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Towards the “real” consumer.

*An experimental analysis comparing the average consumer
benchmark with behavioral findings stemming from ECJ Case
Law*

ABSTRACT: Consumer protection laws against unfair commercial practices are based on a judicial assessment of the likelihood that a commercial strategy impacts individual’s conduct. In particular, the misleading nature of a business practice is determined by considering its capacity to influence the behavior of the “average consumer,” defined as a “reasonably circumspect and well-informed individual”. Behavioral studies, however, demonstrate that this kind of consumer is rarely found in the real world: consumers are subject to cognitive limitations and heuristics that lead to choices with sub-optimal results. Nonetheless it is currently not clear if - and how - European authorities apply these findings

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when analyzing the unfairness of a commercial practice. In the absence of solid empiric research on the relation between the interpretation of the “average consumer” notion with behavioral findings, the purpose of this study is to verify – through factual analysis - whether the concept of the “average consumer” fails to capture how *real* consumers *actually* behave by systematically comparing the consumer behavior depicted in the case law of the European Court of Justice (ECJ) with actual consumer behavior in analogous situations. The results of the experiment show that the European Union’s approach to consumer protection against unfair commercial practices appears less misguided than what the literature suggests, and that the main decisions are consistent with the behavior of actual consumers. Nevertheless, in developing its opinions, the ECJ rarely mentions the role of behavioral findings in predicting consumers’ characteristics, nor does it engage in substantial analysis of the data coming from empirical studies. Instead, it provides rationalistic justifications for its holdings and infers disputable connections that are not empirically confirmed. The problem with this approach - even when the holding of the case is consistent with empirical data – is that the “rules of thumb” that the ECJ embraces are not sophisticated enough to address the modern strategies of behavioral advertising, and therefore leave room for the opportunistic exploitation of consumers on the basis of those elements that the courts might sometimes unconsciously perceive, but not yet understand and transpose into a new, more accurate, concept of the average consumer.

KEYWORDS: Average consumer; behavioural insights; Court of Justice of the European Union; Unfair Commercial Practices.

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1. Introduction: Unfair commercial practices, behavioral economics, and the average consumer benchmark

Consumer protection is most likely – alongside competition law – the area of European Union law, that has been most affected by microeconomic theories of individual behavior. Over time, the economic analysis of consumer law helped balancing the opportunity of market exploitation

through mass consumption with social-welfare interests¹, based on the idea that consumers are – both in terms of information and bargaining power – the weakest agents on the market and in need of support from public powers to overcome their inner fragility². As a result, economic analysis has significantly influenced regulatory interventions in consumer law³.

The connection between economic studies and consumer protection is well expressed by how the developments in the first branch of studies directly affect the approach to the second one. Consumer protection was originally structured following the teachings of neoclassic information economics⁴: accordingly, individuals on the market have been depicted – and supposed to behave – as rational agents; they evaluate the information they are provided, and compare alternatives to maximize their expected utility⁵. Consistently with such premise, the very first body of law protecting EU consumers focused on the provision of information as the main tool to empower consumers, introducing mandatory duties of disclosure on enterprises and listing and supplying the essential elements

¹ H.W. MICKLITZ, *The Expulsion of the Concept of Protection from the Consumer Law and the Return of Social Elements in the Civil Law: A bittersweet polemic*, in *EUI Law Working Paper Series*, 2013; G. HOWELLS, C. TWIGG-FLESNER, T. WILHELMSSON, *Rethinking EU Consumer Law*, Routledge, 2018.

² H. BEALE, *The inequality of bargaining power*, in *Oxford Journal of Legal Studies*, 1986, 6, 123.

³ H. BEALE, R. CRASWELL, S. SALOP, *The Efficient Regulation of Consumer Information*, in *Journal of Law & Economics*, 1981, 24, 501 - 513.

⁴ See *ex multis* J. STIGLITZ, *The Contributions of the Economics of Information to the Twentieth Century Economics*, in *Quarterly Journal of Economics*, 2000, 114, 1441-78.

⁵ See P.D. LUNN, *Are Consumer Decision-Making Phenomena a Fourth Market Failure?*, in *Journal of Consumer Policy*, 2015, 38, 3, 315–330 2015.

of a contract to consumers⁶. Information asymmetry was (and still is, in many ways) considered the major source of disparity between consumers and enterprises on the market, and fairness in *B2C* transactions was thought to be achieved through extensive transparency and providing consumers with all relevant data before decisions were made⁷.

Then, the rise of institutional economics led to a more structured approach to consumer protection laws. Scholars in this field challenged the idea that the mere provision of information could empower consumers and advocated for a change in the regulation of certain tools; much attention was devoted to contract and liability rules to reduce transaction costs (operating as externalities) that impact consumer behavior and, ultimately, on the overall transparency of the market⁸. Ultimately, though, both neoclassic and institutional economics favored the idea that consumers – even when constrained by information asymmetries or by the institutional design of the tools at their disposal –

⁶ S. ISACHAROFF, *Disclosure, Agents and Consumer Protection*, in *Journal of Institutional and Theoretical Economics*, 2011, 167, 1, 56-71; S. GRUNDMANN, *L'autonomia privata nel mercato interno: le regole d'informazione come strumento*, in *Europa e dir. privato*, 2001, 278 ss.; T. WILHELMSSON, C. TWIGG-FLESSNER, *Pre-contractual information duties in the acquis communautaire*, in *European Contract Law Review*, 2006, 450 ss.

⁷ G. HOWELS, *The Potential and Limits of Consumer Empowerment by Information*, in *Journal of Law & Society*, 2005, 32, 3, 349 ss.

⁸ O. BAR-GILL, O. BEN-SHAHAR, *Regulatory Techniques in Consumer Protection: A Critique of European Consumer Contract Law*, in *Common Market Law Review* 2013, 50, 109; J. LUZAK, *To Withdraw or Not to Withdraw? Evaluation of the Mandatory Right of Withdrawal in Consumer Distance Selling Contracts Taking Into Account Its Behavioral Effects on Consumers*, in *Journal of Consumer Policy* 2014, 37, 91.

are essentially rational beings⁹.

The foundations of these theories have, since then, been deeply revised and debated. Scholars in the fields of behavioral economics and cognitive science rejected the expected utility theory, suggesting that its approach does not encompass all elements affecting consumer decision-making. According to behavioral economics, rational players – in the neoclassical sense of the term – are scarcely found in the real world, and prospect theory suggests that decision-making processes do not rely exclusively on information; rather, individual reference points play an essential role when consumers consider the potential outcomes of their choice¹⁰.

Behavioral and cognitive studies provide further elements to be included in the microeconomic analysis: studies on information overload show that increasing disclosure may not be helpful since consumers' ability to digest information is limited¹¹ and they do not even read contracts¹². Consumers

⁹ H.S. HOUTHAKKER, *The Present State of Consumption Theory*, in *Econometrica*, 1961, 29, 704-740; N. GEORGESCU-ROEGEN, *The Theory of Choice and the Constancy of Economic Laws*, in *Quarterly Journal of Economics*, 1950, 50, 545-593.

¹⁰ *Ex multis* D. KAHNEMAN, A. TVERSKY, *Prospect Theory: An Analysis of Decision Under Risk*, in *Econometrica*, 1979, 47, 2, 263-291; also D. ARTLEY, *Predictably Irrational: The Hidden Forces That Shape Our Decisions*, Harper Collins, 2008; C. CAMERER, G. LOEWENSTEIN, M. RABIN, *Advances in behavioral economics*, Princeton University Press, 2004; A. TVERSKY D. KAHNEMAN, *Judgment under uncertainty: heuristics and biases*, in *Science. New Series*, 1979, 185, 1124-1131.

¹¹ J. JACOBY, *Perspectives on Information Overload*, in *Journal of Consumer Research*, 1984, 10, 433; B.K. LEE, *The Effect of Information Overload and Consumer Choice Quality in an On-Line environment*, in *Psychology and Marketing*, 2004, 21 160; N.K. MAHLOTRA, *Information Load and Consumer Decision Making*, in *The Journal of Consumer Research*, 1982, 8, 4, 419-430; S. ISSACHAROFF, *Disclosure, Agents, and Consumer Protection*, in *Journal of Institutional and Theoretical Economics*, 2011, 167, 56.

¹² I. AYRES, A. SCHWARTZ, *The No-Reading Problem in Consumer Contract Law*, in *Stanford Law Review*, 2015, 66, 545; O. BEN-SHAHAR, *The Myth of the "Opportunity to Read" in Contract*

also use heuristic strategies (or shortcuts) in their evaluations, leading to a systematic departure from statistical reasoning biased decision-making¹³. In addition, they extensively rely on situational cues to manifest their preferences and tend to be overoptimistic, overestimating the likelihood of experiencing positive events and considering negative events as more remote than they are¹⁴.

Lastly, consumer choices tend to vary depending on how outcomes are framed¹⁵. These insights served as a critical reassessment to traditional theories of choice, challenging the idea that consumers are profit-minded and aim to maximize personal utility through their choices. Reality shows that consumers are much more complex than originally perceived: their choices are driven or influenced by non-economic and social factors¹⁶, and consumer protection regulations must embrace a multi-focal approach.

Law, in *European Review of Contract Law*, 2009, 1, 1; O. BAR-GILL, F. FERRARI, *Informing Consumers about Themselves*, in *Erasmus Law Review*, 2010, 3, 93; O. BEN-SHAHAR, C. SCHNEIDER, *The Failure of Mandated Disclosure*, in *University of Pennsylvania Law Review*, 2010, 159, 647.

¹³ G. ALPA, *Introduzione al diritto dei consumatori* Laterza, 2006; also R. INCADORNA, C. PONCIBÒ, *The average consumer, the unfair commercial practice directive, and the cognitive revolution*, in *Journal of Consumer Policy*, 2007, 30, 1, 21-38; M. CHAMALLAS, *The Disappearing Consumer, Cognitive Bias and Tort Law*, in *Roger Williams University Law Review*, 2014, 6, 1, 34.

¹⁴ A. TOR, *Some Challenges Facing a Behaviorally-Informed Approach to the Directive on Unfair Commercial Practices*, in *Unfair Commercial Practices: The Long Road to Harmonized Law Enforcement*, Tihamer Toth ed., 2013.

¹⁵ R. CATERINA, *Beyond Error: Psychology's (Not-So-Easy) Lesson*, in B. HEIDERHOFF R. SCHULZE (eds.), *Verbraucherrecht und Verbraucherverhalten. Consumer Law and Consumer Behavior*, Broschert, 2016, 49.

¹⁶ J. HANSON, *Ideology, Psychology & Law*, Oxford University Press, 2012.

Most recently, and after major attempts in legal scholarship¹⁷, the role of behavioral insights in shaping traditional notions of consumer law was highlighted by the European Court of Justice as well in *Compass*¹⁸, suggesting that the average consumer test can, indeed, factor in cognitive bias. There is no doubt, that the development of digital markets is playing a major role in this process as well, unveiling different subliminal techniques that companies use to manipulate online consumers' behavior¹⁹.

Sibony and Helleringer²⁰ provide two reasons for the attention that consumer law historically devotes to behavioral insights: first, the specific focus of consumer law on individuals – as opposed to corporate behavior – in the design of regulatory intervention favors scientific inquiry into how people behave in day-to-day activities. Second, they argue that since behavioral analysis is essentially meant to “lower the bar” of consumer protection (that is, making it adherent to consumers' concrete conduct), it

¹⁷ For an overview, see F. FERRETTI, *The consumer image under EU law: Average, rationally bounded and dispositionally vulnerable. What are the prospects for protection in digital markets?*, in *Common Market Law Review*, 2025, 62, 1.

¹⁸ *Compass Banca SpA v. AGCM* (Case C-646/22).

¹⁹ R. CALO, *Digital market manipulation*, in *George Washington Law Review*, 2013, 82, 4, 995–1051; F. GALLI, *Online behavioural advertising and unfair manipulation between the GDPR and the UCPD*, in M. EBERS, M. CANTERO GAMITO (eds.), *Algorithmic governance and governance of algorithms. Data science, machine intelligence, and law*, Springer, 2021, 109–135; P. HACKER, *Manipulation by algorithms. Exploring the triangle of unfair commercial practice, data protection, and privacy law*, in *European Law Journal*, 2021, 1–34; M. SAX, N. HELBERGER, *Digital Vulnerability and Manipulation in the Emerging Digital Framework*, in N. HELBERGER, B. KAS, H.-W. MICKLITZ, M. NAMYSŁOWSKA, L. NAUDTS, P. ROTT, M. SAX, M. VEALE (eds.), *Digital Fairness for Consumers*, BEUC, 2024, 10-24.

²⁰ A.L. SIBONY, G. HELLERINGER, *EU Consumer Protection and Behavioral Sciences: revolution or reform?*, in *Nudge and the Law: A European Perspective*, Hart, 2015.

is naturally welcomed by consumer law which is usually paternalistic²¹. Regardless of agreement with these reasons, the contribution of behavioral and cognitive studies to consumer protection represents a pivotal part of the discussion concerning the use of these sciences in legal systems.

The implementation of behavioral insights in policymaking and adjudication differs significantly in the European Union (EU) and the United States (US)²² and, even within European Union consumer law, the impact of behavioral studies differs by Member States' approach in the implementation of the *Directive 2005/29/EC concerning unfair business-to-consumer commercial practices in the internal market* (UCPD) which, in spite of its amendments, still constitute the main benchmark to be considered. The Directive is meant to limit the extent to which market actors can influence consumers' choices and undermine their personal autonomy, prohibiting commercial practices likely to materially distort the economic behavior of consumers through techniques that impair consumers' ability to make informed decisions, causing them to take transactional choices that they would not have taken otherwise²³.

In assessing the unfairness of a commercial practice and the likelihood

²¹ See R.H. THALER, C.R. SUNSTEIN, *Libertarian Paternalism*, in *American Economic Review*, 2001, 93, 175; C. JOLLS, C.R. SUNSTEIN, R. THALER, *Behavioral Approach to Law and Economics*, in *Stanford Law Review*, 1998, 50 1471.

²² See P. HACKER, *The Behavioral Divide A Critique of the Differential Implementation of Behavioral Law and Economics in the US and the EU*, in *European Review of Contract Law*, 2015, 11, 299-345; A.L. SIBONY, G. HELLERINGER, *European consumer protection through the behavioral lens*, in *The Columbia Journal of European Law*, 2017, 607-646.

