

# Zombies ahead: The Covid-19 consumption game-changer

## Evidence from a large-scale multi-country survey

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### Abstract

Prospective economic developments depend on the behavior of consumer spending. A key question is whether private expenditures recover once social distancing restrictions are lifted or whether the COVID-19 crisis has a sustained impact on consumer confidence, preferences, and, hence, spending. The elongated and profound experience of the COVID-19 crisis may fundamentally change consumer preferences. We conducted a representative consumer survey in five European countries in summer 2020, after the release of the first wave's lockdown restrictions, and document the underlying reasons for households' reduction in consumption in five key sectors: tourism, hospitality, services, retail, and public transports. We identify a large confidence shock in the Southern European countries and a permanent shift in consumer preferences in the Northern European countries, particularly among high-income earners. We conclude that horizontal fiscal support risks creating zombie firms and hindering the necessary reallocation of resources.

Keywords: COVID-19; household behavior; consumption; expectations; consumer preferences; economic resilience; sectoral changes; zombification; fiscal policy.

JEL Classifications: D12, D81, D84, E21, E60, E71, G51, H30.

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# 1 Introduction

*“Recovery is sound only if it does come of itself. For any revival which is merely due to artificial stimulus leaves part of the work of depressions undone”* Schumpeter (1934)

The COVID-19 pandemic has swiftly transformed life as we knew it and has plunged the world into the worst economic downturn since the 1930s (IMF, 2020). Following the onset of the COVID-19 crisis, governments have initially responded with a huge fiscal stimulus, including a range of generous support packages for firms. The premise of these wholesale support schemes is that the crisis is facing businesses with a temporary liquidity shock, and that normal revenues will resume once this difficult period has been bridged. However, as the extended duration of the crisis is becoming clear, governments are facing critical questions on how best to design their continuing support to the economy.

The longer the crisis lasts, the higher the likelihood that the post-COVID-19 economy will fundamentally differ from what preceded it. If consumer preferences have fundamentally shifted in response to the COVID-19 experience, many firms and sectors will become obsolete. Bailing out such firms is likely to create unsustainable so-called “zombies” and mismatch unemployment in the long run.

This paper seeks to provide insight into how different the post-COVID-19 equilibrium might be from what preceded it by using a large scale multi-country survey. We are primarily interested in whether the lockdown experience altered consumption trends and whether long-term sectoral consumption shifts are likely. For this purpose, a survey method is needed to provide insights on *why* consumption is shifting.<sup>1</sup> The sample consists of 7,500 households and is representative for the general population in France, Germany, Italy, The Netherlands, and Spain. These five countries represent most of the EU economy but have experienced differing health crisis severities and lockdown intensities.<sup>2</sup>

We collected the data after the first lockdown experience in July 2020, at a point when those initial restrictions were completely lifted. The survey covers five sectors and activities: tourism (traveling abroad for private reasons), hospitality

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<sup>1</sup>Parker and Souleles (2019) study the difference between reported (survey) data and revealed consumption expenditures. This research shows that self-reported data works well in predicting consumption behavioural changes, and in estimating population aggregates.

<sup>2</sup>In 2019, these five countries account for 70% the EU’s GDP; 25% was generated by Germany, followed by France 17% and Italy 13%, ahead of Spain 9% and the Netherlands 6% (Eurostat).

(restaurants, bars, and cafes), services (such as hairdressers), retail (shopping in malls and other stores), and public transport. The survey asks households how their consumption has changed as a result of the COVID-19 lockdown experience. Households are specifically asked to state the main reason for their consumption changes. We focus on five possible drivers of consumption changes: (i) financial constraints, (ii) worry of infection risk, (iii) a lack of confidence in the future that induces a rise in precautionary savings, (iv) substitution to online alternatives, or (v) permanent shifts in taste and preferences arising from the lockdown experience. We focus on these key reasons, as each would imply a different optimal policy response.

Our focus on households' self-reported reasoning for the shifts in their consumption behavior allows us to identify the underlying drivers for consumption changes for each sector. We thus provide initial evidence on *the nature* of the COVID-19 demand shock, and on *how durable* the reported consumption shifts could turn out in the post-COVID-19 environment. Are we merely experiencing a transitory income shock? A shock to consumer confidence? Or is the COVID-19 experience a game-changer, creating permanent shifts in consumer preferences?

Our paper contributes to the fast-emerging literature studying the effect of the COVID-19 outbreak on households' consumption behavior.<sup>3</sup> This related literature is generally descriptive in nature, quantifying shifting consumption patterns during the first lockdown in spring 2020—often using financial transaction data.<sup>4</sup> Using micro-simulations on UK data, Brewer and Gardiner (2020) discuss the economic and distributional effects of various fiscal interventions. The authors show that the COVID-19 crisis disproportionately impacts low-educated and low-income households. A handful of papers rely on large-scale survey data from households. For the US, Coibion et al. (2020a) document the impact of lockdown measures on a wide range of household variables, including consumption patterns. Coibion et al. (2020b) show that public communication amid the COVID-19 crisis had little impact on households' beliefs and consumption decisions. Using cross-country survey data, Adams-Prassl et al. (2020) find that the COVID-19 crisis exacerbates inequalities in the UK, US, and German labor market. Piyapromdee and Spittal (2020) report similar findings for the UK. Zwanka and Buff (2021) discuss the potential channels

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<sup>3</sup>We limit ourselves to the literature related to the COVID-19 pandemic. Of course, there are other large strands of related literature: the determinants of households' consumption, the effects of recessions on households' behavior, and the literature on survey and sampling methods.

<sup>4</sup>Andersen et al. (2020) for Denmark; Baker et al. (2020) for the US; Bounie et al. (2020) for France; Carvalho et al. (2020) for Spain; Chronopoulos et al. (2020) for the UK.

through which the COVID-19 crisis could generate lasting changes to consumption habits, and conclude by emphasising the need for detailed empirical work.

We contribute to this existing literature in three ways. First, and most importantly, the data on households’ self-reported reasons for consumption changes allows us to go beyond the mere description of realized consumption changes. The reasons for consumption drops can vary across sectors and countries. Second, we identify which types of consumers are shifting their consumption the most, and for what reasons. We need to know *why* consumption patterns are shifting and *who* is shifting them to support policy-makers in devising the optimal design of fiscal policies. Third, the cross-country dimension allows us to link the survey outcomes to the economic fundamentals and the intensity of the COVID-19 experience.

Our analysis reveals six main findings, each of which has relevant policy implications. First, compared to before the COVID-19 outbreak, a large proportion of households report consuming “less than before” or “not at all”, ranging between a 38 and 66 percent reduction—depending on the consumption category. We observe the largest decline for the tourism sector: sixty-six percent of households report that they will now travel less abroad for private reasons. The second-largest drop is found in the public transport sector, with 58 percent of households reporting to use public transport less following the COVID-19 outbreak. The third-largest drop concerns the hospitality sector, with 55 percent of households reporting a drop in their appetite to visit restaurants, bars, and cafes.<sup>5</sup> A similarly large impact in consumption demand is observed in the retail sector, with 46 percent of households reporting a drop in the frequency of their visits to shops, malls, and other physical retail outlets. Services such as hairdressers see the smallest decline, with thirty-eight percent of households reporting to use these services less often. It is important to stress that these drops are not due to lockdown measures, as these restrictions were not in place in July 2020 at the point when the survey was carried out.

Second, for almost all sectors and countries, the fraction of households reducing their consumption correlates with the severity of the COVID-19 health crisis. A personal COVID-19 infection experience explains a substantial part of households’ consumption reduction, while standard socio-economic household characteristics such as income and education are not relevant. By contrast, behavioral factors such as

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<sup>5</sup>This sector faces the second-largest decline in France, Germany, and Spain; and the third-largest decline in Italy and The Netherlands. The drop ranges from 66 percent of households visiting restaurants less often in Spain to 48 percent in France.

personal experiences, macroeconomic expectations (pessimism), and psychological factors such as fear about the future matter for households' change in consumption.

Third, the largest fraction of households that report consuming now “less often than before” or “not at all” cite the infection risk as the main reason for changing their behavior. This result holds for all sectors and countries.

Fourth, the fraction of households reporting to consume less because the lockdown has permanently altered their preferences is substantial. Specifically, we observe high proportions of households reporting the realization of not missing consuming things. Such permanent preference shifts are particularly apparent in the services and hospitality sectors. For example, the fraction of households realizing that they do not miss services such as hairdressers amounts to 23 percent in France. Similarly, the fraction of households realizing they do not miss going to restaurants amounts to 21 percent in Germany. In France and Germany, households report that—across all sectors—“not missing it” is the second most powerful driver for households' reduced consumption. Similarly, in The Netherlands, the permanent preference shift is the second most frequently cited reason for reduced consumption in all but one sector.<sup>6</sup> Interestingly, these households are mainly middle-aged, high-income households and the least likely to have had a personal COVID-19 experience. The fact that mainly high-income households realized through the lockdown experience, that they do not miss consuming certain things, might reinforce the change in consumer demand.

Fifth, precautionary saving is a substantial driver for changing consumption patterns in Spain and Italy. In these countries, increased saving appetite is the second most important reason for reductions in consumption across almost all product categories. While in Germany, France, and the Netherlands, the saving motive is the third most popular reason, after the infection risk and the permanent preference shift. These households are mainly young families.

Sixth, the fraction of households reporting “financial constraints” as the main reason for reducing consumption is small. The fraction of households that cite either “precautionary saving motives” or “permanent changes in preferences” as the key reason for lower consumption is far greater than the fraction reporting “financial constraints”. This observation is valid for all countries and sectors. This result surely reflects the unprecedented size of the governmental financial support programs that have protected households to a great extent in all countries during 2020.

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<sup>6</sup>The exception is the retail sector, where households' second primary reason is the substitution for online shopping.

Given these behavioral changes, how can policy-makers boost economic recovery while containing the pandemic’s adverse effects? We draw three policy conclusions.

First, our results suggest that we might not go back to the old normal. Profound and elongated experiences, such as the COVID-19 pandemic, tend to create new habits and produce a permanent shift in behavior. This paper shows initial evidence that consumer demand is already changing in ways that may have lasting consequences for the economy. During the lockdown, many households realized they do not miss certain services, for example, restaurants or hairdressers. Within the retail sector, a substantial fraction of respondents reported shifting their consumption away from high street stores onto online alternatives.

This evidence suggests that the post-COVID 19 economy’s equilibrium will look substantially different from the one the world left behind in February 2020. Government financial support to businesses should be designed with the goal of adjusting to the new equilibrium in mind. Some incumbent firms will find themselves to be obsolete in the new and different post-pandemic economy. Policy must seek to avoid that support to businesses is extended too generously, too broadly, and for too long—as this will tend to artificially extend the lives of zombie firms. If the prevalence of such zombie firms is allowed to proliferate, long-run problems are created; mismatch unemployment, inefficient resource allocation, and lower post-pandemic growth.

Sound COVID-19 fiscal support to businesses requires market mechanisms to be retained that dissuade unviable firms from prolonging their exit from the market. In recognition of this, the G30 has rightly called on governments to ensure that businesses receiving fiscal support retain substantial “skin in the game” (G30, 2020). This could involve setting government guarantees on business borrowing significantly below 100% of the total value of the debt taken out. Similarly, interest rates on direct government lending to businesses should be discriminatory—rewarding financially stronger firms in a way that reflects their more robust prospects. Such market mechanisms allow a better balance between keeping viable firms alive through the temporary crisis and avoiding zombification sponsorship. Instead of simply keeping all the firms that existed pre-COVID alive, fiscal resources should focus more on cultivating workers and firms to transition into new growth areas.

Second, our results suggest that broad-based policies aiming to restore consumption to pre-pandemic levels by reducing the pricing of products and services (e.g., VAT cuts) are unlikely to be effective. Financial constraints are the least reported

reason for consumption drops. Instead, fiscal support should be laser-like in targeting those low-educated, low-income households who are particularly hard hit by the crisis. Such support should be oriented towards helping displaced workers to retrain and find new jobs.

Third, our results indicate that the objectives of protecting citizens from the virus risk and preserving economic prosperity may not lead to any trade-offs. During the time of the survey, lockdowns and travel restrictions were lifted in the countries under investigation. However, the fraction of households reducing consumption during this time highly correlates with the number of death per 1M population that mostly occurred during the lockdown phase. Hence, governments should treat the control of the infection risk as a prerequisite to achieving their objectives of preserving economic prosperity.

The remainder of this paper is organized as follows. Section 2 describes the data and the survey design. Section 3 summarizes our key findings, Section 4 concludes.

## 2 Survey Design and Data

### 2.1 Data collection

To investigate households' consumption behavior during the COVID-19 “dance phase”<sup>7</sup>, we conducted a representative survey in five countries: France, Germany, Italy, The Netherlands, and Spain. The company IPSOS collected the data on our behalf using their online panel of consumers. Samples are representative for the general population (aged 18 year-old and older) on gender, age, education and occupation (based on the one-digit ISCO-classification). The representativeness of the samples is ensured by setting a non-interlocking quota. The survey was conducted during the period from July 10th–28th, 2020. During this time, lockdowns and travel restrictions were lifted in all five countries. The sample size equals 7,501, see Appendix Table A1.

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<sup>7</sup>The “hammer” phase refers to the lockdown. The “dance” phase describes times when lockdown restrictions are entirely lifted—while no effective treatment or vaccine is widely available (i.e., infection risk remains). We borrow this terminology from Pueyo (2020), who describes this “hammer and dance” pandemic management from an epidemiological perspective.

## 2.2 Descriptive Statistics

The survey first collected background information on the households. Data was collected on households' socio-economic situation, personal experience with a COVID-19 infection, concerns related to the COVID-19 crisis, macroeconomic expectations, and levels of trust and satisfaction with their government. Having answered these background questions, households were asked questions about their consumption behavior. This section provides descriptive statistics of the data.

### 2.2.1 Households' socio-economic background

For each country, Appendix Tables A2-A3 report descriptive statistics of the socio-economic characteristics of the sample. Appendix Table A2 documents that the average respondent is 50 years old and shows the average household size and the distribution across three education categories (low, middle, high).

*Financial Statistics:* The distribution of households' income—yearly total income, after tax and compulsory deductions, from all sources (across ten income bins)—is reported in Appendix Table A3. Column 5 of Appendix Table A4 reports the fraction of households that have the ability to make an unexpected payment of one-month of income. More than two-thirds of the households have this ability. Interestingly, the variation across countries is negligible.

Column 6 of Appendix Table A4 reports households' perception of how they cope financially with their current income. The survey question is “Which of these descriptions comes closest to how you feel about your household's income nowadays?”, with five answer categories, ranging from 1: “Very difficult on present income and insufficient to cover all the expenses” to 5= “Living comfortably on present income and able to save”. The cross-country variation is small, ranging from 2.6 to 3.5. The average household is coping on current income in most countries. Spanish households are facing the most financial difficulties, with an average value of 2.6.

