



ELISA SCHENFEL DE ARRUDA

**PERSONALISED PRICES: STRIVING FOR TRANSPARENCY FROM A
DATA PROTECTION AND EUROPEAN CONSUMER LAW
PERSPECTIVE**

Dissertation to obtain a Master's Degree in
Law, in the specialty of International and
European Law

Supervisor:
Prof. Dr. Jorge Morais Carvalho, Professor of the NOVA School of Law

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ANTI-PLAGIARISM STATEMENT

In accordance with Article 20.º-A of NOVA School of Law's Regulation of the 2nd Cycle of Studies leading to a Master of Law Degree, I, Elisa Arruda, hereby declare on my honour that the present dissertation is original and that all my citations are correctly identified. I am aware that unidentified use of others' work and plagiarism constitute a serious ethical and disciplinary breach.

Lisbon, November 2020

Elisa Schenfel De Arruda

Elisa Schenfel de Arruda

ACKNOWLEDGEMENTS

Even though I am aware that words could not possibly convey the gratitude that fills me for all of those that accompanied me during this academic journey, this brief note serves the purpose of attempting to express my feeling of thankfulness.

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Also, in this context, I would like to demonstrate my immense appreciation for the help and partnership offered to me by Professor Dr. Fabrizio Esposito, without whom the empirical survey project related to this dissertation's topic would not have come into being.

My gratefulness towards my parents Cássia and Marcos is simply boundless, as they are the very first people that nourished me and unwaveringly believed in my potential, all throughout my life and particularly during the years spent in pursuit of my education. It has not been easy living so far away physically for so long, but they have walked each step of the way with me.

I am and always will be thankful to my husband Daniel for sticking by me on a daily basis and showing me love's very real and practical aspect, through fighting each battle by my side and always trying to motivate me and cheer me up. Particularly during such an exacting year as 2020 has proven to be, I would not have been able to overcome the obstacles if it was not for him.

As a full-time working professional carrying the weight of adult life while concurrently in pursuit of furthering my education, I can assuredly say that my friends', classmates' and colleagues' support has been essential during this journey. While I am afraid of leaving someone out due to a memory lapse, I cannot fail to mention Carina, Joana, Raquel, André, Tânia, Helena, Jorge, Jéssica, and so many others.

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ABSTRACT

Before the Digital Era, the personalisation of a price to match a consumer's willingness to pay was thought to be unattainable. However, this commercial practice can now be achieved through the processing of personal data and profiling of consumer behaviour utilising techniques related to Big Data and Big Analytics. This merited the attention of European Law, as shown by the new pre-contractual information requirement brought by the Modernisation Directive, currently awaiting transposition. Its wording is concise, and its context is expanded to some extent by the Recital 45, which points to the reason behind the need to inform consumers: to enable them to take into account the potential risks in their purchasing decision brought by price personalisation. This work starts by situating the matter conceptually, along with its economic background and the public's general perception about it. The perspective presumes no prior distinction between personalised prices that are either higher or lower than the uniform fee, with a few exceptions highlighted when relevant. This choice is justified by the notion that in either situation, a business employing this pricing strategy is doing so with the goal of maximising profits. In the legal analysis, it is argued that personal data processing (such as behaviour profiling) is an essential condition for estimating the consumer's reservation price. Thus, the General Data Protection Regulation is applicable. Additionally, the data subject's consent presents itself as the sole viable lawful grounds for this specific purpose. One caveat of prices derived from profiling is the risk of hidden biases turning out to reveal it was, in fact, based on a protected characteristic. The issue of transparency is central to the investigation under a consumer law perspective, as this legal framework strives to enable individuals with the knowledge they need to make informed decisions, while not hindering businesses' autonomy. Another provision from the Modernisation Directive regarding prices' transparency towards consumers is examined alongside the central topic – namely, price reduction rules, and their potential interplay. Lastly, the conclusive remarks offered point out that the new information requirement is a step in the right direction. However, it is necessary to broaden its scope to truly empower consumers to face the risks personalised prices could bring to their purchasing decisions.

Keywords: personalised prices; behavioural profiling; consumer law; data protection law; Modernisation Directive; Big Data; Big Analytics; information requirements; transparency

RESUMO

Antes da Era Digital, a personalização de um preço para corresponder à disposição de pagar do consumidor era considerada inatingível. No entanto, essa prática comercial agora pode ser alcançada através do processamento de dados pessoais e da elaboração do perfil comportamental do consumidor, utilizando técnicas relacionadas com Big Data e Big Analytics. Isto mereceu a atenção do Direito Europeu, como o demonstra o novo requisito de informação pré-contratual trazido pela Diretiva de Modernização, atualmente a aguardar transposição. A sua redação é concisa e o seu contexto é alargado em certa medida pelo Considerando 45, que aponta para o motivo da necessidade de informar os consumidores: de modo a poderem ter em conta os potenciais riscos nas suas decisões de compra trazidos pela personalização dos preços. Este trabalho começa por situar o assunto conceitualmente, juntamente com seu fundo económico e a perceção geral do público acerca disto. A perspetiva adotada não pressupõe distinção prévia entre preços personalizados maiores ou menores do que o uniforme, com algumas exceções destacadas quando relevantes. Essa escolha é justificada pela noção de que, em qualquer situação, uma empresa que utiliza essa estratégia de preços fá-lo com o objetivo de maximizar os lucros. Na análise jurídica, argumenta-se que o processamento de dados pessoais (como a elaboração de perfis comportamentais) é uma condição essencial para estimar o preço de reserva do consumidor. Assim, o Regulamento Geral de Proteção de Dados é aplicável. Além disso, o consentimento do titular dos dados apresenta-se como o único fundamento legal viável para esse propósito específico. Uma ressalva sobre preços derivados de perfis comportamentais é o risco de vieses ocultos revelarem que, de fato, estes basearam-se em características protegidas. A questão da transparência é central para a investigação sob a perspetiva do direito do consumo, uma vez que este quadro jurídico se esforça por capacitar os indivíduos com o conhecimento que precisam para tomar decisões informadas, sem obstruir a autonomia das empresas. Outra disposição da Diretiva de Modernização relativa à transparência dos preços para os consumidores é examinada paralelamente ao tópico central – nomeadamente, as regras de redução de preços e a sua potencial interação. Por fim, as considerações conclusivas oferecidas apontam que o novo requisito de informação é um passo na direção certa. No entanto, é necessário ampliar o seu escopo para realmente habilitar os consumidores para enfrentarem os riscos que os preços personalizados podem trazer para suas decisões de compra.

Palavras-chave: preços personalizados; perfis comportamentais; direito do consumidor; proteção de dados; Diretiva de Modernização; Big Data; Big Analytics; requisitos de informação; transparência

QUOTING AND OTHER CONVENTIONS

- I.** In the context of this dissertation, quoting other academic works will be done as follows: author or institution, title, year, and page. The complete reference to the publication, edition, and other identifying information is available in the References section.
- II.** For fluidity reasons, all legislative sources are briefly identified in the text or footnotes, and the corresponding complete reference can be found in the References section.
- III.** Similarly, jurisprudence is the Jurisprudence mentioned here refers to the deciding body, the case number, and the European Case Law Identifier, with further identifying information in the References section.
- IV.** The body of this dissertation has 183.085 characters, including spaces and footnotes.
- V.** Extensive quotes (more than 60 words) are highlighted from the body of the text for emphasis.

LIST OF ABBREVIATIONS AND ACRONYMS

A29WP	Article 29 Working Party
ACM	The Netherlands Authority for Consumers & Markets
AEPD	Spanish Data Protection Agency
CEO	Chief Executive Officer
CJEU	Court of Justice of the European Union
COVID-19	Coronavirus disease 2019 (SARS-CoV-2)
CRD	Consumer Rights Directive
DL	Decree-Law
DVD	Digital Versatile Disc
EC	European Commission
ECLI	European Case Law Identifier
EEC	European Economic Community
EDPB	European Data Protection Board
EDPS	European Data Protection Supervisor
EU	European Union
GDPR	General Data Protection Regulation
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
OECD	Organisation for Economic Co-operation and Development
OFT	Office of Fair Trading
PCAST	President's Council of Advisors on Science and Technology
PID	Price indication Directive
TFEU	Treaty on the Functioning of the European Union
UCTD	Unfair Contract Terms Directive
UCPD	Unfair Commercial Practices Directive

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1. INTRODUCTION

Perfect price discrimination, or the personalisation of a price to a certain individual, was thought to be unattainable in the past, considering the number of resources and effort that would need to be devoted to such a task, which would result in losses for the cost-effectiveness relationship. However, with the rise of the Digital Era and, more importantly, of Big Data and machine learning, it is increasingly cheaper and easier to collect and process data on individual consumers, enabling companies the opportunity to extract the knowledge needed to charge each individual consumer practically the equivalent to his or her willingness to pay for a specific product or service.

As indicated by the emphasis placed on the protection of personal data and the concurrent strengthening of confidence in the digital economy, in the context of the Communication from the European Commission on Completing a trusted Digital Single Market from 2018¹, the possibility of personalising prices to individuals is of rising interest to European Law in general, as it bears relevance both from personal data and consumer protection perspectives.

Also in this sense, as a result of a fitness check carried out by the European Commission (hereafter referred to as “EC”)², Directive 2019/2161 was adopted and currently awaits transposition to the Member States’ legal regimes until November 2021. Such Directive brings a new, concise pre-contractual information duty to be added to the Consumer Rights Directive³, compelling the trader to provide the consumer with a definite indication in case the price is personalised on the basis of automated decision-making.

