The Nexus Between Household Consumption, Consumer Protection, and Consumer Confidence in European Countries. A Statistical-Mathematical Analysis

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Abstract: In this manuscript, the authors face the following research question: do consumer protection and consumer confidence have predictive power on household consumption? In order to provide an answer, the authors adopted a proper mathematical-statistical method. In particular, they collected cross-sectional data on 27 European countries and then estimated a consumption function accounting for both the Post-Keynesian Absolute Income Hypothesis and the Neoclassical Life-Cycle Hypothesis. This consumption function comprises, as a control variable, the Consumer Conditions Index, a measure of consumer protection calculated by the EU Commission. Moreover, the authors distinguished the effects on household consumption of three different aspects of consumer protection: Consumer knowledge of their rights and trust, Compliance and enforcement of consumer law, and Complaints and dispute resolution between consumers and retailers. The authors' findings suggest that consumer protection may represent a transmission channel for consumer confidence.

Keywords: Consumer protection, Consumer Confidence, Law enforceability, Household consumption, Mathematical methods for Economics.
JEL: C00; C21; E21; K00; K12

1. Introduction

Consumer protection is a key feature of modern legislative systems because of its importance in enhancing consumer confidence and, consequently, promoting free trade at both the national and international levels. Although jurists are perfectly aware of the importance of this insight, it remains quite underdeveloped in economics.

This manuscript aims to contribute to this research field by analysing the nexus between supranational consumer protection and household consumption expenditure at European level. To accomplish this research goal, the authors propose an empirical analysis based on both the Life-Cycle Hypothesis and Absolute Income Hypothesis, which, together with the Relative Income Hypothesis, represent the main paradigms of the Neoclassical and Post-Keynesian schools of economic thought.

The authors chose to present their article in *Panoeconomicus* because it is one of the few esteemed academic journals showing an interest in the nexus between consumption expenditure and consumer confidence (Özerkek and Çelik, 2010; Çelik and Deniz, 2017) and the economic performance of consumer confidence (O'Hara, 2021), two subject matters treated and extended to the broader category of consumer protection (that, as the authors will point out in the next sections, includes some measures of consumer confidence) precisely in this manuscript. In fact, in this contribution, the authors estimated a consumption function accounting for Life-Cycle Hypothesis, Absolute Income Hypothesis, consumer confidence, consumer protection, and the interaction between consumer protection and consumer confidence, pointing out some novel results on the (until now unexplored) relationship between consumer protection and consumption spending.

The paper is organized as follows: the first section includes a brief introduction to the topic of European consumer protection law just to contextualise the topic under scrutiny; the second section consists of a literature review on European consumer protection; the third section exposes the research aims of this paper; the fourth section presents some essential patterns in the data considered by the authors for their research; the fifth section exposes the authors' theoretical model and its estimation methods; the sixth section contains the authors' results with a relating discussion; and the seventh section draws the conclusions of the research.