²³ See Directive 2005/29/EC, art. 2(e).

that it will ‘materially distort’ consumers’ behavior, the UCPD relies on a three-tier system²⁴: the third tier is composed of a set of practices prohibited *per se*, identified through a blacklist and potentially subject to revision and integration by EU institutions²⁵. The other two tiers are structured, respectively, by means of the definitions of aggressive and misleading commercial practices (Tier 2)²⁶ and the formulation of a general clause of unfairness (Tier 1)²⁷. Apart from the Tier 3 *blacklist*, in order to assess the unfairness of a commercial practice it is necessary to prove that the technique implemented by the professional is suitable to modify the ‘transactional decision’ of the ‘average consumer’. The notion of a transactional decision is largely uncontroversial since it encompasses “any decision whether how and on what terms to purchase, on the modes

²⁴ J. STUYCK, *The Court of justice and the unfair commercial practices directive*, in *Common Market Law Review*, 2015, 724.

²⁵ Directive 2005/29/EC, Annex I: ‘Commercial Practices Which Are In All Circumstances Considered Unfair’.

²⁶ Art. 8 of the Directive defines an ‘aggressive practice’ as a commercial technique that ‘taking account of all its features and circumstances, by [...] undue influence, it significantly impairs or is likely to significantly impair the average consumer’s freedom of choice or conduct with regard to the product and thereby causes him or is likely to cause him to take a transactional decision that he would not have taken otherwise’, whereas the term ‘undue influence’ means (Art. 2(j)) ‘exploiting a position of power in relation to the consumer so as to apply pressure, even without using or threatening to use physical force, in a way which significantly limits the consumer’s ability to make an informed decision’. Misleading actions are defined in Art. 6(1) of the UCPD: ‘A commercial practice shall be regarded as misleading if it ... in any way, including overall presentation, deceives or is likely to deceive the average consumer, even if it is factually correct [...] and [...] causes or is likely to cause him to take a transactional decision that he would not have taken otherwise.’

²⁷ According to Article 5 (2) of the UCPD, a commercial practice is unfair and therefore prohibited according to article 5 (1), if it is ‘contrary to the requirements of professional diligence’, and simultaneously ‘materially distorts or is likely to materially distort the economic behavior’ of the relevant consumers.

of the payment, on the modes of disposal of the product or related to the contractual rights that regulates the use of the product”²⁸. The concept of the ‘average consumer’ as a standard to determine whether a commercial practice is unfair or not represents a more complex issue that has been the subject of animated debate amongst EU scholars²⁹.

The “average consumer benchmark” was developed by the case-law of the European Court of Justice³⁰ as a reaction to the allegedly over-protective German unfair commercial practices law and its tendency to protect uneducated – or otherwise “weak” – consumers. The “average consumer benchmark” offers protection to consumers primarily on their ability to look after themselves. As a consequence, the Directive defines the ‘average consumer’ as an individual who is ‘reasonably well-informed and reasonably observant and circumspect, taking into account social, cultural and linguistic factors’³¹.

This definition was supposed to balance the compelling purposes of consumer protection law, shaping regulations that could guarantee the protection of the most vulnerable actors on the market and also

²⁸ Art. 2(k)

²⁹ See J. TRZASKOWSKI, *Behavioral Economics, Neuroscience, and the Unfair Commercial Practices Directive*, in *Journal of Consumer Policy*, 2011, 34, 377-392; F. ESPOSITO, M. GROCHOWSKI, *The consumer benchmark, vulnerability, and the contract terms transparency: A plea for reconsideration*, in *European Review of Contract Law* 2022, 18, 1, 1-31; V. MAK, *A primavera for European consumer law: Re-birth of the consumer image in the light of digitalisation and sustainability*, in *Journal of European Consumer and Market Law*, 2022, 11, 3.

³⁰ *Gut Springenheide GmbH, Rudolf Tusky v. Oberkreisdirektor des Kreises Steinfurt—Amt für Lebensmittelüberwachung*, judgement of the Court of Justice (Fifth Chamber) of 16 July 1998, case C-210/96, ECR, 1998, I-4657, § 31.

³¹ Directive 2005/29/EC, *Recital 18*.

harmonize and promote the European Single Market³². These elements unveil the main conceptual problem behind the development of consumer law (even before the procedural problem of ineffective enforcement)³³: the promotion of the internal market is an on-going priority for the European Commission (particularly in the light of the digital revolution) and past concerns that the adoption of over-protective, pro-consumer interventions would hinder the free trade still persist³⁴. Hence, it is argued that a higher level of consumer protection does not require stiffer consumer laws, and any interventions should follow the principle of proportionality, comparing the necessity of protecting consumers with the impact of the intervention on business dynamics.

And yet, the existence of a trade-off between market development and consumer protection does not mean embracing notions that are inconsistent with the real dynamics of B2C relations. The average consumer benchmark, built on neo-classic economic theory and fully embracing the information paradigm, has been widely debated as inconsistent with behavioral findings³⁵: critics argue the current threshold

³² See J. STUYCK, E. TERRY, T. VAN DICK, *Confidence through Fairness? The New Directive on Unfair Business-to-Consumer Commercial Practices in the Internal Market*, in *Common Market Law Review*, 2006, 43, 109.

³³ On the problems related to the design of enforcement mechanisms and harmonization see, in general, F. WEBER, *The Law and Economics of Enforcing European Consumer Law. A Comparative Analysis of Package Travel and Misleading Advertising* Ashgate, 2014, 7.

³⁴ Cfr. European Court of Justice, Judgment of the Court of 20 February 1979, Case 120/78, *Reve-Zentral AG v. Bundesmonopolverwaltung für Branntwein*; European Court of Justice, judgment of the Court of 10 November 1982, case 261/81, *Walter Rau Lebensmittelwerke v. De Smedt PVBA*.

³⁵ *Ex multis* cfr. A. ALEMANNO, A. SPINA, *Nudging Legally. On the Checks and Balances of Behavioral Regulation*, in *International Journal of Constitutional Law*, 2014, 2.

represents a fiction that fails to account for the influence of cognitive bias and heuristics or adequately protect consumers³⁶. The European Commission has been conscious of these critiques since the early approval of the UCPD, mentioning behavioral and cognitive findings in its *Staff Working Documents*³⁷. And yet, and in spite of minor adjustments observable in case law³⁸, the average consumer concept has not been subject to any kind of revision.

Revising the average consumer concept to make it “open” to behavioral insights does not necessarily mean creating a standard that is purely subjective³⁹ or fostering the idea that consumers always act in purely irrational ways: standards play an important role in regulation, and the average consumer standard provides a much-needed benchmark⁴⁰. At the

³⁶ F. TRENTMANN (ed.), *The making of the consumer, knowledge, power and identity in the modern world*, Oxford, 2005, 99–121.

³⁷ Commission Staff Working Document — *Guidance on the Implementation/ Application of Directive 2005/29/EC on Unfair Commercial Practices*, 2009, 1666, 35: “The definition of a misleading action used in the Directive has taken into account the current state of knowledge of how consumers take decisions in the market space. For example, new insights from behavioral economics show that not only the content of the information provided, but also the way the information is presented can have a serious impact on how consumers respond to it. [...] It is then for the national courts and administrative authorities to assess the misleading character of commercial practices by reference, among other considerations, to the current state of scientific knowledge, including the most recent findings of behavioral economics”.

³⁸ Besides *Compass*, one can refer to judgments rendered in case C-611/14, *Canal Digital Danmark*; joined cases C-54/17 and C-55/17, *Wind Tre and Vodafone Italia*, and case C-324/97, *Lloyd Schuhfabrik Meyer*. For an overview, see A. JABLONOWSKA, T. BOWMAN, *Cognitive biases of the average consumer*, in *consumerid.eu*, 2024.

³⁹ C. DECKER, *Concepts of The Consumer in Competition, Regulatory, and Consumer Protection Policies*, in *Journal of Competition Law & Economics*, 2017, 13 1, 151–184.

⁴⁰ S. WEATHERHILL, *Who is the “average consumer”?*, in S. WEATHERHILL, U. BERNITS (eds.), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29 – New Rules and New Techniques*, Hart, 2007, 135.

same time, the idea that consumers deviate from a purely rational model in predictable and systematic ways clarifies that consumers are not irrational but, more interestingly, that rationality *per se* might be different from what neoclassical scholars imagined.

The use of a badly-conceived benchmark has consequences for the protection of market actors. Using the average consumer concept as a threshold for protection means that – apart from specifically vulnerable groups⁴¹ – all consumers that are considered less-than-average are left unprotected: if the average consumer concept assumes a high level of rationality (as behavioral insights would suggest), it fails to protect the majority of consumers. There is also the risk that regulators and courts end up drawing an arbitrary line between rational and irrational behavior, since the UCPD qualifies the “average consumer” benchmark as a “non-statistical” test⁴². This choice reflects a general skepticism towards

⁴¹ Other bodies of regulation pinpoint the specific status of ‘vulnerable consumers’ in relation to specific sectors: see e.g. Directive 2009/72/EC on common rules for the internal market in electricity; Directive 2009/73/EC on common rules for the internal market in natural gas or Directive 2010/13/EU on the provision of audiovisual media services. It must be noted, though, that the very definition of vulnerability is complex to provide: on the topic see D. DI PAOLA, R. CALO, *Socio-Digital Vulnerability*, available at SSRN: <https://ssrn.com/abstract=4686874>, 2024; S. RANCHORDAS, M. BECK M., *Vulnerability*, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4596779, 2024 and in M. KAUFMANN, H. MORK LOMELL, (eds.) *Handbook of Digital Criminology*, De Gruyter, 2025.

⁴² *Recital 18* of the UCPD: “The average consumer test is not a statistical test. National courts and authorities will have to exercise their own faculty of judgment, having regard to the case-law of the Court of Justice, to determine the typical reaction of the average consumer in a given case”.

empirical evidence⁴³ as, despite formally promoting the use of behavioral studies as a way to improve consumer protection, the UCPD provides a definition that does not engage directly with scientific findings⁴⁴.

2. The role of behavioral and cognitive studies

Behavioral studies emphasize how the information paradigm as a predictive model for decision-making contains multiple fallacies that should be considered in policymaking. Far from the portrait of an avid information-seeker, consumers seem to be much closer to the Nordic image of the ‘passive glancer;’ they are prone to be influenced by external information and do not actively select information in day-by-day consumption choices⁴⁵.

Unregulated information is ambiguous and can be manipulated quantitatively and qualitatively⁴⁶ to influence consumers’ choices and exploit their cognitive bias, that can be traced to the major concept of

⁴³ H.W. MICKLITZ, *Unfair Commercial Practices and Misleading Advertising*, in N. REICH (ed.), *European Consumer Law*, Intersentia, 2014, 100.

⁴⁴ See J. LUZAK, *Empirical Evidence in Consumer Law Cases: What Are ‘Up To’ Claims Up To?*, in B. HEIDERHOFF, R. SCHULZE (eds.), *Verbraucherrecht und Verbraucherverhalten. Consumer Law and Consumer Behavior*, Broschert, 2016, 257.

⁴⁵ See T. WILHELMSSON, *Consumer images in East and West*, in H.W. MICKLITZ (ed.), *Rechtseinheit oder Rectvielfalt in Europa?*, Nomos, 1996.

⁴⁶ *Ex multis* see J. HANSON, D.A. KYSAR, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, in *Harvard Law Review*, 1999, 112, 1420-1447.

bounded rationality⁴⁷. Framing, anchoring, over-optimism, and other types of bias are explored in marketing activities with various techniques (partitioned payments, prices terminating in 9, Online Behavioral Advertising, etc.⁴⁸). By overlooking these elements, and their relevance, in favor of a concept of consumer deception that is based on the application of rationalist assumptions exclusively, consumer protection neglects the scientific studies on those effects, and the role that the application of more sophisticated theories of cognition and information processing might play in the development of effective protection⁴⁹.

Along with calls for a revision to the average consumer benchmark, scholars stress that behavioral studies can set the groundwork for the convergence of these three different bases for regulation (rationalist analysis of information, empirical studies and general theories of cognition) and reshape consumer protection overall⁵⁰. How this task should be accomplished, though, is unclear: the prominent view is that the main function of behavioral studies is to assist in developing a realistic vision of consumers, and provide information for effective “targeted

⁴⁷ See C. JOLLS, *On Law Enforcement with Boundedly Rational Agents*, in F. PARISI, V. SMITH (eds.), *The Law and Economics of Irrational Behavior*, Stanford University Press, 2004, 268-286.

⁴⁸ A wide number of empirical studies explores this area. For some references see R. CATERINA, *Beyond Error: Psychology's (Not-So-Easy) Lesson*, in B. HEIDERHOFF R. SCHULZE (eds.), *Verbraucherrecht und Verbraucherverhalten. Consumer Law and Consumer Behavior*, (2016), Broschiert, 2016, 49.

⁴⁹ G. KLASS, *Meaning, Purpose, and Cause in the Law of Deception*, in *The Georgetown Law Journal*, 2012, 100, 499.

⁵⁰ Cfr. in general, C. JOLLS, C.R. SUNSTEIN, *Debiasing Through Law*, in *Journal of Legal Studies*, 2006, 35, 199.

intervention”. Some scholars, however, argue that the role of behavioral analysis is to isolate specific strategies of market manipulation, providing the regulator new tools to tackle them⁵¹. According to such perspective, the goal of consumer law is to protect consumers’ freedom of choice, rather than their interest in getting the best product on the market. This approach raises additional normative issues, by introducing the need to balance behaviorally informed regulation with the protection of individuals autonomy⁵². Furthermore, it acknowledges the challenge of creating a general regulation meant to protect such heterogeneous decision-making. According to the most extreme of these positions, even if the average consumer benchmark is unable to provide concrete protection to consumers, replacing it with new benchmark based on behavioral insights will be equally fruitless due to the unpredictable and disparate impact of bias on every consumer.

3. Rules, and Courts

Another debated aspect concerns how behavioral studies should operationally inform consumer law. Here, scholars tend to agree that behavioral studies should be incorporated into consumer law mainly

⁵¹ See J.J. RACHLINSKI, *The Uncertain Psychological Case for Paternalism*, in *Northwestern University School of Law*, 2003, 97, 1165 ff.