*Employment statistics:* Appendix Table A4 reports the employment statistics. Column 1 reports the fraction of households in paid work, Column 2 the fraction not being part of the labor force, and Column 3 the unemployment rate. Column 4 reports the fraction of households having experienced an unemployment spell for more than three months over the past five years. The fraction of households falling into this category varies between 13 percent in Germany to 39 percent in Spain.



## 2.2.2 Households’ COVID-19 experience, concerns and expectations

*Personal Experiences:* Table 1 documents the number of confirmed COVID-19 death per 1M population (July 10th, 2020) and the fraction of households that report having been personally exposed to a COVID-19 infection. Households were asked, “Did you or a person close to you suffer from severe COVID-19 infection?” Spain reports the highest fraction with 17 percent, followed by The Netherlands (9 percent), France (8 percent), Italy (7 percent), and Germany (3 percent).

| Country         | Survey data                 |          |      | COVID-19 statistics |                   |
|-----------------|-----------------------------|----------|------|---------------------|-------------------|
|                 | personal experience<br>mean | st. dev. | N    | deaths              | deaths/<br>1M pop |
| France          | 0.08                        | 0.27     | 1478 | 29,979              | 459               |
| Germany         | 0.03                        | 0.17     | 1487 | 9,130               | 109               |
| Italy           | 0.07                        | 0.26     | 1474 | 35,092              | 580               |
| The Netherlands | 0.09                        | 0.29     | 1487 | 6,135               | 358               |
| Spain           | 0.17                        | 0.38     | 1483 | 28,403              | 607               |
| Total           | 0.09                        | 0.29     | 7409 | 108,739             | 398               |

Notes: The first column reports the percentage of households with a personal COVID-19 experience. The survey question is “Did you or a person close to you suffer from severe COVID-19 infection?” (1=yes; 0=no). The last two columns provide the number of confirmed COVID-19 deaths and the number of deaths/1M population for July 10th, 2020. Source: <https://www.worldometers.info/coronavirus/>.

Table 1: Experiences with COVID-19 infections

*Financial and job-related concerns:* Panel A in Table 2 reports how worried households are about losing their job in the near future. The median household in France, Germany, and The Netherlands is “not worried”, while the median household in Spain and Italy are “somewhat worried”. Panel B in Table 2 shows that households report to be more worried about the broad negative effects that the coronavirus might have on their financial situation than about losing their job outright. We observe a substantial cross-country heterogeneity. Households in Spain are most concerned, followed by Italy, France, the Netherlands, and Germany.

*Macroeconomic expectations and pessimism:* Table 3 documents households’ expectations on when the COVID-19 crisis will end. Households were asked: “In your opinion, when will COVID-19 be totally under control such that it is safe to release all COVID-19 containment measures in your country?”. The respondents could choose among five different time windows: July-September 2020, October-December

| <b>Panel A: Job Loss Concerns</b>  | mean | st. dev. | p10 | p25 | p50 | p75 | p90 | N    |
|------------------------------------|------|----------|-----|-----|-----|-----|-----|------|
| France                             | 1.63 | 0.74     | 1   | 1   | 1   | 2   | 3   | 859  |
| Germany                            | 1.49 | 0.66     | 1   | 1   | 1   | 2   | 2   | 897  |
| Italy                              | 1.87 | 0.77     | 1   | 1   | 2   | 2   | 3   | 886  |
| The Netherlands                    | 1.52 | 0.67     | 1   | 1   | 1   | 2   | 2   | 838  |
| Spain                              | 2.04 | 0.73     | 1   | 2   | 2   | 3   | 3   | 1017 |
| Total                              | 1.72 | 0.75     | 1   | 1   | 2   | 2   | 3   | 4497 |
| <b>Panel B: Financial Concerns</b> | mean | st. dev. | p10 | p25 | p50 | p75 | p90 | N    |
| France                             | 5.79 | 2.54     | 2   | 4   | 6   | 8   | 9   | 1460 |
| Germany                            | 4.44 | 2.98     | 1   | 2   | 5   | 7   | 8   | 1459 |
| Italy                              | 6.45 | 2.54     | 3   | 5   | 7   | 8   | 10  | 1457 |
| The Netherlands                    | 4.87 | 2.62     | 1   | 3   | 5   | 7   | 8   | 1463 |
| Spain                              | 7.42 | 2.20     | 5   | 6   | 8   | 9   | 10  | 1458 |
| Total                              | 5.79 | 2.80     | 1   | 4   | 6   | 8   | 9   | 7297 |

Panel A: The survey question is “How worried are you about losing your job in the near future?” Answer options: 1-3. 1= not worried; 2 = somewhat worried; 3 = very worried. Panel B: The survey question is “How concerned are you about the effects that the coronavirus might have for the financial situation your household?” Answer options: 0-10. 0 (= not at all concerned) to 10 (= extremely concerned).

Table 2: COVID-19 related financial concerns

2020, January-June 2021, July-December 2021, and later. We observe considerable cross-country variation. Interestingly, Italy seems to be the most optimistic country in their predictions of the length of the crisis. Twenty-four percent believe that it is safe to release all COVID-19 containment measures by the end of 2020, while 41 percent think it will be later than July 2021. The second most optimistic country is The Netherlands, followed by Germany, then France. Spanish households have the most pessimistic outlook. Only 9 percent expect the crisis to be over by the end of 2020, while 64 percent expect the crisis to last later than July 2021.

|                       | France  | Germany | Italy   | The Netherlands | Spain   |
|-----------------------|---------|---------|---------|-----------------|---------|
|                       | Percent | Percent | Percent | Percent         | Percent |
| July-September-2020   | 3.33    | 4.27    | 7.47    | 6.93            | 2.73    |
| October-December 2020 | 9.13    | 10.07   | 16.73   | 14.13           | 6.4     |
| January-June 2021     | 28.73   | 28.67   | 35.20   | 34.80           | 26.98   |
| July-December 2021    | 26.47   | 26.27   | 22.87   | 24.87           | 34.58   |
| Later                 | 32.33   | 30.73   | 17.73   | 19.27           | 29.31   |
| Total                 | 100     | 100     | 100     | 100             | 100     |

Notes: The survey question is “In your opinion, when will COVID-19 be totally under control such that it is safe to release all COVID-19 containment measures in your country?”

Table 3: Expectations about the duration of COVID-19 containment measures

Turning to our proxy for pessimism, Table 4 reports households’ predictions about the unemployment rate before the crisis and their expectations about the current and future unemployment rates. In all countries, the average household overestimates the pre-crisis and current unemployment rates compared to the actual figures (source: OECD). This systematic expectation bias is common in household surveys and may not reflect pessimism but rather the misperception of macroeconomic variables. For this reason, in the sequel, we use the predicted *change* in the unemployment rate as a proxy for households’ pessimism. This predicted change at one year ahead directly reflects the expected macroeconomic impact of the COVID-19 crisis and varies from 5 percentage points in Germany to 10 in Spain.

|                                       | France           | Germany          | Italy            | The Netherlands  | Spain            |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|
| <hr/>                                 |                  |                  |                  |                  |                  |
| Unemployment rate<br>point prediction |                  |                  |                  |                  |                  |
| before the crisis                     | 14.58<br>(14.39) | 9.55<br>(12.06)  | 21.62<br>(17.56) | 11.56<br>(12.54) | 19.67<br>(14.11) |
| now (July 2020)                       | 20.89<br>(18.57) | 14.21<br>(15.66) | 31.39<br>(22.91) | 19.68<br>(18.28) | 20.30<br>(20.30) |
| one-year-ahead                        | 21.82<br>(19.09) | 14.40<br>(15.58) | 30.81<br>(22.80) | 20.37<br>(18.53) | 29.62<br>(19.16) |
| in the next 2-3 years                 | 19.49<br>(19.37) | 13.10<br>(15.66) | 26.48<br>(22.67) | 16.25<br>(17.02) | 24.08<br>(18.41) |
| <hr/>                                 |                  |                  |                  |                  |                  |
| Unemployment rate<br>OECD data        |                  |                  |                  |                  |                  |
| July 2019                             | 8.5              | 3.0              | 9.7              | 3.4              | 14.3             |
| July 2020                             | 6.9              | 4.4              | 9.7              | 4.5              | 15.8             |

Notes: The first four rows report the (mean) point prediction, standard deviation in parentheses. The survey question is “Please indicate what you think the unemployment rate was or will be in your country at different points in time.” The last two rows show the realized unemployment rates, measured in numbers of unemployed as % of the labour force (seasonally adjusted). Source: OECD (2020), Unemployment rate (indicator). doi: 10.1787/52570002-en (Accessed on 2020-09-17).

Table 4: Macroeconomic Expectations

*Trust and Satisfaction with the Government:* Panel A of Table 5 documents households’ trust level with the prospective government. Households were asked, “Please tell us how much you personally trust or distrust the (*country name*) government?”. Governments are most trusted in The Netherlands, followed by Germany, Italy, France, and finally, Spain. Panel B of Table 5 shows that a similar pattern for the satisfaction with governments. Households are most satisfied in The Netherlands, followed by Germany, Italy, and Spain. French households are the most dissatisfied with their government.

| <b>Panel A: Trust</b>        | mean | st. dev. | p10  | p25  | p50  | p75  | p90  | N    |
|------------------------------|------|----------|------|------|------|------|------|------|
| France                       | 3.30 | 1.24     | 2.00 | 2.00 | 3.00 | 4.00 | 5.00 | 1462 |
| Germany                      | 2.79 | 1.19     | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 1451 |
| Italy                        | 3.22 | 1.27     | 2.00 | 2.00 | 3.00 | 4.00 | 5.00 | 1454 |
| The Netherlands              | 2.68 | 1.28     | 1.00 | 2.00 | 2.00 | 4.00 | 5.00 | 1469 |
| Spain                        | 3.43 | 1.43     | 1.00 | 2.00 | 4.00 | 5.00 | 5.00 | 1469 |
| Total                        | 3.08 | 1.32     | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 7305 |
| <b>Panel B: Satisfaction</b> | mean | st. dev. | p10  | p25  | p50  | p75  | p90  | N    |
| France                       | 3.51 | 1.23     | 2.00 | 2.00 | 4.00 | 5.00 | 5.00 | 1449 |
| Germany                      | 2.75 | 1.28     | 1.00 | 2.00 | 2.00 | 4.00 | 5.00 | 1458 |
| Italy                        | 2.96 | 1.34     | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 1445 |
| The Netherlands              | 2.59 | 1.34     | 1.00 | 2.00 | 2.00 | 4.00 | 5.00 | 1462 |
| Spain                        | 3.37 | 1.43     | 1.00 | 2.00 | 3.00 | 5.00 | 5.00 | 1464 |
| Total                        | 3.04 | 1.37     | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 7278 |

Panel A: The survey question is “Please tell us how much you personally trust or distrust the (*country name*) government?”. Panel B: The survey question is “How satisfied are you with the way the (*country name*) government led by (*country leader name*) is doing its job?”. Answer categories: 1= Very much trust, 2= Somewhat trust, 3= Neither trust nor distrust, 4= Somewhat distrust, 5= Very much distrust. Dropped: 6= I don’t know and 7= I prefer not to answer.

Table 5: Trust and Satisfaction with Government

|  | <b>experience</b> |                   | <b>concerns</b>     |                      | <b>expectations</b> |                 | <b>government</b> |                   |
|--|-------------------|-------------------|---------------------|----------------------|---------------------|-----------------|-------------------|-------------------|
|  | deaths/<br>1M pop | infection<br>rate | job loss<br>concern | financial<br>concern | crisis<br>end       | unempl.<br>rate | trust             | satis-<br>faction |
| <b>Panel A:</b>  |                   |                   |                     |                      |                     |                 |                   |                   |
| France   | 459               | 0.08              | 1.63                | 5.79                 | 3.3                 | 21.82           | 3.3               | 3.51              |
| Germany  | 109               | 0.03              | 1.49                | 4.44                 | 2.79                | 14.4            | 2.79              | 2.75              |
| Italy  | 580               | 0.07              | 1.87                | 6.45                 | 3.22                | 30.81           | 3.22              | 2.96              |
| The Netherlands  | 358               | 0.09              | 1.52                | 4.87                 | 2.68                | 20.37           | 2.68              | 2.59              |
| Spain  | 607               | 0.17              | 2.04                | 7.42                 | 3.43                | 29.62           | 3.43              | 3.37              |
| <b>Panel B: Cross-Country Correlation with COVID-19 experience</b> |                   |                   |                     |                      |                     |                 |                   |                   |
| deaths/1M pop  | 1                 | 0.73              | 0.86                | 0.92                 | 0.80                | 0.96            | 0.80              | 0.58              |
| infection rate   | 0.73              | 1                 | 0.77                | 0.81                 | 0.60                | 0.65            | 0.60              | 0.50              |

Notes: Column 1: number of confirmed COVID-19 deaths/1M population for July 10th, 2020. Source: <https://www.worldometers.info/coronavirus/>. Column 2, question: “Did you or a person close to you suffer from severe COVID-19 infection?” (1=yes; 0=no). Column 3, question: “How worried are you about losing your job in the near future?” Answer options: 1-3. 1= not worried; 2 = somewhat worried; 3 = very worried. Column 4, question: “How concerned are you about the effects that the coronavirus might have for the financial situation your household?” Answer options: 0-10. 0 (= not at all concerned) to 10 (= extremely concerned). Column 5, question: “In your opinion, when will COVID-19 be totally under control such that it is safe to release all COVID-19 containment measures in your country?”. Column 6, question: “Please indicate what you think the unemployment rate was or will be in your country in one year from now.” Column 7, question: “Please tell us how much you personally trust or distrust the (*country name*) government?”. Column 8, question: “How satisfied are you with the way the (*country name*) government led by (*country leader name*) is doing its job?”. Answer categories: 1= Very much trust, 2= Somewhat trust, 3= Neither trust nor distrust, 4= Somewhat distrust, 5= Very much distrust. Dropped categories 6= I don’t know and 7= I prefer not to answer.

Table 6: Cross-Country Correlations with COVID-19 infection and death experience

Next, we investigate the relationship between personal COVID-19 experiences and the variables discussed in this section. We measure the average COVID-19 experience using the two variables presented in Table 1; that is, the self-reported infection rate and the officially confirmed COVID-19 deaths per 1M population. Table 6 shows meaningful cross-country correlations. The severity of the COVID-19 experience correlates positively with the level of worry and fear, pessimism (unemployment increase and the end date of infection risk), and negatively correlates with the trust and satisfaction level with the government.

### 2.2.3 Households' consumption-specific questions

Households were surveyed about their consumption behavior in five sectors (*activities*): (i) public transports (*usage*), (ii) tourism (*traveling abroad for private reasons*), (iii) services (*use services such as hairdressers or beauty salons*), (iv) hospitality (*visiting restaurants, bars and cafes*), and (v) retail (*shopping in malls or other stores*). We chose these five sectors because they constitute a large part of total household consumption expenditure in normal times and because these sectors have been particularly affected by the lockdown (social-distancing) measures.

