi.org/10.1123/ssj.2020-0166>.
- Muñiz Domínguez, P.E., Vilchis Vélez, Ú.P., 2020. Las implicaciones legales, sociales y económicas del COVID-19 en el deporte. *Rev. Acad. Fac. Derecho.* 18 (35), 123–134. [https://repositorio.lasalle.mx/bitstream/handle/lasalle/1692/RA%2035\\_jul2020-123-134.pdf?sequence=1&isAllowed=y](https://repositorio.lasalle.mx/bitstream/handle/lasalle/1692/RA%2035_jul2020-123-134.pdf?sequence=1&isAllowed=y). (Accessed 2 March 2023).
- Mussida, C., Patimo, R., 2021. Women's family care responsibilities, employment and health: a tale of two countries. *J. Fam. Econ.* 42 (3), 489–507. <https://doi.org/10.1007/s10834-020-09742-4>.
- Navarro, J.T., 2020. ¿TOKIO 2020 en 2021? Carlos III University, Madrid.
- Osanya, J., Adam, R.I., Otieno, D.J., Nyikal, R., Jaleta, M., 2020. An analysis of the respective contributions of husband and wife in farming households in Kenya to decisions regarding the use of income: a multinomial logit approach. *Wom. Stud. Int. Forum* 83, 102419. <https://doi.org/10.1016/j.wsif.2020.102419>, 1–8.
- Paar, D., Kovacs, A., Stocker, M., Fazekas, A., Betlehem, J., Bergier, B., Pongrac, A., 2021. Comparative analysis of sports consumption habits in Hungary, Poland and Germany. *BMC Publ. Health* 21 (S1), 1481. <https://doi.org/10.1186/s12889-020-09442-6>.
- Pappas, N., 2023. Come and gone? A longitudinal study of the effects of COVID-19 on tourism purchasing intentions. *J. Retailing Consum. Serv.* 72, 1–12. <https://doi.org/10.1016/j.jretconser.2023.103269>, 103269.
- Park, I., Lee, J., Lee, D., Lee, C., Chung, W.Y., 2022. Changes in consumption patterns during the COVID-19 pandemic: analyzing the revenge spending motivations of different emotional groups. *J. Retailing Consum. Serv.* 65, 1–16. <https://doi.org/10.1016/j.jretconser.2021.102874>, 102874.
- Pastor, R., 2000. Aspectos psicosociales de la asimetría generica: rupturas, cambios y posibilidades. In: Fernández, J. (Ed.), *Intervención en los ámbitos de la sexología y de la generología*. Pirámide, Madrid, pp. 217–246.
- Pastrana, P.C., 2021. Aproximaciones de perspectivas de género para el desarrollo de la Economía y la Industria Cultural y Creativa. *Rev. Anales* 60, 7–18. <https://doi.org/10.18537/auc.60.02>.
- Pedersen, P.M., Ruihley, B.J., Li, B., 2021. *Sport and the Pandemic*. Routledge, New York.
- Peluso, A.M., Pichierrì, M., Pino, G., 2021. Age-related effects on environmentally sustainable purchases at the time of COVID-19: evidence from Italy. *J. Retailing Consum. Serv.* 60, 1–9. <https://doi.org/10.1016/j.jretconser.2021.102443>, 102443.
- Pérez-Rodrigo, C., Gianzo Citores, M., Hervás Bárbara, G., Ruiz-Litago, F., Casis Sáenz, L., Arjía, V., López-Sobaler, A.M., Martínez de Victoria, E., Ortega, R.M., Partearroyo, T., Quiles-Izquierdo, J., Ribas-Barba, L., Rodríguez-Martín, A., Salvador Castell, G., Tur, J.A., Varela-Moreiras, G., Serra-Majem, L., Aranceta-Bartrina, J., 2021. Patterns of change in dietary habits and physical activity during lockdown in Spain due to the COVID-19 pandemic. *Nutrients* 13 (2), 300. <https://doi.org/10.3390/nu13020300>.