⁵² This debate is particularly developed with reference to the implementation of nudging strategies by legislators. Cfr. C.R. SUNSTEIN, *The Ethics of Nudging?*, in *Yale Journal On Regulation*, 2015, 32, 2, 413.

through the action of courts; this is consistent with the underlying idea that codification does not actually improve consumers protection, and that the impact of bias on purchasing decisions is usually appreciated only after the purchase has been made⁵³. Many scholars, therefore, advocate for national and European judges acting *pro consumatore* to use behavioral studies as an adaptive tool to overcome the unavoidable internal limits of legislation. Still, in promoting the courts as the best-equipped entities to engage in “realistic” consumer protection, harmonization is required: even if courts are more flexible than the legislator in terms of the re-interpretation of the *littera legis*, a fragmented framework of consumer protection in the common market, and the establishment of different practices amongst Member States’ courts must be avoided, perhaps through guiding authority of the European Court of Justice (ECJ). It should be noted, though, that despite some promising decisions, the ECJ case law has followed the average consumer threshold and, even in those few cases where behavioral studies seem to have played a role in orienting the court’s decision, the court has remained faithful to the traditional definition provided by the Directive. By offering a general normative judgment on the mere possibility that a commercial practice has misleading effects of consumers, the ECJ left the interpretation of the specific case (and the final decision) to the national courts, providing little information on the rationale behind its decisions. Despite giving Member States’ judges a useful margin of appreciation to

⁵³ C. TWIGG-FLESNER, *Ability of Consumers to Enforce Their Rights – A UK-Perspective*, in B. HEIDERHOFF, R. SCHULZE (eds.), *Verbraucherrecht und Verbraucherverhalten*, 221.

interpret the average consumer concept, the approach followed by the ECJ creates significant concerns in terms of preservation and promotion of the rule of law, as the uncertainty around the characteristics of the average consumer is a major hurdle in clarifying the role behavioral and cognitive studies in this context. However, through a careful analysis of ECJ case law, it is still possible to isolate some characteristic behaviors of the average consumer: therefore, scholarship extrapolated these elements and proposed “concrete” definitions, describing the average consumer as *‘sensible, attentive and cautious, as well as able to analyze, critically and discerningly, the messages behind advertising and commercial practices in general’*⁵⁴ or as a *‘wise shopper [...] not seriously affected by the no-reading tendency; he will go online to check what is behind the small prints in an alluring advertisement and read food labels. He does not trust appearances and is not easily fooled by colors or size of promotional markings on a package’*⁵⁵. These definitions still do not prove themselves decisive; they take some of the assumptions of the courts and frame them in “behavioral terms”, but do not address the most relevant issue: whether behavioral insights in general can be used as a tool to reach a sophisticated version of the average consumer. Moreover, they do not verify the consistency of courts’ assumptions with the reality of consumer decision-making process.

⁵⁴ R. INCADORNA, C. PONCIBÒ, *The average consumer, the unfair commercial practice directive, and the cognitive revolution*, cit., 30.

⁵⁵ A.L. SIBONY, G. HELLERINGER, *EU Consumer Protection and Behavioral Sciences: revolution or reform?* in *Nudge and the Law: A European Perspective*, Hart, 2015, 214.

4. Product Labeling as a privileged perspective to analyze the average consumer benchmark

Conducting an empirical analysis of ECJ case law to extrapolate insights regarding how the average consumer is supposed to behave faces several challenges. The first one is identifying a specific area of consumer law where cases are sufficiently similar across Member States, as this is necessary to provide consistent information on what courts deem to be the appropriate consumption strategy and to furnish robust data for an eventually sector-specific regulatory intervention. With regards to this aspect, product labeling (with particular reference to food products) is a privileged point of view to analyze the ECJ's interpretation of the average consumer benchmark and evaluate the absence/presence of behavioral elements in the judgments. This is because: *a)* labels govern the interaction between consumer and products, being the main source of information at the moment the consumption choice is actually made; *b)* the relation existing between labels and consumer choice does not involve a human mediation: therefore, it is easier to address in standardized regulatory terms; *c)* product labels have a direct impact on the circulation of products in the EU and the promotion of fundamental values for consumers (*in primis* health and safety). They therefore constitutes an area of law where the abovementioned goals of consumer protection and market stability are particularly significant; lastly, *d)* labeling regulation is a branch of law where the influence of the information paradigm is particularly strong and

where many behavioral studies already highlight the shortcomings of the information paradigm.

4.1. Evidence on consumers' response to information on labels

Literature on the relationship between the information provided and consumer's utility function (and hence their behavior) shows that labels have a deep impact on consumer choices⁵⁶. Apart from this, there is substantial uncertainty with respect to how consumers access and use labels when deciding to purchase a product. While some authors defend the idea that information provided via labels operates directly as a shift variable⁵⁷, others argue that such information acts as a signal for product quality⁵⁸ or affects consumers' beliefs and perception of the product's quality⁵⁹. Given these discrepancies, it is therefore necessary to provide a brief overview of main studies investigating the role of labeling in consumers' choices. To do so, it is useful to refer to two main categories of literature: (1) studies evaluating whether or how labels are used by consumers (i.e., frequency); and (2) studies regarding the ability of consumers to understand information provided via labels (i.e., comprehension)⁶⁰. These studies analyze consumers' decision-making

⁵⁶ K.R. DÖRNYEI, T. GYULAVÁRI, *Why do not you read the label? – an integrated framework of consumer label information search*, in *International Journal of Consumer Studies*, 2016, 401, 92–100.

⁵⁷ R.L. BASMANN, *A Theory of Demand with Variable Consumer Preferences*, in *Econometrica*, 1956, 24, 47–58.

⁵⁸ P. NELSON, *Advertising as Information*, in *Journal of Political Economy*, 1974, 82, 729–54.

⁵⁹ Y. KOTOWITZ, F. MATHEWSON, *Advertising, Consumer Information and Product Quality*, in *Bell Journal of Economics*, 1979, 10, 566–88.

⁶⁰ This distinction is traditionally embraced by literature on consumer protection, distinguishing the provision of information to consumers from their actual ability to evaluate and process it; in such context, many studies already underlined how the two categories do not always operate as directly proportional, *id est*, the positive correlation between information provided and consumer's comprehension of the product only

process – that is, the process determining the purchase decision when multiple options are available – and their attitude formation and change – i.e., how consumers process information presented to them, and whether this information has an actual relevance in choices⁶¹.

The vast majority of this literature analyzes the effect of food labels on consumers' behavior given the relevance of such labels to consumers' day-to-day purchasing activity. This literature is discussed below.

4.2. Frequency

The first branch of literature inspects the use of labels (also defined as “pure looking to the product label”)⁶²: self-report studies on US consumers show that a significant number of consumers (between 52% and 78%) claim to rely on food labels in making their choices. A FDA survey conducted in 2008 found that 67% of respondents reported using front product labels often or occasionally when making purchasing decisions⁶³. A different methodological approach, based on asking

resists until a certain threshold, mostly due to the cognitive overload that information might produce.

⁶¹ See K.G. GRUNERT, J.M. WILLIS, *A review of European research on consumer response to nutrition information on food labels*, in *Journal of Public Health*, 2007, 15, 386.

⁶² S. GODWIN, L. SPELLER-HENDERSON, C. THOMPSON, *Evaluating the nutrition label: its use in and impact on purchasing decisions by consumers*, *Journal of Food Distribution Research*, 2006, 37, 1, 76.

⁶³ U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, *Food and Drug Administration, Health and diet survey: Topline frequency report*,

consumer how much they agreed with the statement “*I frequently check labels to determine whether the foods I buy contain anything I’m trying to avoid*” showed percentages declining from 65% (in 1990) to 48% (in 2013)⁶⁴. Subsequent surveys seem to contradict this trend: in 2016, the FDA released an updated version of its survey, this time reporting that only 16% of respondents asserted to always use nutrition facts labels when buying a product⁶⁵.

Studies conducted in the European Union confirm the profound heterogeneity in the use of food labels: an investigation conducted in 38 countries in 2005⁶⁶ reveal that only 18% of European respondents claim that they “always” check the nutrition information on the package of a food product, and the percentages varied significantly amongst Member States, with higher numbers reported for Portugal, Italy and Denmark (41%, 31% and 30%, respectively). It should be noted that the percentage of consumers reading food labels before purchasing a product differs significantly across (US, EU or others) and within (EU Member States) territories; this makes it difficult to evaluate the overall effectiveness of food labels for consumers. Another problem is that these studies rarely

<http://www.fda.gov/Food/FoodScienceResearch/ConsumerBehaviorResearch/ucm193895.html>, 2008.

⁶⁴ NPD GROUP, *National Eating Trends service reports*, available at <https://www.npd.com/wps/portal/npd/us/industry-expertise/>.

⁶⁵ FDA, *2014 Health and Diet Survey*, Center for Food Safety and Applied Nutrition Food and Drug Administration May 6, 2016, available at <https://www.fda.gov/downloads/food/foodscienceresearch/consumerbehaviorresearch/ucm497251.pdf>.

⁶⁶ A. NIELSON, *The nutrition-conscious global shopper - Consumer attitudes toward nutritional labels on food packaging in Europe*, 2005.

determine whether participants are looking at a label as a result of active searching or due to simple exposure⁶⁷: experiments specifically focused on this aspect demonstrate that only a limited number of consumers actively seeks out for labeling information, whereas the vast majority of individuals read the information only when actively exposed to it⁶⁸. Furthermore, even when the percentage of consumers reading food label is high, demographic, attitudinal and product-related factors can affect food label use, and justify referring to sub-categories within each study sample.

4.3. Discernment

A second set of studies focus on the effect that labels have on knowledge and information, analyzing whether consumers gain useful information to be used when taking their purchasing decisions. Unfortunately, insights coming from these analyses do not lead to unanimous conclusions. It is

⁶⁷ WORLD HEALTH ORGANIZATION, *Portuguese consumers' attitude towards food labeling*, 2017, available at http://www.euro.who.int/_data/assets/pdf_file/0016/353050/Foodlabeling-in-Portugal_web.pdf. The difference in the two notions is well expressed by K.R. DÖRNEY, T. GYULAVÁRI, *Why do not you read the label? – an integrated framework of consumer label information search*, in *International Journal of Consumer Studies*, 2016, 40, 92–100, defining search of information as “effortful activities by consumers to get access to information on nutrition labels, in contrast to situations where consumers are accidentally exposed to these labels and then may or may not process the information on them”.

⁶⁸ E.g. in France, the abovementioned percentage of 63% of people affirming to check for nutrition labels drops to 22% if only those who search actively for nutrition labels are considered. See CONSOMMATION LOGEMENT ET CADRE DE VIE/MINISTÈRE DE L'AGRICULTURE ET DE LA PÊCHE, *Convention A02/22 relative à l'étude de la compréhension par les consommateurs de certaines mentions figurant dans l'étiquetage des denrées alimentaires préemballées et à leur perception de certaines allégations nutritionnelles, fonctionnelles et de santé*, 2004.

undisputed that labels transmit knowledge, consciously or unconsciously⁶⁹, once consumers read them as a result of active search or due to mere exposition; however, research demonstrates that, even when consumers read product labels, they generally find them confusing, and especially when technical and numerical information is used⁷⁰.

The discernment of labels' information is also influenced by specific factors pertaining to each product: for example, consumers tend to read labels more accurately if they are familiar with the label format, they understand information more easily when it is provided in a contextual framework comparing products, and process information with greater cognitive effort when it is located on peripheral parts of the label. Resorting to specific terminology (such as the choice between "use by" and "better before"⁷¹ to identify the expiration date, or the use of the term "natural") can confuse consumers, and elements like age, sex and education play a role in guiding the understanding of product labels⁷².

Overall, and even if it is difficult to draw overarching conclusions from the various studies, a common ground is that the presence of product

⁶⁹ According to the theoretical framework designed by K.G. GRUNERT, J.M. WILLIS, *A review of European research on consumer response to nutrition information on food labels*, in *Journal of Public Health*, 2007, 15, 387.

⁷⁰ G. COWBURN, L. STOCKLEY, *Consumer understanding and use of nutrition labeling: a systematic review*, in *Public Health Nutrition*, 2004, 8, 1, 21–28.

⁷¹ FOOD SAFETY AUTHORITY OF IRELAND, *A Research Study into Consumers' Attitudes to Food Labeling*, 2009.

⁷² See EUROPEAN FOOD INFORMATION COUNCIL *Nutrition Information and Food Labeling: Results of EUFIC Consumer Research Conducted in May – June 2004*, available at: www.eufic.org, 2005; EUROPEAN HEART NETWORK, *A Systematic Review of the Research on Consumer Understanding of Nutrition Labeling*. Brussels, 2003, available at: www.ehnheart.org.

labels does not guarantee by itself that consumers will understand and use the information they provide⁷³.

5. Goal of the study

According to the abovementioned evidence, the present study was designed to verify if the average consumer benchmark, as interpreted by the ECJ, falls short in depicting how consumers actually behave, failing to capture the decision-making approach of a “real” average consumer. To do so, the research has been based on real-world dynamics, rather than fictional scenarios, to analyze how consumers react to situations that are as similar as possible to those that the ECJ considered. Furthermore, instead of focusing on the role of a specific bias, the research considered how the overlap of heuristics and cognitive fallacies affect consumers in their day-to-day choices. This approach differs from other works on consumers’ bias, because it aims at studying bias in “non-artificial” context and to preserve the heterogeneity that characterizes actual decision-making. Lastly, by comparing case studies from the ECJ, it was possible to develop a sort of “EU track record” and monitor whether the interpretation of the average consumer notion – apart from the formal

⁷³ A. BLACK, *Design Council's web pages on User-Centered Design*, 2003, available at <http://webarchive.nationalarchives.gov.uk>. Cfr. also S. PASSERA, H. HAAPIO, T.D. BARTON, *Innovating Contract Practices: Merging Contract Design with Information Design*, in *California West School of Law Review*, 2013.

definition in the UCPD – has evolved in the considered timeframe, and to evaluate if this evolution suggests an increased awareness of behavioral findings.

6. Methodology

To accomplish the research goals, a questionnaire was distributed through the online platform MTurk. Selected participants were European consumers, to respect both the territorial scope of the UCPD and its reference to ‘social, cultural and linguistic factors’⁷⁴. The survey questions were developed after an analysis of ECJ consumer protection decisions issued between 1984 (the year of emanation of the Council Directive 84/450/EEC relating to the *approximation of the laws, regulations and administrative provisions of the Member States concerning misleading advertising*, that provided the first body of consumer protection against unfair commercial practices) and 2018 (in order to ensure stabilization overtime and to avoid referring to case that could be further discussed and reversed) that presented a set of common characteristics. In particular, the selection only considered those cases, that: *a)* were *binding*, insofar as they were issued by European authorities with the power to provide a mandatory interpretation of the notion of average consumer to be later used within Member States; *b)* concerned *unfair b2c commercial practices*; *c)* provided a *clear*

⁷⁴ See Directive, *Recital* 18.

indication of how the ‘average consumer’ was expected to act in specific situation⁷⁵; e) were specifically referred to the regulation of product labeling, and f) were not extremely recent in time. This choice was necessary to operate with consolidated insights, that could be considered as established principles of the ECJ case law in assessing the average consumer expected behavior.

Based on these requirements, the following cases were identified.