Furthermore, Recital 45 of the Modernisation Directive dilates the context within which the new mandated disclosure is inserted, stating that a consumer may be offered a price devised according to their behaviour’s profiling, based on the trader’s ability to assess

¹ EC – *Communication from the Commission: Completing a trusted Digital Single Market for all – The European Commission’s contribution to the Informal EU Leaders’ meeting on data protection and the Digital Single Market*, 2018, p. 3

² Recital 2, Directive 2161/2019 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules (hereafter, “Modernisation Directive”)

³ Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council (hereafter, “Consumer Rights Directive” or simply “CRD”)

their purchasing power from processing their data. For this reason, it is necessary to provide the individual with clear information about the issue so that “they can take into account the potential risks in their purchasing decision”, according to the Recital’s wording.

Bearing in mind the new provision that will come into force in the near future regarding the matter at hand, along with its elucidating Recital, combined with the potential for the controversy surrounding it, this work undertakes to first look at the concept of personalised pricing, its modern-day enabling factors (which we argue lie on consumers’ data processing) and the technological prerequisites that facilitate its implementation. Next, we turn to a concise evaluation of this pricing strategy’s pros and cons from an economic point of view; then, we consider some empirical observations regarding the practice in the actual market⁴, to finally consider the public’s potentially negative opinion towards it. In particular, the preliminary results of a survey carried out with lusophone consumers are portrayed herein.

The subsequent Chapter will lay the foundations for the upcoming considerations, which will, in turn, delve into the matter of price personalisation from a legal point of view, within a European perspective, taking into consideration data protection and consumer law, with a brief note to anti-discrimination principles. The position herein subscribed is that these legal branches are not parallel but rather intertwined and complementary⁵.

The third Chapter is devoted to the enabling factor behind the prospect of personalising prices, which we defend is the collection and processing of consumers’ personal data in order to extract the insights needed to estimate their reservation price reliably. The analysis is carried out under the light of European Data Protection rules, especially the General Data Protection Regulation (hereinafter the GDPR⁶). The matter of under which lawful grounds may data processing take place for the purpose of employing this pricing strategy, or, in other words, under which fundament may businesses personalise their offers based on the profiling of consumer behaviour is scrutinized.

The fourth chapter dedicates itself to the task of situating price personalisation within the context of European consumer law, notably where it intersects with subjects such as

⁴ For the purposes of the present work, the market under analysis consists primarily of the Digital Single Market within the European Union’s context

⁵ HELBERGER, N. [et.al.] – *The perfect match? A closer look at the relationship between EU Consumer Law and Data Protection Law*, 2017, p. 1459

⁶ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

online contracts, unfair commercial practices, and recent developments in the area, such as the Modernisation Directive indicated above, which arguably brought its first explicit mention to the field. The Chapter starts with considerations about some of the guiding notions from this legal branch that bear a significance to the matter at hand, then moves on towards the possible interplay with another innovation brought by the new Directive regarding pricing – namely, the rules about price reductions.

Lastly, the fifth Chapter serves the purpose of offering conclusive remarks to the present work, bearing in mind the fleeting nature of the Digital reality we currently live in, in which the Legal discipline must strive for fluidity in order to constantly adapt and re-adapt itself to new technologies and their social employment. In particular, we return to the issue of the “potential risks in the (consumer’s) purchasing decision” that price personalisation represents, according to Recital 45 of the Modernisation Directive.

Namely, regarding the issue of price personalisation based on automated decision-making and profiling of consumer behaviour, we conclude by arguing that a goal worthy of pursuing is ensuring the transparency of the practice by efficiently bridging the knowledge gap between the individual (consumer) and businesses (traders) in order to empower the individual to effectively decide on their own, in relation to what their data is used for and also as to their purchasing choices, particularly where profiting at the expense of personal data occurs.

2. SETTING THE SCENE – CONCEPT OF PERSONALISED PRICING AND TECHNOLOGICAL BACKGROUND

2.1. What is personalised pricing? Price discrimination and price personalisation

While developing a pricing strategy, a trader typically considers several different factors, such as production and distribution costs, stock levels, competition, and a general assessment of how much the potential consumers are willing to pay in exchange for a particular product or service. When the focus lies in estimating a specific consumer segment's willingness to pay, bearing little or no relation to the costs, price discrimination occurs. This pricing strategy is different from dynamic pricing, which, in turn, focuses on adjusting the price based on the shifting market conditions related to supply and demand⁷.

Price personalisation, a particular manifestation of the broader phenomenon of price discrimination, is by no means a fresh concept. One of the first times it was described in the literature was in Cecil Pigou's work "The Economics of Welfare", first published in 1920. In it, the author discerns three distinct instances or degrees in which price discrimination could be practised:

*A first degree would involve the charge of a different price against all the different units of commodity, in such wise that the price exacted for each was equal to the demand price for it, and no consumers' surplus was left to the buyers. A second degree would obtain if a monopolist were able to make n separate prices, in such wise that all units with a demand price greater than x were sold at a price x , all with a demand price less than x and greater than y at a price y , and so on. A third degree would obtain if the monopolist were able to distinguish among his customers in different groups, separated from one another more or less by some practicable mark, and could charge a separate monopoly price to the members of each group. This degree, it will be noticed, differs fundamentally from either of the preceding degrees, in that it may involve the refusal to satisfy, in one market, demands represented by demand prices in excess of some of those which, in another market, are satisfied.*⁸

The notion of price discrimination and personalisation was built upon and developed over the decades. The Organisation for Economic Co-operation and Development

⁷ OFT, *Personalised Pricing – Increasing Transparency to Improve Trust*, 2013, p. 9. Moreover, Recital 45 of the Modernisation Directive specifically mentions that the new information requirement to be added to the CRD regarding personalised prices "should not apply to techniques such as 'dynamic' or 'real-time' pricing that involve changing the price in a highly flexible and quick manner in response to market demands when those techniques do not involve personalisation based on automated decision-making"

⁸ PIGOU, A. C. – *The economics of welfare*, 1932, p. 279

(hereinafter, the OECD) held a joint meeting between its Competition Committee and Committee on Consumer Policy in 2018, context within which several stakeholders prepared and presented their notes regarding the topic of personalised pricing. A summary definition of the three types or degrees originally described by Pigou was given in this context. First-degree or perfect price discrimination consists of a theoretical scenario in which every consumer is charged the equivalent of their willingness to pay. Second-degree or versioning occurs where the trader offers different versions of a product for different prices, allowing the consumer to choose which variety best suits their needs. Lastly, third-degree or group-pricing takes place when the seller takes their pricing decisions concerning different groups of consumers, taking into account the known collective characteristics⁹.

It is important to note that personalised pricing – herein understood either as first- or third-degree price discrimination, where the price varies as a function of the individual consumer’s or group of consumers’ estimated willingness to pay, may either constitute a personalised discount or shape up to be, in fact, a price increase towards a particular individual.

In the present work, *a priori*, there will be no preeminent distinction between situations where the trader estimates the consumer might only be persuaded to conclude a purchase at a reduced price (thus being given a personalised discount) or, alternatively, the prediction pointing to a more price-insensitive customer, prone to paying a higher, individualised fee. While it is evident there may be remarkable and strikingly different consequences stemming from the trader’s selection between these possibilities, and such considerations will not be the central focus here. This choice is made with the justification that in either situation, a trader employing personalised pricing is doing so intending to maximise their own profits, through offering consumers the precise price estimated to prod them into finalising the operation, thus arguably constituting two sides of one coin.

Subsequently, a few examples will lay out what forms these pricing strategies may take. A personalised discount could take the form of unique coupons granted to customers enrolled in a supermarket chain’s loyalty program, for instance. By means of sifting through the purchase history of clients who joined the program, the supermarket chain is able to

⁹ BOURREAU, M.; DE STREEL; A. – *The regulation of personalised pricing in the digital era*, 2018, p. 2

extract actionable knowledge¹⁰ about which consumers (or group of consumers) would only be led to buy a particular item if offered a lowered price.

Another example features a business (a language school) selling a self-paced online language course. In this scenario, it is known that the production costs are invariable, as the course material only needs to be developed once, to be then sold to all interested consumers. Similarly, the distribution costs are fixed – the content can be accessed via the Internet, so there is no significant logistical difference between serving customers in different parts of the world. Now the seller has the choice to conduct a general assessment to estimate how much their target audience is willing to pay in exchange for this course, or they can use their audience’s personal data to refine the pricing strategy.

The language school’s access to the consumers’ data can have many sources – for example, it may consist of a billing address; browser and device used to access the seller’s website; social media information (“sharing” the progress in the course, for example). Alternatively, the seller can purchase data regarding their intended audience from data brokers. Subsequently, all this information will be processed in order to extract conclusions regarding the consumers’ willingness to pay for this online course.

In case the language school opts to individually estimate each consumer’s reservation price for the online course by granularly evaluating their personal characteristics (for example, age, location, professional aspirations), then we are faced with first-degree price discrimination. On the other hand, if the seller makes available two versions of the course (one leading to a certificate and the other not) and the students can choose in which one to enrol, the pricing strategy fits into the second-degree definition. Lastly, if the school divides their target consumers into different groups according to their peculiarities to assess these groups’ reservation price, then we have third-degree price discrimination. For example, single moms looking to increase their employability by learning a second language may be willing to pay more.