For each sector, households are asked whether they are now consuming more, less, not at all, or the same compared to before the COVID-19 outbreak. We also screen for households who never consumed pre-pandemic.

If a household reports a change in consumption behavior, the household is asked to provide the main reason for the change. Households can select between six main reasons: (i) "I cannot afford it anymore", (ii) "I am worried to get infected with COVID-19", (iii) "I want to save more", (iv) "I realized I don't miss it anymore", (v) "I buy more online instead", and (vi) "other reason". We interpret the alternatives as (i) financial constraints due to the COVID-19 income shock, (ii) worry of temporary infection risk, (iii) precautionary saving motives due to drop in consumer confidence, (iv) lockdown has permanently altered preferences, and (v) substitution to online consumption.

The next section analyzes for each country and consumption sector, the changes in household consumption behavior, and the reported primary reason for these changes.

### 3 Survey results

This section first presents the households’ reported consumption changes for each sector and country. The change refers to consumption during the dance phase (where restrictions were lifted) compared to before the COVID-19 outbreak. Second, this section analyzes the reported consumption changes in light of the demographic and other background information collected. Finally, this section documents the self-reported main reason for the change in consumption behavior.

#### 3.1 Overview of consumption changes during dance phase

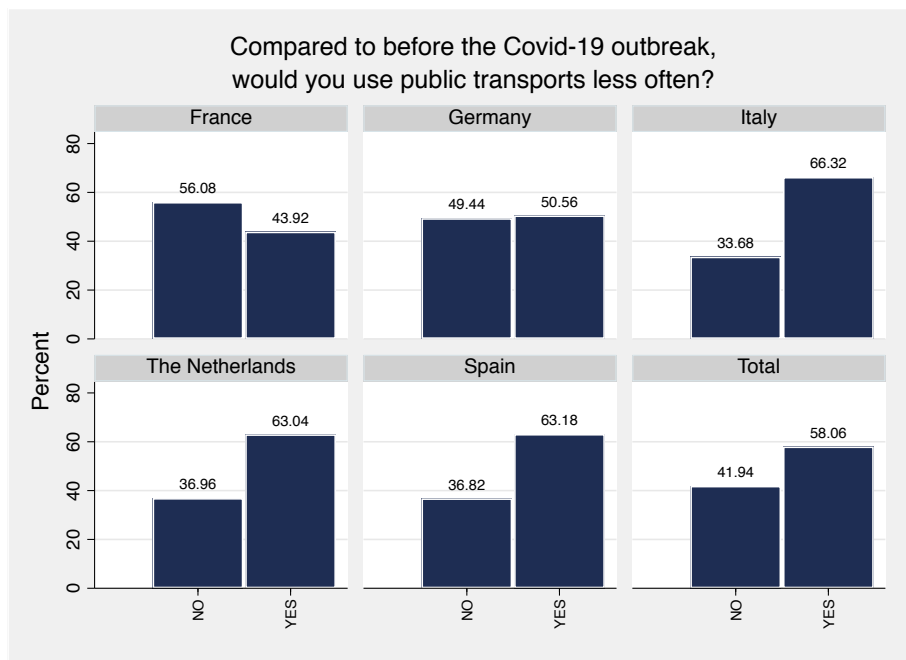
We find that a substantial fraction of households changed their consumption behavior during the dance phase in all sectors for all countries (compared to before the COVID-19 outbreak). For each country and sector, Appendix Figures A11-A15 provide the percentage of households reporting to consume “now more often than before”, “same as before”, “less often than before”, “not at all”, “never did this before”.

Two clear patterns emerge. First, it is striking that the fraction of households consuming less is substantial, while the fraction reporting a consumption rise is negligible if not nonexistent. Depending on the country and sector, the share of households reporting a consumption drop ranges from 18% to 57%. The share of households reporting a complete consumption stop ranges from 4% to 31%. Compared to before the COVID-19 outbreak, Figures 1-5 show the fraction of households that reduced their consumption—conditional of having consumed before. Across all sectors, the largest proportion of households that reduce their consumption is found in Spain and Italy, which leads us to highlight the first observation:

**Observation 1** (Consumption drop). *In all sectors, households substantially reduced their consumption during the dance phase, with the largest drop in Spain and Italy.*

These cross-country differences may reflect differences in the severity of the health crisis: At the time of the survey (July 10th, 2020), Spain had the highest number of confirmed COVID-19 death per 1M population, followed by Italy, France, The Netherlands, and Germany; see Table 1. A higher COVID-19 death rate in a given country seems to go hand-in-hand with a larger fraction of households that reduce their consumption. The only exception is France. It is striking to see that France is the country that displays the lowest fraction of households consuming less in each

sector during the dance phase. In the remainder of this section, we analyze further the cross-country differences in households' consumption response. However, this finding provides anecdotal evidence for the view that governments might not face any trade-off in designing policies to rescue lives and the economy during a pandemic.



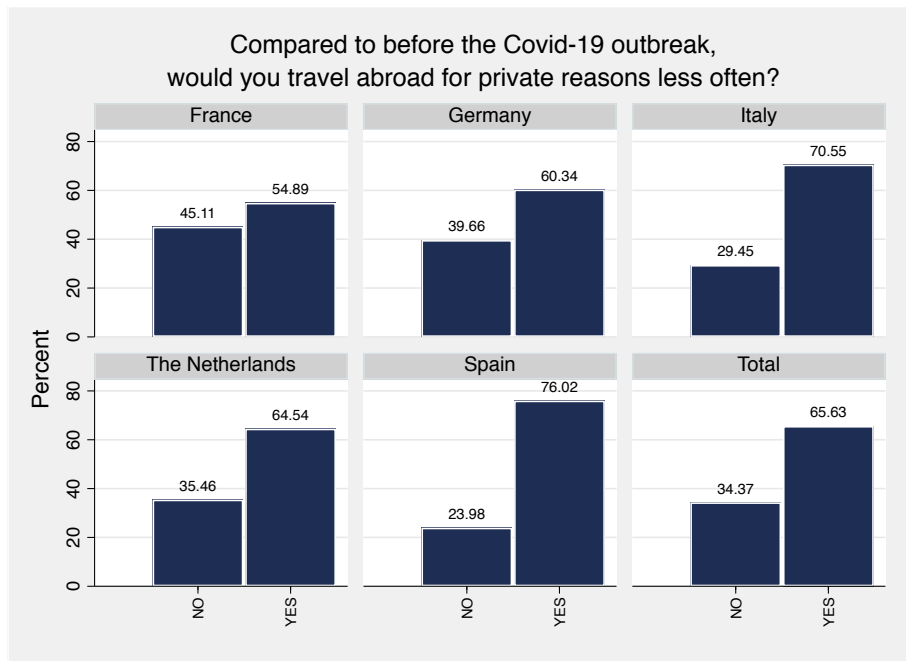
The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would use public transports: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

Figure 1: Lower usage of public transports (yes/no)

**Observation 2** (Sectoral variation in the consumption drop). *Across all countries, the tourism sector experienced the largest consumption drop and services the smallest.*

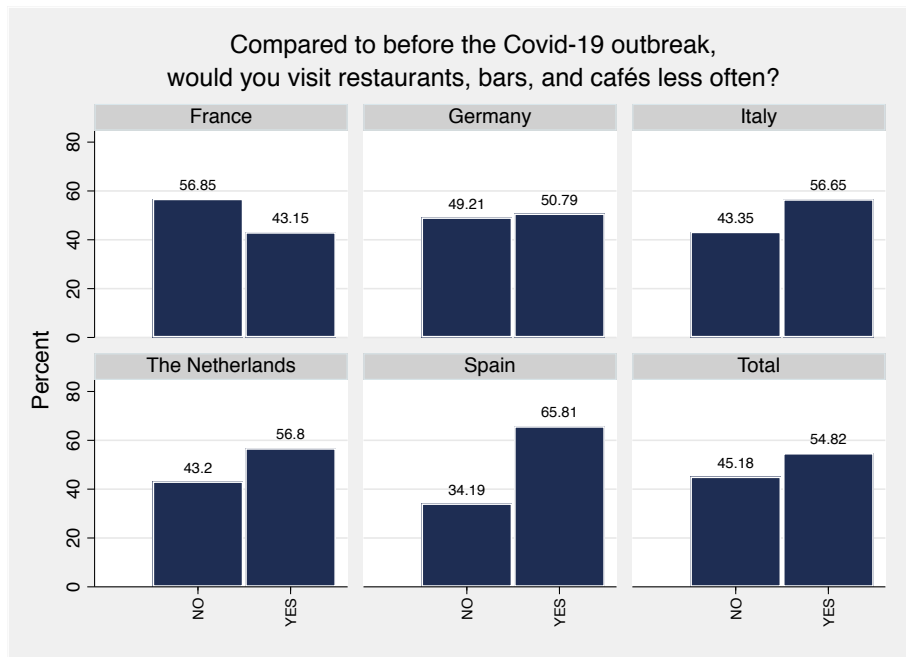
The second pattern that stands out is the sectoral variation in the consumption drop. For the whole sample, we observe the largest decline for the tourism sector: 66 percent of households say that they will now travel less abroad for private reasons. The second-largest drop is found for the public transport sector, with 58 percent of households reporting to use this now less. For the whole sample, the third-largest drop concerns the hospitality sector: 55 percent of households report visiting restaurants, bars, and cafes less often. Then comes the retail sector: 46 percent of households shop less in malls and other stores. Services such as hairdressers see the smallest, albeit still substantial, decline with 38 percent of households reporting to now use these services less.<sup>8</sup>

<sup>8</sup>For each country, the tourism sector faces the largest decline, ranging from 76 percent of



The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would travel abroad for private reasons: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

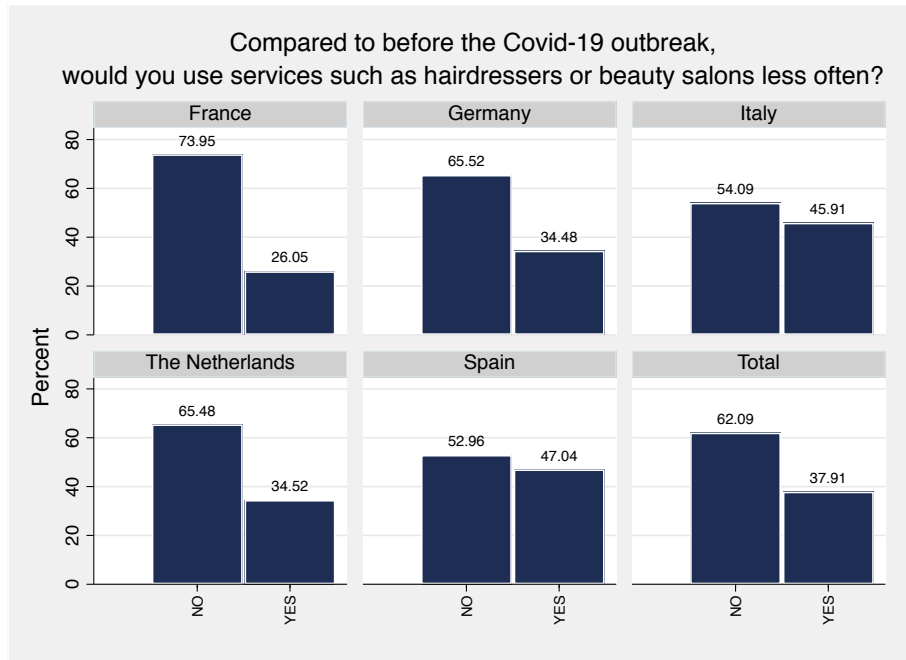
Figure 2: Less traveling abroad (yes/no)



The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would visit restaurants, bars, and cafes: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

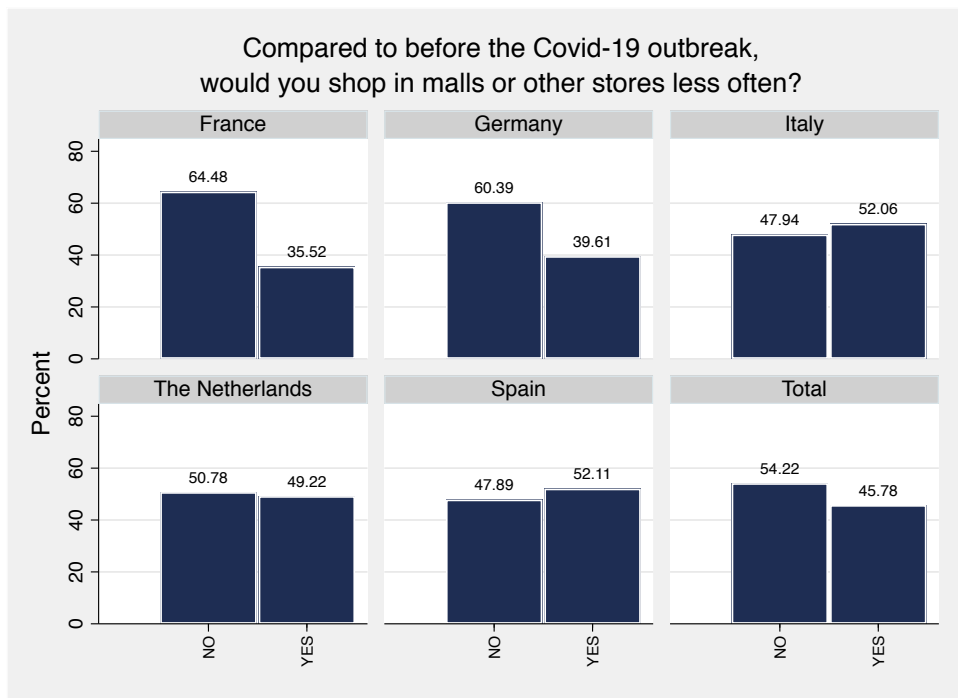
Figure 3: Less visits to restaurants, bars, and cafes (yes/no)





The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would use services such as hairdressers or beauty salons: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

Figure 4: Less usage of services such as hairdressers or beauty salons (yes/no)



The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would shop in malls or other stores: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

Figure 5: Less shopping in malls or other stores (yes/no)

### 3.2 Consumption changes and households’ characteristics

Next, we investigate households’ characteristics that could explain the reported consumption changes during the dance phase on a individual level. Using the whole data set, we perform probit estimations of the following specification:

$$Less_{isc} = \beta_0 + \beta_1 X_i + \beta_2 \tilde{Z}_i + \varepsilon_{isc} \quad (3.1)$$

$Less_{isc}$  denotes the household  $i$ ’s consumption behavior in sector  $s$  surveyed in July 2020, and who resides in the country  $c$ . This indicator is equal to one if household  $i$  reports to consume “less often than before” or “not at all” in sector  $s$  (compared to before the COVID-19 outbreak) and zero otherwise.  $X_i$  denotes a vector of standard controls for household  $i$ : we include age, gender, household size, income, employment status, and the education level.  $\tilde{Z}_i$  denotes a vector of additional behavioral controls for household  $i$ , which vary depending on the specification considered: it includes households’ personal experiences, households’ macroeconomic expectations, and psychological factors such as worry and fear. The standard errors are clustered at the country level and denoted by  $\varepsilon_{isc}$ .

