

DIFFERENCES BETWEEN WOMEN AND MEN IN PURCHASING DECISION MAKING DURING A PANDEMIC SITUATION

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Abstract

There is supporting evidence to affirm that women are more risk averse than men, and in this research we are trying to relate this aversion to the way in which people have been doing their weekly shopping during a unique situation as it is a global pandemic. The main goal is to investigate if massive purchases grow the greater the degree of aversion does. The results we expected to get were that in this uncertain situation, women would still be more risk averse than men and thus, they would have bought more products as a result of their fear, and figure out which products were the most demanded ones. Finally, our findings show that during this period, pastry products were the most bought ones among women, who turned to be the most risk averse gender.

Jel Codes: C44, C83, C93, D12, D81

Keywords: risk aversion, weekly shopping, coronavirus, alcohol or disinfectant gel, pastry products.

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1. INTRODUCTION

The entire world faced during 2020 the beginning of an spontaneous health crisis provoked by a global pandemic, in which virus Covid-19 turned to be the player. Taking into account that this situation did not happened in developed countries since 1918 with the Gripe Española (Spanish Flu), countries found hospitals deprived of medical supply, healthcare staff and efficient economic measures able to face a high complex situation. Meanwhile, chaos broke out among citizens, especially at the very beginning due to uncertainty and fear of possible future scenarios.

This is the reason why there were many changes in the consumer's behavioural pattern and as a consequence, the consumption of certain products shot upwards. However, this pattern had been changing according to each period of the crisis, being the very first leading role played by toilet paper.

The goal of this investigation is to study the difference in decision making between women and men in a world pandemic scenario and to analyse how their behaviour varies depending on gender and risk aversion when doing the shopping.

Taking decisions involves indirectly experiencing and uncertain situation because, even if we analyse every single possible consequence of our final decision, we are not able to know them until we really take the decision as there is no way of guaranteeing that conditions will remain the same. For this reason, figuring out how consumers' preferences have changed during a global pandemic situation makes this and all other coronavirus researches so interesting.

Our hypothesis are as follows:

- Women are more risk averse and more responsible to do the weekly shopping, they believe that products will run out in supermarkets or at least some of them, and for that reason they will have provided their household with more products.
- The most risk averse people will have done massive purchases encouraged by fear. They will have gone to the supermarket more times per week and will have stocked up all kind of products.
- Risk lover people will not have bought any product for any reason in a higher quantity than before.

2. DEFINING THE TOPIC

The 31st of December, the state of Wuhan (China) informed the World Health Organization that there were twenty seven sick people from pneumonia but unknown origin, despite of the fact that they all had eaten seafood and alive animals in the same city.

In view of this news, the investigation of these cases found out a new virus whose disease clinical pattern was named Covid-19. The 11th of March 2020, the WHO declared the situation as a global pandemic. A few weeks later, there were confirmed cases all over the world.

The swift changes of the facts and newness and the evolving political and economic decisions taken by the institutions have created a huge uncertain scenario all around the world and any country can predict the end of the lock down nor the virus.

So all this has made every user to take their particular decisions in many aspects of their daily life: business decisions, investing decisions, consumption decisions, lifestyle, etc. Depending on their attitude towards risk, these decisions will have been very disperse among them, but in this investigation we are focusing on two clearly differentiated groups: women and men. According to García-Gallego, Georgantzís and Jaramillo-Gutiérrez (2012), women tend to be more risk averse than men, confirmed in a context composed by four lottery panels in which risk is compensated by lineal increasing payments as long as decreases the probability of winning.

The relation of this scenario with the goal of my investigation is that uncertainty is related with risk aversion and risk aversion with gender.

Among all the consequence we have lived with this unusual situation, in this research we will focus on consumer's behaviour in order to compare all the different actions taken by them depending on their risk aversion.

For this, we will use a Random Lottery Pairs (RLP) based on the random sampling of Holt and Laury (2002). However, we will use different payments as an strategy to measure subjects decision making behaviour in front of uncertainty and risk. We will be able to study the existing correlation in economical decision making (earnings depending of the decision) and consumption election (purchase of products in supermarkets) in a situation far from common.

It is important to remind that when random lottery pairs are used, we should calculate the appropriated utility functions which allow understand the real value of these payments for each person, which will depend on each economic situation, monthly

earnings, cost value in each one's zone, or other circumstantial variables such as short term debts. This is the reason why the same quantity can represent different values for two different people. Nonetheless, we are going to consider all these payments represent the same utility for all participants.

3. PRECEDENT TO THE PANDEMIC COVID-19

Just as a curiosity we want to compare briefly this pandemic with the one from 1918 called "La Gripe Española" in order to compare the situation our ancestors lived about a hundred years ago all over the world, although it has affected in first place our country one more time. Thus, we could understand a bit better the importance and relevance of doing researches about these topics.

During the First World War it occurred the pandemic of the flu in 1918, which was encouraged by the movement of military troops around the world. The first cases were detected in the United States but the other countries involved in the war were not informed of its severity and rapid spread. However, Spain was the only country reporting the progress of the flu under the headlines of the three days fever, which is why the disease became known as the Spanish flu worldwide. More than one hundred thousand people died from it in the United States in only one month.

The second wave was even more shocking and it lasted for three months.

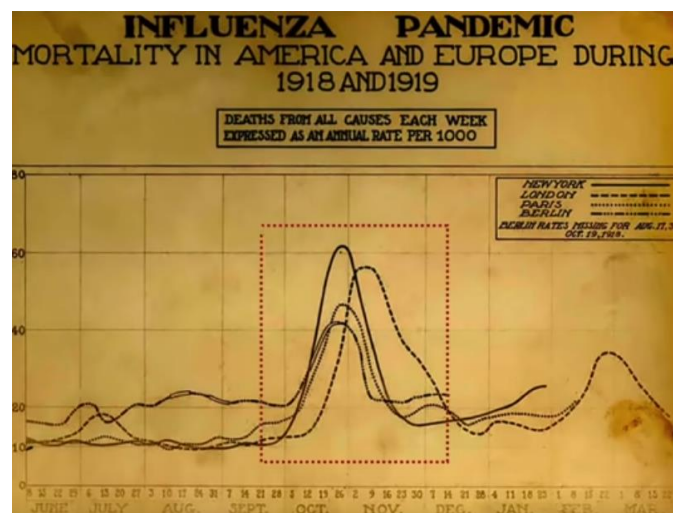


Figure 1: "Gripe Española 1918" waves (MedicineNet Health News, 2020)

The third and last one was in 1919 during all spring season until it was almost over in summer 1919, when most of the population had already become immune, after having left families and communities devastated by the losses of their relatives. But the summer of 1920, there were no more infected people left.

Over time, scientists discovered it was caused by the H1N1 virus, which continued circulating as a seasonal virus for more than 38 years. The symptoms of this disease were fever, earache, diarrhea, vomiting and body fatigue, as well as breathing difficulties and nosebleeds. Despite the similar events that had happened in this current pandemic, the main and most important difference is that in 1918 there were no vaccines to protect the population against the infection, no drugs to treat it and no antibiotics to treat secondary infections such as pneumonia.

Basically, the authorities focused their efforts in stopping the spread on personal hygiene, isolation and quarantine as well as the closure of schools and public places. In large cities, the use of masks was enforced and people who did not cover their mouth when coughing were fined.

It was thanks to 1918 pandemic that respirators, intensive care units and personal protective equipment such as gloves, gowns and masks were better developed.

After 1918 pandemic there have been three more pandemics: in 1957, 1968 and 2009 ones, which we will remember this last one by the name of Influenza A (Gripe A); although the 1918 pandemic was the most serious as it claimed 50 million people's lives around the world, three hundred thousand in Spain. Unlike this pandemic, the mortality rate was very high among children aged 5, between 20 and 40 and among those over 65.