2. Literature review

In the second half of the 1990s, the necessity of achieving normative unity in consumer protection law was felt at the European level. In particular, the need for a common legal definition of "consumer" and harmonization of the different national legislations arose. At that time, building up European legislation on consumer protection was considered complementary both to the enlargement of the post-WWII markets and also due to the technological progress (Trumpy 1986) and to the Maastricht Treaty of 1992, which formalized the birth of the European Union and set as its objective the creation of a common free trade area (Latham 1999). Indeed, national laws were seen as inadequate because of their complexity, which made consumers unaware of their rights against sellers (Brady 1997) and, in many countries, also because of the lack of a proper notion of "consumer", a problem still persisting today (Alpa 2018). In 1997, the European Commission issued the Directive on the Sale of Consumer Goods and Associated Guarantees (Directive 1997/44 EC) just to endow consumers and vendors with new guidelines about their rights, warranties, and duties. Two categories of guarantees were set: the legal ones, relating to the cases in which the consumer good does not conform to the contract of sale, and the commercial ones, consisting of the provisions for cases in which the consumer good does not comply with the seller's express promise. This act represented the birth of European consumer protection law and was welcomed by jurists as, in their opinion, it provided a high level of consumer protection (Staudenmayer, 2000). However, it did not properly achieve the objective of normative unity because of the wide power given to the Member State to deviate from the Directive (Zollers et al., 1999). As a result, the European Commission approved the Unfair Commercial Practices Directive (UCPD) in 2005 with the aim of lowering the barriers to free trade and ensuring higher-level consumer protection, but this attempt to harmonize the national legislation also failed. The reason is that Member States were required to pass it no later than June 12, 2007, but Article 3(5) allowed the national governments to continue to apply their local laws until June 12, 2013. Moreover, some observers noted that the notion of consumer and the protection mechanisms for vulnerable consumers in the UCPD restricted too much the categories of beneficiaries, making it incomplete (Trzaskowski, 2013); that, contrary to the national courts, the Court of Justice of the European Union interpreted the notion of consumer in an unfavourable way for weaker consumers (Hondius, 2006); that the national courts' application of the general clauses of the Directive generated consistent divergences among the Member States (Stuyck, 2015); and that the aim of eliminating barriers for the internal market was not met (Gomez, 2006). Other limitations of the UCPD and previous Directives (not only on consumer protection) were collected into the executive summary of the fitness check of 2007, in which it was highlighted that it was necessary to: *a*) improve the judges' and legal practitioners' knowledge of EU law; *b*) improve the stepped-up enforcement of EU law; *c*) consider the introduction of the targeted amendments to simplify the regulatory landscape. Some jurists also suggested addressing the problem of normative unity by abandoning the goal of maximum harmonization and employing an approach similar to that of the EU free movement regulation, namely establishing a set of standards of consumer protection with the possibility for adjustment where there is justification for it (Mak 2010: 1). In 2011, the EU Commission made a further attempt to address these criticalities by approving the new Consumer Rights Directive 2011/83/EU against unfair terms in all types of business-to-consumer contracts (UCTD, whose effective implementation started on December 13th, 2013). In that period, the UCTD received little attention from jurists, who preferred to focus on the Common European Sales Law (CESL). The definition of consumer was expanded compared to past Directives, but three main shortcomings remained unresolved (Tonner and Fangerow, 2012; Chirita, 2017): *i*) an appropriate notion of "end-user" was not provided by the UCTD, impeding the accomplishment of the maximum level of protection possible; *ii*) the goal of full harmonization was not met as the UCTD still left a room for the autonomous rights of the Member States; *iii*) the discipline of unfair contracts was not included in the UCTD. In order to work out all the problems reported above, in 2019, the European Commission issued the Enforcement and Modernisation Directive 2019/2161, an omnibus Directive updating the Unfair Contract Terms Directive (93/13/EEC), the

Price Indication Directive (98/6/EC), the Unfair Commercial Practices Directive (2005/29/EC) and the Consumer Rights Directive (2011/83/EU). The Modernisation Directive boosted the powers of enforcement (by providing more effective penalties for cross-border infringements, compensation and other remedies for victims of unfair commercial practices and stronger powers to the national authorities to stop misleading marketing of dual quality goods), the transparency obligations (in particular on online market places, consumer reviews and personal pricing) and the consumer rights for free digital services (namely, both the obligation for the providers of online free services to clearly inform the consumers about the characteristics of the services, the contract duration and termination conditions and the right for the consumer to cancel the online contract within 14 days without stating the reason of her decision). The Modernisation Directive has been positively judged by experts, who spoke of a "New Deal for Consumers". In fact, there is a general consensus on the fact that it raised the quality of consumer protection, even if additional provisions, especially on online trading, are desirable (Loos, 2020; Đurović, 2020).

This contribution relates to the topic of consumer law at the European level in a new fashion, namely by looking at the link between consumer protection and consumption from a mathematical-economic perspective.

3. Research aims

The literature on household consumption determinants is very extensive. In the General Theory of Employment, Interest, and Money, John Maynard Keynes (1936) proposed the Absolute Income Hypothesis according to which per capita consumption depends on current disposable income. After that, the Life-Cycle Hypothesis pointed out that individuals exploit the financial market, the insurance market, and government social transfers to move along a stable consumption path. Consequently, household consumption is a function of permanent income (Friedman, 1957; Ando and Modigliani, 1963; Carroll, 2001). Today, there is a general consensus on the fact that household consumption is mainly affected by labor income, net wealth, asset returns, risk aversion, nominal interest rates, and habits (Attanasio and Weber, 1989; Campbell and Cochrane, 1999; Bostic et al., 2009; Ascari et al., 2021). Moreover, researchers are perfectly aware of the economic importance of consumer legal protection in the context of the European Single Market: they know that it protects consumers as the weaker part of a contractual relationship and allows them to make informed and meaningful choices (Velentzas et al., 2012). What is really missing is an empirical investigation of the relationship between consumer protection and household consumption. In fact, the contributions dealing with this topic are still few and focus on the effect of consumer confidence on overall consumption spending (Dees and Brinca, 2013) and the impact of consumer protection on online shopping (Buettner, 2020; Rösner et al., 2020), but no evidence on the nexus between consumer protection, consumer confidence, and consumer confidence has been proposed, at least until today.