Turning back to Pigou’s work, as a disclaimer to the very concepts he had described, he stated that “these three degrees of discriminating power, though all theoretically possible, are not, from a practical point of view, of equal importance. On the contrary, in real life, the

¹⁰ The idea that the data collected in the context of customer loyalty programs are mainly used for market research and advertising purposes using profiling techniques was developed by KAMP, M.; KÖRFFER, B.; MEINTS, M. *Profiling of Customers and Consumers-Customer Loyalty Programmes and Scoring Practices*. In: *Profiling the European Citizen*, 2008, p. 208

third degree only is found”¹¹. This impracticability would be dictated by the scale of effort necessary to ascertain each consumer’s demand price, which could be conceivably achieved using “separate bargaining with every separate customer”. Nonetheless, through the employment of versioning, second-degree price discrimination is not only viable but also relatively easy, as illustrated by the online language course example.

In a return to scale context, the endeavour necessary to implement first- or third-degree price discrimination would be far too costly, thus not justifying the struggle to price discriminate. In its report from 2013, the late Office of Fair Trading (hereafter, the “OFT”) noted that “historically, a business’s ability to collect all the information necessary to help predict how much a consumer would be willing to pay for a product (a good or a service) has been too costly for businesses to implement”¹².

Nonetheless, one century has gone by, and the Digital Revolution has disrupted the reality in which we live. The amount of data routinely generated by individuals online is immense, whether it is information observed, volunteered, inferred, or collected. The market for such data is also a growing part of the global economy¹³. What was not feasible in the past – namely, ascertaining the amount each consumer is willing to pay for a particular product or service – can now be achieved relatively easily, employing technologies related to big data, machine learning, behavioural predictions, and consumer profiling.

In the examples of the unique supermarket coupons and the language school willing to charge different prices from its consumers despite the production and distribution costs of the online course being invariable, what enabled the price discrimination strategies were the insights derived from processing the consumers’ data. In this context, the next section is dedicated to broadening the understanding of the technological aspects that facilitate price discrimination and personalisation, before the issue is considered from a legal perspective further on; namely, under data protection and consumer protection rules.

¹¹ PIGOU, A. C. – cit. 8, p. 279

¹² OFT – cit. 7, p. 7

¹³ CARRIÈRE-SWALLOW, Y. & HAKSAR, V. – *The Economics and Implications of Data - An Integrated Perspective*, 2019, p. 1. The authors highlight: “Data has taken on a critical role with the rise of the digital economy. In the past decade, companies with data at the core of their business models have come to dominate the rankings of the world’s most valuable corporations”

2.2. Technological prerequisites of personalised pricing in the Digital Era

The current epitome, “data is the new oil”¹⁴, regardless of its debatable accuracy, is still representative of the paradigm shift that took place in the last decade, signalling the increasing value attributed to the collection and processing of data. This change is significant in part due to the rise of artificial intelligence techniques.

The impracticability and difficulties first foreseen by Pigou, related to the sheer volume of work that would be necessary to implement price personalisation, seem to have met their match in the rise of artificial intelligence and machine learning, fuelled by Big Data and its counterpart, Big Analytics.

As computational processing tools exponentially develop and the costs associated with them decrease, the previously unattainable level of insight necessary to personalise prices for the individual consumer or specific group of consumers becomes an accessible possibility. This is but one of the vast possible myriads of socio-technological practices that artificial intelligence enables and is the subject of analysis here. The focal point is not merely the technology, but what different social players choose to use it for and what interests lay at stake, in consonance with what Jabłonowska and others¹⁵ asserted.

Even if the application of technology is the true centre of the problematic here, in order to better comprehend the phenomenon at hand, much broader than the legal perspective in and of itself, it is necessary to broaden the understanding of the technological concepts and terminology associated with it, a task that the following lines are set to accomplish.

2.2.1. Big Data

According to Ezrachi and Stucke, Big Data has various broad and inclusive definitions¹⁶. These authors refer to a report from the United States’ President’s Council of

¹⁴ The phrase is credited to Mathematician Clive Humby, who supposedly coined it back in 2006. Humby went on to elaborate that “*data is valuable, but if unrefined it cannot really be used. (Oil) has to be changed into gas, plastic, chemicals, etc to create a valuable entity that drives profitable activity; so, data must be broken down and analysed for it to have value*”. The Economist published a piece about this subject in 2017 (“The world’s most valuable resource is no longer oil, but data”), later revisited by Forbes in 2019 (“Here’s Why Data Is Not The New Oil”)

¹⁵ JABŁONOWSKA, A. [et.al.] – *Consumer Law and Artificial Intelligence: Challenges to the EU Consumer Law and Policy Stemming from the Business’ Use of Artificial Intelligence*, 2018, p. 12

¹⁶ EZRACHI, A., & STUCKE, M. E. – *Virtual Competition*, 2016, p. 15

Advisors on Science and Technology from 2014¹⁷, within which the term's meaning varies according to different perspectives that deal with this reality.

For example, this document highlights that in the field of computer science, a more technical description is given: “a term describing the storage and analysis of large and/or complex data sets using a series of techniques including, but not limited to, NoSQL, MapReduce, and machine learning”. On the other hand, from a business point of view, it is understood as: “high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making”. Finally, in a privacy context, Big Data typically means data about one individual or a group of them, or that might be analysed to make inferences about individuals.

Additionally, Big Data is commonly characterised by four V's: volume, meaning the sheer size of the data sets in question, that demand exceptional processing capabilities; velocity, referring to the speed with which new data is generated and used; variety, signalling that it comprises both structured and unstructured information and, finally, value, which translates the trustworthiness or quality of the data under analysis¹⁸.

From a European perspective, Big Data was described as “gigantic digital datasets held by corporations, governments and other large organisations, which are then extensively analysed (hence the name: analytics) using computer algorithms”¹⁹ by the late Article 29 Working Party (hereinafter A29WP²⁰). At the time, it went on to say that “Big data can be used to identify more general trends and correlations but it can also be processed in order to directly affect individuals”, which we argue is the case with personalised pricing, as the particular price charged for a product or service directly affects the individual consumer.

Of particular relevance for the issue of price personalisation is the collection and processing of personal data, a subcategory of Big Data that is subject to special legal

¹⁷ PCAST – *Report to the President: Big Data and Privacy: A Technological Perspective*, 2014, p. 2

¹⁸ EZRACHI, A., & STUCKE, M. E. – cit. 16, p. 19

¹⁹ A29WP – *Opinion 03/2013 on purpose limitation*, 2013, p. 35

²⁰ The Article 29 Working Party (A29WP) was the independent European working party that dealt with issues relating to the protection of privacy and personal data under Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data. Although it has been replaced by the European Data Protection Board (EDPB) since May 2018 (entry into application of the GDPR), many of its works retain relevance and have thus been endorsed by its successor, as a number of the core elements from the Directive have been maintained within the GDPR

treatment. What exactly can be considered as personal data? The GDPR defines it in broad terms in its Article 4(1) as “any information relating to an identified or identifiable natural person (‘data subject’)”. In practical terms, this can relate to “tangible” things, such as past online purchases and social media posts and interactions, but also to technological identifiers and trackers, such as an IP address²¹ or browser cookies²², for example.

Still under Directive 95/46/EC, the A29WP had issued an opinion in 2007 about the concept of personal data (which remained mostly the same under the GDPR), indicating it consists of four elements: (i) any information; (ii) relating to; (iii) an identified or identifiable; (iv) natural person²³.

More recently, new and intricate implications have been added to the issue of personal data within consumer relationships, especially with the advent of Directive (EU) 2019/770²⁴, which strengthens the notion that data can be, in fact, a contractual counter-performance. This legal text brings intriguing innovations: its application scope includes contracts under which the consumer either pays a monetary price or provides personal data in exchange for the supply of digital content. Additionally, even its concept of ‘price’ is peculiar, encompassing both money or a digital representation of value²⁵.

It is undeniable that personal data (which conceivably could take the form of “a digital representation of value”, when exchanged for the relevant service or content, as stated in the Digital Content Sales Directive) has an economic value – now, not only for companies that see it as Big Data that may lead to actionable knowledge, but to data subjects as well, who can benefit from different layers of protection, particularly from consumer contractual rules and data protection rules.

²¹ According to AVAST, “an IP address is a numerical representation of where a device is connected to the internet. It’s how you identify where something is and, to some degree, what that thing is”

²² According to NORTON, “a computer “cookie” is more formally known as an HTTP cookie, a web cookie, an Internet cookie, or a browser cookie. The name is a shorter version of “magic cookie,” which is a term for a packet of data that a computer receives, then sends back without changing or altering it. No matter what it’s called, a computer cookie consists of information. When you visit a website, the website sends the cookie to your computer. Your computer stores it in a file located inside your web browser. The purpose of the cookie is to help the website keep track of your visits and activity”

²³ A29WP, *Opinion 4/2007 on the concept of personal data No. 01248/07/EN*, 2007, p. 6

²⁴ Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services (hereafter, “Digital Content Sales Directive”). According to its Article 24(1), “[b]y 1 July 2021 Member States shall adopt and publish the measures necessary to comply with this Directive”

²⁵ Articles 3(1) and 2(7) of the Digital Content Sales Directive

The fact that personal data may be provided by the consumer in exchange for the supply of digital content or digital services has implications to the businesses wishing to process said data to personalise its prices (admitting a business model that would encompass multiple transactions between the same parties, for instance). As developed in Chapter 3 of the present work, it is argued that the only available hypothesis allowing for the processing of personal data for the purposes of ascertaining a consumer's willingness to pay is the individual's freely given consent. Even if one postpones the analysis of whether consent can be considered as freely given in circumstances where the provision of personal data constitutes in and of itself a counter-performance to a later Chapter, the answer inclines towards the negative.