The economic consequences from summer 1920 were mainly drastic decrease of exports from Spain, also that businessmen and workers had no opportunities to modernize their workplaces for three years and streets were revolted by demonstrations, strikes and crimes.

With Primo de Rivera's coup d'état, the economy stabilized a bit because already industrialized regions saw a growth in their economy prosperity and an increase in job employments. The labour force was dedicated to agriculture which was about 57% and became a 45% industrialized. Spanish bank became a national bank and appeared the called saving banks. This period was known as the "Happy Twenties" until the Crack of 29, with the fall of the peseta.

Unfortunately, there is no big data about individuals' consumption from that pandemic, but we found it quite interesting investigating and comparing this pandemic with the current one to make readers understand why we chose this topic.

However, we can see some macroeconomic data to understand the seriousness of the situation. For example, according to Eurostat publish news, GDP fell 5.2% in our country during the first quarter. Moreover, unemployment increased 1% for the first time since 2013, being the first country in unemployment incensement. During the two first weeks

of March, the economic activity decreased more than 33%, and during April it did it in 45%. Government predicts that GDP will fall down up to 9.2% during 2020, and it will start recovering around 6.8% during the following year, according to what is said in *El Economista (2020)*. On the other hand, GDP fell 8% during the 1918 crisis, but we have to take into consideration that this crisis occurred at the same time as the First World War did, so probably consequences were determined all together. Regions with major exposition to the virus paid the highest salaries as a consequence of the scarce labour force; but companies and factories experienced a really stressful economical situation. Nonetheless, it is not worth it comparing both crisis as the world has developed countless techniques, all hygiene, working and medical ones. 1918 crisis was more deadly, especially among young people, what makes it worse for the economy.

4. LITERATURE REVIEW

Now we are doing a literature about gender differences in risk behaviour and consumption. Difference between risk aversion between women and men has been studied for many years. Empirical evidence has shown it is allowed to affirm that women are more risk averse than men, and they are normally less attracted to lineal risk premiums used in Sabater-Grande and Georgantzis (2002)´ lottery panels, as said by García-Gallego, Georgantzís and Jaramillo-Gutiérrez (2012).

Effects between biological gender is then result, although there are other explicative variables such as age or educational level. Some authors like Mora and Escardibul (2018) discussed those effects on Spanish financial investments´ aversion and got that a better education reports a higher probability to individuals investing in risky assets, which means, in other words, that a higher educational level implies a risk aversion reduction.

In terms of the age, participation increases in subjects of medium age, and decreases when these people come close to retirement. While it is true that these results differ from the ones shown by Ruiz-Tagle and Tapia (2010), whose results reveal that aversion is increased between youngsters and medium age people, to get settled afterwards among older ages, being age categories as follows:

20-39 years: young

40-54 years: adult or medium age

55-75 years: elderly

Another found during the last years was that women are more risk averse than men but only during early and medium ages. This could be explained through the experience of

the oldest group as well as the marital status, having children, etc. Finally, it is confirmed that higher incomes and a higher educational level reduce probability of aversion, as said by Mora and Escardibul (2018).

Also *Criteo* did a study based on online sales and booking data, and it offered the very first data that coronavirus outbreak gave in consumption habits and in consumers' behaviour, especially in food, cleaning supplies and household items sales. Answers were an extract from answers of 7886 participants responding to coronavirus questions in March 2020. Conclusions of this study demonstrate that electronic items' sale was triggered as a cause of the new need of teleworking; likewise, pets products sales increased significantly as did fresh products after having done rice, flour and canned food. This might be also confirmed by the answers we got from our own data collection about pastry products, so we can ensure our results along the same lines.

According to a survey done by the European Financial Planning Association (EFPA) (2016), the main financial concern women have is their children education and it is themselves who take on less risks and prefer consider it the most about their future investments. Their other financial interests, in order of preference are financial independence (19.2%), retirement saving schemes (18.5%), house purchase (13.7%) and bequeath inheritances for their heirs (12.1%). Another surprising fact is that 48% women are the responsible for their household economic and financial decisions, although they have increased the demand of financial guidance in more than 35%, too. EFPA also confirms that women are more risk averse than men.

What becomes clear is that there are many differences between women and men when investing. According to Spectrem Group (2016) publications, half of interviewed men are likely to invest in shares and bonds against the third part of women, demonstrating their higher nastiness as it is their biological nature to assume more risks, getting carried by adrenalin, while women are more likely to avoid loss. What is more and referring to reflections of EFPA (2016) women, *"they take decisions more slowly because of their education or because of their inborn risk aversion"*. A possible reason found for this is health and life expectancy, meaning that women are likely to live 81 years against men, whose life expectancy is 76 years. In agreement with the American Association of University Women in 2014, *"5 more years of life expectancy for women make them being more conservative beyond their genetics or attitudes towards their own life and investments"*.

But there is still a relation between risk aversion and uncertainty we might consider. Facing an uncertain future radically changes consumption decisions. Thus, in an uncertain world, there will be welfare losses due to differences in decision making compared to a world without uncertainty, say Ruiz Gómez and Tapia Stefanoni (2010).

And we can consider coronavirus crisis a really uncertain situation in which nobody knew what was going to happen nor for how long.

Another study found that the more risk averse we are, the more rational we will behave and at the same time, the more inert we will be. With this, they demonstrate there exist two basic phenomenon that can go in the same or in opposite directions, depending on how safe or unsafe is the bet. So there is a huge correlation between risk aversion and all our decisions. And for this estimation, they also use a Random Lottery Pairs, in which a subject faces a choice of two lotteries and has to choose the one of his preference.

Finally, there are many studies trying to explain the differences due to hypothetical or real payments. Obviously, the more money we are risking, the more we think our choice, because they are more easily affected by a larger amount of money. However, empirically, this difference between hypothetical versus real monetary rewards is still controversial. Xu et al. (2018) have shown that “participants were more risk averse after negative feedback with increased magnitude of real monetary rewards, while no behaviour differences were observed between large and small hypothetical monetary rewards” As they conclude, “these findings suggest that the magnitudes of real and hypothetical monetary rewards have differential effects on risk-taking behaviour and brain activity. Real and hypothetical money incentives may have different validity for modulating human decisions”.

5. CONSUMPTION PATTERN REVIEW

According to a research done by *Nielsen (2020)* about premiums, 49% of consumers were likely to pay a high price to guarantee good quality standards in terms of health safety.

In another study from *Nielsen* published 27th April by *Daimiel (2020)*, according to first information about positive infections in our country, sales increased more than 8% with emphasis on long-life basic food products and on cleaning and personal hygiene products. As she describes, there are six levels to identify this behaviour: two of them are linked to health, meaning that in this level we buy products which make us feel good and safe about our health and in the second we start buying products reacting to our increasing level of concern, which means buying disinfectants such as alcohol or more specific products. Thirdly, we start doing massive purchases and it is in the fourth level, in which was Spain when this article was written, when people easily double the size of their regular purchases. In fact, sales skyrocket due to Spanish fear of running out of supplies.

The very early days were chaotic in supermarkets because of an effect called, which we have mentioned by dint of Fear Of Missing Out (FOMO). As reported by *Nielsen (2020)*, sales in the first week of lockdown shot up 71% compared to the same week in 2019, while in the second week the rise was already 74%. These purchases are called “bunker shopping” or “survival shopping” with a majority of non-perishable products (pasta, vegetables, rice...) and also hygiene products. Online sales have also increased more than 50% and some products that were not bought much before, since people have a lot of free time. Especially these products have been pastries: sales of yeast have shot up by 233% and baking paper by 123%. Moreover, as people cannot go out to bars or discos, low-grade drinks have now increased 70% of consumption at home.