**Socio-economic characteristics** Table 7 presents the results of the baseline specification (3.1), where we only include the standard socio-economic characteristics  $X_i$  that are known to affect households’ consumption behavior during a recession.

We find that gender is consistently significant: females are more likely to reduce consumption—this result holds across all sectors. We find that age does not drive changes in households’ consumption behavior in the hospitality and public transport sectors. However, we find age to play a significant role in shifting consumption trends in the retail sector, services sector, and tourism sector. Compared to before the COVID-19 outbreak, older households are now more likely to travel less often abroad for private reasons than younger households. In contrast, younger households are

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households traveling less abroad in Spain to 55 percent in France. The public transport sector faces the second-largest decline in Italy and in The Netherlands and the third-largest decline in Germany, France, and Spain. The drop ranges from 66 percent of households using less public transport in Italy to 44 percent in France. The hospitality sector faces the second-largest decline in France, Germany, and Spain. And the third-largest decline in Italy and The Netherlands. The drop ranges from 66 percent of households visiting less often restaurants in Spain to 48 percent in France. For each country, the retail sector faces the fourth-largest decline, ranging from 52 percent of households shopping less often in malls and other stores in Spain to 36 percent in France. For each country, the services sector faces the fifth-largest decline, ranging from 47 percent of households using these services less often in Spain to 26 percent in France.

more likely to cut their consumption in the hospitality and services sectors. As age is recognized as a major risk factor associated with more severe health consequences from COVID-19 infections, this finding is somewhat surprising. One could have expected the opposite effect: the older the household, the more likely the household will cut non-essential consumption to reduce social interactions and, hence, the infection risk. Our results do not support this narrative, but are in line with recent research on the preception of personal health risks associated with Covid-19. Bordalo et al. (2020) find that perceived personal health risks associated with Covid-19 fall sharply with age.

|                          | tourism<br>(travel abroad)<br>(1) | hospitality<br>(restaurants)<br>(2) | services<br>(hairdressers)<br>(3) | retail<br>(shopping)<br>(4) | public<br>transports<br>(5) |
|--------------------------|-----------------------------------|-------------------------------------|-----------------------------------|-----------------------------|-----------------------------|
| age                      | 0.00514***<br>(0.00)              | 0.00200<br>(0.00)                   | -0.00221**<br>(0.00)              | -0.00236***<br>(0.00)       | 0.000583<br>(0.00)          |
| male                     | -0.237***<br>(0.03)               | -0.192***<br>(0.02)                 | -0.0978**<br>(0.04)               | -0.275***<br>(0.05)         | -0.167***<br>(0.02)         |
| household size           | 0.0705***<br>(0.02)               | 0.0562***<br>(0.02)                 | 0.117***<br>(0.01)                | 0.0656***<br>(0.01)         | 0.0607**<br>(0.02)          |
| income                   | 0.00923<br>(0.01)                 | -0.00763<br>(0.01)                  | -0.0345***<br>(0.01)              | 0.00525<br>(0.01)           | 0.0268***<br>(0.01)         |
| <i>Employment Status</i> |                                   |                                     |                                   |                             |                             |
| unemployed               | 0.142**<br>(0.07)                 | 0.107<br>(0.08)                     | 0.115*<br>(0.06)                  | 0.0224<br>(0.05)            | 0.118<br>(0.09)             |
| not in labor force       | 0.0865**<br>(0.03)                | 0.0588*<br>(0.03)                   | -0.0148<br>(0.02)                 | 0.0203<br>(0.03)            | 0.0563***<br>(0.01)         |
| <i>Education Level</i>   |                                   |                                     |                                   |                             |                             |
| middle education         | 0.0346<br>(0.04)                  | -0.0616***<br>(0.02)                | -0.120***<br>(0.03)               | -0.0576<br>(0.06)           | -0.00149<br>(0.03)          |
| high education           | 0.0249<br>(0.07)                  | -0.000157<br>(0.07)                 | -0.105<br>(0.07)                  | 0.0458<br>(0.06)            | -0.0167<br>(0.07)           |
| <i>N</i>                 | 5570                              | 6261                                | 6007                              | 6374                        | 5583                        |

Probit estimation. Marginal effects; Clustered standard errors (at country level) are reported in parentheses. Significance levels: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The dependent variable is a dummy that is equal to one if individual  $i$  reports to consume "less often than before" or "not at all"—compared to before the COVID-19 outbreak; and zero otherwise. Income categories are: 1= Less than 12,700 euros; 2= Between 12,700 and 18,700 euros; 3= Between 18,700 and 25,000 euros; 4= Between 25,000 and 30,700 euros; 5= Between 30,700 and 36,400 euros; 6= Between 36,400 and 42,600 euros; 7= Between 42,600 and 49,700 euros; 8= Between 49,700 and 61,400 euros; 9= Between 61,40 and 84,200 euros; 10= More than 84,200 euros. Employment status categories are: has a paid job (omitted), unemployed, not in labor force (including education or training, permanently sick or disabled, retired, (unpaid) community or military service, housework, looking after children and/or other persons). Education categories are: low (omitted), middle, high.

Table 7: Socio-economic Factors

Turning to the role of income, we find that income is only significant for consumption changes in two sectors. Higher-income households are more likely to decrease the use of public transport compared to before the outbreak. For the services sector, we observe the opposite result. The higher the household income, the less likely that the household uses services like hairdressers less often. This result echoes those of Baker et al. (2020) and Carvalho et al. (2020). While these authors find no correlation between income and changes in consumer behavior during lockdown (i.e., the hammer phase), we report a limited role of income for consumption changes during the dance phase. Yet, the unemployment status increases the probability of having reduced consumption during the dance phase in the tourism and services sectors, while not being in the labor force makes the household more likely to consume less in the tourism, hospitality, and public transport sector. Education does not play a large role in explaining changes in consumption behavior. We consider three education categories (low, middle, high) and find that high educational attainment does not affect the change in consumption behavior. Households with middle educational attainment are less likely to report consumption changes in the hospitality and service sectors (compared to the low-educated households). These insights are summarized by the first finding:

**Finding 1** (Consumption drop and socio-economic profile). *Gender is the only socio-economic household characteristic that is consistently and significantly associated with consumption changes during the dance phase, while income, age, employment status, and education play a minor role.*

**Behavioral factors and expectations** Next, we investigate whether households' change in consumption can be explained by households' personal experiences with a COVID-19 infection and previous unemployment spells, households' macroeconomic expectations, and psychological factors such as worry and fear.

First, we add personal experiences to the baseline specification. Table 8 reports the results. We find that a personal COVID-19 infection experience (i.e., exposure to a close person that suffered from a severe COVID-19 infection) makes households more likely to reduce consumption during the dance phase in the hospitality, services, and retail sectors. In contrast, this experience does not affect the tourism and public transport sectors. The same result holds for the experience of an unemployment spell of at least three months in the past five years. In terms of magnitude,

the personal COVID-19 infection experience has roughly twice as large an impact than a personal unemployment spell experience.

|                                      | tourism<br>(travel abroad)<br>(1) | hospitality<br>(restaurants)<br>(2) | services<br>(hairdressers)<br>(3) | retail<br>(shopping)<br>(4) | public<br>transports<br>(5) |
|--------------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|-----------------------------|-----------------------------|
| <b>past unemployment experience</b>  | 0.0261<br>(0.07)                  | 0.0783***<br>(0.02)                 | 0.0880***<br>(0.03)               | 0.0786**<br>(0.03)          | 0.0450<br>(0.07)            |
| <b>COVID-19 infection experience</b> | 0.102<br>(0.07)                   | 0.161***<br>(0.06)                  | 0.138*<br>(0.08)                  | 0.208***<br>(0.08)          | 0.00414<br>(0.06)           |
| age                                  | 0.00536***<br>(0.00)              | 0.00259*<br>(0.00)                  | -0.00148<br>(0.00)                | -0.00152**<br>(0.00)        | 0.000829<br>(0.00)          |
| male                                 | -0.239***<br>(0.03)               | -0.196***<br>(0.02)                 | -0.0943**<br>(0.05)               | -0.277***<br>(0.05)         | -0.163***<br>(0.02)         |
| household size                       | 0.0731***<br>(0.02)               | 0.0544***<br>(0.02)                 | 0.117***<br>(0.01)                | 0.0641***<br>(0.01)         | 0.0642**<br>(0.03)          |
| income                               | 0.00993<br>(0.01)                 | -0.00462<br>(0.01)                  | -0.0322***<br>(0.01)              | 0.00820<br>(0.01)           | 0.0288***<br>(0.01)         |
| <i>Employment Status</i>             |                                   |                                     |                                   |                             |                             |
| unemployed                           | 0.142***<br>(0.04)                | 0.0709<br>(0.08)                    | 0.0662<br>(0.05)                  | 0.00385<br>(0.04)           | 0.112*<br>(0.06)            |
| not in labor force                   | 0.0978***<br>(0.03)               | 0.0650**<br>(0.03)                  | -0.00316<br>(0.02)                | 0.0208<br>(0.02)            | 0.0635***<br>(0.02)         |
| <i>Education Level</i>               |                                   |                                     |                                   |                             |                             |
| middle education                     | 0.0473<br>(0.03)                  | -0.0438*<br>(0.02)                  | -0.0985***<br>(0.03)              | -0.0376<br>(0.06)           | 0.00700<br>(0.04)           |
| high education                       | 0.0350<br>(0.07)                  | 0.0164<br>(0.07)                    | -0.0887<br>(0.07)                 | 0.0586<br>(0.06)            | -0.00574<br>(0.07)          |
| <i>N</i>                             | 5495                              | 6177                                | 5928                              | 6290                        | 5504                        |

Probit estimation. Marginal effects; Clustered standard errors (at country level) are reported in parentheses. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The dependent variable is a dummy that is equal to one if individual  $i$  reports to consume "less often than before" or "not at all"—compared to before the COVID-19 outbreak; and zero otherwise. Income categories are: 1= Less than 12,700 euros; 2= Between 12,700 and 18,700 euros; 3= Between 18,700 and 25,000 euros; 4= Between 25,000 and 30,700 euros; 5= Between 30,700 and 36,400 euros; 6= Between 36,400 and 42,600 euros; 7= Between 42,600 and 49,700 euros; 8= Between 49,700 and 61,400 euros; 9= Between 61,40 and 84,200 euros; 10= More than 84,200 euros. Employment status categories are: has a paid job (omitted), unemployed, not in labor force (including education or training, permanently sick or disabled, retired, (unpaid) community or military service, housework, looking after children and/or other persons). Education categories are: low (omitted), middle, high. Past unemployment experience, the survey question is: "Have you been unemployed and seeking work for more than 3 months in the last 5 years?" (1=yes; 0=no). COVID-19 infection experience, the survey question is: "Did you or a person close to you suffer from severe COVID-19 infection?" (1=yes; 0=no).

Table 8: Personal Experiences

Table 9 shows the regression results when adding households' macroeconomic expectations to the baseline regression. Households' expectations about the one-year-ahead change in the unemployment rate compared to the pre-crisis perception levels are significant for all sectors. The more pessimistic the household (i.e., the larger the expected Covid-19 induced increase in unemployment), the more likely

the household reduces consumption in all sectors. Expectation about the pandemic's severity and length is the most significant variable for all sectors. The survey question is: "In your opinion, when will COVID-19 virus be totally under control such that it is safe to release all COVID-19 containment measures in your country?". The later the expected date, the more likely the household to reduce consumption during the dance phase compared to before the COVID-19 outbreak.

|   | tourism<br>(travel abroad)<br>(1) | hospitality<br>(restaurants)<br>(2) | services<br>(hairstressers)<br>(3) | retail<br>(shopping)<br>(4) | public<br>transports<br>(5) |
|---|-----------------------------------|-------------------------------------|------------------------------------|-----------------------------|-----------------------------|
| <b>unemployment<br/>(prediction)</b>                | 0.00668***<br>(0.00)              | 0.00480***<br>(0.00)                | 0.00863***<br>(0.00)               | 0.00557***<br>(0.00)        | 0.00825***<br>(0.00)        |
| <b>expectation pandemic<br/>severity and length</b> | 0.165***<br>(0.01)                | 0.162***<br>(0.02)                  | 0.110***<br>(0.03)                 | 0.113***<br>(0.03)          | 0.120***<br>(0.01)          |
| age   | 0.00418***<br>(0.00)              | 0.00119<br>(0.00)                   | -0.00300***<br>(0.00)              | -0.00301***<br>(0.00)       | -0.000168<br>(0.00)         |
| male  | -0.198***<br>(0.03)               | -0.156***<br>(0.02)                 | -0.0606<br>(0.05)                  | -0.246***<br>(0.05)         | -0.133***<br>(0.02)         |
| household size                                      | 0.0746***<br>(0.02)               | 0.0608***<br>(0.02)                 | 0.117***<br>(0.01)                 | 0.0679***<br>(0.01)         | 0.0635**<br>(0.03)          |
| income  | 0.0101<br>(0.01)                  | -0.00753<br>(0.01)                  | -0.0334***<br>(0.01)               | 0.00629<br>(0.01)           | 0.0288***<br>(0.00)         |
| unemployed  | 0.128*<br>(0.07)                  | 0.0994<br>(0.08)                    | 0.105*<br>(0.06)                   | 0.00952<br>(0.05)           | 0.109<br>(0.08)             |
| not in labor force                                  | 0.110***<br>(0.04)                | 0.0791**<br>(0.04)                  | 0.00754<br>(0.03)                  | 0.0373<br>(0.03)            | 0.0792***<br>(0.01)         |
| middle education                                    | 0.0391<br>(0.04)                  | -0.0595***<br>(0.02)                | -0.110***<br>(0.04)                | -0.0512<br>(0.06)           | 0.00557<br>(0.03)           |
| high education                                      | 0.0305<br>(0.07)                  | 0.00234<br>(0.07)                   | -0.0903<br>(0.06)                  | 0.0553<br>(0.06)            | -0.00356<br>(0.07)          |
| <i>N</i>  | 5570                              | 6261                                | 6007                               | 6374                        | 5583                        |

Probit estimation. Marginal effects; Clustered standard errors (at country level) are reported in parentheses. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The dependent variable is a dummy that is equal to one if individual  $i$  reports to consume "less often than before" or "not at all"—compared to before the COVID-19 outbreak; and zero otherwise. Income categories are: 1= Less than 12,700 euros; 2= Between 12,700 and 18,700 euros; 3= Between 18,700 and 25,000 euros; 4= Between 25,000 and 30,700 euros; 5= Between 30,700 and 36,400 euros; 6= Between 36,400 and 42,600 euros; 7= Between 42,600 and 49,700 euros; 8= Between 49,700 and 61,400 euros; 9= Between 61,40 and 84,200 euros; 10= More than 84,200 euros. Employment status categories are: has a paid job (omitted), unemployed, not in labor force (including education or training, permanently sick or disabled, retired, (unpaid) community or military service, housework, looking after children and/or other persons). Education categories are: low (omitted), middle, high. Unemployment expectation, the two survey questions are: "Please indicate what you think the unemployment rate was before the crisis in your country" (point prediction) and "Please indicate what you think the unemployment rate will be in your country in one year from now" (point prediction). We use the difference of the two unemployment point predictions (one year from now – before the crisis). Expectation about COVID-19 pandemic severity and length, the survey question is: "In your opinion, when will COVID-19 be totally under control such that it is safe to release all COVID-19 containment measures in your country?". The households could choose among five different time windows: 1= July-September 2020, 2= October-December 2020, 3= January-June 2021, 4= July-December 2021, and 5= later.