This manuscript represents an attempt to fill this gap in the literature using a simple but sound empirical strategy.

In order to accomplish their task, the authors propose a consumption function accounting for both the Post-Keynesian Absolute Income Hypothesis Neoclassical Life-Cycle Hypothesis, and consumer confidence, and then estimate it through the Ordinary Least Squares (OLS) and Weighted Least Squares (WLS) regression techniques. In particular, the authors' estimates were carried out using cross-sectional data on 27 European countries collected from the database of the EU Commission (Eurostat).

The authors chose as a proxy for consumer protection the Consumer Conditions Index (CCI), a country-level composite indicator provided by the EU Commission and obtained by conducting appropriate surveys on both consumers and retailers. More specifically, the CCI index is built up through a survey approach and is articulated into three pillars. The first one measures knowledge of consumers rights, trust in organisations, trust in redness mechanisms, trust in product safety, trust in environmental claims, and trust in online shopping. The second one relates to compliance with and enforcement of both national and supranational consumer laws. The third one, instead, covers complaints and dispute resolution. A detailed description of the CCI is reported in Table A (Cfr. Section I of the Appendix).

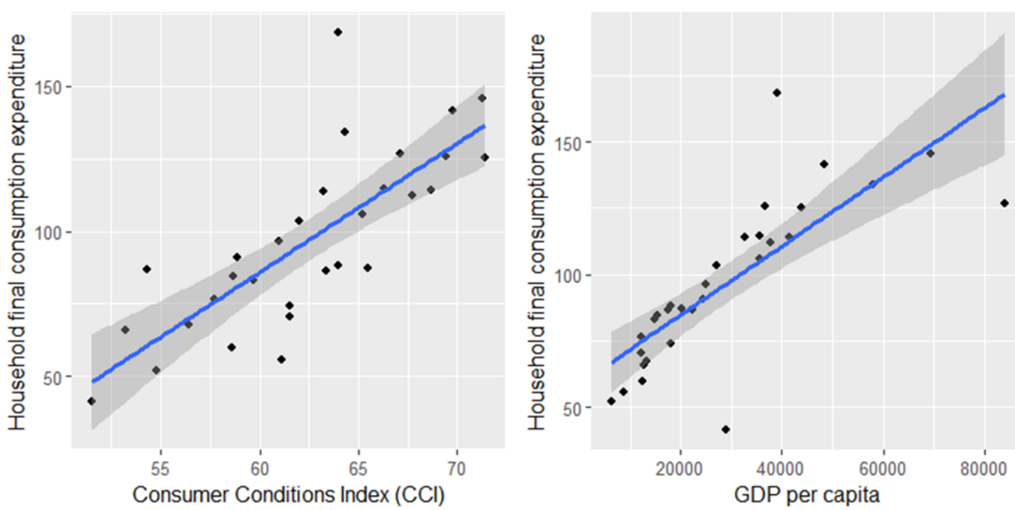
Indeed, the authors check not only for the predictive power of the CCI on household final consumption expenditure but also for each of the three components listed above and the Consumer Confidence Indicator (CC). The latter (CC indicator) needs to be included in the authors' model because its exclusion can potentially overstate the impact of CCI index on household consumption. In fact, as pointed out by Table A in the Appendix, the Knowledge and trust pillar of CCI incorporates some measures of consumer confidence (namely, trust in organisations, trust in redress mechanisms, trust in product safety, trust in environmental claims, and confidence in online shopping), but they are different from those usually employed to measure consumer confidence indicators (which are based on surveys about the general state of the economy). Hence, a proper evaluation of the predictive ability of CCI requires the inclusion of a proper measure of consumer confidence. Furthermore, the authors included an interaction term between the Consumer Conditions Index and the Consumer Confidence indicator in order to empirically assess the hypothesis that consumer protection represents a transmission channel of consumer confidence to household consumption spending, in the sense that households living in countries with higher levels of consumer protection exhibit higher levels of consumer confidence and consumption spending (and, vice versa, countries in which consumer protection is lower are characterized by lower levels of consumer confidence and consumption spending).

The weak point of the CCI is that it includes a subjective measure of compliance with and enforcement of consumer law and complaint and dispute resolution, as it is computed on the basis of the declarations of consumers and vendors, not on technical and objective data. However, at the same time, the CCI has the advantage of taking into account consumers and retailers knowledge of their rights and duties and trust in consumer protection mechanisms, factors that can be captured only through interviews with the concerned parties. In any case, also in the papers by Buettner (2020) and Rösner et al. (2020) cited above, consumer protection is measured using a survey approach.