BCC Innovation (2020) also wanted to analyse how consumption habits has influenced Spanish households during the last months. They emphasize the lack of pastry products such as flour or yeast and affirm that consumption has been significantly higher than the same weeks from the past year. Their survey was sent to 600 consumers from all around Spain and published in the *International Journal of Gastronomy and Food Science (2020)*. Some conclusions they got are that more than 50% of the respondents have kept their consumption in the same way, 30% have declared consuming less fish than before and 50% have increased candies and pastries consumption.

During the lockdown, many supermarkets reached the point of having to limit the permitted number of units per person because of the extreme sales of some products like toilet paper or flour, according to what *El Confidencial (2020)* declared. However, in his inform published 22nd May 2020, the most demanded products in that period of time were related to feed, but they had little to do with pastries and candies, as said by the Ministry of Agriculture, Fisheries and Food. Purchases had increased 30.6% in comparison to the same week – 4th -10th May – in 2019: meat increased 64.5%, but decreased 15% in relation with the previous week; fish products increased 38.7% from the previous year, fruits did it in 26.1%, and vegetables and potatoes were sold a 36.8% more than 2019. Also bread increased 21.5, eggs did it in 42.1% although a 3.3% decrease from the previous week, and a remarkable increase took place for olive oil, with a 36.4%. Furthermore, flour had a decrease in its sales about 23.4% respect the week before. It also increased 23.3% water and coffee and tea did it in 19%.

Comparing these last results with data from our study, we can observe we got similar figures in those products we both asked about: bread increased 19.4%, water did it a 24.9% and potatoes, rice and pasta did it a 26.1%. We do not have to forget that the period of time is not the same.

6. EXPERIMENTAL DESIGN

Our study is a scientific cross-section method design, with a sample composed of 404 random and anonymous subjects divided in two groups: women and men participants. We considered it of strongly important to analyse significant differences between genders to agree with the context review or give different outcomes from our data.

Data collection was done through a Google Forms questionnaire, composed by three differentiated parts: socio-demographic data, investigation part and random lottery pairs part based on Holt and Laury (2002) lottery play.

We are now going to explain each of the parts and afterwards we will find the full questionnaire.

In the socio-demographic data part we have included some variables under consideration which will let us divide subjects in specific groups in order to find major differences between them. These variables are age, starting from sixteen years old due to it is a reasonable age for an adolescent to be able to do the weekly shopping both in cities and villages. Hereon, the first dimension will include until twenty-five years for two reasons: first, because main of the responses would be from people of this age, second, because it is the period when most students have finished their studies and they have had time enough to find a job and achieve independence from their parents, so their responsibility for doing the shopping might have changed from there on.

From 26 years on, ranges have been limited every fifteen years. In this manner:

- 26-40 years old
- 41-55 years old
- 56 years or older

We expect that this variable confirms that youngest people and older than 56 people are the most risk averse ones, as Mora and Escardibul (2018) say: *“compared with people from medium age, youngest and elderly people have a higher risk aversion, so they consider it less to invest in risky financial assets”*. The reason for this may be the low or non-existing teenager or just-graduated student’s earnings as well as the low retirement pensions for retired people. *“Those people prefer to risk as little as possible so that they can ensure any income as minimal as it is”*, say Mora and Escardibul (2018). Thus, it is highly possible that these people have been more cautious in their purchases during this crisis.

Second variable is referred to housing situation, which will allow us evaluate how this affects to someone’s point of view about the crisis and to his demand according to who

they live with: children, elderly people, two adults or only one... For this question we let an open answer for other possibilities we did not mention before.

Next variable is province or country of residence, for national or international respondents, respectively. With this, we are able to see major differences between different provinces from Spain and look into macroeconomic data to understand them. This one is related to the following, which asks where people live, being "city" or "village" the two options. The difference stems from the positive correlation between population and infections: largest populations are more likely to have a higher number of coronavirus infections, which would make people be more afraid of it and make them do bigger purchases. Also culture, security, misinformation and zone economy, among other reasons, would affect to the kind of shopping people do.

The variable which collects each person's liability for doing the weekly shopping in his household will classify every response depending on its reliability: people who are normally in charge of the shopping will give the most meaningful answers because they will be based on personal experience. People who answer hardly ever or never will give feedback based on others' opinions or believes, which could easily change in real life. Nevertheless, this is still useful for us because believes are also the basics for aversion.

In the investigation part of the questionnaire, questions were addressed to figure out what products were bought in largest amount during the period of data collection, which products mobilized people to go to supermarkets and the reasons for this.

The initial target product proposal was toilet paper. However, in order to avoid bias in the responses and to compare them with other products' answers, we asked about a large variety of goods, which turned out to be positive because consumption patten changed since the approach of this research. It is therefore that at first sight, results show the interest towards other products.

7. RESULTS

7.1. STATISTICS ANALYSIS

The sample for this experiment is composed by 404 people both national and international participants, with a 40% stake for men and 60% for women. The majority of our participants range from 16 to 25 years old, although this rate is not far away from others until "65 or older", from when participation really declines. For this reason, 36% of participants have asserted living with their parents, and 45% out of the total live with partners, with or without children.

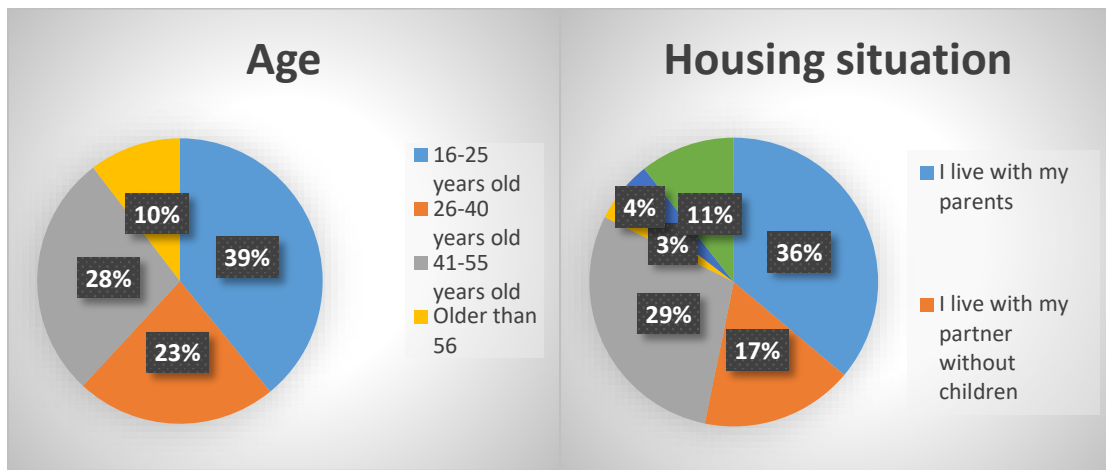


Figure 2: a) Percentage of responses according to age range, b) Percentage of responses according to housing situation

To what concerns to Spanish participants, 64% turned out to be from Castellón, although there were 24 Spanish regions registered. Internationally, the broader representation is formed by France (13%) out of 23 different countries. Of them all, 73% lives in cities against 27%, who lives in villages of small size.

Despite of the young age mentioned above, 45% of participants are the main responsible of doing the weekly shopping, and 23% are sometimes responsible of this task. Only a 7% never does the shopping, which is good statistics because as we said before, these responses may be the less effective. From all of them, only a 24% believed that some products would be sold out in supermarkets during the lockdown, and this representation can be also divided in women and men as follows: 17% of women believed some products would be run out from supermarkets against 8% of men. Doing a proportions test we guess the p value is lower than 5% with a statistical z equal to -2.14, which means this difference is statistically significant at 5% significance, so women were more worried about the lack of products in supermarkets.