Table 9: Macroeconomic Expectations

Turning to psychological factors, Table 10 shows that worries about the future (financial and job insecurity) are important explanatory factors for households' decision to reduce consumption during the dance phase (compared to before the virus outbreak). The most considerable effects we observe for the hospitality, services, and retail sectors. Those insights lead us to the second finding.

|                          | tourism<br>(travel abroad)<br>(1) | hospitality<br>(restaurants)<br>(2) | services<br>(hairdressers)<br>(3) | retail<br>(shopping)<br>(4) | public<br>transports<br>(5) |
|--------------------------|-----------------------------------|-------------------------------------|-----------------------------------|-----------------------------|-----------------------------|
| <b>worry-finance</b>     | 0.0637***<br>(0.01)               | 0.0553***<br>(0.01)                 | 0.0529***<br>(0.01)               | 0.0389***<br>(0.01)         | 0.0331***<br>(0.01)         |
| <b>worry-job</b>         | 0.0514<br>(0.04)                  | 0.118***<br>(0.02)                  | 0.166***<br>(0.05)                | 0.128***<br>(0.02)          | 0.0939***<br>(0.02)         |
| age                      | 0.00479***<br>(0.00)              | 0.00104<br>(0.00)                   | -0.00108<br>(0.00)                | -0.00239<br>(0.00)          | 0.00209<br>(0.00)           |
| male                     | -0.179***<br>(0.04)               | -0.128***<br>(0.01)                 | -0.0510<br>(0.06)                 | -0.211***<br>(0.06)         | -0.0762**<br>(0.03)         |
| household size           | 0.0166<br>(0.03)                  | 0.00335<br>(0.02)                   | 0.0568***<br>(0.02)               | 0.0299<br>(0.02)            | 0.0197<br>(0.03)            |
| income                   | 0.0175<br>(0.02)                  | 0.00486<br>(0.01)                   | -0.0192*<br>(0.01)                | 0.0142<br>(0.02)            | 0.0307***<br>(0.01)         |
| <i>Employment Status</i> |                                   |                                     |                                   |                             |                             |
| unemployed               | 0.0571<br>(0.11)                  | 0.0403<br>(0.14)                    | 0.0169<br>(0.13)                  | -0.110<br>(0.10)            | 0.112<br>(0.10)             |
| not in labor force       | 0.0946<br>(0.09)                  | 0.0963**<br>(0.05)                  | 0.114***<br>(0.04)                | 0.0258<br>(0.05)            | 0.102***<br>(0.03)          |
| <i>Education Level</i>   |                                   |                                     |                                   |                             |                             |
| middle education         | 0.0758**<br>(0.04)                | 0.0258<br>(0.03)                    | -0.0751<br>(0.06)                 | -0.0116<br>(0.08)           | 0.0431<br>(0.05)            |
| high education           | 0.0585<br>(0.06)                  | 0.108<br>(0.07)                     | -0.0415<br>(0.08)                 | 0.117<br>(0.10)             | 0.0268<br>(0.10)            |
| <i>N</i>                 | 3473                              | 3809                                | 3665                              | 3834                        | 3410                        |
| pseudo $R^2$             | 0.03                              | 0.02                                | 0.04                              | 0.02                        | 0.01                        |

Probit estimation. Marginal effects; Clustered standard errors (at country level) are reported in parentheses. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The dependent variable is a dummy that is equal to one if individual  $i$  reports to consume "less often than before" or "not at all"—compared to before the COVID-19 outbreak; and zero otherwise. Income categories are: 1= Less than 12,700 euros; 2= Between 12,700 and 18,700 euros; 3= Between 18,700 and 25,000 euros; 4= Between 25,000 and 30,700 euros; 5= Between 30,700 and 36,400 euros; 6= Between 36,400 and 42,600 euros; 7= Between 42,600 and 49,700 euros; 8= Between 49,700 and 61,400 euros; 9= Between 61,40 and 84,200 euros; 10= More than 84,200 euros. Employment status categories are: has a paid job (omitted), unemployed, not in labor force (including education or training, permanently sick or disabled, retired, (unpaid) community or military service, housework, looking after children and/or other persons). Education categories are: low (omitted), middle, high. Worry-finance, the survey question is "How concerned are you about the effects that the coronavirus might have for the financial situation your household?" Answer options: 0-10. 0 (= not at all concerned) to 10 (= extremely concerned). Worry-job, the survey question is "How worried are you about losing your job in the near future?" Answer options: 1-3. 1= not worried; 2 = somewhat worried; 3 = very worried.

Table 10: Psychological Factors: Personal Financial Fears

**Finding 2** (Consumption drop and behavioral factors). *Personal COVID-19 experiences, pessimistic macroeconomic expectations, and concerns about the future are strongly and significantly associated with a consumption drop during the dance phase.*

Using probit estimations, we find that most standard socio-economic household characteristics (except gender) do not explain much of the large changes in household consumption behavior. Females (compared to men) are more likely to consume less in all sectors across all estimation specifications. Findings 1-2 indicate that financial hardship is not the primary driver for reducing consumption.<sup>9</sup> Instead, we find relevant behavioral factors explaining households' consumption changes such as personal experiences with a COVID-19 infection and previous unemployment spells, households' degree of pessimism, and psychological factors such as fear about the future. In light of this finding, the next section explores the self-reported reasons for changing (reducing) consumption and investigates to what extent the consumption shifts may be temporary or permanent.

### 3.3 Self-reported reasons for consumption changes

Conditional on having reported consuming “less often than before” or “not at all”, households were asked: “What is your main reason for doing now less of this activity?”. For each sector and country, Figures 6-10 provide an overview of the percentage of households that report as the primary reason (i) financial constraints, (ii) worry of infection risk, (iii) precautionary saving motives, (iv) lockdown has permanently altered preferences, and (v) substitution to online consumption.<sup>10</sup> Four main observations stand out, leading to four additional findings.

**Finding 3** (Infection risk). *The infection risk is the most reported reason for decreasing consumption (for all countries and sectors).*

While the infection risk is the most reported reason for decreasing consumption (across countries and sectors), a non-negligible fraction of households reports what seems to be a shift in preferences, i.e. households report that they decreased their consumption because they realized that they do not miss it. It is striking that in

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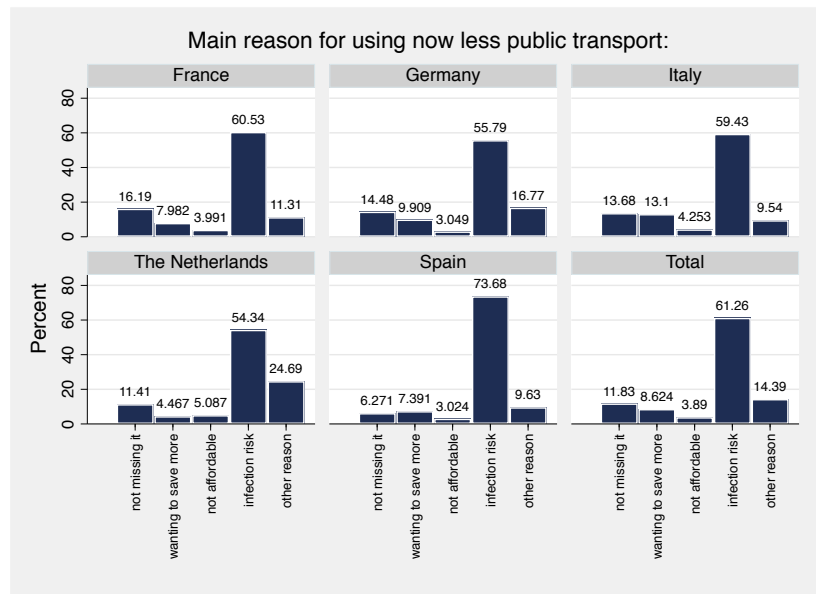
<sup>9</sup>This is consistent with households' reported perception of how they cope financially with their current income. We refer to Column 6 of Appendix Table A4.

<sup>10</sup>The answer options for the main reason are: “I buy more online instead”; “I realized I don't miss it”; “I want to save more”; “I cannot afford it anymore”; “I am worried to get infected with COVID-19”; “Other reason”.



France and in Germany, the reason “not missing it” is even the second invoked reason after the infection risk for all sectors. In the Netherlands, we observe the same pattern, except for the retail sector “shopping in malls or other stores”.<sup>11</sup> Households’ permanent preference shifts are particularly prominent in the services sector (such as hairdressers) and hospitality industry (i.e., restaurants). For example, the fraction of households that realized that they do not miss services such as hairdressers amounts to 23 percent in France, 19 percent in Germany and Italy, 14 percent in The Netherlands, and 10 percent in Spain. At the same time, the fraction of households that realized that they do not miss going to the restaurants amounts to 19 percent in France, 21 percent in Germany, 18 percent in Italy, 15 percent in The Netherlands, and 9 percent in Spain. These figures lead us to the next finding:

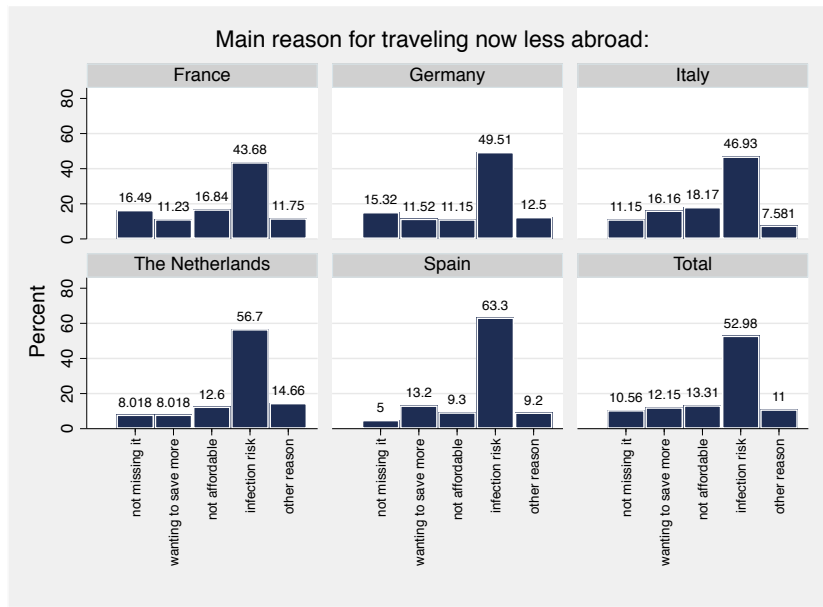
**Finding 4** (Change in consumers’ preferences). *For all sectors, the fraction of households that explain their reported consumption drop by a change in preferences is substantial (the realization of not missing it). It is even the second invoked reason behind the infection risk in France, Germany, and The Netherlands.*



This survey question is only asked for people who reported “less often than before” or “not at all” in the previous question. The survey question is: “What is your main reason for doing now less of the following activity: Public transport?” 1= I realized I don’t miss it; 2= I want to save more; 3= I cannot afford it anymore; 4= I am worried to get infected with COVID-19; 5= Other reason.

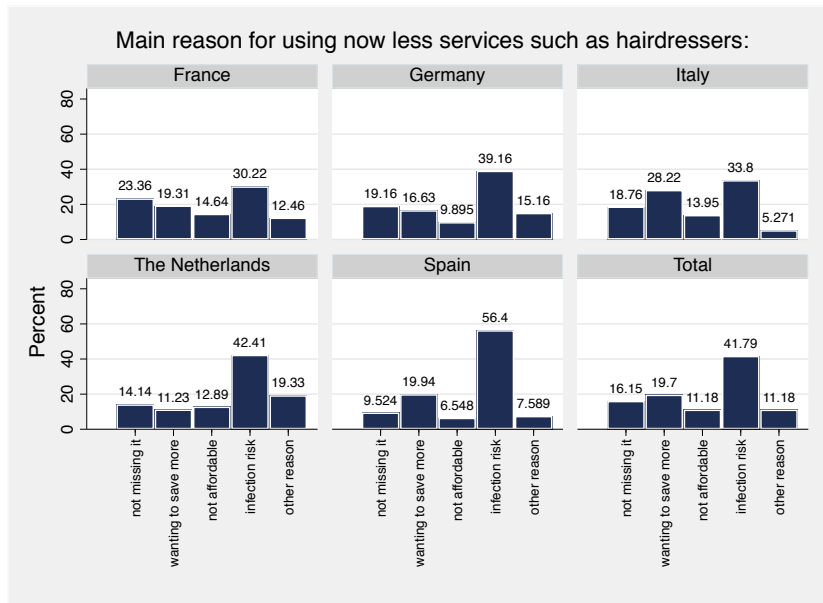
Figure 6: Reasons for lower usage of public transports during dance phase

<sup>11</sup>For the retail sector, Dutch households report as the second main reason a substitution to online shopping, followed by the reason “not missing it”.