- Piedra, J., 2019. La perspectiva de género en sociología del deporte en España: presente y futuro. *RES. Rev. Esp. Soc.* 28 (3), 489–500.
- Prentice, C., Chen, J., Stantic, B., 2020. Timed intervention in COVID-19 and panic buying. *J. Retailing Consum. Serv.* 57, 1–11. <https://doi.org/10.1016/j.jretconser.2020.102203>, 102203.
- Ramaeker, J., Petrie, T.A., 2019. "Man up!": exploring intersections of sport participation, masculinity, psychological distress, and help-seeking attitudes and intentions. *Psychol. Men Masc.* 20 (4), 515–527. <https://doi.org/10.1037/men000198>.
- Ramos, J., Gómez, A., 2020. Por qué los retos de la conciliación en tiempos de COVID-19 son todavía mayores para las mujeres? *COVID19*. IvieExpress. 16, 1–10. [https://www.ivie.es/wp-content/uploads/2020/06/16.Covid19\\_IvieExpress\\_Por-qu%C3%A9-los-retos-de-la-conciliacion-en-tiempos.pdf](https://www.ivie.es/wp-content/uploads/2020/06/16.Covid19_IvieExpress_Por-qu%C3%A9-los-retos-de-la-conciliacion-en-tiempos.pdf). (Accessed 2 March 2023).
- Ratner, B., 2011. *Statistical and Machine-Learning Data Mining: Techniques for Better Predictive Modeling and Analysis of Big Data*, second ed. CRC Press, Boca Raton.
- Ratten, V., 2020. Coronavirus disease (COVID-19) and sport entrepreneurship. *Int. J. Entrepreneurial Behav. Res.* 26 (6), 1379–1388. <https://doi.org/10.1108/IJEBR-06-2020-0387>.
- Ravera, F., Iniesta Arandía, I., 2017. Perspectivas feministas para repensar la investigación en cambio climático y las políticas de adaptación. [https://www.researchgate.net/publication/320525447\\_Perspectivas\\_feministas\\_para\\_repensar\\_la\\_investigacion\\_en\\_cambio\\_climatico\\_y\\_las\\_politicas\\_de\\_adaptacion#fullTextFileContent](https://www.researchgate.net/publication/320525447_Perspectivas_feministas_para_repensar_la_investigacion_en_cambio_climatico_y_las_politicas_de_adaptacion#fullTextFileContent). (Accessed 23 August 2023).
- Rodríguez, Y., Lameiras, M., Carrera, M.V., Magalhães, M.J., 2012. Estereotipos de género y la imagen de la mujer en los Mass Media. In: Iglesias, I.C., Lameiras, M. (Eds.), *Comunicación y justicia en violencia de género*. Tirant lo Blanch, Barcelona, pp. 37–69.
- Roll, S., Chun, Y., Kondratjeva, O., Despard, M., Schwartz-Tayri, T.M., Grinstein-Weiss, M., 2022. Household spending patterns and hardships during COVID-19: a comparative study of the US and Israel. *J. Fam. Econ.* 43 (2), 261–281. <https://doi.org/10.1007/s10834-021-09814-z>.
- Romera del Castillo, S., 2021. El comportamiento de consumo y compra de las familias y el Covid-19 Master Thesis. University of Valladolid. <https://uvadoc.uva.es/handle/10324/51274>. (Accessed 2 March 2023).
- Samar Ali, S., Kaur, R., Ersöz, F., Lotero, L., Weber, G.W., 2019. Evaluation of the effectiveness of green practices in manufacturing sector using CHAID analysis. *J. Remanuf.* 9 (1), 3–27. <https://doi.org/10.1007/s13243-018-0053-y>.
- Sánchez, J., 2018. Employment predictors and outcomes of U.S. state-federal vocational rehabilitation consumers with affective disorders: a CHAID analysis. *J. Affect. Disorers.* 239, 48–57. <https://doi.org/10.1016/j.jad.2018.06.044>.