In respect of the frequency to which people have been in a supermarket or local shop since the beginning of the lockdown, this is from 14th march, after 3 weeks and a half, 63% of consumers have gone to a supermarket once or twice a week. This is the trendy to the assistance to a supermarket. Down below we can find the graphic:



Figure 3. Percentage of responses according to attendance times to a supermarket

During this period, to those most in demand products have been alcohol or disinfectant gel, pastry products and bleach or other household disinfectant products. However, more than 60% of the sample has affirmed not having had the temptation of going to buy any particular product.

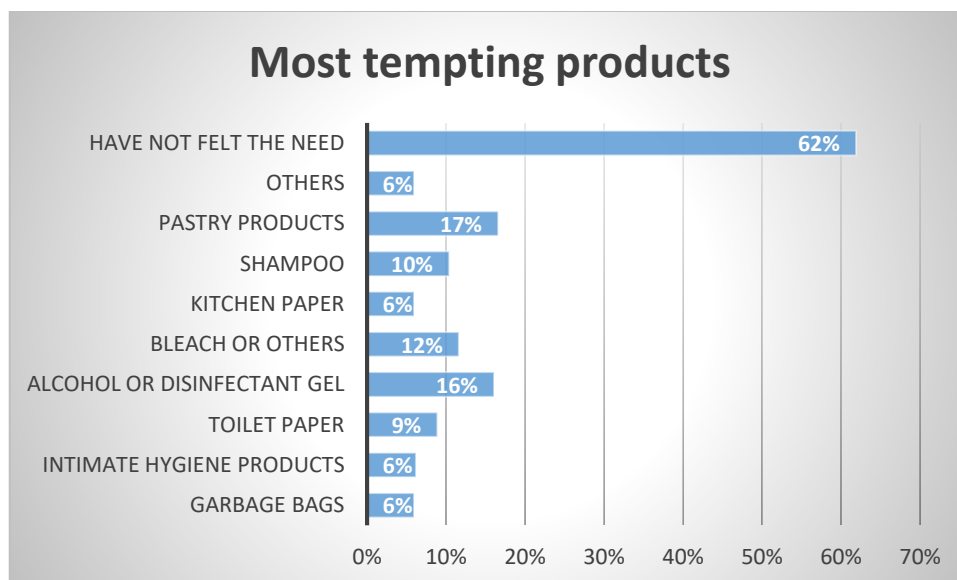


Figure 4: Percentage of responses according to how tempted people have felt to buy each of the products

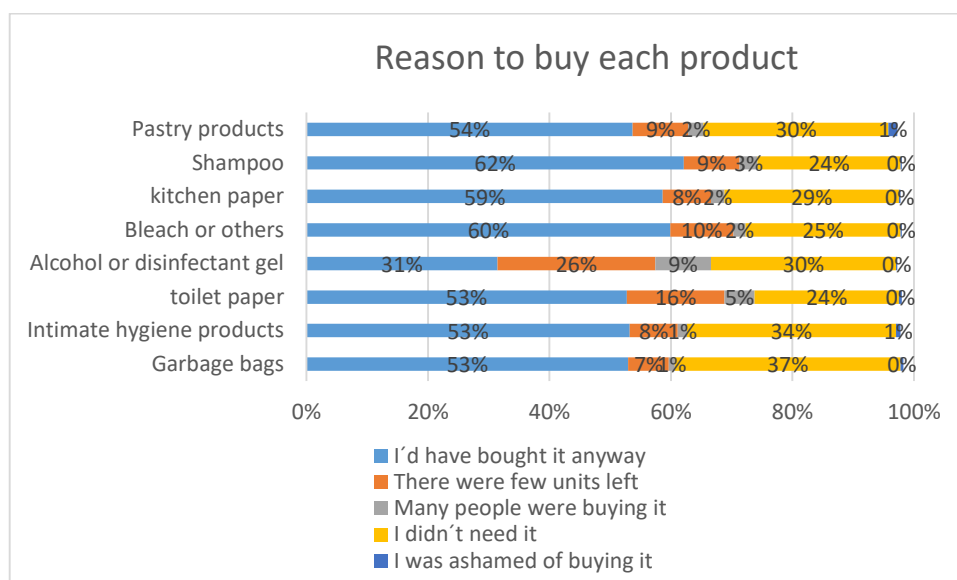


Figure 5: Percentage of responses according to the reason why people have bought each product.

Nevertheless, though the main reason to buy anything ensues to be they would have bought it anyway, we can observe a great percentage that says they bought because there were many units left, especially among disinfectant gel and toilet paper.

In such a way, we can conclude that although the population did not have the intention to go to buy toilet paper, once they were in the supermarket they did buy it, and a 16% confessed doing it for this reason. This could be explained through a phenomenon called FOMO (Fear Of Missing Out), which we will analyse hereafter.

On the other hand, it is worth stressing it exists a source of sampling error in contestants' answers when they say they would have bought it anyway, for two main reasons: either because they have not considered other situations in which they would not have bought these products or because there was not another possible option justifying their reasons. What is clear is that the demand of this product has chaotically raised and therefore its prices have increased automatically, according to different economy newspapers like *ámbito*, *economía digital* or *bbc*. Provided a report from *infobae económico* (2020), demand increased in 300% and they experienced a large jump in prices around 48%, generating a lack of toilet paper in supermarkets.

I must give a small clarification about the answer "I did not need it", because it can be referred to the non-purchase of this product as well as to the unneeded shop of it. So participants can have misunderstood the purpose of this option, which was initially "not the need".

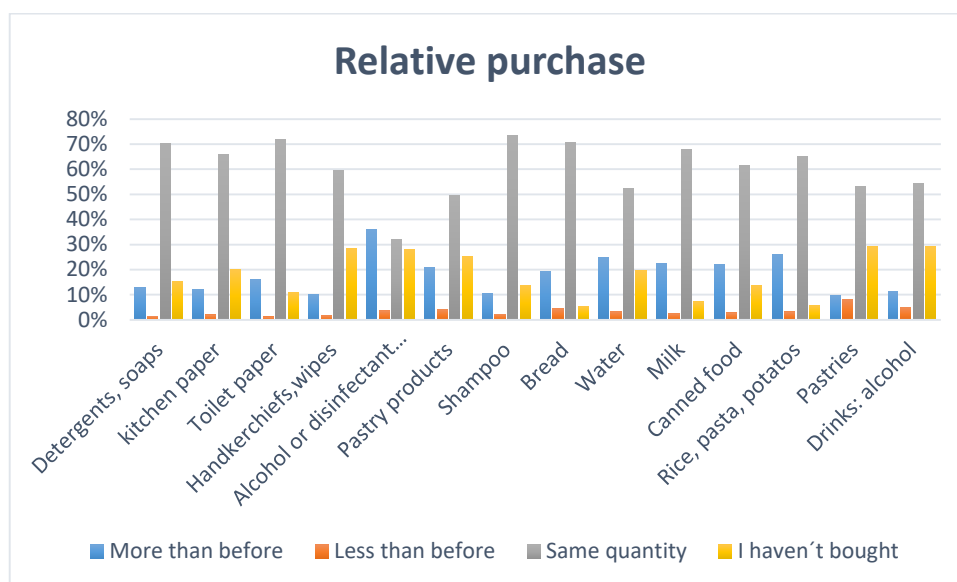


Figure 6: Percentage of responses according to how much of each product people have bought in comparison to the purchase they used to do before the lockdown.