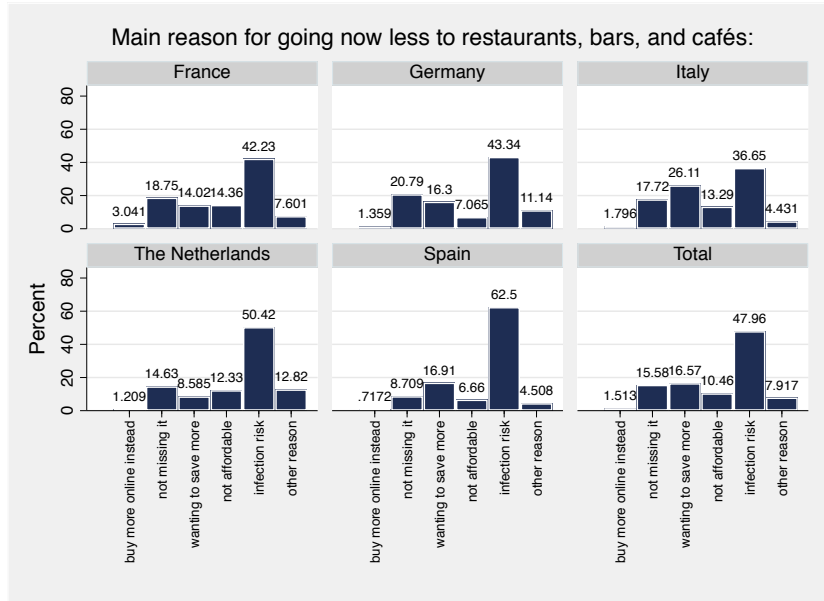
This survey question is only asked for people who reported “less often than before” or “not at all” in the previous question. The survey question is: “What is your main reason for doing now less of the following activity: Traveling abroad for private reasons?” 1= I realized I don’t miss it; 2= I want to save more; 3= I cannot afford it anymore; 4= I am worried to get infected with COVID-19; 5= Other reason.

Figure 7: Reasons for fewer private travels abroad during dance phase



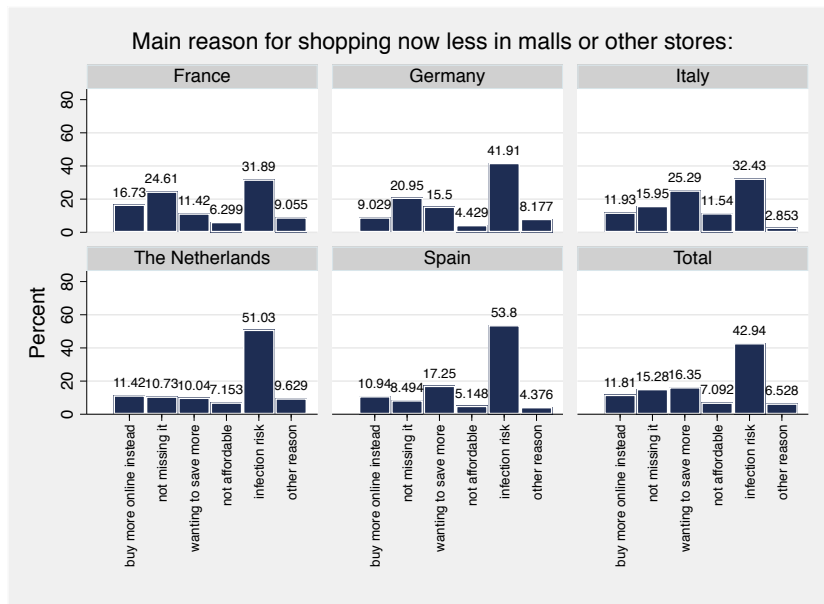
This survey question is only asked for people who reported “less often than before” or “not at all” in the previous question. The survey question is: “What is your main reason for doing now less of the following activity: use services such as hairdressers or beauty salons?” 1= I realized I don’t miss it; 2= I want to save more; 3= I cannot afford it anymore; 4= I am worried to get infected with COVID-19; 5= Other reason.

Figure 8: Reasons for using less services during dance phase



This survey question is only asked for people who reported “less often than before” or “not at all” in the previous question. The survey question is: “What is your main reason for doing now less of the following activity: visiting restaurants, bars, and cafes?” 1= I plan to buy more online; 2= I realized I don’t miss it; 3= I want to save more; 4= I cannot afford it anymore; 5= I am worried to get infected with COVID-19; 6= Other reason.

Figure 9: Reasons for going less to restaurants, bars, and cafes during dance phase



This survey question is only asked for people who reported “less often than before” or “not at all” in the previous question. The survey question is: “What is your main reason for doing now less of the following activity: shopping in malls and other stores?” 1= I plan to buy more online; 2= I realized I don’t miss it; 3= I want to save more; 4= I cannot afford it anymore; 5= I am worried to get infected with COVID-19; 6= Other reason.

Figure 10: Reasons for shopping less in malls and other stores during dance phase

To the best of our knowledge, this paper is the first to provide evidence on the *nature of the COVID-19 demand shock* and on how durable the reported consumption shifts could turn out in the post-COVID-19 environment. Beyond the question of how much households are consuming, one must also reflect upon how they are making their purchases. For instance, amongst respondents indicating a reduction in their shopping at malls and other stores, a significant number report that this was due to substitution into online alternatives. The fraction of households reporting online substitution as the main reason for shopping less in malls and other stores is highest in France with 16% and lowest in Germany with 9%.<sup>12</sup> As the crisis becomes prolonged, consumers may become accustomed to this new way of consumption, which could lead to a long-term shift in the retail sector away from high-street shops. For the hospitality sector, households rarely report “buy more online instead” to explain their fewer visits to restaurants, bars, and cafes. The fraction of households reporting to compensate these visits by delivery services or pick-ups is negligible, ranging from 3% in France to 0.7% in Spain.

Aside from the main reasons “infection risk” and the “change in preferences”, precautionary saving motives are substantial. A rise in savings is traditionally associated with pessimistic views about the future economic outlooks. This phenomenon reads as a confidence shock that may have a long-lasting impact on demand. For the whole sample, the fraction of households reporting as the main reason “wanting to save more” to explain their consumption reduction varies between 8.6% to 19.7%—depending on the sector. The hospitality and services sectors are the most impacted by precautionary savings, followed by the retail, tourism, and finally by the public transport sector. We observe important cross-country variations in the fraction of households reporting as a primary reason precautionary savings. In Spain and Italy, the desire to save more represents the second most often cited main reason for reducing consumption in almost all sectors. While in France, Germany, and The Netherlands, precautionary saving motives are the third most often cited reason. We highlight the following finding:

**Finding 5** (Precautionary savings). *The fraction of households explaining their consumption drop by a desire to save more is substantial for all sectors. In France,*

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<sup>12</sup>This cross-country variation cannot be explained by cross-country differences in the importance of e-commerce in the retail sector. In 2019, the percentage of online sales (of total retail sales) was 15.9% in Germany, 10.9% in France, 9.9% in The Netherlands, 5.4% in Spain, and 3.7% in Italy (sources: Center for Retail Research; Statistica).

*Germany, and The Netherlands, the saving motive is the third most often cited reason (after infection risk and change in preferences), and the second most popular reason in Italy and Spain.*

Financial constraints are the least reported reason for reducing consumption in most sectors and countries. This observation should be understood in light of the unprecedented size of governmental fiscal support before and at the time of the survey (July 2020). For the public transport, retail, hospitality, and services sector, the fraction of households reporting as the main reason for reducing consumption “I cannot afford it anymore” is much smaller than the fraction reporting the infection risk, a permanent shift in preferences, or precautionary saving motives. The only sector that seems to lose demand because of households feeling financially constrained is the tourism sector. However, even for the tourism sector, twice as many households report either precautionary saving motives or the “realization of not missing it” to explain their reduced travels abroad (compared to those citing financial constraints).

**Finding 6** (Financial constraints). *Across all sectors and countries, the fraction of households explaining their consumption drop by financial constraints is small.*

Finally, we investigate whether households differ systematically (in terms of socio-economic characteristics) by their reported reason for consumption reduction. In light of the pandemic’s asymmetric impact on labor market outcomes (and its resulting distributional effects), this information is crucial to quantify the COVID-19 demand shock, besides its persistence. The next section is dedicated to this analysis.

### **3.4 Which consumers changed behavior for what reason?**

Appendix Tables A5-A6 document for each sector the average socio-economic and behavioral household characteristics for each self-reported reason for decreasing consumption.<sup>13</sup> These tables reveal a remarkably stable pattern across the five sectors, with four distinct household types arising—each corresponding to a different reasons for consumption reduction. This household-level perspective provides further insight regarding the magnitude of the COVID-19 consumption game-changer.

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<sup>13</sup>We test for group differences pairwise using the nonparametric Wilcoxon-Mann-Whitney test. Detailed results, including breakdowns per sector, are available upon request. We only discuss systematic differences in household characteristics that are statistically significant at  $p < 0.05$ .

The first household type is “financially struggling” and is characterized by lower-income, a lower ability to save, lower educational attainment, a higher likelihood of being unemployed, and unsatisfied with one’s income level. Women are disproportionately represented in this category. This result is most striking for the services sector, where 76 percent of the households consuming fewer services because they are now financially constrained are female. This result is consistent with the finding that the downturn triggered by the Covid-19 pandemic has created larger employment losses for women than for men (Alon et al. (2020a); Alon et al. (2020b)). Also, this household type is most likely to have had personal Covid-19 experiences and reports the lowest trust in and satisfaction level with the government. Notably, Ross et al. (2020) find that households that face a contracting budget tend to experience non-transitional refinement in their consumption preferences, even after normal financial circumstances are restored. Therefore, if financially struggling households are left unsupported to manage this hardship period, this may tend to reinforce structural changes to the economy—as this group will be forced to fundamentally re-assess their consumption priorities, thereby leading to permanent behavioural changes.

**Implication 1** (Asymmetry of the income shock). *The negative income shock induced by COVID-19 is strikingly asymmetric: low-income households and women are disproportionately represented among the households reporting affordability issues as the primary reason for decreasing their consumption.*

The second household type are “Young Families”. These larger households are mostly employed, and are most likely to report precautionary savings motives as the primary reason for decreasing their consumption. These households are also more likely to be less satisfied with their income level, despite not reporting the lowest income level.

**Implication 2** (Uneven confidence shock). *Policies designed to address the COVID-19 confidence shock should primarily target younger and larger households (families).*

The third household type is the “Middle-aged and Rich”. This group is more likely than younger and lower-income households to report long-term changes in their preferences resulting from the lockdown experience. Individuals within households that report the “realization of not missing it anymore” as a primary reason for consuming less have an average age of 50. These households are the least worried

about the future and have the highest level of trust and satisfaction with the government. They are the least likely to have personally experienced a severe COVID-19 health issue in their group of friends and family. That these “Middle-aged and Rich” households with higher saving capacities report this consumer preference shift indicates that the magnitude of the consumer preference shock may be more substantial than the actual share of these households suggests.

The fourth household type are “Young Rich (Families)”. These households report substitution away from the high street retail sector and into online alternatives. These high-income households are mostly in the labor force. This bias towards higher income can also amplify the preference shock and accelerate the retail market transformation—away from high-street shops to more e-commerce.

**Implication 3** (Preference shock amplifier). *The lockdown experience has disproportionately shifted consumer preference of high-income households. This may amplify the magnitude of sectoral consumer demand changes and reinforce zombification risk.*

## 4 Conclusion

This paper provides novel survey-based evidence on the underlying reasons for the shifts in household consumption following the first COVID-19 lockdown. The representative survey covers five European countries: France, Germany, Italy, The Netherlands, and Spain. At the time of the survey, July 2020, lockdowns and travel restrictions were entirely lifted.

Unsurprisingly, we find that there has been a substantial reduction in household consumption in various sensitive sectors since the onset of COVID-19. Countries that have been heavier hit by the health consequences of COVID-19 have seen bigger consumption drops than those that have survived more unscathed. While most households cite “infection risk” as the main reason for their changed behavior, “financial constraints” were not cited by many respondents as a primary driver of consumption changes. Permanent shifts in preferences and precautionary saving motives are far more substantial explanatory factors than financial constraints.

These results should be considered as part of the growing and important debate on zombification. Two potential drivers for zombification in the COVID-19 context are already widely discussed. First, the ready availability of cheap debt in today’s highly liquid markets may be acting to impede necessary exits from the market

(Òscar Jordà et al., 2020). In this context, firms with poor prospects for future revenue generation can nonetheless prolong their lives, as they still find it easy and cheap to borrow. Second, a geographical mechanism exists (Gathergood et al., 2020)—relating to the relocation out of city centres and into suburban and rural areas by the new cadre of home-office-workers. Such shifts of activity could leave many city-centre service providers facing obsolescence, irrespective of preferences.

Our findings highlight a third possible zombification driver, relating to the long-term impacts of the profound and protracted COVID-19 experience on consumer preferences. In short, consumers may want very different things after the pandemic and thus we may never return to the old pre-existing “normal”. We draw three policy conclusions from these results.

First and foremost, Government support to businesses must begin to move on from the idea that this crisis is purely a liquidity shock and that everything will snap back to normal once it is over. After the infection risk, the largest fraction of households report “permanent preferences shifts” as the main reason for reduced consumption in France, Germany, and the Netherlands. In Italy and Spain, “permanent preferences shifts” are the third most powerful reason. This fraction is particularly large in the retail, hospitality, and services sectors.

These dynamics imply that some incumbent firms will become obsolete in the new and different post-pandemic economy. Trying to keep such unviable firms alive will be of no benefit and of potentially high cost. Governments therefore need to become stricter over time with the terms they offer support to businesses. Building robust market mechanisms into such schemes, as proposed by the G30, would be a helpful step forwards in this regard. Such mechanisms dissuade unviable firms from prolonging their inevitable demise and create rewards for more vital firms—allowing them to grow and support economic recovery.

Second, policy-makers should reflect on the fact that financial constraints are not primarily driving reduced consumption. Broad-based efforts to reduce the pricing of products and services (e.g., via VAT cuts or via subsidies) are unlikely to be effective.

Third, our results indicate that the objectives of protecting citizens from virus risk and preserving economic prosperity may not lead to real trade-offs. During the time of the survey, lockdowns and travel restrictions were completely lifted. However, the fraction of households reducing consumption during this time highly correlates with the number of deaths per 1M population and personal infection ex-



perience during the lockdown phase. Also, we find that standard socio-economic characteristics (except for gender) do not explain the drop in individual households' consumption. By contrast, behavioral factors such as macroeconomic expectations (pessimism) and psychological factors such as fears about the future are significant variables explaining individual households' drop in consumption. These behavioral factors highly correlate with households' personal experience with a COVID-19 infection and the country's severity of the health crisis. Hence, governments should see controlling infection risk as a prerequisite to achieving their objectives of preserving economic prosperity.