Putting the legal issues surrounding the economic value and the employment of Big Data aside for the moment, and returning to the matter which is the at the core of the present work, the next point will focus on the technological aspects of Big Data's refinement – circling back to the analogy with oil; the emphasis now lies on the techniques utilised to extract actionable insights from the source material, especially those related to the estimation of customer's reservation price.

2.2.2. Machine learning and Big Analytics

In order to obtain actionable information or valuable knowledge from Big Data, it is first necessary to process it. Considering the volume of the data sets, it would be unfeasible to subject it to human scrutiny. Thus, this is where artificial intelligence comes into the picture, and more specifically, machine learning techniques.

Within the Data Analytics industry, Analytics Software & Solutions defines machine learning as “a method of data analysis that automates analytical model building. It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns, and make decisions with minimal human intervention”²⁶. From another point of view:

*Instead of telling a machine how to do something, we provide it with a huge amount of input and output data (...) and let it “figure out” how to do this by itself. What the computer gets from humans is the learning algorithm (how to learn something) and data, but it “programs itself” when it comes to finding a recipe for solving a given problem.*²⁷

²⁶ Definition retrieved from the Analytics Software & Solutions Institute website.

²⁷ JABLONOWSKA, A. [et.al.] – cit. 15, p. 5

Machine learning can be achieved through the employ of algorithms, many of which are proprietary. An algorithm can be defined as “a step by step method of solving a problem”²⁸, and is used to manipulate data in various ways. Ezrachi and Stucke note that “recent years have witnessed ground-breaking research and progress in the design and development of self-learning algorithms to assist in pricing decisions, planning, trade, and logistics. The field has attracted significant investment in deep learning by leading market players”²⁹.

The European Data Protection Supervisor (hereinafter, the EDPS) highlights that “deep learning computers teach themselves tasks by crunching large data sets using (among other things) neural networks that appear to emulate the brain”³⁰. Ezrachi and Stucke point out the essential nature of the relationship between Big Data and Big Analytics, concluding that the former would be less valuable if it could not be rapidly analysed and acted upon. However, the algorithm’s level of complexity is not the key, but rather, the size of the data set under scrutiny, as the belief is those simple algorithms with lots of data will eventually outperform sophisticated algorithms with little data.

One of the questions that remain is how to conciliate the growing demand for more data (one of the four V’s of Big Data, velocity) with the principle of data minimisation, embodied in Article 5(c) of the GDPR. A ramification of this question is precisely how to frame the collection and processing of consumers’ personal data for the purposes of price personalisation under one of the possible lawfulness grounds allowed by the GDPR, and it will be the subject of the following considerations herein included, among others. As briefly mentioned in the preceding topic, it is argued in Chapter 3 that consent is the only viable option for this specific purpose.

Algorithms also play a key role in implementing price discrimination practices, as besides being employed in the construction of the behavioural profiles, they also empower automated decision-making mechanisms designed to act upon the estimation of the consumer’s willingness to pay in a real-time manner not achievable by human intervention,

²⁸ Definition retrieved from the Techopedia – Technology Dictionary website

²⁹ EZRACHI, A., & STUCKE, M. E. – cit. 16, p. 32

³⁰ EDPS – *Opinion 4/2015 Towards a New Digital Ethics*, 2015, p. 9

in order to display the supposedly most attractive price for the “right” individual on cue, to maximise the chances of concluding a sale, thus justifying the name “pricing algorithms”³¹.

In sum, as Jabłowska and others have put, “what is actually happening now, under the label of ‘artificial intelligence’, is businesses using machine learning to make sense out of vast amounts of data (big data), to generate new knowledge, and act upon that knowledge in order to optimise certain processes, and undertake new tasks, previously impossible”³². That statement resonates exceptionally well in relation to price personalisation, as in the pre-digital context, one of its early scholars (Pigou) was sceptical about the possibility of actually employing this strategy.

Having first looked at the concept of price personalisation and then at the technological aspects brought by the Digital Era that counter the impracticability associated with “analogically” evaluating and bargaining with every separate consumer, the spotlight will now move on to the economic aspects that circumscribe this pricing strategy, before evaluating empirical findings and later moving on to the legal analysis.

2.3. A brief economic perspective and market conditions

In addition to the previously discussed technological enabling factors, the phenomenon of price discrimination and, more specifically, price personalisation, pre-supposes certain market conditions are present. In the Background Note by the OECD’s Secretariat on personalised pricing, the circumstances under which it is more likely to be observed are outlined. First, the relevant market mustn’t be subject to arbitrage, signifying that re-selling of an item from an individual with a low willingness to pay to another with a higher valuation is not possible or is considerably troublesome. In the mentioned document by that international organisation, this is exemplified by digital content that must be accessed using a personal account or by non-transferrable tickets.³³

³¹ SEELE, P.; DIERKSMEIER, C.; HOFSTETTER, R.; SCHULTZ, M. D. – *Mapping the Ethicality of Algorithmic Pricing: A Review of Dynamic and Personalized Pricing*, 2019, p. 6. The authors definition is the following: “Pricing algorithms process input data about markets and actors, accounting for numerous factors such as competitors’ prices, consumer demand, or personal behavior and characteristics (such as gender, age, educational background etc.) to determine the output price in relation to the highest (i.e., profit-maximizing prices) achievable revenue”

³² JABŁONOWSKA, A. [et.al.] – cit. 15, p. 5

³³ OECD – *Personalised Pricing in the Digital Era: Background Note by the Secretariat*, 2018, p. 12

Secondly, the trader wishing to engage in price personalisation will be more successful if it holds a certain element of market power. As indicated above, Pigou often refers to “the monopolist” in his work. However, it is sufficient that the relevant market is not perfectly competitive in favour of the trader: “personalised pricing may be particularly feasible in markets with some degree of economies of scale, economies of scope, network effects, entry costs or switching costs, enabling firms to exert some market power by differentiating prices above the marginal cost curve”³⁴.

Even though the focus of the present work lies in price personalisation, it is essential to note the existence of other closely-linked practices that are similarly data-driven and involve behavioural economics insights, such as the personalised ranking of offers and targeted online advertising, as highlighted in a market study sponsored by the EC³⁵, discussed below in the next topic. In particular, regarding the ranking of offers (personalised or otherwise), the Modernisation Directive significantly increments Directive 2005/29/EC³⁶ in terms of increasing transparency, determining that traders are responsible for informing consumers about “the main parameters determining the ranking of products presented to the consumer as a result of the search query and the relative importance of those parameters, as opposed to other parameters”³⁷.

Returning to the issue of price personalisation, aside from the market conditions most favourable to price personalisation and its related practices, Poort and Zuiderveen Borgesius argue that from an economic perspective, such pricing strategy actually has the potential to benefit both traders and consumers, by “[helping] the seller to regain its fixed costs without leaving many potential customers unserved”³⁸. Such potential gain in efficiency is also noted by the OECD, alongside associated risks:

On the one hand, personalised pricing has the potential to substantially improve allocative efficiency, by enabling companies to supply to low-end consumers

³⁴ OECD – cit. 33, p. 13

³⁵ IPSOS, LONDON ECONOMICS & DELOITTE – *Consumer market study on online market segmentation through personalised pricing/offers in the European Union*, Final Report (hereafter, the “European consumer market study”), 2018, p. 264

³⁶ Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council (hereafter “Unfair Commercial Practices Directive” or “UCPD”)

³⁷ Article 3(4)(b) of the Modernisation Directive

³⁸ POORT, J., & ZUIDERVEEN BORGESIOUS, F. J. – *Does everyone have a price? Understanding people’s attitude towards online and offline price discrimination*, 2019, p. 5

*who would otherwise be underserved. On the other hand, personalised pricing has an unclear effect on distribution outcomes – among firms and different types of consumers – and on dynamic efficiency, since such practices can both promote innovation and rent-seeking behaviour. In some circumstances, personalised pricing can also be perceived by consumers as an unfair practice, potentially dampening trust in digital markets.*³⁹

The key repercussions of the pricing strategy herein discussed upon consumer surplus were comprehensively explored by the OFT in its 2013 report regarding the economics surrounding it. Namely, these are the appropriation, output expansion, intensified competition and commitment effects. Depending upon the circumstances of the case, the outcome can be either positive or negative for consumers.

For instance, while it is possible that the trader may benefit from charging more from individuals with a higher willingness to pay (appropriation), it is equally conceivable that consumers who would not be inclined to disburse the uniform price may now be identified by the company and be offered a price lower than what is feasible to offer to the general public (output expansion).

Most notably, the OFT's report appears to point that, within a market that is not a monopoly, price discrimination may actually intensify competition among traders, to the consumers' advantage – incentivising the trader to maintain a dynamic approach to its offers to try and prevent consumers from switching to the competitor's more appealing ones (intensified competition and commitment)⁴⁰.