In this graphic we can see the relative shop of products and analyse the quantity consumers have bought with regard to before the state of alert. There are quite interesting results in it:

Disinfectant gel turns to be the most bought product in terms of the past, as its shopping increase is about 36%, followed by pastry products (21%), milk (22%), pasta or rice (26%), canned food (22%) and water (25%). This is also observed in the percentage of answers to having bought the same quantity as before, where pastries or disinfectant gel got the lowest percentages, being 49% and 32%, respectively, However, 68% of the people said they bought milk in the same quantity, 65% for pasta and rice and 72% for toilet paper, surprisingly.

Furthermore, it is these products the ones that got the highest number of answers for "I haven't bought this product". Precisely, 28% affirms not having bought gel nor handkerchiefs and 25% say the same for pastry products.

Pastries got similar results (29%) in this last answer: a logical possible explanation to this might be that pastries and similar consumption is now left to home-made products, as the period of time when this survey was done was Easter, which added to a lockdown, made most of families dedicate their time for cooking. Thus, shopping industrial goods made no sense. Instead, buying products for its home production increased.

Regarding alcoholic drinks, sales have increased 11.4%, but 29% of respondents admit not having bought any unit.

7.2. FEAR OF MISSING OUT (FOMO)

FOMO is a way of social anxiety developed in any social context which can be generated by social media, according to APA's meaning.

As the neuropsychologist Amy Loughman from the University of Melbourne explains it further, FOMO consists in the willingness of avoiding regrets of not having done something. But the more choices we have, the less satisfied with the one we have made, because social pressure tells us that the whole responsibility of this choice is our own fault.

In our investigation, only 26% of participants had heard about FOMO or knew what this phenomenon consisted in. From all of them, 86% believed that massive toilet paper purchases in Spain during the first week of alarm state was due to this syndrome. Indeed, when we asked participants why they thought toilet paper was one of the main players in this pandemic, 26% gave similar answers to FOMO or fear of running out of toilet paper, 43% people could not give a reason, 9% said it was because of irrationality, 3% because it does occupy a lot of space so it gives the impression of being running out and 19% gave many other different reasons, for example, people bought toilet paper because it does not expire and thus they avoid going to supermarkets as much as possible.

Lastly, we wanted to see the impact that having an infected person close to participants affected on shopping decisions. Out of 404 participants, only 7% had suffered from coronavirus themselves or a relative / known did suffered it, although 59% of them were high – risk people.

7.3. SIGNIFICANCE TESTS

So our first curiosity was knowing if in an exceptional situation as it is a pandemic, men were still less risk averse than women. As we have said before, using a Random Lottery Pairs (RLP) based in Holt and Laury's game (2002), we have measured this variables and we have got these following results:

- The average turning point in men was 0.7, i.e., on average, men went from preferring the 100 - 80 u. m. option to 190 - 5 u. m. when the probability was 70 - 30%.
- The average turning point in women was 0.8, i.e., on average, women went from preferring the 100 – 80 u. m. option to 190 – 5 u. m. when the probability was 80 – 20%.

Although this difference seems not to be very different because it looks like women and men have changed their preferences at almost the same time, we have to test it empirically, and for that, we are using a Mann Whitney test, which compares two unrelated probabilities from a sample to see if this difference is significant for an infinite population.

In the Mann Whitney test, we got a p value equal to 0.0045, which is lower than 5% of significance. Thus, we reject our null hypothesis, which was that this difference is not significant. In other words, women and men are significantly different in risk aversion decision making. This results match with all the papers reviewed in the literature.

Secondly, we are interested in knowing if this difference makes also different purchasing decision making, that is to say, women and men have changed their preferences in the RLP when probabilities were not the same, but does this occur also in products shopping?

For testing this we use a Proportions Test which will analyse if the number (as a proportion of the total) of men have bought a product in the same proportion than women have done it. We have done the test for all the products we asked about how tempted people felt about buying them, and there have been only two products for which proportions seem to differ.

Note that our confidence level will be always 95%, so our alpha is going to be 5% for every proportion test, and our non – rejection range will be [-1.95, 1.95] in a student's T-distribution.

Our hypothesis were as follows:

- $H_0: P_1=P_2$
- $H_1: H_0$ is false

Just as a reminder, we got that disinfectant gel and pastry products were two of the most demanded ones as we expected. However, we consider that there would be no difference between the proportion of women and men that bought disinfectant alcohol, but there would be in pastry products. Exactly as expected, statistical value from disinfectant gel was -0.84, included in the non – rejection range, which was (-1.95, 1.95), so men and women bought in a very similar proportion disinfectant gel. Nonetheless, our statistical z for pastry products was -2.04, which is excluded from the acceptance range, what means that there is a difference between the proportions of women that bought pastry products versus the proportion of men. Women bought in average 8% more of pastry products than men.

The other products with significant difference were bleach and other disinfectant household products, whose statistical value was -2.16. As p value was lower than 5% f

significance, we can reject our null hypothesis and affirm that there are statistical differences between genders in what purchases temptation concerns: Women bought disinfectant products for the house a 7% more than men did. This might be for two possible reasons: on the one hand, women are still the major responsible of cleaning the house; on the other hand, as they are more risk averse, they became more obsessed with cleanliness to avoid catching coronavirus in their own house.

We cannot omit that there is also relevant significance in the non – necessity of any products, with an statistical value equal to 2.24, out of the non – rejection zone. Men felt 11% less tempted to go to a supermarket than women.

If we analyse the frequency of assistance for both women and men, 67% of women have gone one or two times against 59% of men. However, this difference is not significant with a z value of -1.57 at 5% significance. We can conclude that both genders have gone more or less the same times to a supermarket in that period of time, so it seems like the grade of aversion does not affect this variable. In fact, if there was a correlation between risk aversion and the number of times of assistance to a supermarket, the average of the number of times should increase together with the level of aversion, but the average does not follow a steady increase. In fact, women whose tipping point is 0.8 have gone to a supermarket 2.36 times, in average, while women with a tipping point in 0.9 have gone 1.97 times, in average.

Men whose tipping point is 0.1 have gone 1.75 times whereas the ones whose tipping point is 0.4 or 0.5 have gone 1.22 and 1.33, respectively. As long as risk aversion increases, men should have attended more frequently a supermarket, but in our sample, men who changed their preference in 0.7 have been in a supermarket 2.66 times, whereas men who changed in 0.8 or 0.9 have been 1.37 and 1.76 times, respectively.

Now we are analysing the grade of responsibility each of the genders has: 52% of women are always the main responsible for doing the weekly shop while 37% of men are. Through a proportions test, we get a z value equal to -2.88, which is out of the range (1-.95, 1.95) corresponding to 5% significance. This means that proportion 1 (for women) would not be the same than proportion 2 (for men) in an infinitive sample. So women are significantly more responsible for doing the weekly shopping than men. For the other options, women and men turn to do the shopping similarly.

In this grade of responsibility, women have significantly bought more quantity of some products. Just as a reminder, we are analysing differences between genders in those products whose increase are the highest of all.

For example, pastry products (z value is -2.44). This might be because women are more likely to cook cakes or desserts, and also because under the lockdown, they might have enjoyed cooking Easter cakes with their children to have fun together.

Also disinfectant alcohol or gel's (statistical value is -7.44) results are the same: 36% of women bought more quantity of this product whereas 4% men did; 42% women bought more water than before versus 24% of men, which comes out to be significant (with an statistical value equal to -3.65).

On the other hand, there were other products sold in a higher quantity but there were no significant differences between genders. Some examples are milk, canned food and rice or pasta.