- 1) Case C-465/98, *Verein gegen Unwesen in Handel und Gewerbe Köln eV v Adolf Darbo AG* (Adolf Darbo);
- 2) Case C-315/92, *Verband Sozialer Wettbewerb eV V. Clinique Laboratories SNC and Estée Lauder Cosmetics GmbH* (Clinique);
- 3) Case C-195/14, *Bundesverband der Verbraucherzentralen und Verbraucherverbände – Verbraucherzentrale Bundesverband e.V. v Teekanne GmbH & Co. KG* (Teekanne);
- 4) Case 178/84, *Commission vs. Federal Republic of Germany* (Béarnaise sauce);
- 5) Case C-210/96, *Gut Springenheide GmbH and Others v. Oberkreisdirektor des Kreises Steinfurt Ä Amt für Lebensmittelüberwachung* (Gut Springenheide);
- 6) European Parliament and EU Commission, Official statement of 14 July 2011 on product labeling;
- 7) Case C-220/98, *Estée Lauder Cosmetics GmbH & Co. OHG v Lancaster*

⁷⁵ Many ECJ cases, as well as policy documents by European Authorities, briefly mention the average consumer benchmark when evaluating a commercial practice, and provide little indication of what this threshold requires from individuals to be protected under the UCPD. These cases were not considered, to improve the robustness of the results of the study.

Group GmbH (Lifting);

- 8) Case C-157/14 – *Neptune Distribution SNC v. Ministre de l'Économie et des Finances*, First question (Neptune).

7. Questionnaire's structure and demographics

Once the relevant ECJ cases were selected, the questionnaire was structured in three parts. Part I (Questions 1 to 10) was meant to identify the participants' characteristics and habits related to product consumption. Attention Checks were introduced in accordance with the model illustrated in Oppenheimer et al., to ensure active participation⁷⁶; in addition, two questions (8 and 9) measured the general attitude of participants towards utility maximization and reflective thinking. In particular, Question 8 presented a traditional Cognitive Reflection Tests to evaluate the cognitive commitment of participants: the test was structured according to the method illustrated in Toplak et al.⁷⁷, implementing the traditional structure designed by Frederick⁷⁸, and each participant was presented with a set of four problems randomly selected

⁷⁶ D.M. OPPENHEIMER, T. MEYVIS, N. DAVIDENKO, *Instructional manipulation checks: Detecting satisficing to increase statistical power*, in *Journal of Experimental Social Psychology* 2009, 45, 867–872.

⁷⁷ M.E. TOPLAK, R.F. WEST, K.E. STANOVICH, *Assessing miserly information processing: An expansion of the Cognitive Reflection Test*, in *Thinking & Reasoning*, 2014, 20, 2, 147–168.

⁷⁸ S. FREDERICK, *Cognitive reflection and decision making*, in *Journal of Economic Perspectives*, 2005, 19, 25–42.

out of a poll of seven. Question 9 introduced a Maximizers vs. Satisfiers test to measure the personality of the participants according to the scale developed in Schwartz et al.⁷⁹: obtaining data with respect to participants' tendencies and actual consumption behavior was relevant, as the "maximization tendency" is usually correlated with a higher level of regret, perfectionism, and carefulness during choices, and these elements can play a pivotal role in consumers' approach to labels' analysis.

Part II of the questionnaire (Questions 11 to 16) was meant to provide preliminary insights regarding the effect of specific bias on participants. The purpose of this section was to verify consumers' use of product labels could be related to specific bias, that are traditionally correlated with consumption. The bias considered were: (1) *perceived information overload*; (2) *loss aversion*; (3) *regret*; (4) *ambiguity aversion*; and (5) *over-optimism*. Perceived information overload was measured according to the approach developed by Jacoby et al.⁸⁰. The loss aversion test was structured according to the

⁷⁹ B. SCHWARTZ, A. WARD, S. LYUBOMIRSKY, J. MONTEROSSO, K. WHITE, D. R. LEHMAN *Maximizing Versus Satisficing: Happiness Is a Matter of Choice*, in *Journal of Personality and Social Psychology*, 2002, 83, 5, 1178–1197.

⁸⁰ J. JACOBY, D.E. SPELLER, C.A. KOHN, *Brand choice behavior as a function of information load*, in *Journal of Marketing Research*, 1974, 11, 1, 63–9. See also, N.K. MALHOTRA, *Reflection on the information overload paradigm in consumer decision making*, in *Journal of Consumer Research*, 1984, 10, 4, 436–40; K.L. KELLER, R. STAELIN, *Effects of quality and quantity of information on decision effectiveness*, in *Journal of Consumer Research*, 1987, 9, 14, 200–213; B.K. LEE, W.N. LEE, *The effect of information overload on consumer choice quality in an on-line environment*, in *Psychology and Marketing*, 2004, 21, 3, 159–183; Y.C. CHEN, R.A. SHANG, C.Y. KAO, *The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment*, in *Electronic Commerce Research and Applications*, 2009, 8, 48–58.

format provided in Gächter et al.⁸¹, adapting a previous version formulated by Fehr and Goette⁸². This format was chosen since the traditional Fehr and Goette structure is specifically designed to measure loss aversion rather than risk aversion, the former not being particularly relevant in day-to-day consumption choices⁸³. Participants' resulting loss aversion was then measured according to cumulative prospect theory⁸⁴, and a regret analysis was operationalized by using Marcatto et. al. framework⁸⁵. The definition of regret was based on the benchmark proposed in Camille et. al.⁸⁶: accordingly, the level of regret was measured on a 1 to 7 Likert-type scale, on the assumption that this feeling could be associated with verbal labels with sufficient precision⁸⁷. The analysis of participants' ambiguity aversion has been measured through the "Urn

⁸¹ S. GÄCHTER, E.J. JOHNSON, A. HERRMANN, *Individual-level loss aversion in riskless and risky choices*, in *Discussion Papers 2010-20, The Centre for Decision Research and Experimental Economics*, School of Economics, University of Nottingham, 2010.

⁸² E. FEHR, L. GOETTE, *Do workers work more if wages are high? Evidence from a randomized field experiment*, in *American Economic Review*, 2007, 97, 1, 298-317.

⁸³ M. RABIN, *Risk aversion and expected-utility theory: A calibration theorem*, in *Econometrica*, 2000, 68 5, 1281-1293; M. RABIN, R.H. THALER, *Anomalies - risk aversion*, in *Journal of Economic Perspectives*, 2001, 15, 1, 219-232.

⁸⁴ A. TVERSKY, D. KAHNEMAN, *Advances in prospect-theory - cumulative representation of uncertainty*, in *Journal of Risk and Uncertainty*, 1992, 5, 4 297-323.

⁸⁵ *The Regret and Disappointment Scale: An instrument for assessing regret and disappointment in decision making*, in *Judgment and Decision Making*, 2008, 3, 1, 87-99.

⁸⁶ N. CAMILLE, G. CORICELLI, J. SALLET, P. PREDAT-DIEHL, J. DUHAMEL, J., A. SIRIGU, *The involvement of the orbitofrontal cortex in the experience of regret*, in *Science*, 2004, 304, 1167. See also M. ZEELENBERG, W.W. VAN DIJK, A.S.R. MANSTEAD, J. VAN DER PLIGT, *On bad decisions and disconfirmed expectancies: The psychology of regret and disappointment*, in *Cognition and Emotion*, 2000, 14, 521-541.

⁸⁷ See *ex multis* J.E LÖNNQVIST, S. LEIKAS, S. PAUNONEN, V. NISSINEN, M. VERKASALO, *Conformism moderates the relations between values, anticipated regret, and behavior*, in *Personality and Social Psychology Bulletin*, 2006, 32, 1469-1481.

model,” developed by Ellsberg⁸⁸. Lastly, the analysis of over-optimism was measured in terms of participants’ capacity to provide a self-assessment of their characteristics and abilities in comparison to peers⁸⁹ using a question on comparative evaluation of personal performance, which is widely implemented in different studies on the topic⁹⁰.

In completing Part III of the questionnaire, participants have been divided in two study-groups. Questions 17 to 24, in particular, consist of 7 sets of questions based on the selected ECJ decisions. Participants were presented questions concerning the information that they could infer from reading a product label (front, back or both) to investigate: (1) whether participants displayed behaviors consistent with the ECJ’s understanding of the “average consumer”; and (2) if the structure of the label was sufficient to distort the participants’ perception of the product characteristics and, if so, whether this could related to a specific bias, assessed on the basis of the results from Part II of the questionnaire.

The questionnaire was developed using Qualtrics and designed to be completed in 20 or 30 minutes, to minimize attention dispersion. After the questionnaire was launched on MTurk, it was available for participants in 14 days. In this span, 250 acceptable responses were collected.

⁸⁸ D. ELLSBERG, *Risk, Ambiguity and the Savage Axioms*, in *The Quarterly Journal of Economics* 1961, 75, 643–669.

⁸⁹ M. ROSS, F. SICOLY, *Egocentric Biases in Availability and Attribution*, in *Journal of Personality & Social Psychology*, 1979, 37; also D.A. MOORE, D.A. SMALL, *Error and Bias in Comparative Judgment: On Being Both Better and Worse than We Think We Are*, (2007), *ivi*, 2007, 92.

⁹⁰ E.g. see GUTHRIE, J.J. RACHLINSKI, A.J. WISTRICH, *The “Hidden Judiciary”: An Empirical Examination Of Executive Branch Justice*, in *Duke Law Journal*, 2009, 58, 1477 ss.

European consumers were recruited using the specific requirement “Location” on MTurk’s qualification system. A second round of control checks were used to compare the answer declared by participants in Question 3 and the Latitude and Longitude of their IP address.

When a participant completed the questionnaire, her responses to each block were saved each time a navigation button was selected, to capture partially completed survey data and allowing respondents to complete the survey in multiple sessions. Furthermore, electronic timestamp capture allowed to record the timing of survey initiation and completion and the cumulative time spent across multiple sessions, in order to verify the consistency of the participants’ activity with the expected patterns.

[Tab. 1.1] illustrates the demographic characteristics of the 250 participants in the study. The sample had a strong preponderance of men (78.80%), and the average age of participants was 28 years, with almost half of the participants (47.60%) being between 25 and 29 years old. The Member States’ of the respondents were grouped into five areas, according to the classification provided by the UN *Standard Country or Area Codes for Statistical Use* (s.c. *M49 standard*)⁹¹. Most represented states were Western (36%) and Northern Europe (26.40%), with France and United Kingdom encompassing 30.4% and the 15.20% of total respondents, respectively.

Analysis of participants’ education and professional level reveals higher

⁹¹ UNITED NATIONS STATISTICS DIVISION, *Standard Country or Area Codes for Statistical Use*. The classification can be consulted at the link: <https://unstats.un.org/unsd/methodology/m49/>.

qualifications than the average demographic data traditionally observed on MTurk⁹²: 65.20% of participants declared to hold a bachelor's degree, compared to the average level of 58%. Working rate is in line with the traditional distribution of MTurk crowd-workers (79.20% of the respondents declared to be occupied), but the average declared income is higher than the traditional allocation⁹³, with 69.70% of respondents almost equally distributed in the sections between 10.000 and 74.900€ per year (the distribution in the three related sections is 22.80%, 24.80% and 22.00%, respectively), with the majority of participants declaring a total family household income for 2017 ranging between €30.000 and €49.000. Such data is reasonably related with the geographic provenience of the participants, considering that the average income considered in previous studies was assessed on a global basis.

8. Results

Information concerning the consumption preferences [Tabs 2.1 and 2.2] of participants reveals a general trend towards the use of online shopping as the main consumption dynamic (76%), whereas decision-making is declared to be based mainly on advertisements (37.20%) and personal

⁹² Cfr. J. ROSS, I. IRANI, M. SILBERMAN, A. SIX ZALDIVAR, B. TOMLINSON, *Who are the Crowdworkers?: Shifting Demographics in Amazon Mechanical Turk*, in *Conference: Proceedings of the 28th International Conference on Human Factors in Computing Systems*, 2010, 2863-2872.

⁹³ *Ibidem*.

habits (36%).

When interrogated about the use of labels during consumption [Tab 2.3], the majority of respondents declared to “always” or “often” read the information regarding the products they are interested in (75.20%). None of the participants admitted to never reading labels. These results are consistent with the question is presented in a Likert-scale form [Tab. 3.4]⁹⁴ and with existing self-report studies. With regards to the specific area of food labeling, the results [Tab. 2.4] suggest a moderate to significant correlation (0.448) between interest in the topics of food, diet and nutrition and the use of labels [Graph. 2.4].

8.1. Maximizers vs. Satisfiers (MvS) and Cognitive Reflection Test (CRT)

The Maximizers vs. Satisfiers (MvS) tests assessed the general tendency of participants towards maximization and reflective choices. For the MvS Question 9, each participant was asked to answer six questions randomly selected from a pool of fourteen [Tab 3.1]; the only question that was always presented to each participant was question 14 (interest politics and fair conditions in the realization of products), in order to relate the interest rate for this specific characteristic with the information pertaining to the

⁹⁴ This result suggests that the assumptions of consumers regarding their approach to labels is not influenced by the presentation of the question in terms of different frequencies.

“*Country of Origin*” case⁹⁵ and appreciate the consistency between such declared interest and the consideration given to that element in a concrete scenario⁹⁶. In general, respondents displayed a general tendency towards satisfaction rather than maximization (3.97 in the Likert scale), which is consistent with existing literature⁹⁷. With regards to the Cognitive Reflection Test (CRT) [Tab 3.2], participants were presented with a set of four questions randomly selected from a pool of seven. Randomized selection was supposed to enhance diversification among the possible questions, reducing the risk that participants would be familiar (e.g. due to participation in previous studies) with the original test designed by Frederick⁹⁸, which is used in most experiments on the topic. The results of the CRT show an overall tendency towards intuitive judgments, with an average score of 1.57 out of 4. Notably, female participants appear significantly more inclined to rely on intuitive judgments, with an average score of 0.90 against the 1.75 one of male respondents.

⁹⁵ See Case 6.

⁹⁶ See *infra*, Case 6.

⁹⁷ See *ex multis* A. KAPTEYN, T. WANSBEEK, J. BUYZE, *Maximizing or Satisficing*, in *The Review of Economics and Statistics*, 1979, 61, 4, pp. 549-563.

⁹⁸ S. FREDERICK, *Cognitive reflection and decision making*, in *Journal of Economic Perspectives*, 2005, 19, 25-42.

8.2. Consistency between EU cases and consumers' behavior

To verify the consistency of participants' behavior with the holdings of European Authorities, respondents were divided into two study groups. Participants in each group were randomly assigned different sets of questions that presented situations similar to the scenarios considered in the ECJ cases. They were then requested to provide assessments regarding the nature and characteristic of different products based on the information provided. The division of respondents in two groups made it possible to reduce the overall number of questions presented to each participant (to minimize the risk of cognitive overload over multiple choices) and to analyze the effect of different presentations of the same product without nudging individuals by providing them too much information regarding the specific aspect subject to evaluation. Data for each question was analyzed using SPSS. For open-ended questions, responses were organized within categories for conversion to numeric variables.