4. Household consumption and consumer protection in European countries

In this Section, the authors propose some simple summary statistics and graphic representations in order to show some interesting patterns in household final consumption expenditure per capita, the CCI and their relationship. The first graph (Figure 1) they present consists of two scatter plots put on the same panel. In the first and second ones, household final consumption expenditure is plotted, respectively, towards the CCI and household final consumption expenditure.

Figure 1. Scatter plot of household final consumption expenditure towards Consumer Conditions Index (CCI) and GDP per capita. Source: authors' elaboration



From the two scatter plots above, three important observations can be drawn. The first is that a positive and highly significant correlation exists, namely that the higher the CCI, the higher the household final consumption expenditure, and, similarly, the higher the GDP per capita, the higher the household final consumption expenditure. The second is that a significant heteroscedasticity in the considered data exists. Indeed, heteroscedasticity in household consumption is a well-known phenomenon widely analysed in literature (Hildenbrand and Kneip, 1993) and the authors have to face it with appropriate estimation techniques in order to get unbiased estimates of the standard errors of regression. The third one, instead, is the presence of a high variance in the data. This high variability has also been highlighted in Table 1[1] below, which reports the summary statistics for real household final consumption expenditure and real GDP per capita (in thousands of euros), as well as the Consumer Conditions Index (CCI), and the Consumer Confidence Indicator (CC) (both in levels):

Table 1. Summary statistics for household final consumption expenditure, GDP per capita, and Consumer Conditions Index (CCI). Source: authors' elaboration

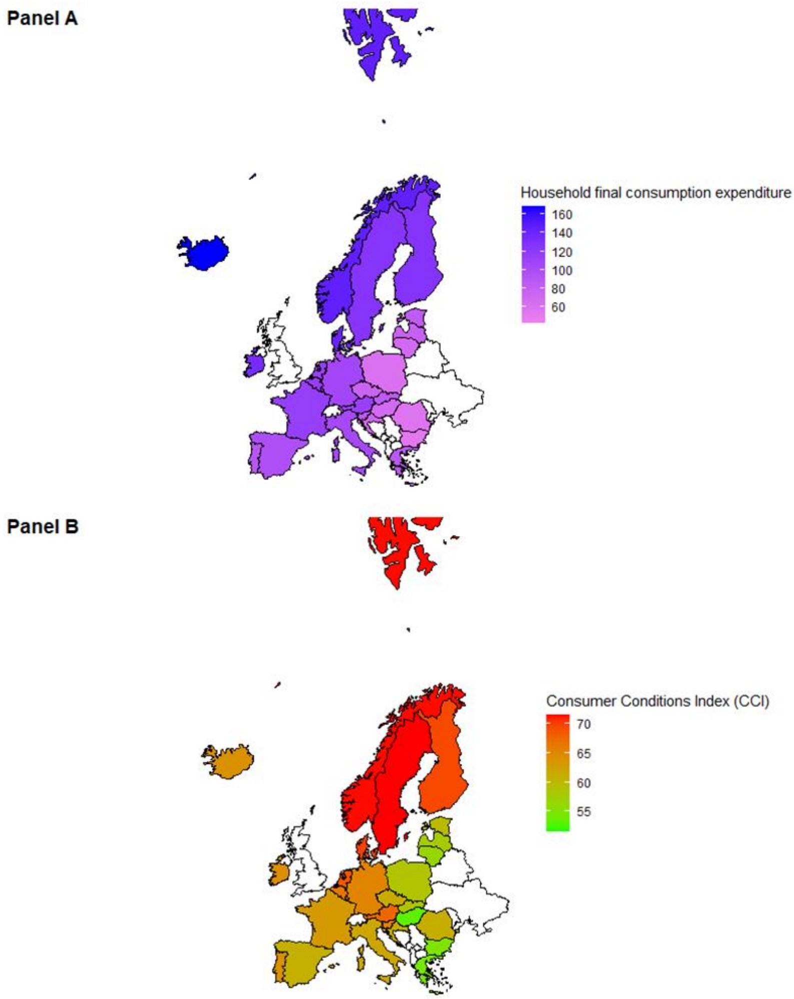
Variable	*Mean*	*Median*	*Min*	*Max*	*Standard deviation*
Household final consumption expenditure	96.60	89.55	6330	84040	30.54
GDP per capita	29091	24655	6330	84040	18377
Consumer Conditions Index (CCI)	62.41	62.60	51.50	71.40	5.36
Consumer Confidence Indicator (CC)	59.47	58.23	47.26	62.67	7.29