One thought experiment might provide a valuable illustration of the potential perks of charging different prices from particular customers. Returning to the online language course pricing example, re-imagining it to fit the scenario first designed by Odlyzko, it has the potential to demonstrate how price discrimination can be “economically and socially desirable”⁴¹. Assuming two individuals are looking to purchase the self-paced online language course, which in this case still needs to be produced at a fixed cost of 150€. The first potential customer is willing to pay up to 70€ for it, while the second would be happy to pay 100€ for the same material.

Suppose the language school is obliged to charge the same from both individuals. In that case, the course is at risk of not getting produced at all – any price up to 70€ is capable

³⁹ OECD – cit. 33, p. 5

⁴⁰ OFT – *The economics of online personalised pricing*, 2013, p. 25

⁴¹ ODLYZKO, A. – *Privacy, Economics, and Price Discrimination on the Internet*, 2004, p. 5

of persuading both people to enrol, but will not bring in enough to cover the production costs. If the school charges any price between 70€ and 100€, the first individual will not be convinced to sign up, and the course will not be profitable either. Lastly, if the price for enrolment is in excess of 100€, there won't be any students at all.

Concluding Odlyzko's thought experiment, in case the language school is first able to extract actionable insights from its potential customers' data and, from that, determine their willingness to pay, ultimately charging personalised prices to each, everyone will be better off: both will pay an amount close to their valuation of the course; the production costs will be covered, and there will be profit for the language school.

Despite a general resistance towards price personalisation (as discussed in the following topic), there seem to be economic benefits to consumers as a whole stemming from this pricing strategy that may even be, ultimately, in the individual's interest. For instance, it appears undeniable that a person would typically not oppose to being offered a personalised price that is lower than the uniform one; and even in cases where there's a surcharge, one might be convinced that it is for a good cause (e.g. charity donations).

Once again returning to the matter of the present work's boundaries, we highlight that its focus lies in the legal perspective (data and consumer protection rules) and that the issue concerning the distinction between personalised prices that are either above or below a hypothetical uniform price is not at the centre of the problematic, as opposed to their influence power. However, the examination of the key economic takeaways is crucial in order to measure the implications of certain regulatory and policy decisions more adequately. Subsequently, the analysis will now move to the public's understanding and perception regarding price personalisation.

2.4. Empirical Observations

A paradigmatic case illustrating the risk of potentially triggering consumer backlash took place in 2000, regarding the sales of DVDs on Amazon. At the time, it was discovered that the company sold certain DVDs to regular consumers at a higher price and that merely deleting the device's cookies would lead to lower prices being displayed. This incident led their CEO, Jeff Bezos, to issue a statement saying it was a mistake⁴².

⁴² The online magazine Computerworld published an article about the story in September 2000

The previously mentioned empirical European consumer market study from 2018 has found that there is a substantial level of concern about online personalisation and that a considerable proportion of consumers do not perceive any benefits from it⁴³. Moreover, less than half of the survey's respondents (44%) reported having some level of understanding about how price personalisation may work. However, in relation to the broader category of data-driven, behavioural practices, the same study also pointed out that “the findings from the consumer survey, behavioural experiment and stakeholder survey suggest that a (relative) majority of consumers see both benefits and disadvantages of online personalisation. This applies in particular to online targeted advertising and personalised ranking of offers; opinions about personalised pricing tilted more to the negative”⁴⁴.

The authors Poort and Zuiderveen Borgesius conducted two surveys in the Netherlands in regards to the people's attitudes towards different forms of price discrimination. The results were published in 2019 and were starker than those from the study mentioned in the previous paragraph, although covering a much smaller population sample. By comparison, the former had respondents from all the 28 European Union Member States at the time, while the latter only comprised a representative sample of the Dutch population.

One of the interesting finds of the study mentioned above is that the way a price is personalised matters for the purposes of consumer perception and acceptance: “After being told that online price discrimination is possible, a vast majority finds it unacceptable and unfair. If online price discrimination is presented as a personalised discount based on online behaviour, the acceptance is slightly better”⁴⁵. Even though the present work leans towards the notion that either by increasing the price in relation to the uniform one or through applying a reduction for a particular individual, the trader fundamentally does so with the aim of driving the consumer into completing the purchase (by means of echoing their willingness to pay), it is undeniable that the perception of a presumed advantage would be more pleasing in the eyes of the public.

In this sense, it is noteworthy that consumers react not only to the price personalisation practice itself, but the manner in which it is framed also plays a vital role in whether or not their perception will be negative. The authors van Boom, van der Rest, van den Bos and Dechesne carried out two “twin” studies, one among a sample of Dutch university students

⁴³ IPSOS, LONDON ECONOMICS & DELOITTE – cit. 35, p. 264

⁴⁴ IPSOS, LONDON ECONOMICS & DELOITTE – cit. 35, p. 265

⁴⁵ POORT, J., & ZUIDERVEEN BORGESIOUS, F. J. – cit. 38, p. 12

and another among participants in the United States of America, through the MTurk platform, with the aim of looking at how the way an individual is informed that price personalisation will take place impacts their decisions related to purchasing⁴⁶.

Overall, the researchers observed that “participants did not feel treated fairly when a booking site offered a pricing policy in which personal buying habits were used to calculate individualised prices”⁴⁷. However, after presenting different disclosure messages regarding pricing, varying the wording in order to reflect or not an alignment with the individual’s self-interest (for example, highlighting the fact that the consumer’s past shopping would be processed to potentially generate better deals to that person), the researchers also noted that “as the behavioural pricing information was more in line with self-interest, the intention to purchase increased”⁴⁸.

In addition to the analysis of what are the consumers’ understanding and opinions about the topic, there is a concern regarding the fact that so little price personalisation seems to be taking place. Maggiolino notes that “the early empirically collected data suggests that that perfect price discrimination based solely on buyers’ willingness to pay remains a phenomenon of very limited proportions”⁴⁹, citing the finds of a study conducted by the Executive Office of the President of the United States in 2015⁵⁰.

Lastly, as the year of 2020 brought a global health crisis that compelled the majority of the world’s population to limit their in-person interactions in an effort to reduce the spread of COVID-19, people have been forced to live a greater proportion of their lives in the digital environment. Additionally, evidence shows that online shopping has increased in comparison to the pre-pandemic era⁵¹, in a trend also observable in the context of the European digital market. Consequently, as people now carry out a larger portion of their purchases online, it is presumable that the opportunities for businesses wishing to personalise their prices equally multiply.

⁴⁶ VAN BOOM, W. H. [et.al.] – *Consumers Beware: Online Personalized Pricing in Action! How the Framing of a Mandated Discriminatory Pricing Disclosure Influences Intention to Purchase*, 2020, p. 5

⁴⁷ VAN BOOM, W. H. [et.al.] – cit. 46, p. 9

⁴⁸ VAN BOOM, W. H. [et.al.] – cit. 46, p. 12

⁴⁹ MAGGIOLINO, M. – *Personalized prices in European Competition Law*, 2017, p. 10

⁵⁰ See White House – *Big Data and differential pricing*, 2015

⁵¹ PwC Study – *Global Consumer Insights Survey*, 2020, p. 14

The following question that comes to mind is whether businesses are simply not engaging in the practice and thus “leaving money on the table” or, instead, if they personalise their prices but do so in a fashion that is not entirely transparent to the consumer. Such an issue is of pivotal importance, as it will be detailed in the following Chapters – first, from a data protection perspective and then, from a consumer law point of view – as the European legal framework allows price personalisation, provided it is done in a transparent manner. Nonetheless, the attention will first turn to the preliminary results obtained in a survey carried out mainly among consumers living in Portugal but also aimed at lusophone consumers in general and their viewpoint regarding price personalisation.

2.5. Survey carried out with lusophone consumers

In the context of the academic and empirical research developed within the NOVA Consumer Lab⁵², a survey was designed to investigate what is the perception of lusophone consumers regarding personalised prices⁵³. Until the completion of this work, the survey had not yet met the pre-established goal of four-hundred participants; nonetheless, with more than three-quarters of that already accounted for, it is conceivable to observe and draw out stable trends. In this sense, even though the survey results will require greater scrutiny in a separate opportunity, some of its most evident indications are preliminarily explored here. A complete transcript of the original questions in Portuguese and their respective translation into English can be found in the Annex.

The study was inspired by those mentioned in the previous topic, namely the European consumer market study and those carried out by Poort and Zuiderveen Borgesius and also by van Boom and others. Nevertheless, with the benefit of the Modernisation Directive already in existence, one of the main goals of this particular endeavour was to investigate what is likely to be consumers’ understanding and reaction when faced with disclosures pertaining to price personalisation – whether or not these would impact their purchasing

⁵² The NOVA Consumer Lab defines itself as a hub that aggregates activities developed by the NOVA School of Law in the area of consumer law, namely related to information, training, research, studies and opinions, dispute resolution, editorial activities, internships, digital content, support to consumers, companies and other entities

⁵³ The project was conducted in a partnership with Prof. Dr. Fabrizio Esposito and Leonor Bettencourt

decisions, or even what would they perceive as an adequate level of information to be provided with, in case their personal data was processed to adjust commercial offers.

From a practical standpoint, the methodology involved a questionnaire built using the Google Forms platform that was propagated using the NOVA Consumer Lab's and its members' social media channels, through general requests for participation and sharing on Facebook, Instagram, LinkedIn, and WhatsApp. After a few months of careful preparation, the survey started accepting responses on 12 September 2020 and, a little over one month later, has gathered three hundred and twenty-three participations⁵⁴.