To illustrate findings, the results for each specific case are presented below.

- Case 1 – Jam Case⁹⁹

In its 1998 ruling in the *Adolf Darbo* case, the ECJ determined that an “All natural” claim on the front label of a jar of jam will not be misleading if

⁹⁹ ECJ Case C-465/98, *Verein gegen Unwesen in Handel und Gewerbe Köln eV v Adolf Darbo AG*.

the product's ingredients list clearly indicates the presence of a chemical gelling agent. According to the court, the average consumer knows that, in order to assess if a product is natural, it is necessary to look at the back label and to the individual list of ingredients, since the front label claim is not offering a reliable information.

To verify this claim, participants were asked to provide statements regarding the likelihood that two jams contain a specific ingredient (in the first case, chemical additives, in the second, fruit). The first group of respondents was provided with both the front and the back label of the two jams, while the second group saw only the front label. In the first case, the back labels of the two jams were identical, and both indicated the presence of chemical agents. The analysis regarding the presence of fruit was structured in comparative terms to assess whether the "all natural" label could orientate the respondents towards a certain outcome.

[Tabs. 5.1-5.2] provide the results of the analysis. For consumers in the first case [Tab 5.1], the presence of the "All Natural" label played a pivotal role in orienting their evaluation regarding the expected content of the product. The average results regarding the likelihood of product A and B containing chemical agents were extremely similar (4.93 and 4.99, respectively) and in both cases the percentage of respondents excluding the (or expecting a low) presence of chemical agents was between 15 and 20%. Similar results were observed in the comparative evaluation regarding the presence of fruit [Tab. 5.2]. The means reveals participants' substantial indifference to the "All Natural" label (question 1, 2 and 3 had

an average value of 3.28, 3.43 and a 3.88, respectively, with the last one indicating the expected probability of finding the same amount of fruit in both products). Interestingly, and contrary to ECJ's position, results suggest that the presence of the "All Natural" label might, at most, raise suspicion among respondents. Even if the means were ultimately similar, in both sets of questions the number of respondents hypothesizing the highest likelihood of the presence of fruit (and a lack of chemical additives) deemed the jam without the "All Natural" label to contain less chemical agents (21.49% vs. 10.74% assessing a level 7 likelihood) and more fruit (20.93% vs. 11.63% assessing a level 5 likelihood).

Lastly, if the "All Natural" label did not prove to be salient in orienting consumers' expectations towards the product, respondents did not seem to have carefully analyzed the back label of the jams before providing their statements: a careful analysis of the ingredients list would have indeed pointed out the presence of chemical agents in both products.

- *Case 2 – Clinique*¹⁰⁰

In 1992, the ECJ held that the presence of the label "Clinique" on a cosmetic product is not likely to make consumers think that the product has medical effects, since the product is not expressly presented as a medical one, and is rarely available in pharmacies. According to the court, the joint effect of the information on the label and the purchasing context should be sufficient to dissolve any doubt regarding the nature of the

¹⁰⁰ ECJ Case C-315/92 *Verband Sozialer Wettbewerb eV V. Clinique Laboratories SNC and Estée Lauder Cosmetics GmbH*.

product.

In the questionnaire, participants were asked to assess if they expected that the product presented to them – with a noticeable “Clinique” label on the front – had medical effects and where they would expect to find the product amongst different alternatives, including a pharmacy.

With regards to the first aspect [Tab. 5.3], a significant majority of respondents (56%) reported a belief (from 5 to 7 on the 7 digits Likert-Scale) that the product had medical effects, with an overall mean of 4.81/7. Respondents seemed to assume the presence of medical effects simply based on the “Clinique” label. This is further supported by the results of the second question [Tab. 5.4], with the majority (61.25%) of participants also reporting to expect to find the product in stores, that are not pharmacies.

- Case 3 – Teekanne¹⁰¹

In *Teekanne*, the ECJ stated that a correct and comprehensive list of ingredients may not be sufficient to correct the erroneous or misleading impression which the consumer gains from the front labeling of the foodstuff, departing from their earlier decision in *Darbo*¹⁰². The case involved the packaging of the product (tea) which included depictions of raspberries and vanilla flowers, and the front label stated ‘fruit tea with natural flavorings.’ The tea, though, did not contain any vanilla or

¹⁰¹ ECJ Case C-195/14 *Bundesverband der Verbraucherzentralen und Verbraucherverbände – Verbraucherzentrale Bundesverband e.V. v Teekanne GmbH & Co. KG*.

¹⁰² K. PURNHAGEN, *More Reality in the CJEU’s Interpretation of the Average Consumer Benchmark – Also More Behavioural Science in Unfair Commercial Practices?*, in *European Journal of Risk Regulation*, 2017, 8, 437–440.

raspberry constituents or flavorings, and they were not mentioned in the list provided on the back label. The Court held that, where the front label of a foodstuff gives the impression that a particular ingredient is contained, even though it is not in fact present, such labeling could mislead the purchaser as to the characteristics of the foodstuff. Ultimately, the information provided in the front label was deemed sufficient to create an expectation in consumers regarding the characteristics of the product regardless of what information was provided on the back label.

In the questionnaire, both the study groups were presented with two tea packages. Both products had a front label claiming the presence of fruit. Package B also had images of fruit depicted on it, and some additional claims modeled after the *Teekanne* case (‘with natural flavors; world of fruit’). Participants were asked to evaluate the likelihood that each of the teas contained fruit without comparing the two products (Group A) or considering the teas in juxtaposition to each other (Group B) (e.g. “evaluate the likelihood that product A contains more fruit than product B”, etc.).

The results, in this case, differ significantly from *Darbo*, suggesting a direct relationship between the claims on, and the appearance of, the product and the expectations of consumers. With regards to the non-comparative evaluation [Tab. 5.5], the average likelihood of fruit presence for product B was 5.41 versus a 4.77 mean for product A. Even more significantly, although 27.27% of participants claimed that product B had a high probability (level 7) of containing fruit, only 9.09% of the respondents

chose the corresponding level 7 claim for product A. This outcome is consistent with the comparative evaluation [Tab. 5.6], where an analysis of the means shows a higher expectancy for Product B containing more fruit than Product A (4.83) and for Product A not containing fruit (4.81), with 30.23% of participants assigning a 6 out of 7 on the Likert-Scale in both cases. This is consistent with the Court's holding that the presence of fruits and related claims on packaging is sufficient to create a significant expectation regarding the characteristics of the good, both in case of stand-alone evaluation and when comparing it with other products.

- Case 4 – *Béarnaise Sauce*¹⁰³

In 1984, the European Court of Justice ruled in favor of the European Commission in a claim against the legitimacy of the German consumer protection regulation. At that time, German consumer protection law prohibited the marketing of béarnaise sauce prepared from vegetable fats if the product was sold without an express statement mentioning this characteristic on the front label. The rationale was that consumers might believe that the sauce had been made with butter and eggs, in accordance with the traditional recipe of the sauce. In striking down the regulation as an unlawful burden to the free movement of goods, the ECJ stated that the average consumer is not supposed to be deceived by the information provided on the front label; instead, she will actively look for the individual ingredients on the back label.

Like the procedure applied in Case 1, each study group was presented with

¹⁰³ ECJ Case 178/84, *Commission vs. Federal Republic of Germany*.

a different question. For the first group, respondents were shown both the front and the back label of a béarnaise sauce and were asked to assess the likelihood that the sauce contained eggs (that were not present as ingredients in the back label). The second group of participants was asked to provide a general statement (Yes/No) regarding the presence of different ingredients within the sauce, and the evaluation had to be made by observing only the front label of the product, providing no indication regarding the composition of the sauce.

For the general statement question, most respondents (75.97%) positively hypothesized, observing the front label only, the presence of eggs in the product, following the traditional understanding of the recipe [Tab. 5.8]. Furthermore, the answers provided to the second question again show that the participants do not seem to consider the content of the ingredient lists offered on the back label, when provided [Tab. 5.7]. On a 7 level Likert Scale, the mean regarding the presence of eggs in the béarnaise sauce was 5, and 34.71% of respondents evaluated the presence of eggs as “highly probable” (6 out of 7) even when the list of ingredients provided different information. This result further confirms the tendency observed in the *Darbo* case, according to which the presence or absence of a back label does not change consumers’ understanding of the characteristics of a product.

- Case 5 – *Gut Springenheide*¹⁰⁴

¹⁰⁴ ECJ Case C-210/96 *Gut Springenheide GmbH and Others v. Oberkreisdirektor des Kreises Steinfurt Ä Amt für Lebensmittelüberwachung*.

The 1996 *Gut Springenheide* case is one of the most fundamental decisions in the development of consumers protection. The ‘average consumer benchmark’ is a result of this decision. The case itself dealt with the possible deceiving nature of the description "6-Korn - 10 *frische Eier*" (six-grain - 10 fresh eggs), presented on the front label on a package of eggs. In addition to this information, a slip on each pack of eggs extolled the beneficial effect this feed had on the quality of the product. The six varieties of cereals in question only accounted for 60% of the feed mix, but this information was not provided on the front or back label. The German Office for the Supervision of Foodstuff claimed that the front label statement and the slip of paper would mislead a significant proportion of consumers by falsely implying that the feed given to the hens was made up exclusively of the six cereals.

Participants were asked to hypothesize the presence or absence of different ingredients in the feed provided to the chickens after presenting them a package with “Chicken fed with six-grains feed” writing exposed on the front label [Tab. 5.9]. While almost all the participants (90%) noted the indication and provided a positive indication regarding the presence of cereal grains, such a consideration does not seem to have excluded the presence of other nutrients in the chicken feed, provided that significant percentages of the respondents also estimated the presence of oilseed meals (62.40%) and animal protein (58.80%) within it.

- Case 6 - Holding of the EU Commission on the “Product of Origin” information

This case is different from the previous ones, in that it does not involve a

decision by a European court, but rather a regulatory choice by the European Parliament regarding the characteristics of product labeling on the specific aspect of the country of origin of a product, and its likelihood to affect consumption choices. The rules governing the production of goods in the disputed (and partially Moroccan-occupied) area of Western Sahara state that products manufactured in that area by Moroccan companies could be sold in the European Union labeled as “Made in Morocco.” According to his interpretation, such an indication is not sufficient to constitute a misleading commercial practice, since the information regarding the specific area where the product comes from is not sufficient to affect consumers’ purchasing choices¹⁰⁵.

Participants were presented with two fictional frameworks concerning a contested area. In the first scenario, the area was disputed by its own government (as it is happening in the West Sahara) and partially occupied by the State of Narnia without the recognition of the European Union. In the second scenario, that same area was subject to a military occupation by the Narnian government. In both cases, participants were first asked to provide their opinion regarding the labeling of products manufactured by

¹⁰⁵ On this aspect, it is also opportune to underline that such a statement does not appear rock-hard solid, provided that in other context the European Commission considered the “country of origin” information significant for consumers’ choice: the most prominent example concerns the products manufactured in the area of Palestine: despite the adoption, in December 2014, of a Resolution promoting the recognition of the Palestinian State (EU Parliament, *Resolution on recognition of Palestine statehood*, 2014/2964RSP, available at the link: [http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2964\(RSP\)&l=EN](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2964(RSP)&l=EN)), the area is still qualified as disputed, provided that the agreement of each Member State is necessary to proceed to a formal recognition.

Narnian companies in the occupied area, and then to assess how relevant the truthful information regarding the area of origin of that product was for them. The first aspect is essentially policy-related, and does not have significant interest for the study, but it was useful in order to provide internal coherence and consistency to the question (for the sake of the argument, it is worth noticing that in both scenarios, the majority of respondents favored the idea that the product should be labeled after the occupied area, and not in the name of the occupying state). More interestingly – on a 1-to-7 Likert Scale – the relevance of the correct information regarding the country of origin was evaluated with an overall mean of 4.40, suggesting that the country of origin actually is deemed relevant for consumption choices. Furthermore, the analysis of the relationship between the answers given to these questions and the evaluations provided in the question 14 of the MvS test (where, on a 1-6 scale, the mean value provided by participants was 4.04) offers a Pearson coefficient of 0.44, suggesting a significant positive correlation between the two matrixes.

- *Case 7 – Lifting*¹⁰⁶

The 1998 *Lifting* case is similar to the *Clinque* case: the main dispute was whether the use of the term “Lifting” on the front label of a cosmetic product might be considered misleading, giving purchasers the impression that the use of the product would achieve results comparable to a surgical

¹⁰⁶ ECJ Case C-220/98, *Estée Lauder Cosmetics GmbH & Co. OHG v Lancaster Group GmbH*.

lifting. Once again, the ECJ concluded that the presence of a term on the front label would have an effect on consumers.

This time, the analysis focused on whether the presence of the “Lifting” front label had an impact on the perceived characterization of the product through a different method. Following the methodology used in *Clinique*, members of the two study groups were first asked to evaluate where they would expect to find the product (For Product A, the crème had “Lifting” on the front label, whereas for Product B, this was not present), and then all participants were asked to classify the product as “medical” or “cosmetic”. This time, the results were different from what was observed in *Clinique*. The study group confronted with Product A [Tab. 5.12], excluded the chance to find the product in a pharmacy (10.74%), whereas the respondents who were exposed to Product B [5.13], were divided almost equally amongst those who expected to find the product in a pharmacy (34.11%), in a Market (31.01%) or in a cosmetic shop (34.88%). Apart from this aspect, more respondents classified the crème as cosmetic (64.34%), than medical [Tab. 5.14].

- Case 8 – *Neptune*¹⁰⁷

The last case examined was subject to a Preliminary Ruling by the ECJ in 2015. The court held that the indications provided on the front label of mineral water products, claiming their “low sodium” content, should have been considered misleading, even if factually correct. Since the increase of

¹⁰⁷ ECJ, Preliminary ruling in Case C-157/14 – *Neptune Distribution SNC v. Ministre dell’Économie et des Finances*, First question.

arterial tension (the main condition related to high sodium intake) is caused not only by the action of sodium, but also by other components that can be found in the water (*in primis* chloride ions), the information regarding the low sodium content had a deceptive effect every time those components were present, since it suggests that the water is healthier than it is. The fact that the correct amount of the water's other components was listed on the back label was insufficient to address the misleading claim.

In the questionnaire, participants were first asked to assess (among the other ingredients) the quantity of sodium present in a mineral water product. For the first study group, the product displayed (Product A) did not present any particular claim on the front label, while the second study group saw a package (Product B) displaying “No Sodium” on the front label. In both cases, the back label with the components of the water was provided.