Table 1 points out that, as aforementioned, both the standard deviation and the range (the difference between the maximum value and the minimum one) are quite high for each of the four variables, meaning that the variability in household final consumption expenditure, GDP per capita, the Consumer Conditions Index (CCI), and the Consumer Confidence Indicator (CC) is very high among the countries belonging to the European Union. The substantial difference in these key variables highlights that, despite the efforts exerted since the signing of the Maastricht Treaty in 1992, considerable difficulties in ensuring economic convergence among the EU states still exist.

After analysing the summary statistics, the authors graphically represented the geographical distribution of household final consumption expenditure and CCI across the 27 European countries using the two colored maps in Figure 2 below:

[1] This table is the second one in the manuscript because the first one has been included in the first section of the Appendix.

Figure 2. Household final consumption expenditure and Consumer Conditions Index (CCI) in EU countries. Source: authors' elaboration



These two maps suggest that both household final consumption expenditure and the Consumer Conditions Index have higher values in the northern European countries (in particular the Scandinavian ones) than in the southern ones. A significant difference in the same two variables emerges when comparing the Western countries to the Eastern ones. Three colored maps showing the geographical distribution of the three components of the CCI are reported in Figure 3 (Cfr. Section II of the Appendix) and exhibit a territorial variability very similar to that of Figure 2.

The data and graphs displayed in this section seem to indicate that the nexus between household final consumption expenditure and the Consumer Conditions Index is strong and positive. In the remaining paragraphs of this manuscript, the authors simply test the significance and sign of this correlation by controlling for a large set of independent variables.

5. Theoretical model and estimation method

In this Section, the authors explain their research method, namely the theoretical consumption function they consider, the estimation methods, and their data.
The authors' theoretical model consists of the following Keynesian linear consumption function:

$$C_i = c_0 + c_1 Y_i + c_2 CC_i + c_3 CCI_i + \mathrm{c}_4(\mathrm{CC_i} * \mathrm{CCI_i}) + \beta X' \qquad (1)$$

where C_i is the household final consumption expenditure per capita, c_0 and c_2 are two constants known, respectively, as autonomous consumption and marginal propensity to consume (MPC); Y_i is the GDP per capita accounting for the Absolute Income Hypothesis; CCI_i is the Consumer Conditions Index; $\mathrm{CC_i}$ stands for Consumer Confidence Indicator, the coefficient c_4 captures the effect of the interaction between consumer confidence and consumer protection on household consumption, namely, it assesses the possibility that consumer protection acts like a transmission channel of consumer confidence to consumption spending; β is a vector of parameters to be estimated, and X is a vector of explanatory variables consistent with the Life-Cycle Hypothesis.
More precisely, the regressors comprised in the vector X are the social transfers to households from the government, household labour income, household gross income to debt ratio, household gross saving rate, household net financial asset ratio, and household disposable income. In addition, the three pillars of the CCI (namely, Compliance and enforcement pillar, Consumer knowledge and trust pillar, and Complaints and dispute resolution pillar) have been included in X by the authors in order to distinguish the effect of each of these three index components on the household final consumption expenditure.
The authors chose a linear specification because it is the most appropriate to fit data on consumption, according to well-established literature on the Consumption theory (Tsao, 1975; Thomas, 1989).
As hinted at in the previous section, the estimation of equation (1) should be carried out taking into account the problem of heteroscedasticity of household consumption expenditure in order to obtain consistent estimates of the standard errors associated with the coefficients. Then, the authors used both the Ordinary Least Squares (OLS) with heteroskedasticity consistent standard errors (HC1) (White, 1980) and the Weighted Least Squares (WLS) to accomplish their task. In particular, given the following optimization problem:

$$\min_{\beta} \sum_{i=1}^{n} (y_i - \beta x')^2 \tag{2}$$

with $y_i - \beta x' = u_i$, the solution provided by the OLS estimator is the following:

$$\hat{\beta}_{OLS} = (x^T x)^{-1} x^T y$$

where y_i is the dependent variable, x is the vector of the regressors. The HC1 standard errors for $\hat{\beta}_{\mathrm{OLS}}$ are given by:

$$\Sigma = \frac{n}{n-k} diag\left(u_i^2\right)$$

where:

$$\Sigma = \begin{pmatrix} \sigma_1^2 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \sigma_n^2 \end{pmatrix}$$