- Sass, A.C., Krause, L., Hintzpetter, B., Ludwig, S., Prütz, F., 2021. Health situation of women in Germany 2020. *Eur. J. Publ. Health* 31 (3). <https://doi.org/10.1093/eurpub/ckab164.778>.
- Schmidt, E.M., 2021. Flexible working for all? How collective constructions by Austrian employers and employees perpetuate gendered inequalities? *J. Fam. Res.* 34 (2), 615–642. <https://doi.org/10.20377/jfr-668>.
- Svensson, B., Moreno, P., Martín, D., 2011. Understanding travel expenditure by means of market segmentation. *Serv. Ind. J.* 31 (10), 1683–1698. <https://doi.org/10.1080/02642069.2010.503891>.
- Toala-Toala, G.M.L., Mendoza Briones, A.A., 2019. Importance of teaching the methodology of scientific research in administrative sciences. *Dominio Cien* 5 (2), 56–70.
- Toffoletti, K., Thorpe, H., 2018. Female athletes' self-representation on social media: a feminist analysis of neoliberal marketing strategies in "economies of visibility". *Fem.&Psych.* 28 (1), 11–31. <https://doi.org/10.1177/095935317726705>.
- Truong, D., Truong, M.D., 2022. How do customers change their purchasing behaviors during the COVID-19 pandemic? *J. Retailing Consum. Serv.* 67, 1–12. <https://doi.org/10.1016/j.jretconser.2022.102963>, 102963.
- Ulusoy, B., Yolcu, H., 2014. Household expenditures on education by parents of students attending public schools at the primary education level. *Kast. Egit. Derg.* 22 (3), 1091–1112. <https://dergipark.tr/en/pub/kefedergi/issue/22601/241488>. (Accessed 26 August 2023).
- UN, 2002. Gender Mainstreaming an Overview. <https://www.un.org/womenwatch/osagi/pdf/e65237.pdf>. (Accessed 2 March 2023).
- UPF, 2020. ¿Cómo incorporar la perspectiva de género en nuestra investigación? [https://ccs.upf.edu/wp-content/uploads/Guia-Genero\\_20.pdf](https://ccs.upf.edu/wp-content/uploads/Guia-Genero_20.pdf). (Accessed 23 August 2023).
- Vázquez-Martínez, U.J., Morales-Mediano, J., Leal-Rodríguez, A.L., 2021. The impact of the COVID-19 crisis on consumer purchasing motivation and behavior. *Europ. Res. Manag. Bus. Econ.* 27 (3), 1–18. <https://doi.org/10.1016/j.edeen.2021.100166>, 100166.
- Wildman, S.M., 2007. Critical feminist theory. In: Clark, D.S. (Ed.), *Encyclopedia of Law & Society: American and Global Perspectives*. Sage Publications, Thousand Oaks, pp. 349–351. <https://doi.org/10.4135/9781412952637>.
- Wojtasiewicz, P., 2021. Gender Asymmetry in Language a Case Study. *Uniwersytet Jagielloński w Krakowie*.
- Woods, R., Butler, B.N., 2020. *Social Issues in Sport*. Human Kinetics Publishers, Champaign.
- Woolley, F., 2003. Control over money in marriage. In: Grossbard-Shechtman, S. (Ed.), *Marriage and the Economy: Theory and Evidence from Advanced Industrial Societies*. Cambridge University Press, New York.
- Parker, J.A., Schild, J., Erhard, L., Johnson, D.S., 2023. Economic impact payments and household spending during the pandemic. *Brookings Pap. Econ. Activ.*, 81–130. <https://doi.org/10.3386/w30888>.

[:/www.brookings.edu/wp-content/uploads/2022/09/BPEA-FA22\\_WEB\\_Parker-et-al.pdf](http://www.brookings.edu/wp-content/uploads/2022/09/BPEA-FA22_WEB_Parker-et-al.pdf) (Accessed 27 November 2023).