Once again, participants substantially ignored the back labels and their assessment of the quantity of sodium for both products [Tabs. 5.16 and 5.17] was completely unrelated to the ingredients list. Furthermore, the presence of the “Low Sodium” claim on the front label did not seem to have played a pivotal role in the quantification of the sodium in absolute terms, considering that the mean assessment in the two cases is substantially similar, and even higher for Product B (42.73 and 47.92, respectively).

If, considering the isolated product, the presence of the “Low Sodium”

claim apparently had a minor effect, the situation changes when the two labels were compared [Tab. 5.17]. When confronted with the front labels of both the products, 52.00% of respondents evaluated the product with the “Low Sodium” label as healthier than Product A, whereas only 8.33% of participants did not consider the difference between the two labels significant in terms of expected healthiness.

8.3. Bias vulnerability, and relationship between consumers’ behavior and cognitive bias

The questionnaire also provided a general overview of the respondents’ vulnerability to specific cognitive bias. This section examines this data and offers some preliminary analysis meant to verify the relationship between consumption choices and vulnerability to specific bias.

For perceived information overload [Tab. 4.1], respondents showed a low perception of this limitation. According to their self-assessment, 49.20% of participants said they usually engage in a careful analysis of all information before buying a product, concluding a contract or, more generally, making a choice. Respondents did not disclose any difficulty in evaluating the data provided and did not focus only on the information perceived as more salient or relevant (this option was selected by 28.80% of the participants). Lastly, only 0.80% of respondents openly admitted to not reading the information, relying on alternative strategies of evaluation.

The loss aversion analysis [Tab. 4.2] is consistent with past studies¹⁰⁸. The majority of respondents favored the lotteries providing the highest expected payout (50% chances of either losing €2 or win €6), avoiding the one with the worst winning expectation (50% chances of either losing €7 or win €6). As for the intermediate options, the answers illustrate a substantial indifference towards expected payouts, suggesting limited reflection on the concrete characteristics of the alternatives provided. In considering the determinants for this tendency, it can be hypothesized that the absence of a concrete set of incentives (i.e. providing real money) played a major role, affecting the participants' choice. Nevertheless, the results of the ambiguity aversion test, might also suggest that the participants were actually willing to accept (until the threshold point of lottery #6) lower expected payouts, assuming a risk prone attitude.

The regret evaluation [Tab. 4.3] shows that participants are both regret and remorse-prone, and suggests that the two values – despite the position of a part of scholars advocating for a neat distinction between these elements¹⁰⁹ – are difficult for the participant to distinguish on the basis of a self assessment. The average value arising from the questions meant to evaluate the regret-rate (nn. 1 and 2) is 5.294 out of 7, whereas the average value for the remorse-rate question (num. 3) is 5.256 out of 7. This result suggests that the implicit perception of these two feelings is not subject to

¹⁰⁸ M. RABIN, *Risk aversion and expected-utility theory: A calibration theorem*, in *Econometrica*, 2000, 68, 5, 1281-1293.

¹⁰⁹ L.G. EPSTEIN, *A Definition of Uncertainty Aversion*, in *Review of Economic Studies*, 1999, 66, 3, 579–608.

significant variations.

Moving to the evaluation of the ambiguity aversion, the analysis [Tab. 4.4] shows – contrary to the traditional evidence observed in Ellberg’s work¹¹⁰ – a general preference (49.60%) towards the ambiguous urn, whether with strong or light intensity, against relatively few choices (27.60%) in favor of the so-called “risk” urn. The remaining 22.80% of participants showed a neutral attitude towards the two choices. This apparent ‘paradox of the paradox’ is not new to the economic literature. Various scholars investigated the determinants of the ambiguity preference phenomenon¹¹¹ and, despite a lack of unanimous consent, emphasize that the results of these tests are usually heterogeneous, making it difficult to draw general assumptions¹¹². Nevertheless, one explanation for ambiguity-seeking behaviors is traditionally found in the risk prone attitude of individuals. The last bias taken into account was over-optimism with regards to each respondent’s self-assessed capacity to understand the characteristics of the products, and to discern the impact of information provided by labels (with particular reference to nutritional information). The question was presented in a comparative format, asking respondents to evaluate their ability in comparison to their peers. The results [Tab. 4.5] reveal a diffused skepticism of the participants regarding their capacity to properly assess

¹¹⁰ D. ELLSBERG, *Risk, ambiguity, and the Savage axioms*, in *Quarterly Journal of Economics*, 1961, 75, 4, 643-669.

¹¹¹ C.R. FOX, A. TVERSKY, *Ambiguity Aversion and Comparative Ignorance*, in *Quarterly Journal of Economics*, 1995, 110, 585-660.

¹¹² See *ex multis* D.O. STAHL, *Heterogeneity of Ambiguity Preferences*, 2012, available at SSRN: <https://ssrn.com/abstract=2160864>.

the characteristics of the products encountered in their day-to-day life: 45.20% of the respondents placed themselves in the second lowest quartile in assessing their ability to understand products' characteristic in general and, when confronted with the specific problem of discerning the impacts of nutritional information, 68.40% of them affirmed to be less skilled than 50% of average individuals at their age (with 30.40% of them locating themselves in the lowest quartile). This result appears consistent with the major findings in the literature analyzing the relationship between consumers and product labels. As noted earlier, consumers usually admit that labeling information is not easy to understand, often creating more confusion than clarity.

After examining the data on the vulnerability of the respondents to the abovementioned bias, preliminary comparisons and regressions were operated to verify if some of these factors might be connected with the answers provided in the questions involving the choice between different products. While definitive conclusions were not possible without a more rigorous methodological design, it was still possible to highlight some promising findings that could present the basis for future study. In particular, a main hypothesis was that ambiguity aversion would be statistically related to respondents' careful consideration of the content of labels, and therefore with the reduction of (potentially) misleading effects. To verify this relationship, regressions were run to evaluate the efficacy of front label claims in the various cases provided based on the ambiguity aversion rate of the participants. For example, a significant effect was

found for the front label claims over the ingredient list considered in the *Teekanne* case [Tab 4.6]:

$$(F(1,126) = 11.262, p \leq .001), \text{ with an } R^2 \text{ of } .082$$

and the two variables considered expressed an inverse correlation:

$$r(127) = -.286, p < .01$$

This suggests that individuals that are less averse to ambiguity might observe with lower frequency the ingredients list provided on the packages of products. Further research is required to confirm the robustness of this finding.

9. Discussion: consistency between the ECJ's average consumer and the empirical findings

This study makes it possible to identify some general considerations regarding the analysis. This section first evaluates the approach to consumer protection against misleading commercial practices embraced by European Authorities, and then discusses which characteristics of consumers' behavior are identified by the questionnaire.

Based on the results of the study, EU consumer protection against unfair commercial practices seems less problematic than what legal scholars suggest¹¹³, and yet profoundly misguided with regards to the average consumer benchmark. Even when the European Authorities provide an

¹¹³ See *supra* references provided in the first sections of the present work.

evaluation regarding the deceptive perception of a commercial strategy that is coherent with the empirical data, the *rationale* under which such decision (and, subsequently, the definition of the characteristics of the average consumer) is reached proves itself inconsistent with actual consumers behavior.

This discrepancy is particularly clear in the analysis of older cases like *Adolf Darbo*, and *Gut Springenheide*. In both cases, the ECJ was factually correct in assessing that the indication provided on the front label was not salient enough to affect consumers' perception of the qualities of the product. Nevertheless, the underlying assumption of the court – that consumers look at the list of single ingredients and are not misled by generic front label claims – is not consistent with real consumers' behavior. The analysis, in accordance with the main literature¹¹⁴, confirmed that consumers pay little or no attention to the ingredients list, which plays a minimal role as a determinant for their choice. As the data related to the *Bernaise sauce* case (analyzed by the ECJ under the same “front vs. back label” rationale) verifies, the immediate availability of the list of ingredients is not sufficient to modify consumers' convictions regarding the characteristics of a product.

Even in those cases where the ECJ considered the relevance of other elements that are not directly related to the content of the back label, the factors shaping the *real* average consumer's conduct are different from the

¹¹⁴ C. HIGGINSON, T.R. KIRK, M. RAYNER, S. DRAPER, *How do consumers use nutrition label information?*, in *Nutrition and Food Science*, 2002, 32, 4, 145–52.

ones that the court deemed significant. This emerges from a comparative analysis of *Clinique* and *Lifting*. Both the cases were solved by the ECJ under the assumption that the wording on the front label is not sufficient to generate in consumers a belief regarding the medical nature of the products, since these products are located in non-medical areas like markets and convenience stores. The analysis reveals that respondents, even when keenly aware that both products were unlikely to be found in pharmacies, had different evaluations regarding the characteristics of the *Clinique* product (considered medical in nature) and the *Lifting* product (acknowledged as a cosmetic one). This finding is consistent with those studies that underline how consumer evaluations are affected by the specific inner meaning that some words suggest¹¹⁵ and that the context and location of products play a secondary role. The ECJ does not consider this fact, preferring to embrace an uncompromising position that fails to recognize that consumers react to product labels in different ways.

The ECJ's assumption, however, is indirectly confirmed by the results of the *Country of origin* case. Despite the position of European Authorities which assumes that the country of origin of a product does not influence consumption choices, consumers appear to be interested in this characteristic, at least when they are aware of some specific political issues involving the country of origin of a product.

Fortunately, it seems that the traditional approach to the average

¹¹⁵ *Report on misleading 'natural' foods*, available at <https://www.consumerreports.org/foodsafety/peeling-back-the-natural-food-label/>.

consumer behavior is beginning to change, as the two most recent cases in this study demonstrate. In the *Teekanne* case, the ECJ adopted a perspective that is different from the approaches in *Darbo* and *Springenheide* and more consistent with the study results and the experimental data. The Court clarified that is not possible to assume that the average consumer will always refer to the list of ingredients in order to infer the qualities of product, and that specific elements – namely, the front label claims and the presence on images on the package – may shape their understanding. Similarly, in the preliminary ruling in *Neptune*, the Court seems to acknowledge that the use of a specific wording (in this case, “Low sodium”) can generate a specific impression on the average consumer regarding the characteristic of the product. And this impression, even if the information provided is factually correct, might be sufficient to consider a business practice misleading regardless of the context in which the product is sold. The judgment, as observed by some early commentators¹¹⁶, accepts the impossibility of relying solely on the information provided by a back label and unveils a new, more open-minded perspective on the effect of claims (and their relevance in the comparative evaluations of competing products) in terms of the specific wording used. This has the effect of opening the door for future adjustments of the peremptory approach observed in past cases.

The data from this study also provide insight that enhances the

¹¹⁶ K. PURNHAGEN, *More Reality in the CJEU's Interpretation of the Average Consumer Benchmark*, 440.

understanding of how consumers actually behave in consumption choices, providing relevant elements for the regulator. A main finding is the significant gap between the declarations provided by consumers on their tendency to read product labels, and their actual approach to information when they make choices. Consistent with the empirical literature, the study further confirms that consumers do not actually read or infer products' characteristics from labels and generally ignore them. Other elements such as the use of particular wording also seem to generate very specific beliefs regarding the attributes of the product. Additionally, the data from the questionnaire further support the idea that, even when consumers actually engage in an analysis of a label, they are rarely able to understand the implication or meaning of the information it provides. This finding is repeatedly stressed by economic and legal scholars, but largely ignored by the European Courts and legislators (that consider this aspect from the perspective of promoting standardization of labels rather than their substantial simplification. This finding should be taken seriously when implementing new strategies to enhance consumer protection.

10. Limits of the analysis and concluding remarks

The present study has some limitations that should be considered. The main constraint relates to use of an online platform – MTurk – as means for collecting data: online questionnaires might not draw sufficient participants' attention, leading to the influence of external elements and

leading to superficial answers. To avoid (or minimize) this risk different strategies were implemented, such as the use of the attention test at the beginning of the questionnaire. All responses were also checked to verify that the completion time – estimated at an average of 30 min. – was consistent with a mindful reading and answering of the questions. Naturally, those precautions are not sufficient to completely exclude the risk of a superficial reading of the questions provided. However, as individuals usually do not use significant cognitive resources in their day-to-day consumption choices¹¹⁷, answers might prove reliable even in absence of a full cognitive commitment by participants.

A second limitation relates to the difference between taking a choice and analyzing a product based on information provided on a monitor and taking the same choice in the real world, where that product can be examined, compared to multiple alternatives, physically observed and touched. Even if this problem is mitigated by the rise of online shopping, it is undeniable that a large part of daily consumption still occurs through traditional methods, and therefore consumers' reaction might be different from their theoretical assessments expressed in the questionnaire.

A third limitation relates to those questions where monetary incentives are involved (prominent examples are those questions meant to gather data about the risk propensity and ambiguity aversion of the participants). Since the monetary reward for the participant was conferred upon the

¹¹⁷ See *ex multis* F.R. KARDES, M.L. CRONLEY, T.W. CLINE, *Consumer behavior*, South-Western Pub, ed. 2010, in particular 108 ff.

completion of the questionnaire, and it was not possible to have participants actually spend money on the basis of poor strategic choices (like it would happen in an actual version of the “lottery” question); hence, there is a chance that respondents displayed more risk-seeking behaviors than they would in real life. To avoid these issues and confirm this study’s findings, follow-up studies would benefit from using other methodologies, including laboratory studies, or ideally, field experiments. Finally, with respect to the case-by-case analysis in Part II of the questionnaire, it is important to point out that many of the characteristics of the average consumer benchmark are created through the action of Member States courts and regulatory agencies. In many cases, the ECJ leaves the assessment of the deceptive nature of a commercial practice to national judges. Examining the decisions rendered by national authorities and comparing them to the general indications provided by the European Authorities would provide further insight into the difference between the judicial average consumer and her actual behavior.

These limitations aside, it is possible to develop some preliminary conclusions. First, the European Union’s approach to consumer protection against unfair commercial practices appears less misguided than what literature suggests, as decisions are generally consistent with the behavior of the majority of actual consumers. This is particularly true for cases such as *Teekanne* and *Neptune*. Nevertheless, while the outcome of the decision may be empirically confirmed, the court’s reasoning and the elements it considered in formulating its decision significantly diverges

from the actual dynamics of consumer conduct.

In developing its opinions, the ECJ seldom mentions the role of behavioral findings in predicting consumers' characteristics, nor does it engage in substantial analysis of the data coming from empirical studies. Instead, it provides rationalistic justifications for its holdings and infers disputable connections (e.g. the one between the correct assessment of the features of a product and the careful analysis of its back label) that are scarcely verified in the real world. The problem with this approach - even when the holding of the case is consistent with empirical data - is that the (whether conscious or unconscious) dismissal of behavioral grounds from the decisional outcomes hinders the ability of courts and regulators to develop a structured revision of traditional notions. European Authorities' refusal to adopt a clear position on the implementation of scientific studies in consumer protection ruling leads to substantive uncertainty, leaving room for opportunistic exploitation of consumers on the basis of those behavioral elements that the courts might sometimes unconsciously perceive, but not yet understand and transpose into a new, more accurate, concept of the average consumer.