is the variance-covariance matrix of u_i and k is the number of estimated parameters. The WLS estimator, instead, represents a generalization of the OLS and faces heteroscedasticity through an appropriate weighting procedure of the data. In fact, in the WLS the optimization problem (2) is rearranged as follows:

$$\min_{\{\beta, w\}} \sum_{i=1}^{n} w\,(y_i - \beta x')^2$$

where w is the weight matrix. Then, the following solution is provided:

$$\hat{\beta}_{\mathrm{W}LS} = (x^T w x)^{-1} x^T w y$$

In this manuscript, the authors set the weight matrix as follows:

$$w = \begin{pmatrix} \frac{1}{\sigma_1^2} & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \frac{1}{\sigma_n^2} \end{pmatrix}$$

namely, the authors' weight matrix is equal to the inverse of the variance-covariance matrix, meaning that each element of the matrix w (weight) is calculated as the reciprocal of the corresponding variance on the main diagonal of the matrix Σ (σ_i^2).
The authors opted for this particular specification because, as proved by Aitken (1936), it ensures that the WLS estimator is BLUE (best, linear, unbiased). The coefficients of both the OLS and WLS regression models have been computed by the authors using cross-sectional data from the same 27 countries for which the European Commission calculates the CCI and CC indicators. The data source exploited by the authors is the database of the statistical office of the European Commission (Eurostat)[2]. Since the data collected by the authors refers to the year 2019, it does not capture the Modernisation Directive (that, as seen in the previous section, was issued just in that year), but only the European Directives and national consumer laws effectively applied at that time.

6. Estimation results and discussion

In this Section, the authors expose their estimates of equation (1) carried out through the OLS and WLS estimators. The authors propose a version of their OLS and WLS regression models that includes the CCI index and an alternative specification with its three components (Compliance and enforcement pillar, Knowledge and trust pillar, and Complaints and dispute resolution pillar).
The authors standardized the variables they comprised in their model in order to overcome the multicollinearity concerns posed by the high correlation among the same taken in levels. The Variance Inflation Factor tests (VIF) carried out by the authors for each of their standardized variables strongly refute the presence of multicollinearity[3].
The estimation output is reported in Table 2 below:

Table 2. Estimation outputs of the equation (1). Source: authors' elaboration

Variable	*OLS (1)*	*OLS (2)*	*WLS (3)*	*WLS (4)*
Constant	1.3245***	1.1389**	1.1981***	1.2018***
	(0.0023)	(0.4212)	(0.0123)	(0.2187)
GDP per capita	0.5389***	0.5173***	0.5023***	0.4998**
	(0.0198)	(0.0019)	(0.0002)	(0.1987)

[2] https://ec.europa.eu/eurostat/data/database
[3] Due to spacing constraints, the table including the results of the VIF tests has not been inserted in the article's text file. So, it will be shared by the authors with the concerned parties only upon request.

Consumer Conditions Index (CCI)	1.2317*** (0.0091)	-	1.3787** (0.5198)	-
Consumer Confidence Indicator (CC)	0.7814** (0.1389)	0.7374*** (0.1089)	0.7164*** (0.0981)	0.6991** (0.1898)
Consumer Confidence Indicator*Consumer Conditions Index (CC*CCI)	0.5323*** (0.0671)	-	0.5112** (0.1067)	-
Household gross income to debt ratio	0.9731 (0.6781)	0.7345 (0.8871)	0.6598* (0.3213)	0.8731 (0.9934)
Household gross saving rate	0.3781 (0.4512)	0.2356 (0.3198)	0.5341 (0.6678)	0.1789 (0.2391)
Household net financial asset ratio	0.3819 (0.2891)	0.4198 (0.6671)	0.3409 (0.5561)	0.4489 (0.8912)
Compliance and enforcement pillar of CCI	-	0.7812** (0.1381)	-	0.7239*** (0.2201)
Knowledge and trust pillar of CCI	-	0.4819 (0.6781)	-	0.7712 (0.8919)
Complaints and dispute resolution pillar of CCI	-	0.2319 (0.3419)	-	0.1123 (0.3341)
Number of units	27	27	27	27
Adjusted R squared	0.5134	0.5567	0.5014	0.5876
Ramsey RESET test statistic	1.4538	1.5976	-	-
Ramsey RESET test p-value	0.1245	0.0965	-	-