7.4. CORRELATION TESTS

Finally, we wanted to do a correlation test between some main variables to see how much they were correlated. Here below we can find the correlation table, which we got from our Excel data in Stata program.

| | Gender | Age | Housing | p | core | Respons | Lack_produc | Shop_times | Garbag_bag | Intim_hyg | Toilet_paper | Alcohol_gel | Bleach | Kitchen_pap | Shampoo | Pastry | Other |
|--------------|--------|--------|---------|--------|--------|---------|-------------|------------|------------|-----------|--------------|-------------|--------|-------------|---------|--------|--------|
| Gender | | | | | | | | | | | | | | | | | |
| Age | 0,0956 | | | | | | | | | | | | | | | | |
| Housing sit | 0,0471 | 0,0000 | | | | | | | | | | | | | | | |
| p | 0,0044 | 0,0105 | 0,0478 | | | | | | | | | | | | | | |
| core | 0,0166 | 0,0000 | 0,0000 | 0,2518 | | | | | | | | | | | | | |
| Respons | 0,0808 | 0,0000 | 0,0001 | 0,4519 | 0,0000 | | | | | | | | | | | | |
| Lack_produc | 0,1047 | 0,0549 | 0,4458 | 0,6020 | 0,1340 | 0,7896 | | | | | | | | | | | |
| Shop_times | 0,6861 | 0,6530 | 0,8996 | 0,1857 | 0,0928 | 0,0003 | 0,0999 | | | | | | | | | | |
| Garbag_bag | 0,2587 | 0,0476 | 0,3889 | 0,4452 | 0,9440 | 0,6060 | 0,2776 | 0,0742 | | | | | | | | | |
| Intim_hyg | 0,6601 | 0,0285 | 0,0832 | 0,5519 | 0,4004 | 0,7200 | 0,4607 | 0,9604 | 0,0000 | | | | | | | | |
| Toilet_paper | 0,4286 | 0,0167 | 0,2158 | 0,4902 | 0,3521 | 0,9564 | 0,9487 | 0,2475 | 0,0000 | 0,0000 | | | | | | | |
| Alcohol_gel | 0,2783 | 0,7019 | 0,6368 | 0,6278 | 0,5938 | 0,6053 | 0,1508 | 0,0094 | 0,0002 | 0,0005 | 0,0000 | | | | | | |
| Bleach | 0,0154 | 0,1014 | 0,3877 | 0,4394 | 0,1695 | 0,0062 | 0,3875 | 0,1660 | 0,0001 | 0,0000 | 0,0000 | 0,0000 | | | | | |
| Kitchen_pap | 0,5202 | 0,9455 | 0,9209 | 0,5674 | 0,3476 | 0,0103 | 0,9951 | 0,2085 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | | | | |
| Shampoo | 0,8385 | 0,0193 | 0,6921 | 0,4788 | 0,1874 | 0,4062 | 0,9928 | 0,7438 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0193 | 0,0000 | | | |
| Pastry_prod | 0,3845 | 0,2190 | 0,1983 | 0,9249 | 0,5623 | 0,6245 | 0,0027 | 0,0172 | 0,0000 | 0,0069 | 0,0000 | 0,0000 | 0,2190 | 0,0113 | 0,0000 | | |
| Other | 0,8891 | 0,8989 | 0,4617 | 0,6068 | 0,3476 | 0,3511 | 0,9951 | 0,4154 | 0,0003 | 0,0262 | 0,0026 | 0,1839 | 0,8989 | 0,0361 | 0,1290 | 0,4969 | |
| No_necess | 0,1104 | 0,1013 | 0,9341 | 0,8825 | 0,5707 | 0,5345 | 0,0522 | 0,0952 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,1013 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |

Table 1. Spearman correlation test (p-value)

7.4.1. General variables

If we get that some variables are correlated, it means that the variation of one of them affects to the other's variation. So our hypothesis will be as follows:

H₀: the two variables we are comparing are not correlated altogether

H₁: the two variables are correlated: the variation of one of them affects to the other's variation.

Just by seeing the table in page 31, we can extract some interesting and surprising conclusions. For example, p value for correlation between housing situation and responsibility shows they are very correlated for any level of significance (p value equal to 0.0001) because depending on who somebody lives with, each one will be the responsible of doing the weekly shopping in a certain level: if we live with our parents we are probably not the main responsible, whereas if we live with our partner, we may be. However, responsibility is just correlated with gender under 10% of significance, but not under 5% (p value equal to 0.08). All at once, responsibility is also correlated with the number of times a person goes to a supermarket to do the shopping; but the number of times of supermarket attendance is not related to risk aversion (p value = 0.1857). This refers to our second hypothesis, which turns to be wrong: we suspected this in significance tests section but we had already said we needed this correlation test. Once we have tested it we can confirm there is no correlation.

On the other hand, attendance to supermarkets is correlated with people's concern about lack of products in shops under 10% of significance (p value = 0.0999), although this correlation seems to be very little.

Finally, we can see again that correlation between gender and risk aversion is very significant (p value is 0.0044), as we have said many times along this investigation and we have also contrasted in the literature review.

7.4.2. Correlation between general variables and products' variables

First of all, although it has nothing to do with the topic of this research, it is quite curious to see the first significant correlation, which refers to personal hygienic products and age. This makes it possible to trust our results because it is not a nonsense that personal hygiene increases as we become adults, so this is reflected in the p value (equal to 0.0285), which is lower than 5% of significance, so we can reject our null hypothesis. However, we cannot say hygiene increases with age because we have not gone that deep.

Getting back to really important results, toilet paper is highly correlated with age (p value = 0.0167). Comparing this result with massive purchases there have been during the lockdown, we can think that the oldest a person is, the more he buys toilet paper, at least in an scenario like ours. We remind again this is our hypothesis, but we have not test it. Reasons are not found with this either, but now we ensure our readers that investigating about this topic might be a good idea.

In the same way, buying alcohol or disinfectant gel is very related to going many times to supermarkets, buying garbage bags or hygienic products, obviously. Panic during coronavirus crisis has made people take more self-care outdoors, especially when going to the supermarket. Same happens between buying bleach, kitchen paper, toilet paper, hygienic products or shampoo: their p value is zero.

About pastry products, they do not show a correlation with age (p value = 0.2190) nor with gender (0.3845), but they do it with concern about lack of products (0.0027). This makes sense as long as we have seen there was a high lack of some pastry products. Maybe it happened due to this fear of running out, also called in our investigation as FOMO: people saw other people in social media making cakes or they heard supermarkets were running out of flour and yeast, so they understood people were cooking a lot and they just came up with the idea of cooking, too.

8. CONCLUSIONS

The goal of this investigation was to analyse how risk aversion affected people's decisions about shopping during an uncertain and exceptional situation the whole world was living, as it is a pandemic. There are many done researches talking about grade aversion, but firstly we wanted to test it with our own data to see if results differed in order to focus our research accordingly. So our first conclusion was that even in such a complicated situation, men were still less risk averse than women.

This led us to start analysing how people took decisions about buying basic products: food, beverages and personal care products.

Getting back to our first hypothesis, we can confirm it: women are more risk averse than men and are the main responsible of the household in terms of doing the weekly shopping, although both genders have been in a supermarket in the same frequency during this period of time. However, despite of the fact that women did believe that some products would run out of supermarkets whereas men did not - as we predicted - women have just bought few products such as disinfectant gel, pastry products and water in a greater quantity. There is no difference among all the products analysed in terms of the quantity bought by women and the quantity bought by men. So we cannot say that

aversion to risk is the cause to the increase of sales in every product, but we have clues to think that for those products with significant differences, it is been this situation and the period of time in which we asked the main reasons for the results in differentiated genders' outcomes. So we were wrong about the last part of our first hypothesis: women did not provide their houses with more products than men did.