The questionnaire was comprised by an introduction, followed by which the participant was asked if they were at least 18 years old and also informed that their response data would be used solely for academic research purposes and would be kept anonymous. Following that, the first section was dedicated to gathering demographic data, before moving on to the inquiry on price personalisation itself.

Subsequently, the participant was faced with four groups of questions: first, concerning their online consumption habits, and especially their attitude concerning "terms and conditions" and "privacy policies" (related to legally mandated disclosures). Then, the survey moved on to their perception about price personalisation and whether or not they thought it already occurred to them, among other issues, such as their opinion regarding the practice's fairness. At this stage, it was also asked what level of information regarding this pricing strategy they thought should be provided to the consumer.

The third group of questions focused on price personalisation's impact upon consumption habits, and particularly upon the hypothesis of it varying in accordance with how the information about it was presented to the individual. Lastly, the fourth and final section was dedicated to investigating the participant's opinion about hypothetical instances in which it could occur – whether or not it would be unacceptable and unfair or the opposite, acceptable and fair.

As stated, the survey was aimed at lusophone consumers. Therefore, on the matter of sample base, out of the more than three-hundred participants that had filled the questionnaire until the completion of this work, approximately 82% declared residing in Portugal; the remaining subjects were mostly in Brazil, and a few were in other places. The majority were

⁵⁴ Up to 25 October 2020

female (about 70%) and declared to have at least some level of higher education (about two-thirds said to hold either a Graduate's, a Master's or a Postgraduate's degree). The largest age group was comprised of participants from 25 to 39 years (about 44%), and only a minority declared to be 60 or older (less than 6%).

In the context of the first group of questions regarding online consumption habits, when asked about their attitude towards a store or service provider's terms and conditions and privacy policies, the vast majority of the subjects said to agree at least in part with the phrase "I usually just scroll through the page quickly so that I can access the content faster". Participants were asked to place their agreement with the relevant phrase within a 1 to 7 scale, in which 1 represented total disagreement and 7 signified complete agreement. Approximately 81% of the participants chose either 5, 6 or 7 in this situation, indicating at least some level of assent. Most notably, out of this figure, the single most-chosen option was 7, with about 49% of the total selections, as it can be observed from Figure 1 below.

Foreseeably, yet on the matter of mandated disclosures, most of the participants said to disagree at least partially with the phrase "I always read the information in full, before completing my registration". Here, they were asked to place their concordance with the phrase above within a 1 to 7 scale, in which 1 represented total disagreement and 7 signified complete agreement (similar to the previous statement). Approximately 74% of the subjects chose either 1, 2 or 3 in this situation, suggesting that, in fact, most do not regularly engage in the scrutiny of the information made available by traders – additionally, the single most-chosen option was 1, with about 40% of the total responses.

Regarding "Terms and Conditions" and "Privacy Policy", on a scale of 1 to 7, tell us how much you agree with the statement: I usually just scroll through the page quickly so that I can access the content faster.

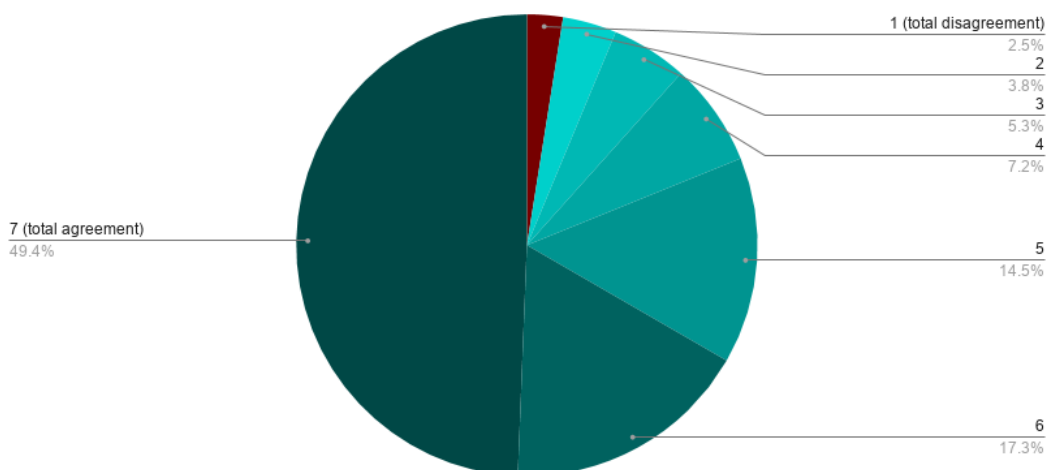


Figure 1 – Regarding “Terms and Conditions” and “Privacy Policy”, on a scale of 1 to 7, tell us how much you agree with the statement: *I usually just scroll through the page quickly so that I can access the content faster.*

Moving on towards the second group of questions, now related to the consumers’ perception and attitude toward price personalisation, the trend revealed in the survey until the completion of the present work is quite interesting. Firstly, there seems to be some level of uncertainty regarding the existence and prevalence of the commercial practice. This is indicated by the divide among participants when asked whether they thought they were already offered a price that was adjusted to them based on their data – roughly, 42% replied “yes”, while 33% said “no” and 25% “maybe”. Furthermore, when asked about how often they believed online offers vary based on user data utilizing a 1 to 7 scale, in which 1 represented none of the time and 7 signified every time, participants were scattered through the range – albeit the largest concentration of answers landed right in the middle, as almost 37% answered they thought it happened sometimes.

The split in the participants’ answers is even more accentuated when faced with the question regarding what they suppose is more likely to have happened when presented the exiguous indication that a price had been personalised to them based on their digital profile – whether the price had either increased or decreased or if both were equally possible. In sum, while only a little over 15% of participants are confident the price increased, the remainder was divided among indefinite suppositions, as it can be seen in Figure 2 below. What is indisputable is that armed with just this scant information, the majority (approximately 87%) answered they would either continue searching for the product or similar on other websites or employ techniques such as clearing their cookies and using an incognito browser.

Imagine that you decided to buy a product online (for 10€). The website informs you that "this price has been personalised for you, based on your digital profile". Do you believe that:

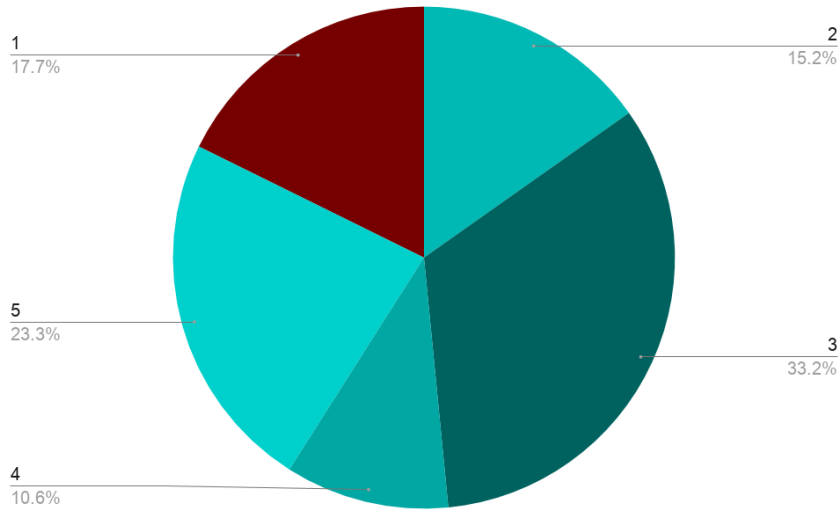


Figure 2 – Imagine that you decided to buy a product online (for 10€). The website informs you that “this price has been personalised for you, based on your digital profile”. Do you believe that: **1** – Do not know; **2** – The price increased; **3** – It is more likely that the price has increased, but it is also possible that it has decreased; **4** – It is more likely that the price has decreased, but it is also possible that it has increased; **5** – It is equally possible that the price has increased or decreased.

It is important to note that despite the scattered responses when the participants were presented with exiguous information about the practice, as described above, once asked directly whether they thought price personalisation is unfair and should therefore be prohibited, the most-chosen option was “No, it is enough that the consumer is informed about it”, with about 44% of the total responses. Nonetheless, most of the remaining responses were split between “Yes, it should be prohibited, but only when it occurs to the detriment of the consumer” and “Yes, it should be prohibited in all circumstances”, with approximately 28% and 26% respectively. Lastly, only a negligible portion of participants answered: “No, it is a fair practice and should not be prohibited under any circumstances” (about 1.5%).

Most remarkably, when asked about what was their opinion regarding an “adequate” level of information consumers should be provided with in the case of price personalisation, the participants seemed to lean towards the general criteria around which the price may vary, according to the individual’s characteristics, and even more so to the matter of how much the price was personalised, in terms of an increase or decrease. In a multiple-choice question, almost 56% of the respondents selected the option “the website should inform the main/general parameters according to which prices will vary based on the user’s data” and

approximately 68% selected “the website should inform the extent to which the price has been personalised for the particular consumer, in terms of how much the increase or discount was”.