TABS.

Tab 1.1: Participants in the survey and individual characteristics

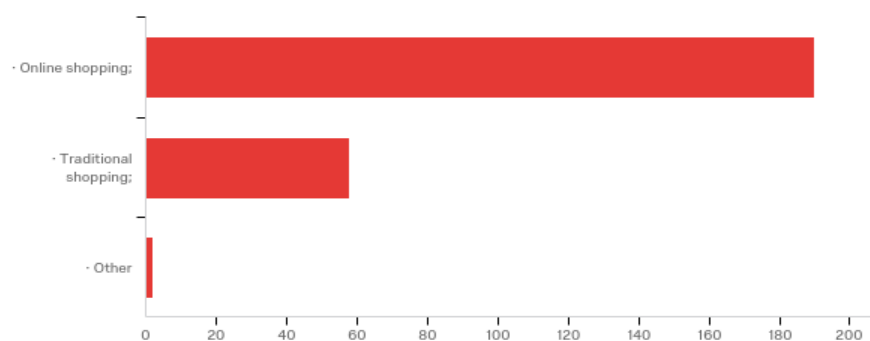
	N	%
Total Participants	250	100
<u>Gender</u>		
Male	197	78.80
Female	53	21.20
<u>Age</u>		
18-24	36	14.40
25-29	119	47.60
30-34	60	24.00
Over 35	35	14.00
<u>EU Member State (Regions)</u>		
Northern Europe	66	26.40
Central Europe	38	15.20
Eastern Europe	22	8.80
Western Europe	90	36.00
Southern Europe	34	13.60
<u>Level of Education</u>		
Less than high school	5	2.00
High School or equivalent (e.g. GED)	11	4.40
	31	12.40

College	163	65.20
Bachelor Degree	40	16.00
Post-Graduate Degree		
<u>Employment Status</u>		
Employed, working 40 or more hours per week;	198	79.20
Employed, working less than 40 hours per week;	41	16.40
Not employed, looking for work;	7	2.80
Not employed, NOT looking for work;	3	1.20
Retired; 0.40%;	1	0.40
Disable/not able to work;	0	0
<u>Income of the family household for year 2017</u>		
Less than € 10.000; 7.60%	19	7.60
Between € 10.000 – 24.900; 22.80%	57	22.80
Between € 30.000 – 49.900; 24.80%	62	24.80
Between € 50.000 – 74.900; 22.00%	55	22.00
Between € 75.000 – 99.900; 17.60%	44	17.60
Between € 100.000 – 149.900; 4.00%	10	4.00
More than €150.000	3	1.20

2. CONSUMPTION HABITS

Tab. 2.1

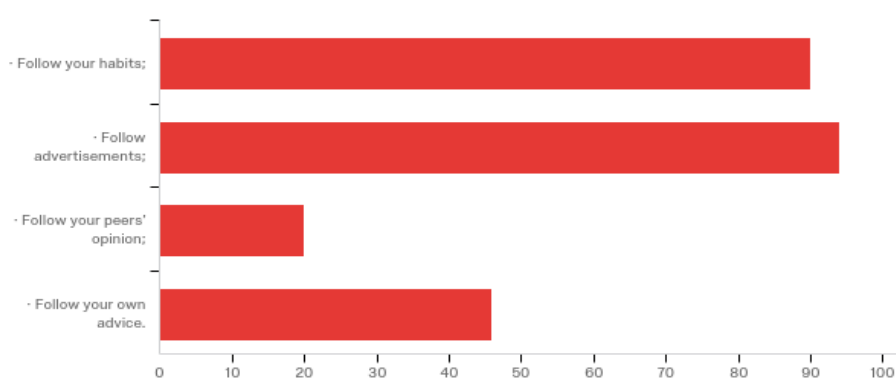
Q. 10a: When you buy a product, which method do you use more often?



#	Answer	%	N
1	Online shopping	76.00	190
2	Traditional shopping	23.20	58
3	Other	0.80	2
	Total	100	250

Tab. 2.2

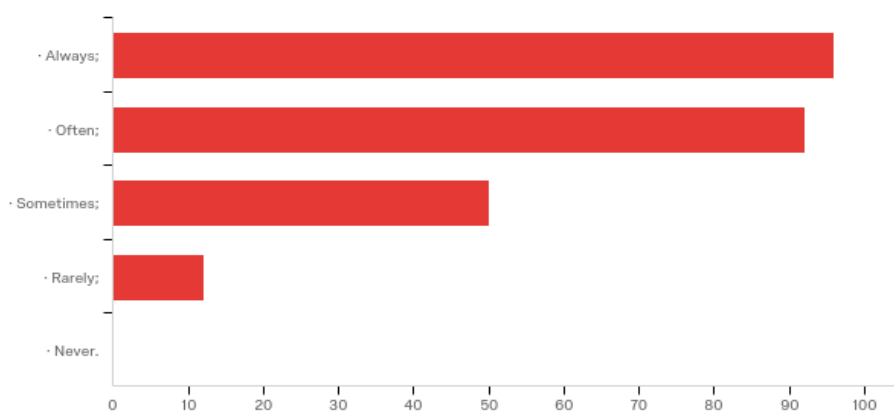
Q. 10b: When you decide to buy something you prefer to:



#	Answer	%	N
1	Follow your habits	36.00	90
2	Follow advertisements	37.60	94
3	Follow your peers' opinion	8.00	20
4	Follow your own advice	18.40	46
	Total	100	250

Tab. 2.3

Q. 10c: When you buy products, how often do your read the labels on the package?



#	Answer	%	N
1	Always	38.40	96
2	Often	36.80	92
3	Sometimes	20.00	50
4	Rarely	4.80	12
5	Never	0.00	0
	Total	100	250

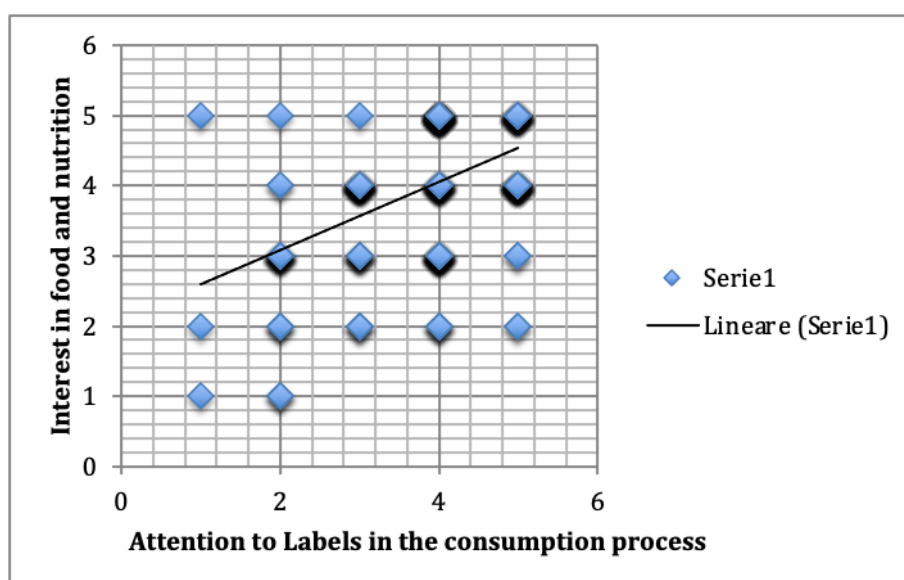
Tab. 2.4

Q. 10d: Evaluate how much you disagree with the following affirmations
(1: strongly disagree - 5: strongly agree)

Question	1 (Strongly disagree)		2		3		4		5 (Strongly agree)		Total N
	%	N	%	N	%	N	%	N	%	N	
I am interested in the topics of food, diet and nutrition	1.20	3	9.60	24	17.20	43	46.80	117	25.20	63	250
When I buy a product, I carefully read the instructions and the information on the package	1.60	4	6.40	16	20.80	52	35.60	89	35.60	89	250

Graph. 2.4 – Regression between Interest in food and nutrition and attention to labels

Regression rate: 0.44834



Tab 3.1: Maximizers vs. Satisfiers test

Question	1 (strongly agree)		2		3		4		5		6 (strongly disagree)		Total
	%	N	%	N	%	N	%	N	%	N	%	N	
1) When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program.	7.07	7	8.08	8	14.14	14	29.29	29	32.32	32	9.09	9	99
2) When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to.	6.38%	6	6.38%	6	12.77%	12	26.60%	25	32.98%	31	14.89%	14	94
3) I treat relationships like clothing: I expect to try a lot on before I get the perfect fit.	6.86%	7	9.80%	10	19.61%	20	16.67%	17	29.41%	30	17.65%	18	102
4) No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities.	6.19%	6	18.56%	18	13.40%	13	14.43%	14	30.93%	30	16.49%	16	97
5) I often fantasize about living in ways that are quite different from my actual life.	10.10%	10	11.11%	11	14.14%	14	24.24%	24	28.28%	28	12.12%	12	99
6) I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.).	4.12%	4	17.53%	17	13.40%	13	27.84%	27	23.71%	23	13.40%	13	97

7) I often find it difficult to shop for a gift for a friend.	5.05%	5	14.14%	14	18.18%	18	20.20%	20	27.27%	27	15.15%	15	99
8) When shopping, I have a hard time finding clothing that I really love.	10.23%	9	10.23%	9	15.91%	14	21.59%	19	23.86%	21	18.18%	16	88
9) Renting videos is really difficult. I'm always struggling to pick the best one.	6.19%	6	13.40%	13	11.34%	11	28.87%	28	20.62%	20	19.59%	19	97
10) I find that writing is very difficult, even if it's just writing a letter to a friend, because it's so hard to word things just right. I often do several drafts of even simple things.	10.00%	9	18.89%	17	7.78%	7	23.33%	21	25.56%	23	14.44%	13	90
11) No matter what I do, I have the highest standards for myself.	3.96%	4	15.84%	16	13.86%	14	21.78%	22	35.64%	36	8.91%	9	101
12) I never settle for second best.	7.37%	7	10.53%	10	13.68%	13	26.32%	25	31.58%	30	10.53%	10	95
13) Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.	3.26%	3	17.39%	16	18.48%	17	20.65%	19	26.09%	24	14.13%	13	92
14) I am very interested in politics and in fair condition for the realization of products (e.g. fair trade): I take into account this element when choosing which products I should buy.	4.00%	10	13.60%	34	14.40%	36	22.00%	55	32.80%	82	13.20%	33	250

Tab. 3.2: Cognitive Reflection Test and Means comparison

	Mean		
M	1.75	Difference	-0.851
F	0.90	Standard error	0.244
TOT	1.57	95% CI	-1.3320 to -0.3704
		t-statistic	-3.487
		DF	248
		Significance level	P = 0.0006

Graph 3.2.1 – CRT (Female participants)

Result	
Sample Standard Deviation, s	1.3624659620787
Variance (Sample Standard), s^2	1.8563134978229
Population Standard Deviation, σ	1.3495513013017
Variance (Population Standard), σ^2	1.8212887148451
Total Numbers, N	53
Sum:	48
Mean (Average):	0.90566037735849
Standard Error of the Mean ($SE_{\bar{x}}$):	0.18714909291202

Confidence Interval Approximations, If sampling distribution of the mean follows normal distribution

Confidence Level	Range
68.3%, $SE_{\bar{x}}$	0.71851128444647 - 1.0928094702705
90%, $1.645SE_{\bar{x}}$	0.59780011951822 - 1.2135206351988
95%, $1.960SE_{\bar{x}}$	0.53884815525094 - 1.272472599466
99%, $2.576SE_{\bar{x}}$	0.42356431401713 - 1.3877564406998
99.9%, $3.291SE_{\bar{x}}$	0.28975271258504 - 1.5215680421319
99.99%, $3.891SE_{\bar{x}}$	0.17746325683783 - 1.6338574978792
99.999%, $4.417SE_{\bar{x}}$	0.079022833966107 - 1.7322979207509
99.9999%, $4.892SE_{\bar{x}}$	-0.0098729851671019 - 1.8211937398841

Graph. 3.2.2 – CRT (Male Participants)

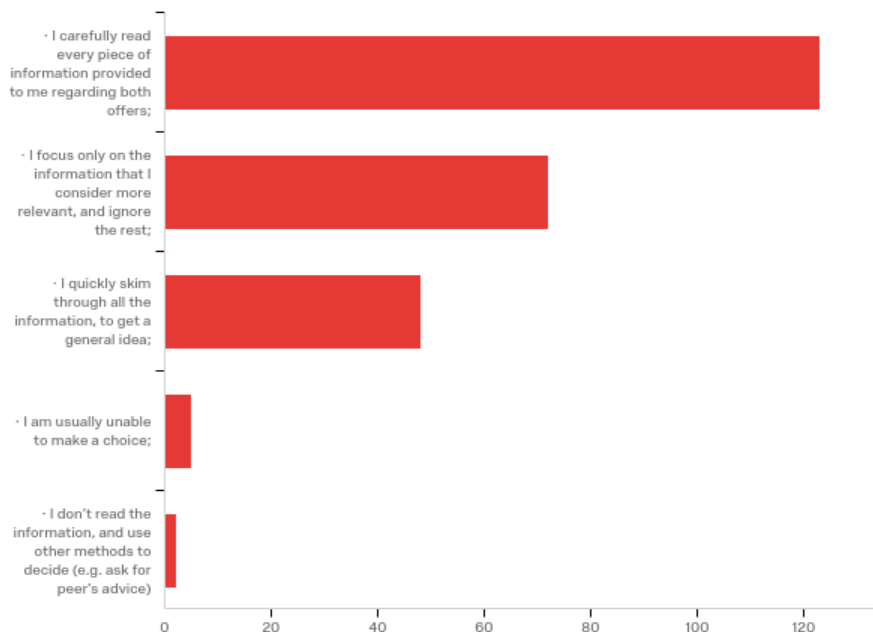
Result	
Sample Standard Deviation, s	1.6300935598871
Variance (Sample Standard), s^2	2.6572050139853
Population Standard Deviation, σ	1.6259510028474
Variance (Population Standard), σ^2	2.6437166636605
Total Numbers, N	197
Sum:	345
Mean (Average):	1.751269035533
Standard Error of the Mean ($SE_{\bar{x}}$):	0.11613935734624

Confidence Interval Approximations, If sampling distribution of the mean follows normal distribution