For our second hypothesis we need to do a correlation test and see if attendance to a supermarket is correlated with risk aversion level. In case it was, it would mean that as more risk averse a person is, more times he goes to a supermarket because he has more fear or running out of products. Otherwise, if they were not correlated it would mean that more risk lover people may had gone more times to a supermarket than risk averse people. We cannot find an explanation to this, but it might be a topic of study for future investigations.

To what concerns to the correlation between those people who have suffered from coronavirus and their level of aversion, the percentage of infected people was too low to get representative results so we consider it could be a possible topic for investigating in other researches. Also differences between Spanish participants and international ones, to find out how differently countries have lived this experience in terms of consumption, panic or psychological reasons for their actions like it was buying a lot of toilet paper.

It is important to remind that our motivation for this research came first because there were lots of news talking about the lack or massive purchases of toilet paper, and we were curious to understand why people needed this product that much. However, structuring the research and designing the process as well as the questionnaire took us a longer time than expected and the consumption pattern had already changed. This is why we enjoyed much more analysing the data because we got unexpected outcomes: as the period in which we sent the survey was during Easter break, people were really into cooking Easter cakes, which is really typical in Spain. This grade of risk aversion might have done them buy more quantity in respect to what they used to buy, probably because they are more afraid of going out home risking their health in shops, so they prefer to buy more of all the products to avoid unnecessary trips to supermarkets.

We also want to mention some possible future researches about our topic as well as do some recommendations to researchers. A possibility to keep on investigating data from this study is doing an econometric analysis. This would allow us to see how much does consumption change when there is a variation in any or many independent variables, for example. Other variables to study deeply we have mentioned above are investigating differences between national and international participants to know how consumption has been in the rest of the world or what products have been the most bought ones and compare it with our owns. Other variables like "how many people are they locked down

with” could had easily been included to maybe related to “how many times did you go to a supermarket”, for instance.

A recommendation for those who want to investigate the current pattern consumption in any time is to do a literature review of the possible future products to anticipate or corroborate what products will be the most demanded ones and show results before real data comes out. In this sense, we took into account pastry products but we could have seen some others like spring/summer clothes, paddling pools or exercise equipment.

To sum up, our results are really similar to other studies and researches mentioned in the consumption pattern review part, what makes our investigation useful and trustful. Although we probably could had dug deeper in more products’ consumption or asked how much quantity they had exactly bought of each product, it is hard to make people answer consciously to those questions about consumption before coronavirus appearance, so we preferred not to make it boring having to answer so many questions and get less but better results.

9. REFERENCES

- A. Carreras-Candi. (2016, Marzo). "La educación de los hijos, la principal preocupación financiera de las mujeres, según EFPA España". <https://www.efpa.es/actualidad/noticias/la-educacion-de-los-hijos-la-principal-preocupacion-financiera-de-las-mujeres-segun-efpa-espana>
- A. García-Gallego, N. Georgantzís, A. Jaramillo-Gutiérrez and M. Parravano. (2012). El panel de loterías como tarea no paramétrica para la obtención de la actitud frente al riesgo. *Revista Internacional de Sociología*, Vol. 70 No Extra_1. <http://revintsociologia.revistas.csic.es>
- Alcohol en gel: la demanda creció casi 300%, en dos días el precio saltó 48% y hay escasez en los supermercados.* (2020, Marzo). Infobae economics. <https://www.infobae.com/economia/2020/03/16/alcohol-en-gel-la-demanda-crecio-casi-300-en-dos-dias-el-precio-salto-48-y-hay-escasez-en-los-supermercados/>
- Cómo el coronavirus ha cambiado el patrón de consumo.* (2020, 27 abril). SelfBank. <https://blog.selfbank.es/como-el-coronavirus-ha-cambiado-el-patron-de-consumo/>
- Coronavirus: qué están haciendo Amazon, eBay y las grandes tiendas online para evitar la especulación de precios por la pandemia del covid-19.* (2020, Marzo). <https://www.bbc.com/mundo/noticias-51912081>
- D. Ruiz Gómez y J. Tapia Stefanoni. (2010, 15 julio). *Incertidumbre Knightiana vs. Aversión al Riesgo: Consumo óptimo en una economía pequeña y abierta.* https://mba.americaeconomia.com/sites/mba.americaeconomia.com/files/tapia_ruiz_.pdf
- Estos son los productos más demandados durante el confinamiento.* (2020, 22 mayo). El Comercio. <https://www.elcomercio.es/sociedad/productos-demandados-confinamiento-coronavirus-20200522120851-nt>.
- El gel desinfectante de Lidl llega a precios desorbitados en Ebay.* (2020, Marzo). Economía Digital. https://www.economiadigital.es/consumo/gel-desinfectante-lidl-precio-coronavirus-ebay_20040300_102.html
- El PIB de España registra la tercera mayor caída de Europa en el 1T.* (2020, 9 junio). Economía Digital. <https://www.economiadigital.es>
- E.Romeo-Arroyo, M.Mora, L.Vázquez-Araújoab. (2020, Enero). *Consumer behavior in confinement times: Food choice and cooking attitudes in Spain.* *International Journal of Gastronomy and Food Science*, 21(100226). <https://www.sciencedirect.com>

Francisco S. Jiménez. (2020a, mayo 6). *España se lleva el mayor golpe entre las grandes economías por el coronavirus: el PIB se está hundiendo a un ritmo del 7%*. El Economista. <https://www.eleconomista.es>

J. Aníbal and J. Pareja. (2018). *Estimating the risk aversion coefficient using an experimental design with the CRRA function*. Revista Espacios, Vol. 39 (Nº 13) (ISSN 0798 1015). <https://www.revistaespacios.com>

L. González. (2020a, junio 23). *Así ha cambiado el consumo de alimentos en España tras el confinamiento*. Condé Nast Traveler. <https://www.traveler.es/gastronomia/articulos/estudio-consumo-alimentos-despues-confinamiento-basque-culinary-center/18391>

P. Tomey. (2020, 5 marzo). *CÓMO COMBATIR LA PREOCUPACIÓN POR EL COVID-19 APORTANDO VALOR*. Nielsen. <https://www.nielsen.com/es/es/insights/article/2020/como-combatir-preocupacion-por-covid-19-aportando-valor/>

P. Daimiel, Managing Director, Nielsen Spain & Portugal. (2020a, marzo 27). *LOS SEIS COMPORTAMIENTOS DEL CONSUMIDOR ANTE EL COVID-19*. Nielsen. <https://www.nielsen.com/es/es/insights/article/2020/seis-comportamientos-del-consumidor-ante-covid-19/>

P. Schelden. (2020d, marzo). *What 1918 Spanish Flu Death Toll Tells Us About COVID-19 Coronavirus Pandemic*. <https://www.medicinenet.com/script/main/art.asp?articlekey=228841>.