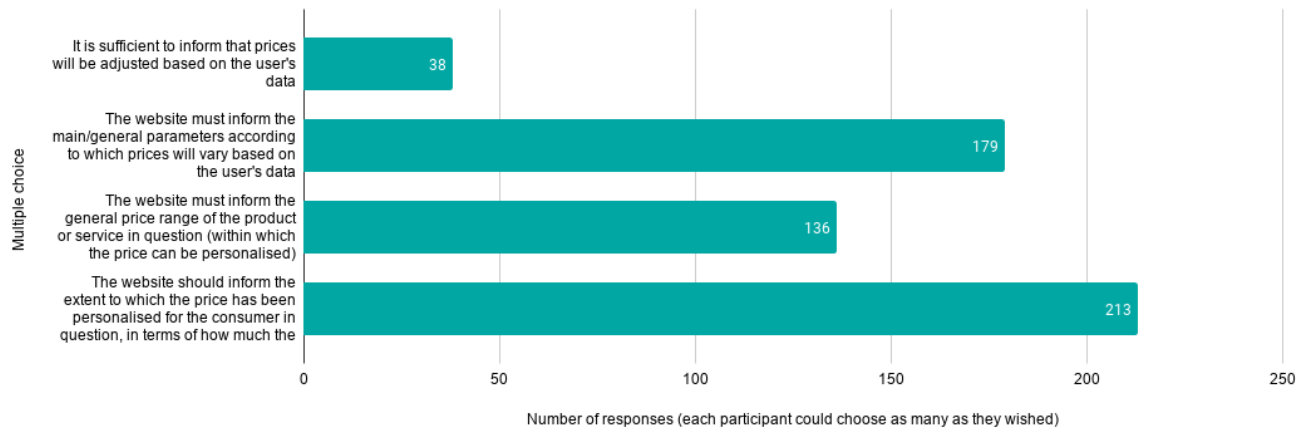


Figure 3 – *In view of price personalisation, in your opinion, what is the appropriate level of information that the website should be obliged to provide? You can select one or more options*

In the third section, the emphasis laid on the manner through which the consumer was made aware of the employment of price personalisation and how it impacted their purchasing decision. It contained three variables, differing mainly regarding how the disclosure to the consumer was framed. In the first instance, it indicated that the offer was more expensive, and it also pointed out how much the price had increased in relation to the uniform one. In the second occasion, it pointed towards only a price reduction being possible, without a clear indication whether or not it was in fact applied or how much it represented in terms of a discount. Lastly, the final one stated only that the price could either have suffered an increase or a reduction, without signalling how much or even if the personalisation effectively occurred.

On the one hand, when met with the unambiguous scenario where they knew how much the price offered to them had increased based on their digital profile, most of the individuals chose the option “Search for the product or similar on other websites” (about 70%), and only a minuscule part chose “Proceed with the purchase on this website” (about 1.5%). On the other hand, when faced with the inconclusive indication instances – that the offer could either be higher or lower than the uniform price, or even simply not knowing whether or not they benefit from the possibility of a personalised discount, the participants seem to have displayed an adverse reaction towards the lack of clarity – or, in other words,

transparency. This is observable by the options “Negatively: the possibility of either an increase or a discount would decrease my desire to buy” and “Negatively: not knowing whether or not I benefited from the discount would decrease my desire to buy” concentrating the majority of the responses (approximately 71% and 45%, respectively). These preliminary results are better illustrated by the charts below.

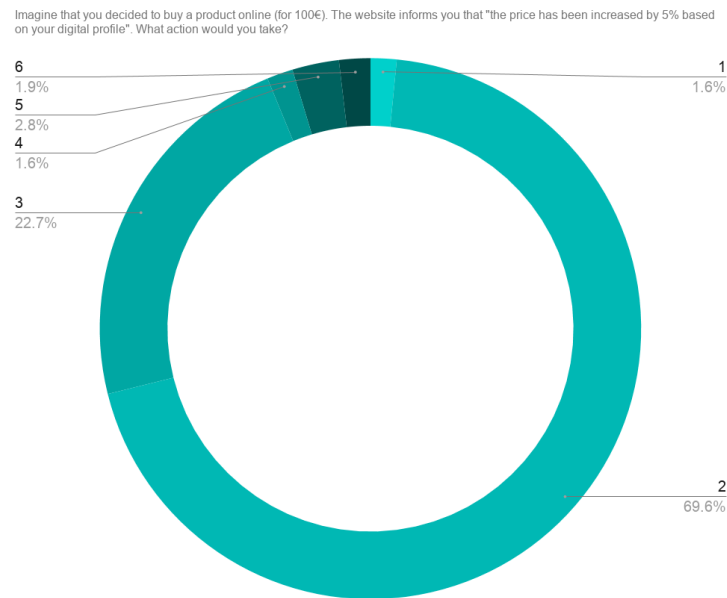


Figure 4 – Imagine that you decided to buy a product online (for 100€). The website informs you that “the price has been increased by 5% based on your digital profile”. What action would you take? **1** – Proceed with the purchase on this website; **2** – Search for the product or similar on other websites; **3** – Search the same website, but using the browser anonymously, after clearing cookies; **4** – Either one of the previous options; **5** – Would not buy; **6** – Other

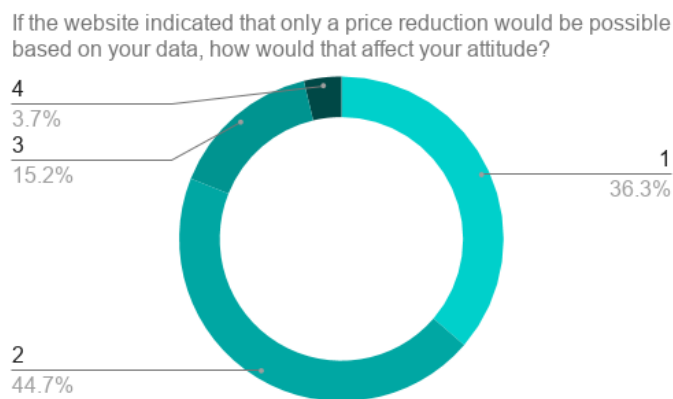


Figure 5 – If the website indicated that only a price reduction would be possible based on your data, how would that affect your attitude? **1** – Positively: the mere possibility of a discount would increase my desire to buy; **2** – Negatively: not knowing whether or not I benefited from the discount would

decrease my desire to buy; **3** – Indifferent: a possible discount based on my data does not interfere with my desire to buy; **4** – Other

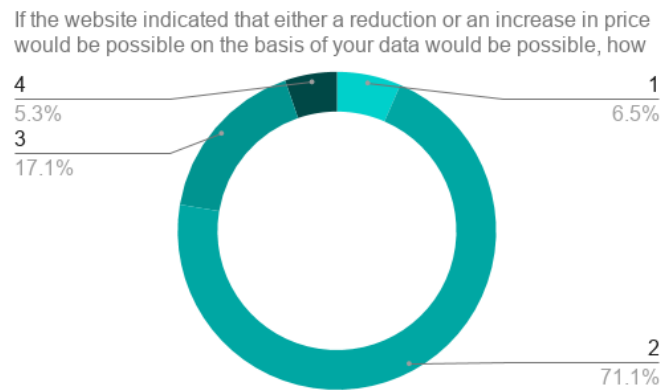


Figure 6 – If the website indicated that either a reduction or an increase in price would be possible on the basis of your data, how would that affect your attitude? **1** – Positively: the possibility of either an increase or a discount would boost my desire to buy; **2** – Negatively: the possibility of either an increase or a discount would diminish my desire to buy; **3** – Indifferent: the possibility of either an increase or a discount does not interfere with my desire to buy; **4** – Other

Subsequently, in the fourth and final question group, a list of situations in which price personalisation takes shape was presented to the participants, who were then asked to place each on a scale measuring its acceptability and fairness, whereas 1 corresponds to “absolutely unacceptable/unfair” and 7 means “absolutely acceptable/fair”. Out of the fourteen circumstances, the most distinguishable trend towards suitability is observed where the difference in prices is “justifiable” – when a museum offers discounts to senior citizens and students or when products are sold in family-sizes and the price per unit is lower, with more than 63% and 49% of participants selecting 7, respectively. Additionally, the responses regarding discounts offered by a supermarket to all customers that are loyalty cardholders were also positive (more than 52% chose absolutely acceptable/fair).

Conversely, the situations participants seem to have found most intolerable are those of a hotel that charges higher fees from users who access the website through Apple devices than those who access via Android or Windows devices and of an online language school that varies course prices based on the digital profile of each student (about 62% and 48% of the responses concentrated on absolutely unacceptable/unfair, respectively).

As mentioned earlier, the results herein described are preliminary in nature, considering the survey had not yet reached the final goal of participation until the completion

of this work. However, bearing in mind that more than 80% of the target was already fulfilled and therefore, the observable trends were highly unlikely to shift, the remarks developed here hold their ground in regards to illustrating the lusophone consumer's understanding and opinion towards price personalisation based on the profiling of their behaviour.

The Modernisation Directive has brought the new information requirement to be added to the CRD, to which Recital 45 sheds some light. However, the scope of what must be included in this mandated disclosure remains overly broad. From what the results of this survey point at, in particular the third group of questions, the manner through which this information is framed substantially impacts the consumers' confidence and purchasing intentions. In this context, it is worthwhile to revisit the responses given to the inquiry into what the participants believe to be an appropriate level of information when a trader decides to implement this pricing strategy – namely, the general parameters and criteria around which the price may vary, according to the individual's characteristics, and even more so the extent to which the price was affected, in comparison to the uniform rate.