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## 5 Appendix A

| Sample Size     |       |       |
|-----------------|-------|-------|
| France          | 1,500 | 20 %  |
| Germany         | 1,500 | 20 %  |
| Italy           | 1,500 | 20 %  |
| The Netherlands | 1,500 | 20 %  |
| Spain           | 1,501 | 20 %  |
| Total           | 7,501 | 100 % |

Table A1: Number of observations by country

| Country         |         |            |             | household size  |               |              | education  |               |             |
|-----------------|---------|------------|-------------|-----------------|---------------|--------------|------------|---------------|-------------|
|                 |         | age<br>(1) | male<br>(2) | children<br>(3) | adults<br>(4) | total<br>(5) | low<br>(6) | middle<br>(7) | high<br>(8) |
| France          | mean    | 50.85      | 0.48        | 1.43            | 1.06          | 2.4          | 0.25       | 0.44          | 0.31        |
|                 | st. dev | 17.90      | 0.50        | 0.78            | 0.88          | 1.16         | 0.43       | 0.5           | 0.46        |
|                 | N       | 1500       | 1500        | 1176            | 1500          | 1500         | 1500       | 1500          | 1500        |
| Germany         | mean    | 50.97      | 0.49        | 1.37            | 0.94          | 2.21         | 0.2        | 0.55          | 0.25        |
|                 | st. dev | 17.04      | 0.50        | 0.76            | 0.86          | 1.13         | 0.40       | 0.50          | 0.43        |
|                 | N       | 1500       | 1496        | 1106            | 1500          | 1500         | 1500       | 1500          | 1500        |
| Italy           | mean    | 50.44      | 0.49        | 1.44            | 1.56          | 2.96         | 0.41       | 0.43          | 0.17        |
|                 | st. dev | 16.91      | 0.50        | 0.75            | 0.99          | 1.14         | 0.49       | 0.49          | 0.37        |
|                 | N       | 1500       | 1499        | 1380            | 1500          | 1500         | 1500       | 1500          | 1500        |
| The Netherlands | mean    | 50.24      | 0.50        | 1.41            | 1.02          | 2.33         | 0.26       | 0.41          | 0.32        |
|                 | st. dev | 17.23      | 0.50        | 0.85            | 0.99          | 1.25         | 0.44       | 0.49          | 0.47        |
|                 | N       | 1500       | 1500        | 1109            | 1500          | 1500         | 1500       | 1500          | 1500        |
| Spain           | mean    | 48.49      | 0.49        | 1.46            | 1.53          | 2.96         | 0.41       | 0.26          | 0.34        |
|                 | st. dev | 15.39      | 0.50        | 0.76            | 0.98          | 1.15         | 0.49       | 0.44          | 0.47        |
|                 | N       | 1501       | 1500        | 1377            | 1501          | 1501         | 1501       | 1501          | 1501        |
| Total           | mean    | 50.2       | 0.49        | 1.42            | 1.22          | 2.57         | 0.31       | 0.42          | 0.28        |
|                 | st. dev | 16.93      | 0.50        | 0.78            | 0.98          | 1.21         | 0.46       | 0.49          | 0.45        |
|                 | N       | 7501       | 7495        | 6148            | 7501          | 7501         | 7501       | 7501          | 7501        |

Notes: Column (1) reports the average age of the household, Column (2) the fraction of male households. Column (3)-(5) report the households' average number of children younger than 14 years, the average number of adults, and the average number of people within a household. Columns (6)-(8) report the fraction of households having attained low, middle, and high education levels, respectively.

Table A2: Descriptive socio-economic statistics by country I

| Country         | mean | st. dev | p10 | p25 | p50 | p75 | p90 | N    |
|-----------------|------|---------|-----|-----|-----|-----|-----|------|
| France          | 5.44 | 2.79    | 1   | 3   | 6   | 8   | 9   | 1384 |
| Germany         | 5.60 | 2.81    | 1   | 3   | 6   | 8   | 9   | 1329 |
| Italy           | 5.83 | 2.62    | 2   | 4   | 6   | 8   | 9   | 1369 |
| The Netherlands | 6.08 | 2.70    | 2   | 4   | 6   | 8   | 10  | 1283 |
| Spain           | 6.03 | 2.78    | 2   | 4   | 6   | 9   | 10  | 1323 |
| Total           | 5.79 | 2.75    | 2   | 4   | 6   | 8   | 10  | 6688 |

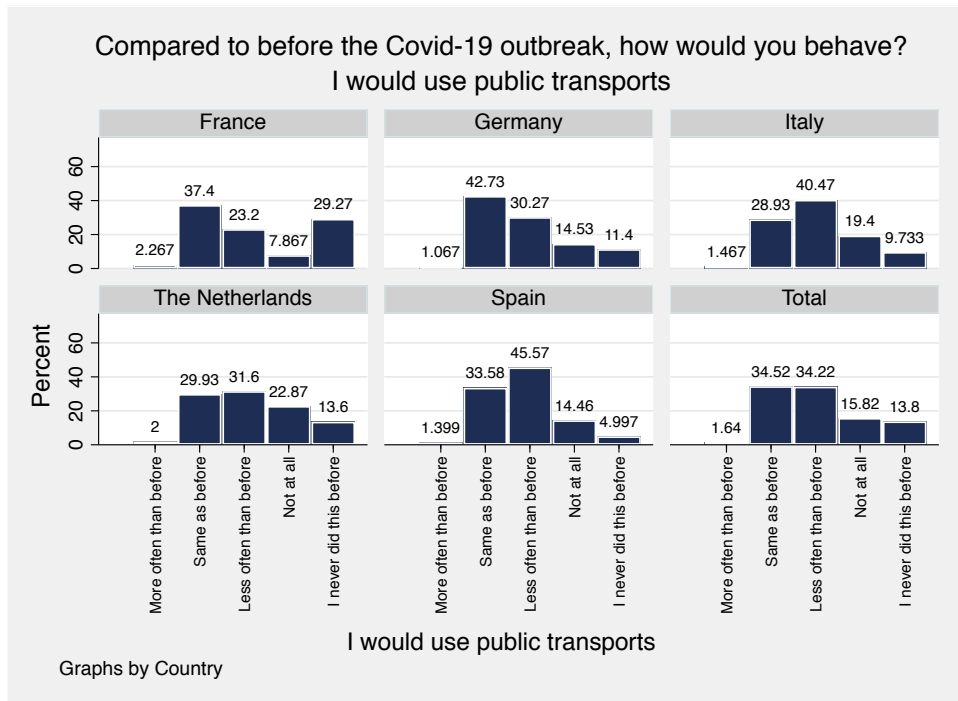
Notes: The survey question is “Can you tell us which value describes your household’s yearly total income, after tax and compulsory deductions, from all sources?” The variable is numeric, 10 categories: 1= Less than 12,700 euros; 2= Between 12,700 and 18,700 euros; 3= Between 18,700 and 25,000 euros; 4= Between 25,000 and 30,700 euros; 5= Between 30,700 and 36,400 euros; 6= Between 36,400 and 42,600 euros; 7= Between 42,600 and 49,700 euros; 8= Between 49,700 and 61,400 euros; 9= Between 61,40 and 84,200 euros; 10= More than 84,200 euros.

Table A3: Descriptive household income statistics by country III

| Country         |         | employment statistics |                    |                   |                            | financial statistics |                     |
|-----------------|---------|-----------------------|--------------------|-------------------|----------------------------|----------------------|---------------------|
|                 |         | employment            | not in labor force | unemployment rate | past spell of unemployment | savings              | income satisfaction |
|                 |         | (1)                   | (2)                | (3)               | (4)                        | (5)                  | (6)                 |
| France          | mean    | 0.5                   | 0.45               | 0.06              | 0.19                       | 0.65                 | 3.16                |
|                 | st. dev | 0.5                   | 0.5                | 0.23              | 0.39                       | 0.48                 | 1.23                |
|                 | N       | 1443                  | 1443               | 1443              | 1481                       | 1351                 | 1469                |
| Germany         | mean    | 0.54                  | 0.43               | 0.03              | 0.13                       | 0.69                 | 3.3                 |
|                 | st. dev | 0.5                   | 0.49               | 0.17              | 0.34                       | 0.46                 | 1.19                |
|                 | N       | 1460                  | 1460               | 1460              | 1470                       | 1354                 | 1454                |
| Italy           | mean    | 0.4                   | 0.48               | 0.12              | 0.3                        | 0.64                 | 2.59                |
|                 | st. dev | 0.49                  | 0.5                | 0.32              | 0.46                       | 0.48                 | 1.04                |
|                 | N       | 1426                  | 1426               | 1426              | 1468                       | 1270                 | 1451                |
| The Netherlands | mean    | 0.47                  | 0.47               | 0.05              | 0.19                       | 0.67                 | 3.51                |
|                 | st. dev | 0.5                   | 0.5                | 0.22              | 0.4                        | 0.47                 | 1.19                |
|                 | N       | 1454                  | 1454               | 1454              | 1473                       | 1268                 | 1456                |
| Spain           | mean    | 0.55                  | 0.32               | 0.13              | 0.39                       | 0.64                 | 3.03                |
|                 | st. dev | 0.5                   | 0.47               | 0.34              | 0.49                       | 0.48                 | 1.16                |
|                 | N       | 1464                  | 1464               | 1464              | 1471                       | 1295                 | 1455                |
| Total           | mean    | 0.49                  | 0.43               | 0.08              | 0.24                       | 0.66                 | 3.12                |
|                 | st. dev | 0.5                   | 0.5                | 0.27              | 0.43                       | 0.47                 | 1.2                 |
|                 | N       | 7247                  | 7247               | 7247              | 7363                       | 6538                 | 7285                |

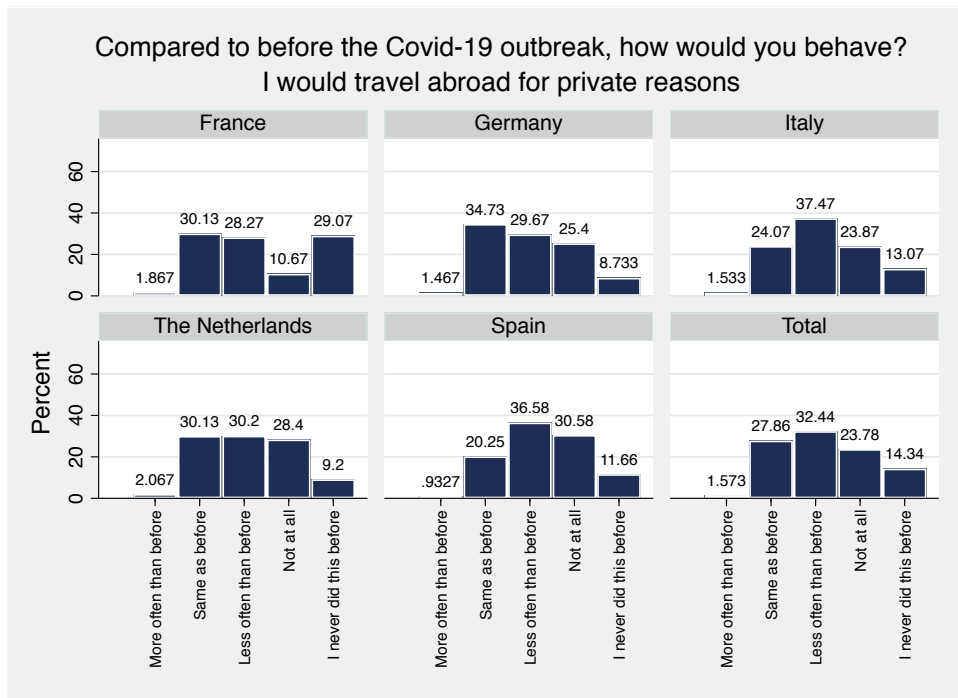
Notes: Column (1) reports the fraction of households in paid work, Column (2) the fraction not being part of the labor force, and Column (3) the fraction being unemployed. Column (4) reports the fraction of households having experienced an unemployment spell over the past 5 years. The survey question is “Have you been unemployed and seeking work for more than 3 months in the last 5 years?”. Column (5) reports the fraction of households that have the ability to make an unexpected payment of one-month of income. The survey question is “Does your household have savings (excluding the value of your home) worth at least one month of the total net income of your household?” (1=yes, 0=no). Column (6) reports households’ perception of how they cope financially with their income. The survey question is “Which of these descriptions comes closest to how you feel about your household’s income nowadays?” The variable is numeric, 5 categories: 1= Very difficult on present income and insufficient to cover all the expenses; 2= Difficult on present income; 3= Coping on present income; 4= Living comfortably on present income, but unable to save; 5= Living comfortably on present income and able to save.

Table A4: Descriptive employment and financial statistics by country II



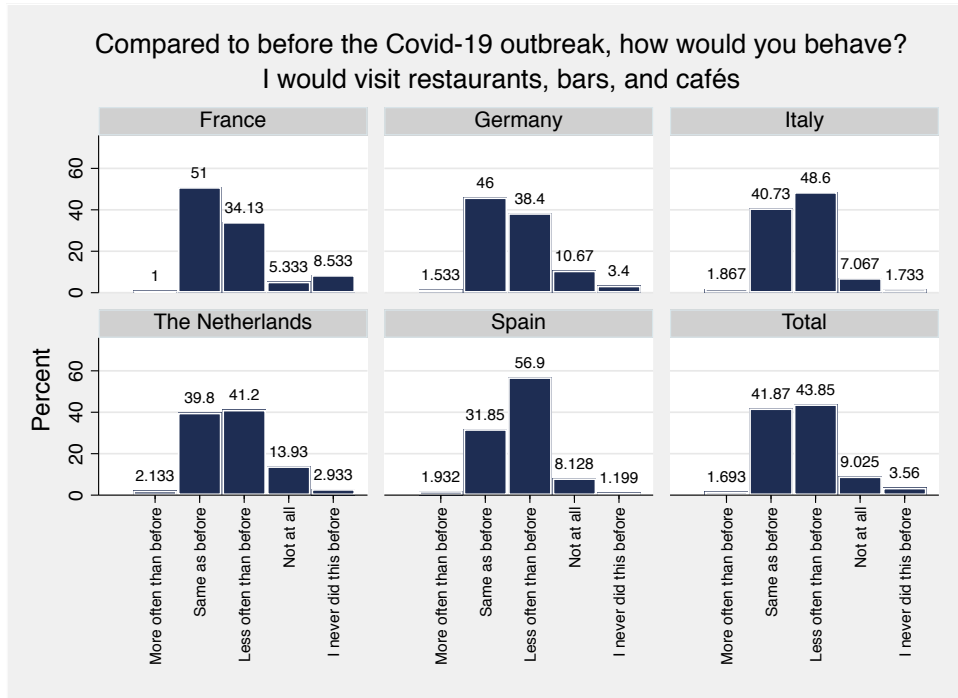
The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would use public transports: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before.