Standard errors in brackets; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The estimation output above refutes the Life-Cycle Hypothesis. In fact, the estimated coefficients associated with all the variables relating to sources of income other than current GDP per capita and current disposable income (namely, household gross debt to income ratio, household net financial asset ratio, and household saving rate) are found to be statistically no different from zero. In other words, the sources of income that guarantee a constant stream of consumption over time, such as returns from financial assets, saving, and borrowing, are not correlated with consumer protection. Instead, the Absolute Income Hypothesis seems to be supported by the obtained results. In fact, according to both the OLS and the WLS estimators, an increase of 1% in current GDP per capita corresponds to a growth of 0.50%-0.54% in current household final consumption expenditure. Moreover, the Ramsey RESET test provides evidence that a linear specification fits better data than a polynomial regression. Then, it can be deduced that the European household consumption function is coherent with the Post-Keynesian theory. As regards the aim of this manuscript, namely assessing the relationship between the Consumer Conditions Index (CCI) and its components and the household final consumption expenditure, it can be noted that, ceteris paribus, the European countries having a CCI index 1% higher than the others have a household final consumption expenditure 1.23%-1.37% higher as well. From the two estimated equations holding the CCI components, it emerges that only the Compliance and enforcement pillar is related to household consumption. In fact, an increase in this component of 1% corresponds to a growth of household consumption of 0.72%-0.78%, while the correlations of the other two components with households consumption are, on average, null. Put differently, it seems that national legislators and supranational courts do a good job of ensuring the compliance of the sold services and goods with consumer law and protecting the consumers rights. It is evident that the estimated coefficient associated with Consumer Confidence Indicator (CC), indicating that an increase of 1% in CC entails a growth of consumption spending of 0.70%-0.78%, makes the estimated coefficient associated with the Knowledge and trust pillar of the CCI (that incorporates some measures of confidence) not significant. This means that consumer confidence is an important variable in assessing the impact of consumer protection on consumption spending, in the sense that neglecting consumer confidence overstates the estimated impact of consumer protection on household consumption. In any case, this result is in line with the established literature showing that consumer confidence is a relevant predictor of consumption spending thanks to its ability to act like a transmission channel of international shocks (Dees and Brinca, 2013) and a signal of future market behaviour (Ghosh, 2020).

Finally, the interaction term between the Consumer Confidence indicator and the Consumer Conditions Index suggests that consumer protection may represent a transmission channel of consumer confidence, in the sense that a higher level of consumer protection may lead to higher levels of consumer confidence, inducing households to consume more, while lower levels of consumer protection may lead to lower levels of consumer confidence and consumption spending.

The policy implication coming from these results is that initiatives to make consumers more aware of their rights, enhance their trust in retailers, and improve complaint and dispute resolution mechanisms (in particular the alternative ones) should be adopted by national and supranational legislators in order to rise consumer confidence and consumption spending among households living in EU countries.

7. Concluding remarks

In this manuscript, the authors studied the nexus between consumer legal protection (at both the national and supranational level) and household final consumption expenditure, exerting an effort to distinguish the effects of the different components of consumer protection, namely: *i*) Consumers rights knowledge and trust; *ii*) Compliance and enforcement of consumer law; and *iii*) Complaints and dispute resolution between consumers and retailers. It is important to highlight that this paper represents the first attempt to quantify the predictive power of consumer confidence, consumer protection, compliance and enforcement of consumer law, and complaints and dispute resolution between consumers and vendors on household final consumption expenditure. From the evidence provided here, some useful considerations may be drawn. In fact, the authors found that, in the 29 EU countries considered, consumer confidence and consumer protection are, on average, positively related to household final consumption expenditure and that the only component among the three listed above with a positive and significant correlation with household consumption expenditure is the compliance and enforcement of national and European consumer law. From a more strictly macroeconomic point of view, the household consumption function seems to be coherent with the Post-Keynesian Absolute Income Hypothesis. However, this evidence may be reversed by accounting for the consumers intertemporal choices through a time series or panel data model. In addition, the authors showed that consumer protection may represent a transmission channel of consumer confidence to consumption spending, in the sense that households benefiting from higher consumer protection thanks to national and supranational consumer laws experience higher consumer confidence and consumption spending levels, while those living in countries with low consumer protection also have low consumer confidence and consumption spending levels.

The policy implication arising from the authors' results is that, in order to boost household consumer confidence and consumption expenditure, the national governments and European institutions should work to improve consumers trust in retailers and awareness of their rights and enhance complaints and dispute resolution mechanisms. The authors know that the European legislator has taken appropriate steps in this direction through the Modernisation Directive of 2019, but, in their opinion, room for further improvements exists. For example, a more pervasive information campaign on consumer rights across European countries could be a good initiative.