Rubio Salinas, E. (2015, septiembre). *“La Anarquía de las Decisiones: la relación entre aversión al riesgo, racionalidad e inercia”*. <http://repositorio.uchile.cl/bitstream/handle/2250/136992/La%20anarqu%C3%ADa%20de%20las%20decisiones%20%20la%20relaci%C3%B3n%20entre%20aversi%C3%B3n%20al%20riesgo%2C%20racionalidad%20e%20inercia.pdf?sequence=1&isAllowed=y>

Sabater-Grande, G. and N. Georgantzís. 2002. *“Accounting for risk aversion in repeated prisoners’ dilemma games: An experimental test.”* Journal of Economic Behavior and Organization 48:37-50. [http://dx.doi.org/10.1016/S0167-2681\(01\)00223-2](http://dx.doi.org/10.1016/S0167-2681(01)00223-2)

S. Xu, Y. Pan, Z. Qu, Z. Fang, Z. Yang, F. Yang, F. Wuang, H. Rao (2018, 27 febrero). *Differential effects of real versus hypothetical monetary reward magnitude on risk-taking behavior and brain activity*. <https://www.nature.com/articles/s41598-018-21820-0>

T. Mora y J-O. Escardíbul. (2018). LOS EFECTOS DE LA EDAD Y LA EDUCACIÓN EN LA AVERSIÓN AL RIESGO. UN ANÁLISIS SOBRE LAS INVERSIONES FINANCIERAS EN ESPAÑA. *Revista Asturiana de Economía, RAE* N° 41 2008. <https://dialnet.unirioja.es>

Tras declaración del COVID-19 como pandemia, el precio del alcohol en gel se disparó hasta 48%. (2020, Marzo). Ámbito. <https://www.ambito.com/economia/covid-19/tras-declaracion-del-como-pandemia-el-precio-del-alcohol-gel-se-disparo-48-n5088924>

V. Nieves. (2020e, abril 7). *La gripe española de 1918 o por qué actuar rápido es vital para la economía y la salud. El Economista. <https://www.economista.es>*

A. APPENDIX

A1. QUESTIONNAIRE

A1.1 First part

Hi. I am doing my economics final year project and I would like you to help me by answering this short questionnaire. The purpose of these data collection is academic and will be used exclusively for the development of this research in an anonymous way. I would appreciate if you answered it honestly and only once. Please share with your friends so that I can collect as much data as possible. Thank you very much for your cooperation.

1. Gender:

- Man
- Woman

2. Age:

- 16-25 years old
- 26-40 years old
- 41-55 years old
- 56 years or older

3. Which of the following best describes your current housing situation?

- I live alone
- I live with my partner but without children
- I live with my partner and children
- I live with my parents
- Another option not mentioned above

4. What country do you live in? (Open question)

5. Do you live in a city or in a village?
- City
 - Village
6. Are you the responsible for doing the weekly shopping in your house?
- Always, except for specific cases in which another member of the household is engaged
 - Sometimes
 - Hardly ever
 - Never
7. Given the current situation caused by Covid-19, do you think you will run out of products in supermarkets in your country?
- Yes, all products are likely to be sold out
 - Yes, but only some products will run out
 - Not at all
8. Have you noticed shortage or a lack of any of the products listed below? You can choose more than one:
- Meat, fish, sausage
 - Fruit and vegetables
 - Household cleaning products: detergents, fabric softeners, kitchen paper, multipurpose products ...
 - Pet's products
 - Personal hygiene products: shampoo, deodorants, toilet paper, toothpaste, handkerchiefs, intimate hygiene products
 - Preserved food, rice, pasta
 - Water
 - Milk
 - Bread
 - Pastry products (products to make desserts)
 - Other products not mentioned above
 - I don't think we reach that point in any case

9. Since coronavirus cases skyrocketed in your country, how many times have you been to a supermarket per week?

- None
- 1 or 2 times per week
- 3-6 times per week
- 7-10 times per week
- More than 10 times

10. Since it was advised not to leave your house more than necessary, have you been tempted to go to the supermarket to buy any of these products? You can choose more than one:

- Garbage bags
- Intimate hygiene products
- Toilet paper
- Alcohol or disinfectant gel
- Bleach or other household products
- Kitchen paper
- Shampoo, gel, hand soap ...
- Confectionery products: flour, yeast, sugar, cinnamon ...
- Other products not mentioned above
- I have not felt the special need to buy any product

11. Choose the main reason why you have purchased or have not purchased each of the above products (Slide the answer options to the left to see more):

| Products | I'd have bought it anyway | There were few units left | Many people were buying it | I didn't need it | I was ashamed of buying it |
|---|---------------------------|---------------------------|----------------------------|------------------|----------------------------|
| Garbage bags | | | | | |
| Intimate hygiene products | | | | | |
| Toilet paper | | | | | |
| Alcohol or disinfectant gel | | | | | |
| Bleach or other household products | | | | | |
| Kitchen paper | | | | | |
| Shampoo, gel, hand soap.. | | | | | |
| Confectionery products: flour, yeast, sugar, cinnamon ... | | | | | |

12. Regarding these products, what quantity have you bought compared to what you used to do? (Swipe the answer options to the left to see more)

| Products | More than before | Less than before | Same quantity | I haven't bought |
|--|------------------|------------------|---------------|------------------|
| Detergents, soaps, cloths .. | | | | |
| Kitchen paper | | | | |
| Toilet paper | | | | |
| Handkerchiefs, wipes.. | | | | |
| Alcohol or disinfectant gel | | | | |
| Pastry products (products to make desserts) | | | | |
| Shampoo, gel, hand soap, toothpaste | | | | |
| Bread | | | | |
| Water | | | | |
| Milk | | | | |
| Canned food | | | | |
| Rice, pasta, potatos | | | | |
| Pastries | | | | |
| Drinks: energetics, alcohol, beers, juice... | | | | |

13. Indicate the reason for buying a greater quantity of the products specified in the previous question

14. Have you heard of FOMO (Fear of Missing Out)?

- Yes
- No

15. Do you think that the massive attendance to supermarkets, especially at the beginning of the quarantine period, is due to this phenomenon?

- Yes
- No
- I don't know

16. In Spain, toilet paper has been one of the main players of this pandemic (maybe also in your own country). Please indicate briefly why you think this has happened.

17. Is there a member of your household who has been affected or who is affected at the time you answer this survey by Covid-19?

- Yes
- No

18. If yes, is he/she considered a person at risk? (Elderly/ with previous pathologies, pregnant...)

- Yes
- No

A1.2. Second part

In each of the following questions, you have two options with probabilities of winning a different amount of money, so the option you choose would make you win, for example, 100 monetary units (m. u.), with a probability of 30% or 80 m. u., with 70% of chance. Consider m. u. in your own currency (€, \$, pounds...). For each question, choose the option you would prefer.

1. Choose your preference between these options:
 - 30% chance of winning 100 m. u., 70% chance of winning 80 m. u.
 - 30% chance of winning 190 m. u., 70% chance of winning 5 m. u.

2. Choose your preference between these options:
 - 60% chance of winning 100 m. u., 40% chance of winning 80 m. u.
 - 60% chance of winning 190 m. u., 40% chance of winning 5 m. u.
3. Choose your preference between these options:
 - 10% chance of winning 100 m. u., 90% chance of winning 80 m. u.
 - 10% chance of winning 190 m. u., 90% chance of winning 5 m. u.
4. Choose your preference between these options:
 - 90% chance of winning 100 m. u., 10% chance of winning 80 m. u.
 - 90% chance of winning 190 m. u., 10% chance of winning 5 m. u.
5. Choose your preference between these options:
 - 50% chance of winning 100 m. u., 50% chance of winning 80 m. u.
 - 50% chance of winning 190 m. u., 50% chance of winning 5 m. u.
6. Choose your preference between these options:
 - 70% chance of winning 100 m. u., 30% chance of winning 80 m. u.
 - 70% chance of winning 190 m. u., 30% chance of winning 5 m. u.
7. Choose your preference between these options:
 - 20% chance of winning 100 m. u., 80% chance of winning 80 m. u.
 - 20% chance of winning 190 m. u., 80% chance of winning 5 m. u.
8. Choose your preference between these options:
 - 80% chance of winning 100 m. u., 20% chance of winning 80 m. u.
 - 80% chance of winning 190 m. u., 20% chance of winning 5 m. u.
9. Choose your preference between these options:
 - 40% chance of winning 100 m. u., 60% chance of winning 80 m. u.
 - 40% chance of winning 190 m. u., 60% chance of winning 5 m. u.