Figure A11: Usage of public transports



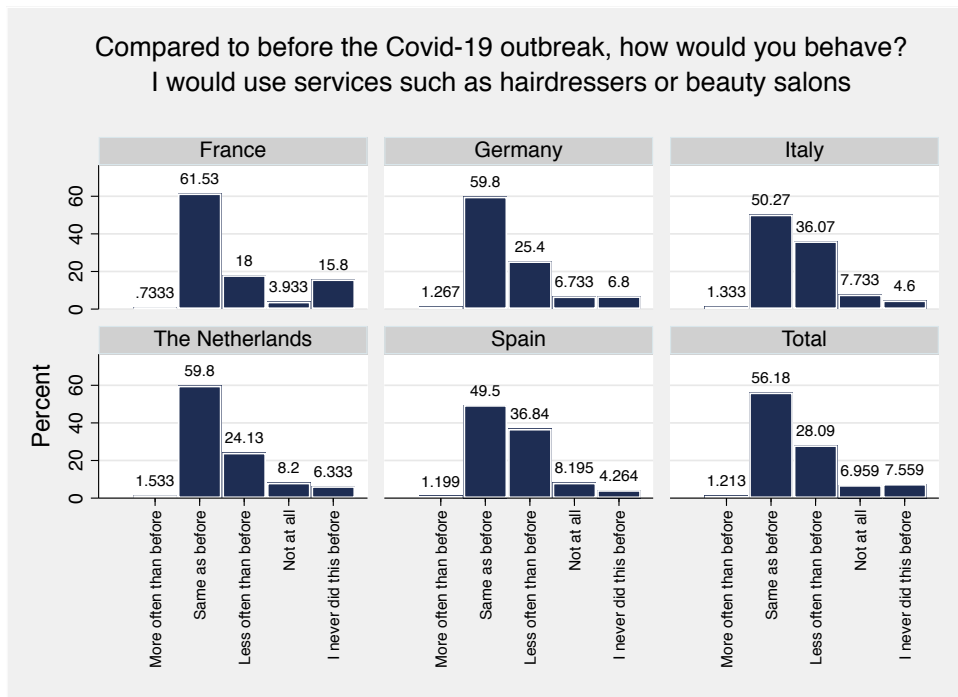
The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would travel abroad for private reasons: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. .

Figure A12: Traveling abroad for private reasons



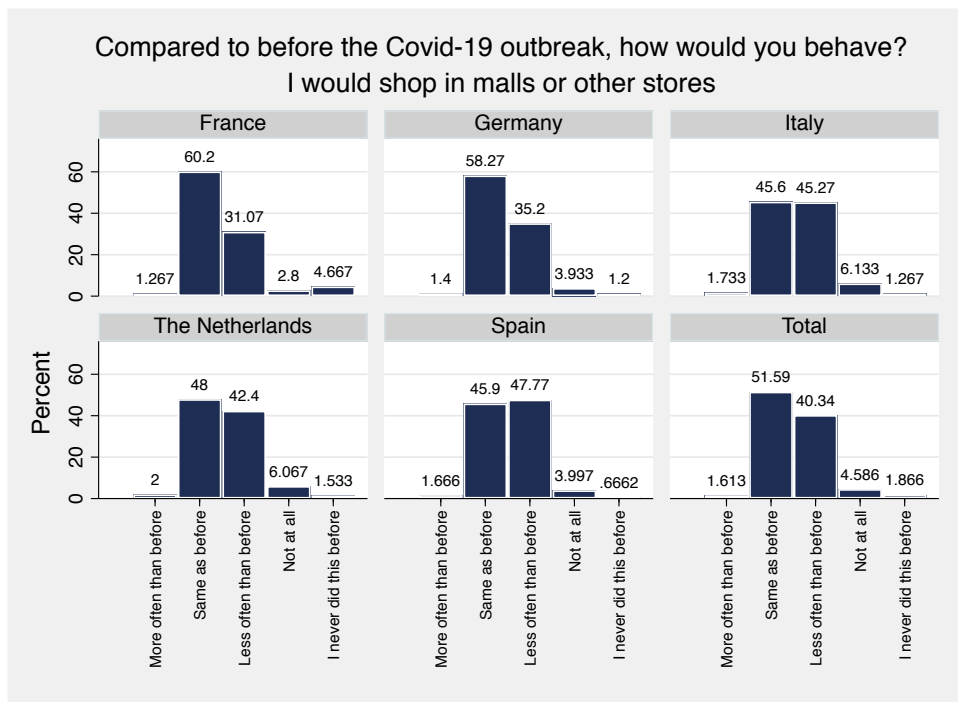
The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would visit restaurants, bars, and cafes: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before.

Figure A13: Visiting restaurants, bars, and cafes



The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would use services such as hairdressers or beauty salons: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before. Responses =5 are dropped and dummy created.

Figure A14: Usage of services such as hairdressers or beauty salons



The survey question is: Compared to before the COVID-19 outbreak, how would you behave? I would shop in malls or other stores: 1= more often than before; 2= same as before; 3= less often than before; 4= not at all; 5= I never did this before.

Figure A15: Shopping in malls or other stores



|                          | standard statistics |      |         | education |        |      | employment statistics |           |         | financial statistics |         |        |                     |
|--------------------------|---------------------|------|---------|-----------|--------|------|-----------------------|-----------|---------|----------------------|---------|--------|---------------------|
|                          | age                 | male | hh size | low       | middle | high | emp.                  | not in LF | un-emp. | spell of unemp.      | savings | income | income satisfaction |
| <b>Public transports</b> |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| not missing it           | 50.26               | 0.53 | 2.58    | 0.29      | 0.45   | 0.26 | 0.48                  | 0.43      | 0.08    | 0.21                 | 0.67    | 3.12   | 5.84                |
| wanting to save          | 40.95               | 0.53 | 2.94    | 0.32      | 0.39   | 0.28 | 0.58                  | 0.29      | 0.13    | 0.39                 | 0.52    | 2.65   | 5.45                |
| not affordable           | 45.34               | 0.48 | 2.96    | 0.46      | 0.32   | 0.22 | 0.4                   | 0.4       | 0.2     | 0.43                 | 0.3     | 2.12   | 3.84                |
| infection risk           | 51.56               | 0.46 | 2.64    | 0.28      | 0.4    | 0.31 | 0.49                  | 0.44      | 0.07    | 0.24                 | 0.72    | 3.22   | 6.28                |
|                          |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| <b>Tourism</b>           |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| not missing it           | 53.31               | 0.58 | 2.52    | 0.27      | 0.47   | 0.25 | 0.47                  | 0.48      | 0.05    | 0.18                 | 0.72    | 3.28   | 5.93                |
| wanting to save          | 43.34               | 0.52 | 2.85    | 0.29      | 0.4    | 0.3  | 0.62                  | 0.29      | 0.09    | 0.32                 | 0.66    | 2.85   | 5.78                |
| not affordable           | 48.71               | 0.45 | 2.63    | 0.38      | 0.42   | 0.2  | 0.41                  | 0.45      | 0.14    | 0.39                 | 0.39    | 2.16   | 4.51                |
| infection risk           | 52.25               | 0.45 | 2.6     | 0.26      | 0.41   | 0.33 | 0.49                  | 0.45      | 0.06    | 0.21                 | 0.76    | 3.39   | 6.53                |
|                          |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| <b>Services</b>          |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| not missing it           | 48.32               | 0.49 | 2.68    | 0.31      | 0.45   | 0.24 | 0.49                  | 0.44      | 0.07    | 0.23                 | 0.68    | 3.08   | 5.59                |
| wanting to save          | 43.54               | 0.46 | 3.01    | 0.37      | 0.36   | 0.28 | 0.56                  | 0.32      | 0.11    | 0.36                 | 0.58    | 2.64   | 5.42                |
| not affordable           | 46.82               | 0.33 | 2.6     | 0.4       | 0.38   | 0.22 | 0.38                  | 0.45      | 0.17    | 0.41                 | 0.32    | 2.02   | 4.2                 |
| infection risk           | 51.07               | 0.44 | 2.71    | 0.31      | 0.39   | 0.3  | 0.49                  | 0.43      | 0.08    | 0.25                 | 0.7     | 3.12   | 6.14                |
|                          |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| <b>Hospitality</b>       |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| not missing it           | 51.97               | 0.53 | 2.57    | 0.29      | 0.46   | 0.25 | 0.46                  | 0.48      | 0.06    | 0.19                 | 0.7     | 3.23   | 5.82                |
| wanting to save          | 44.2                | 0.46 | 2.81    | 0.34      | 0.39   | 0.26 | 0.56                  | 0.34      | 0.1     | 0.35                 | 0.59    | 2.71   | 5.38                |
| not affordable           | 49.11               | 0.41 | 2.63    | 0.4       | 0.41   | 0.19 | 0.38                  | 0.45      | 0.17    | 0.38                 | 0.36    | 2.09   | 4.3                 |
| infection risk           | 52.36               | 0.45 | 2.6     | 0.29      | 0.38   | 0.33 | 0.48                  | 0.46      | 0.06    | 0.22                 | 0.74    | 3.32   | 6.29                |
| online alternatives      | 40.22               | 0.48 | 2.77    | 0.25      | 0.42   | 0.33 | 0.58                  | 0.32      | 0.11    | 0.28                 | 0.56    | 2.69   | 5.65                |
|                          |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| <b>Retail</b>            |                     |      |         |           |        |      |                       |           |         |                      |         |        |                     |
| not missing it           | 51.97               | 0.46 | 2.58    | 0.26      | 0.44   | 0.3  | 0.49                  | 0.46      | 0.05    | 0.19                 | 0.7     | 3.19   | 5.96                |
| wanting to save          | 43.07               | 0.49 | 2.89    | 0.33      | 0.39   | 0.28 | 0.56                  | 0.3       | 0.13    | 0.35                 | 0.55    | 2.68   | 5.52                |
| not affordable           | 46.1                | 0.36 | 2.77    | 0.42      | 0.37   | 0.21 | 0.35                  | 0.46      | 0.19    | 0.45                 | 0.32    | 1.92   | 4.12                |
| infection risk           | 52.28               | 0.42 | 2.57    | 0.3       | 0.39   | 0.31 | 0.47                  | 0.47      | 0.06    | 0.22                 | 0.71    | 3.27   | 6.19                |
| buy more online          | 45.37               | 0.42 | 2.84    | 0.26      | 0.42   | 0.32 | 0.6                   | 0.34      | 0.06    | 0.24                 | 0.71    | 3.12   | 6.09                |

Table A5: Descriptive socio-economic household statistics by sector and by reason for consumption reduction

|                          | experiences   |                |              | macro expectations |                 | feelings about government |              | Psychological factors |          |                   |
|--------------------------|---------------|----------------|--------------|--------------------|-----------------|---------------------------|--------------|-----------------------|----------|-------------------|
| <b>Public transports</b> | deaths/1M pop | infection rate | unempl spell | unempl             | crisis duration | trust                     | satisfaction | concern               | job loss | financial concern |
| not missing it           | 413.36        | 0.07           | 0.21         | 8.42               | 3.41            | 2.98                      | 2.93         | 1.65                  |          | 5.63              |
| wanting to save          | 450.09        | 0.12           | 0.39         | 8.56               | 3.53            | 3.27                      | 3.2          | 1.98                  |          | 6.82              |
| not affordable           | 440.34        | 0.18           | 0.43         | 10.97              | 3.49            | 3.37                      | 3.41         | 2.23                  |          | 6.95              |
| infection risk           | 453.5         | 0.09           | 0.24         | 8.82               | 3.79            | 3.07                      | 2.97         | 1.79                  |          | 6.26              |
|                          |               |                |              |                    |                 |                           |              |                       |          |                   |
| <b>Tourism</b>           | deaths/1M pop | infection rate | unempl spell | unempl             | crisis duration | trust                     | satisfaction | concern               | job loss | financial concern |
| not missing it           | 387.66        | 0.08           | 0.18         | 7.59               | 3.45            | 2.91                      | 2.95         | 1.58                  |          | 5.42              |
| wanting to save          | 453.28        | 0.1            | 0.32         | 7.78               | 3.49            | 3.25                      | 3.11         | 1.89                  |          | 6.58              |
| not affordable           | 441.87        | 0.1            | 0.39         | 10.45              | 3.53            | 3.31                      | 3.25         | 2.18                  |          | 7.23              |
| infection risk           | 437.76        | 0.1            | 0.21         | 8.44               | 3.81            | 2.97                      | 2.87         | 1.72                  |          | 5.98              |
|                          |               |                |              |                    |                 |                           |              |                       |          |                   |
| <b>Services</b>          | deaths/1M pop | infection rate | unempl spell | unempl             | crisis duration | trust                     | satisfaction | concern               | job loss | financial concern |
| not missing it           | 424.14        | 0.09           | 0.23         | 3.49               | 3               | 2.95                      | 1.67         | 1.67                  |          | 5.91              |
| wanting to save          | 476.12        | 0.14           | 0.36         | 9.09               | 3.62            | 3.33                      | 3.16         | 1.98                  |          | 6.93              |
| not affordable           | 440.69        | 0.12           | 0.41         | 11.65              | 3.62            | 3.28                      | 3.32         | 2.31                  |          | 7.36              |
| infection risk           | 456.02        | 0.11           | 0.25         | 9.46               | 3.88            | 3.18                      | 3.09         | 1.89                  |          | 6.59              |
|                          |               |                |              |                    |                 |                           |              |                       |          |                   |
| <b>Hospitality</b>       | deaths/1M pop | infection rate | unempl spell | unempl             | crisis duration | trust                     | satisfaction | concern               | job loss | financial concern |
| not missing it           | 401.91        | 0.09           | 0.19         | 7.99               | 3.56            | 2.85                      | 2.75         | 1.59                  |          | 5.53              |
| wanting to save          | 461.48        | 0.11           | 0.35         | 8.48               | 3.55            | 3.22                      | 3.11         | 1.98                  |          | 6.85              |
| not affordable           | 445.87        | 0.13           | 0.38         | 11.09              | 3.61            | 3.33                      | 3.26         | 2.24                  |          | 7.25              |
| infection risk           | 445.09        | 0.1            | 0.22         | 8.35               | 3.86            | 3.03                      | 2.95         | 1.78                  |          | 6.16              |
| online alternatives      | 431.35        | 0.12           | 0.28         | 10.57              | 3.58            | 3.07                      | 3.35         | 1.68                  |          | 6.07              |
|                          |               |                |              |                    |                 |                           |              |                       |          |                   |
| <b>Retail</b>            | deaths/1M pop | infection rate | unempl spell | unempl             | crisis duration | trust                     | satisfaction | concern               | job loss | financial concern |
| not missing it           | 407.98        | 0.09           | 0.19         | 7.35               | 3.58            | 2.93                      | 2.86         | 1.65                  |          | 5.72              |
| wanting to save          | 466.63        | 0.12           | 0.35         | 8.67               | 3.5             | 3.23                      | 3.09         | 1.93                  |          | 6.87              |
| not affordable           | 468.78        | 0.11           | 0.45         | 12.36              | 3.56            | 3.4                       | 3.38         | 2.37                  |          | 7.78              |
| infection risk           | 437.26        | 0.11           | 0.22         | 8.5                | 3.86            | 2.99                      | 2.91         | 1.79                  |          | 6.14              |
| online alternatives      | 450.91        | 0.13           | 0.24         | 9.88               | 3.69            | 3.11                      | 3.04         | 1.71                  |          | 6.17              |

Table A6: Descriptive behavioral household statistics by sector and by reason for consumption reduction