Finally, the authors hope that, despite its limitations (namely, the scarcity of more recent data on the indices used to measure both consumer protection and consumer confidence, and the inability to compare the results obtained here with those of other authors due to the lack of literature on the marginal effect of Consumer Conditions Index on consumption spending and the fact that the findings provided need to be cautiously interpreted because of the use of cross-sectional data), their contribution will spur future research on the topic of the relationship between consumer protection and consumption.

A useful research cue could be, for instance, assessing the output impact of the CCI by adopting an empirical model also based on the Relative Income Hypothesis and examining the role of the various index components in more detail than in this manuscript.

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Appendix

Section I

Table A The Consumer Conditions Index (CCI) and its components. Source: Consumer Conditions Scoreboard of 2019[4]

Consumers survey	Retailers survey
PILLAR 1: KNOWLEDGE & TRUST – 33.3%	
Knowledge sub-pillar – 16.17%	
Knowledge of consumer rights: average percentage of consumers correct answers to 3 questions (distance purchases cooling-off period, product guarantees, and unsolicited products).	**Knowledge of consumer rights:** average percentage of retailers correct answers to 5 questions (product guarantees, seeking payment in marketing material, insufficient quantity of discounted products, promoting products for children, and premium rate phone number).
Trust sub-pillar – 16.17%	
Trust in organisations: average percentage of consumers who agree that in their country public authorities protect their rights as a consumer; retailers and service providers respect their rights as a consumer; and non-governmental consumer organisations protect their rights as a consumer	
Trust in redress mechanisms: average percentage of consumers who agree that in their country it is easy to settle disputes with retailers and service providers through an out-of-court body and that it is easy to settle disputes through the courts.	
Trust in product safety: percentage of consumers who think that essentially all non-food products on the market in their country are safe or that a small number of products are unsafe.	**Trust in product safety:** percentage of retailers who think that essentially all non-food products on the market in their country are safe or that a small number of products are unsafe.

[4] https://commission.europa.eu/system/files/2020-07/consumers-conditions-scoreboard-2019_pdf_en.pdf

Trust in environmental claims: percentage of consumers who agree that most environmental claims about goods or services in their country are reliable.	**Trust in environmental claims:** percentage of retailers who think that most environmental claims about goods or services in their sector in their country are reliable.
Confidence in online shopping: percentage of consumers who feel confident purchasing goods or services on the internet from retailers or service providers in their country.	**Confidence in online selling:** percentage of retailers who are confident selling online only to consumers in their own country or who are confident when selling both in their own country and in other EU countries.
PILLAR 2: COMPLIANCE AND ENFORCEMENT – 33.3%	
Unfair commercial practices: average percentage of consumers who report having experienced unfair commercial practices by retailers or service providers in their country in the past 12 months (persistent sales calls or messages, fake limited-time offers, fake free-of charge offers, asking to pay money to collect a fake prize, or other unfair commercial practices).	**Unfair commercial practices:** average percentage of retailers who report coming across unfair commercial practices by their domestic competitors in the past 12 months (persistent commercial calls or messages, fake limited-time offers, fake free-of charge offers, asking to pay for unsolicited products, fake reviews, or other unfair commercial practices).
Other illicit practices: average percentage of consumers who report having experienced unfair contract terms and unanticipated charges by retailers or service providers in their country in the past 12 months.	
	Compliance with consumer legislation: average percentage of retailers who agree that in their country: their competitors comply with consumer legislation; it is easy to comply with consumer legislation in their sector; and the costs of compliance with consumer legislation in their sector are reasonable.
	Enforcement of consumer and product safety legislation: average percentage of retailers who agree that in their sector and in their country: public authorities actively monitor and ensure compliance with consumer legislation;

	consumer NGOs actively monitor compliance with consumer legislation; self-regulatory bodies actively monitor compliance with relevant codes; media regularly report on businesses that do not respect consumer legislation; and public authorities actively monitor and ensure compliance with product safety legislation.
PILLAR 3: COMPLAINTS AND DISPUTE RESOLUTION – 33.3%	
Problems and complaints: composite indicator based on questions on the occurrence of problems in the past 12 months when buying or using any goods or services domestically, on complaints to different bodies (retailer/service provider, manufacturer, public authority, ADR body, court), reasons for not complaining and satisfaction with the handling of the complaint.	
	Participation in ADR mechanisms: percentage of retailers who are willing or required by law to use ADR mechanisms for consumer complaints.

Section II

Figure 3. Compliance and enforcement pillar of CCI in EU. Source: authors' elaboration7