Confidence Level	Range
68.3%, $SE_{\bar{x}}$	1.6351296781868 - 1.8674083928792
90%, $1.645SE_{\bar{x}}$	1.5602197926984 - 1.9423182783676
95%, $1.960SE_{\bar{x}}$	1.5236358951344 - 1.9789021759316
99%, $2.576SE_{\bar{x}}$	1.4520940510091 - 2.0504440200569
99.9%, $3.291SE_{\bar{x}}$	1.3690544105065 - 2.1334836605595
99.99%, $3.891SE_{\bar{x}}$	1.2993707960988 - 2.2031672749672
99.999%, $4.417SE_{\bar{x}}$	1.2382814941346 - 2.2642565769314
99.9999%, $4.892SE_{\bar{x}}$	1.1831152993952 - 2.3194227716708

Tab 4.1: Perceived information overload

Q. 11: When I am buying a product or concluding a contract, and I have to choose between to competing offers:



#	Answer	%	N
1	I carefully read every piece of information provided to me regarding both offers;	49.20%	123
2	I focus only on the information that I consider more relevant, and ignore the rest;	28.80%	72

3	I quickly skim through all the information, to get a general idea;	19.20%	48
4	I am usually unable to make a choice;	2.00%	5
5	I don't read the information, and use other methods to decide (e.g. ask for peer's advice)	0.80%	2

Tab 4.2: Loss Aversion

Q. 12 (Note: in this question, multiple choices were possible)

#	Answer	%	N
1	Lottery #1	26.62%	82
2	Lottery #2	10.39%	32
3	Lottery #3	16.56%	51
4	Lottery #4	18.18%	56
5	Lottery #5	23.05%	71
6	Lottery #6	5.19%	16
	Total	100%	308

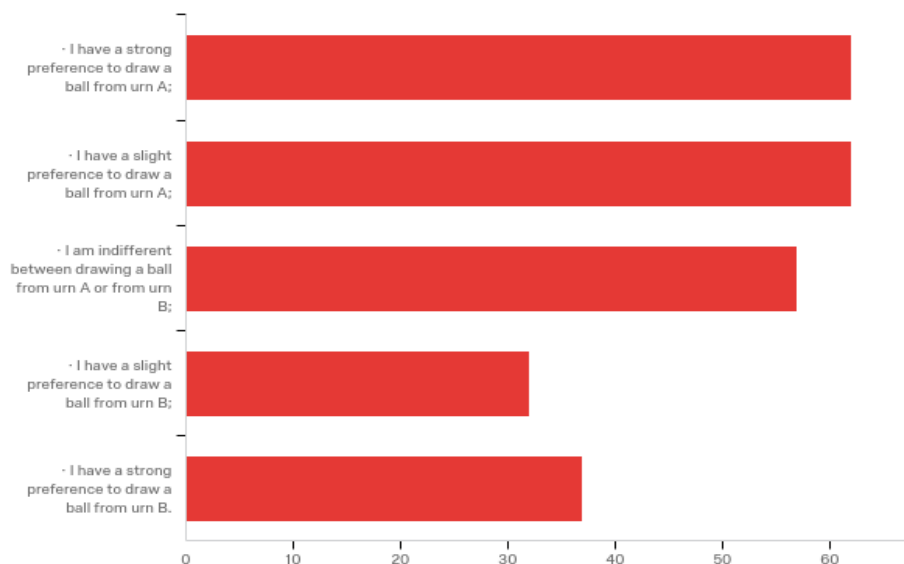
Tab 4.3: Regret Evaluation

Q. 13

#	Question	1		2		3		4		5		6		7		Average
		%	N	%	N	%	N	%	N	%	N	%	N	%	N	
1	I am sorry about what happened to me:	1.60	4	4.00	10	10.80	27	16.00	40	23.60	59	20.40	51	23.60	59	5.116
2	I wish I had chosen to go to the train station with my Friend:	2.40	6	1.60	4	6.40	16	16.00	40	20.80	52	39.20	98	13.60	34	5.256
3	I feel responsible for having missed the train:	1.20	3	2.00	5	4.40	11	14.00	35	24.80	62	26.40	66	27.20	68	5.472

Tab 4.4: Ambiguity Aversion

Q. 14: Please imagine the following situation: You can choose between drawing a ball from two different urns, urn A and urn B. Urn A contains 100 balls, some are white and some are black. However, you don't know how many balls are white and how many balls are black. Any combination is possible. There might be from 0 to 100 white balls, with the remaining balls being black. Urn B contains 100 balls as well, but you know that it contains exactly 50 white balls and 50 black balls. Now choose a color, either white or black. Suppose you win \$100 if you draw a ball of the color you have selected. If the ball is of the other color, you win nothing. From which urn would you prefer drawing a ball?



#	Answer	%	N
1	I have a strong preference to draw a ball from urn A;	24.80	62
2	I have a slight preference to draw a ball from urn A;	24.80	62
3	I am indifferent between drawing a ball from urn A or from urn B;	22.80	57
4	I have a slight preference to draw a ball from urn B;	12.80	32
5	I have a strong preference to draw a ball from urn B.	14.80	37

Tab 4.5: Over-optimism

Q.15 and 16: Relating to other individuals of your age, how would you rate yourself on the following aspects:

Question	Highest quartile		Second highest quartile		Second lowest quartile		Lowest quartile	
	%	N	%	N	%	N	%	N
1) Ability to understand characteristics of products you buy	15.20%	38	24.80%	62	45.20%	113	14.80%	37
2) Ability to discern the impact of nutritional information:	7.20%	18	24.80%	62	37.60%	94	30.40%	76

Tab 4.5: Regression evaluation of the relation between Ambiguity aversion and sensibility to front label claims in the *Teekanne* case

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.286 ^a	.082	.075	1.551		

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.095	1	27.095	11.262	.001 ^b
	Residual	303.124	126	2.406		
	Total	330.219	127			

Correlations

		<i>Teekanne</i> – Sensibility to front label claims	Ambiguity Aversion
Pearson Correlation	<i>Teekanne</i> – Sensibility to front label claims	1.000	-.286
	Ambiguity Aversion	-.286	1.000
Sig. (1-tailed)	<i>Teekanne</i> – Sensibility to front label claims	.	.001
	Ambiguity Aversion	.001	.
N	<i>Teekanne</i> – Sensibility to front label claims	128	128
	Ambiguity Aversion	128	128

TAB 5: CASE ANALYSIS

Q17A&B: ADOLF DARBO (STANDARD PRODUCT A VS. “ALL NATURAL” PRODUCT B)

Tab. 5.1: Evaluation on presence of additives (with label)

Assessment	1 (extremely unlikely)		2		3		4		5		6		7 (extremely probable)		Mean	Std. Deviation
	%	N	%	N	%	N	%	N	%	N	%	N	%	N		
Product A Contains chemical additives	3.31	4	4.13	5	8.26	10	16.53	20	26.45	32	30.58	37	10.74	13	4.93	1.465
Product B Contains chemical additives	4.13	5	5.79	7	11.57	14	13.22	16	17.36	21	26.45	32	21.49	26	4.99	1.710

Tab. 5.2: Evaluation on the presence of Fruit (without label)

Assessment	1 (Very Unlikely)		2		3		4		5 (extremely probable)		Mean	Std. Deviation
	%	N	%	N	%	N	%	N	%	N		
1) Product A contains more fruit than product B	10.85	14	15.50	20	29.46	38	23.26	30	20.93	27	3.28	1.262
2) Product B contains more fruit than product A	7.75	10	10.08	13	24.81	32	45.74	59	11.63	15	3.43	1.074
3) Both the products contains the same amount of fruit	2.33	3	6.98	9	30.23	39	21.71	28	38.76	50	3.88	1.083

Q18A&B: CLINIQUE CASE

Tab. 5.3: Expected medical effects

Expectation	%	N
1 (extremely unlikely)	3.31%	4
2	6.61%	8
3	7.44%	9
4	18.18%	22
5	26.45%	32
6	28.93%	35
7 (extremely probable)	9.09%	11
Mean	4.81	
Std. Deviation	1.496	

Tab. 5.4: Likelihood regarding the location of the product

Answer	%	Count
Pharmacy;	38.76%	50
Supermarket;	44.96%	58
Convenience Store;	12.40%	16
Other	3.88%	5

Q19A&B: TEEKANNE CASE

Tab. 5.5: Evaluation on the presence of Fruit

Assessment	1 (extremely unlikely)		2		3		4		5		6		7 (very probable)		Mean
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	
Product A contains fruit:	3.31	4	5.79	7	11.57	14	14.88	18	27.27	33	28.10	34	9.09	11	4.77
Product B contains fruit:	4.13	5	1.65	2	3.31	4	13.22	16	22.31	27	28.10	34	27.27	33	5.41

Tab. 5.6: Comparative Evaluation on the presence of Fruit

Assessment	1 (very unlikely)		2		3		4		5		6		7 (extremely probable)		Mean
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	
Product A contains more fruit than product B	8.53	11	9.30	12	12.40	16	20.93	27	19.38	25	10.85	14	18.60	24	4.13
Product B contains more fruit than product A	6.98	9	3.10	4	9.30	12	15.50	20	24.03	31	30.23	39	10.85	14	4.83
Both product contains the same amount of fruit	6.20	8	5.43	7	9.30	12	17.05	22	19.38	25	24.03	31	18.60	24	4.62
Product A does not contain fruit	6.20	8	6.20	8	6.98	9	12.40	16	21.71	28	30.23	39	16.28	21	4.81

Product B does not contain fruit	10.08	13	6.20	8	6.98	9	16.28	21	17.05	22	21.71	28	21.71	28	4.60
None of the two products presented contain fruit	14.73	19	6.98	9	4.65	6	17.05	22	17.05	22	24.03	31	15.50	20	4.66

Q20A&B: BERNAISE SAUCE CASE

Tab. 5.7: Evaluation on the presence of Eggs (description and ingredients label provided)

Answer	%	N
1 (extremely unlikely)	0.83	1
2	3.31	4
3	4.96	6
4	14.88	18
5	20.66	25
6	34.71	42
7 (extremely probable)	20.66	25
Mean	5.00	

Tab. 5.8: Evaluation on the ingredients of the product (no ingredients label provided)

Ingredient	Yes		No	
	%	N	%	N
Acids	72.09	93	27.91	36
Spices	72.09	93	27.91	36
Natural Flavours	86.05	111	13.95	18
Salt	74.42	96	25.58	33
Corn/wheat	72.87	94	27.13	35
Eggs	75.97	98	24.03	31
Oil	75.97	98	24.03	31
Conservants	67.44	87	32.56	42
Additives	68.99	89	31.01	40
Colorants	61.24	79	38.76	50

Q21A&B: GUT SPRINGENHEIDE CASE

Tab. 5.9: Evaluation on the ingredients in the chicken feed (no ingredients label provided)

Ingredient	Yes		No	
	%	N	%	N
Cereal grains (e.g. wheat, barley and sorghum)	90.00	225	10.00	25
Oilseed meals (e.g. soya bean or canola meal)	62.40	156	37.60	94
Chemical components	53.20	133	46.80	117
Animal protein (e.g. meat & bone meal)	58.80	147	41.20	103
Conservants	64.81	162	35.79	88

Q22A&B: PRODUCT PROVENIENCE

Tab. 5.10: Country of Origin expected label (non-self governing territory case)

	Wakanda							Narnia						
Assessment	%			N				%			N			
Product should be labeled as “produced in”:	62.80			76				37.20			45			
	1 (Absolutely Irrelevant)	2	3	4	5	6	7 (Extremely relevant)	1 (Absolutely Irrelevant)	2	3	4	5	6	7 (extremely relevant)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Relevance of the Country of Origin in buying the product	7 (9.21)	5 (6.57)	9 (11.84)	9 (11.84)	14 (18.42)	22 (28.94)	10 (13.15)	4 (8.88)	4 (8.88)	7 (15.55)	5 (11.11)	10 (22.20)	8 (17.8)	7 (15.55)
Overall mean: 4.56														

Tab. 5.11: Country of Origin expected label (Occupied territory case)

	Wakanda							Narnia						
Assessment	%			N				%			N			
Product should be labeled as “produced in”:	58.91			76				41.08			53			
	1 (Absolutely Irrelevant)	2	3	4	5	6	7 (Extremely relevant)	1 (Absolutely Irrelevant)	2	3	4	5	6	7 (extremely relevant)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Relevance of the Country of Origin in buying the product	7 (9.21)	6 (7.89)	8 (10.52)	13 (17.10)	17 (22.36)	15 (19.73)	10 (13.15)	4 (7.54)	9 (16.98)	11 (20.75)	7 (13.20)	10 (18.86)	7 (13.20)	5 (9.43)
Overall mean: 4.26														

Q23A&B: LIFTING CASE**Tab. 5.12: Likelihood regarding the location of the product (with “Lifting” Label)**

Location	%	N
Pharmacy	10.74%	13
Market	31.40%	38
Cosmetic Shop	57.85%	70

Tab. 5.13: Likelihood regarding the location of the product (without “Lifting” Label)

Location	%	N
Pharmacy	34.11%	44
Market	31.01%	40
Cosmetic Shop	34.88%	45

Tab. 5.14: Classification of the product

Classification	%	N
Medical product	35.66%	89
Cosmetic product	64.34%	161

Q24 A&B: NEPTUNE CASE

Tab. 5.15: Components evaluation (Product without “Low sodium” Label)

Component (Min. 0.00 – Max. 100.00)	Mean	Std Deviation	Variance
Fat	38.45	33.45	1118.64
Sodium	41.95	33.16	1099.73
Carbohydrates	42.73	35.55	1264.15
Protein	42.92	34.96	1222.03
Calcium	44.82	33.67	1133.95
Magnesium	43.55	32.48	1054.63
Potassium	44.76	33.36	1112.58
Bicarbonite	43.16	33.71	1136.51
Chloride	41.40	33.56	1126.60
Others	50.29	34.58	1196.02

Tab. 5.16: Components evaluation (Product with “Low sodium” Label)

Healthier Product	%	N
Product A (No “Low Sodium” Label)	39.67%	99
Product B (“Low Sodium” Label)	52.00%	130
Identical (I don’t see relevant differences between the two products)	8.33%	21

Tab. 5.17: Comparative perception of healthiness

Components (Min 0.00 – Max 100.00)	Mean	Std Deviation	Variance
Fat	43.74	35.37	1250.81
Sodium	47.92	32.02	1025.06
Carbohydrates	45.76	35.02	1226.45
Protein	47.79	34.92	1219.45
Calcium	49.53	35.27	1244.12
Magnesium	47.13	33.53	1124.07
Potassium	50.61	34.98	1223.26
Bicarbonite	45.06	35.01	1225.53
Chloride	47.28	34.79	1210.42
Others	52.96	34.21	1170.41