Having first looked at the concept of personalised pricing, the technologies that enable it, its economic implications and also how it is regarded by its addressees (the consumers), the analysis will now centralise on the legal structure within which this practice may occur – more precisely, data protection and consumer law. Although it is admitted that these legal disciplines are not detached or disconnected from one another, they will be examined one at a time, purely for methodological reasons. Additionally, while we recognise that other legal branches also bear significance to the matter at hand (for example, competition law), these fall outside the scope of the present work.

3. THE USE OF THE CONSUMERS' PERSONAL DATA FOR THE PURPOSE OF PERSONALISED PRICING

3.1 Personalised pricing and the applicability of the GDPR

As it was outlined in the previous Chapter, price personalisation (first or third degree price discrimination) in the current Digital Era may be effectively pursued through the collection and processing of consumers' personal data. In order to carry out this task, companies within the European Union or those dealing with data pertaining to subjects located therein must comply with the European data protection law, mainly consubstantiated in the GDPR⁵⁵. According to Steppe:

In order to price discriminate, a provider must be able to identify different market segments as well as their respective price sensitivities. Such identification depends on the availability of market information, e.g. retrieved through 'big data'. More specifically, the processing of large datasets allows to build both predictive user profiles (i.e. data obtained by observing user behaviour over time) and explicit user profiles (i.e. data provided by users themselves, for instance when filling out registration forms), as well as a combination of both. The GDPR broadly interprets the concept of 'information', which covers both 'objective' (e.g. one's past retail purchases) and 'subjective' data (e.g. one's posts on social networking sites) (...). As a result, data used for market segmentation and subsequent price discrimination purposes will generally constitute 'information' in the sense of the GDPR.⁵⁶

Having established that personal data collection and processing is a *conditio sine qua non* of modern-day price personalisation, it is now relevant to analyse the legal framework within which such an operation may take place. Under its Articles 1 and 2, the GDPR lays down rules relating to the protection of natural persons concerning the processing of personal data and is applicable to the processing of personal data wholly or partly by automated means, thus englobing price personalisation that is carried out by means of processing the

⁵⁵ The material scope of the GDPR is defined in its Article 2: "This Regulation applies to the processing of personal data wholly or partly by automated means and to the processing other than by automated means of personal data which form part of a filing system or are intended to form part of a filing system". The territorial applicability scope of the GDPR not only englobes companies established within the European Union but in accordance with Article 3(2), it also applies to the processing of personal data of data subjects who are in the Union by a controller or processor not established in the Union, where the processing activities are related to (a) the offering of goods or services, irrespective of whether a payment of the data subject is required, to such data subjects in the Union; or (b) the monitoring of their behaviour as far as their behaviour takes place within the Union

⁵⁶ STEPPE, R. – *Online price discrimination and personal data: A General Data Protection Regulation perspective*, 2017, p. 773

consumers' personal data in order to estimate their willingness to pay for a particular product or service.

In this context, the GDPR contains several essential elements such as definitions, principles and certain conditions inherent to personal data collection and processing. Similarly, to the exercise employed in the previous part of this work regarding the technological context, it is once again necessary to observe the conceptual rigour of the data protection features relevant to the price personalisation analysis.

3.1.1. Key concepts from the GDPR for the purposes of price personalisation

As explored in the preceding Chapter of this work, it is necessary to understand what is personal data for the purposes of the GDPR and for the operationalisation of personalised pricing. According to Article 4(1), it means any information relating to an identified or identifiable natural person ('data subject'). This definition is broad, as to englobe technology that is ever-changing and evolving.

Regarding the parties involved in data processing other than the data subject, there are the figures of the controller (the entity that determines the purposes and means of the processing of personal data)⁵⁷ and the processor (the entity that processes personal data on behalf of the controller)⁵⁸. Bearing in mind that the present work subscribes to the idea that data protection and consumer law are complementary, especially in matters related to digital markets, these last terms will also be used interchangeably with "trader", "business" and "seller".

Processing means any operation or set of operations which are performed on personal data or sets of personal data, whether or not by automated means⁵⁹. An arguably more intensive form of processing is profiling, defined as any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements⁶⁰.

⁵⁷ Article 4(7), GDPR

⁵⁸ Article 4(8), GDPR

⁵⁹ Article 4(2), GDPR

⁶⁰ Article 4(4), GDPR

In an Opinion from 2010, the A29WP noted that there are two main approaches to building user profiles; one being predictive profiles (established by inference from observing individual and collective user behaviour over time, particularly by monitoring visited pages and ads viewed or clicked on), and the other, explicit profiles (personal data that data subjects themselves provide to a web service, such as by registering to a certain website)⁶¹. These can be combined and used to extrapolate predictions about a user's future behaviour, including to ascertain their willingness to pay for a product or service, and consequently, setting a personalised price for it. As profiling holds a critical significance to the issue at hand (as made evident by the reference made by the Recital 45 to the Modernisation Directive), it will be examined in more detail under point 3.4.

The element of consent is constant throughout the GDPR, and given its importance, it will be scrutinised in greater detail later on. It is defined in Article 4(11) as any freely given, specific, informed and unambiguous indication of the data subject's wishes by which he or she, by a statement or by clear affirmative action, signifies agreement to the processing of personal data relating to him or her.

With the conceptual framework of European data protection law in mind, the next step is to ponder over the guiding principles of personal data processing, especially those with greater relevance for price personalisation.

3.1.2. Principles of data processing with particular relevance for price personalisation

The principles for personal data processing are laid out in Article 5 of the GDPR. They dictate that personal data shall be processed lawfully, fairly, and transparently; collected for specific and explicit purposes; limited to what is relevant within the constraints of said purposes; kept accurate, among other provisions.

Each of these principles brings consequences for a business wishing to collect and process consumers' personal data with the aim of personalising its pricing practices, some in a more pronounced manner than others. To comply with its obligations under the GDPR while extracting the actionable knowledge needed to assess the consumers' willingness to pay, the trader must bear in mind the ramifications and implications of the Article mentioned above.

⁶¹ A29WP – *Opinion 2/2010 on online behavioural advertising No. 00909/10/EN*, 2010, p. 7

Lawfulness, fairness, and transparency must be preserved throughout the endeavour, which starts with the precise definition of what is the purpose of the collection and processing. This step is of fundamental importance, as it has implications on the decision regarding what will be the appropriate lawfulness ground for the data collection and processing operation. Furthermore, as it will be argued in the following topics, consent seems likely to be the only viable option for the purpose of personalising prices, which precludes the possibility from Article 6(4) of further processing for a purpose other than that for which the personal data have been collected.

One of the objectives pursued by these principles and their legal materialisation, in particular transparency, is to ensure that the individual is made aware of the possible outcomes from his or her data being collected and processed by businesses or later sold or shared with other processors. The negative effects associated with unpredicted data processing results (from the consumer's point of view), one of which could be being charged a higher, personalised price for a certain item or service, are meant to be curbed by the legal imposition that collection must happen for specified, explicit and legitimate purposes.

Considering the wording used by Recital 45 of the Modernisation Directive, which we argue shows that the *raison d'être* behind the first explicit mention of price personalisation in European consumer legislation is to enable the individual to take into account the potential risks in their purchasing decision brought by this practice, the connection between the new information requirement to be added to the CRD and the principle of transparency from data protection, especially in relation to the individual's awareness of the possible outcomes from personal data processing, is made evident.

Moreover, the Recital mentioned above pointedly makes reference to a pricing strategy devised on the basis of consumer behaviour profiling. Also, it clarifies that the new mandated disclosure is without prejudice to the GDPR. Consequently, it is relevant to note that profiling is a distinctive variety of data processing that entails an increased level of scrutiny. Evidence of this can be found on Recitals 60 and 63 of the GDPR, both of which indicate that when profiling occurs, the individual should be informed about the consequences it will bring upon them.

In theory, the data subject should be conscious about these potential implications in a moment prior to their data being collected, but that is not always the case, as the regular consumer ordinarily checks the "I accept" option related to the privacy policy hastily, in

order to enjoy whatever lies on the next page⁶². Later on, the effectiveness of mandatory information duties – the primary mechanism employed by the European legislator in pursuit of transparency and the mitigation of knowledge asymmetries – will be contemplated.

Momentarily going back to the empirical observations discussed in the previous Chapter, we highlight the lack of understanding reported by the majority of the participants in the European consumer market study and the divided responses gathered in the survey with lusophone consumers (eminently about what they thought had happened when faced with the succinct information that their offer was personalised). Taking this into account, it is reasonable to expect the consequent lack of foresight regarding data processing directed at personalising prices to individual consumers, who might be thoroughly taken by surprise, despite being formally presented with the mandated disclosures both regarding the purposes of the data processing for which their consent is sought and, later on, once the Modernisation Directive comes into force, the specific information requirement it added to the CRD.

Having examined the general framework of data protection and its most relevant principles in relation to price personalisation, albeit, with the caveat regarding the individual's awareness of the implications the processing of their data may bring upon them, the subsequent topic will focus on the issue of the legitimacy of such a practice, to later aim the attention at what are the possibilities to ensure its lawfulness.

3.2. The legitimacy of data processing for the purpose of assessing the consumer's willingness to pay

According to Article 16 of the Charter of Fundamental Rights of the European Union, the freedom to conduct business in accordance with Union Law and national laws and practices is recognised. Borrowing from the common law principle that everything that is not forbidden is allowed, which is loosely related to contractual freedom, the practice of personalising prices to different consumers, depending on their particular willingness to pay, has no legal preclusion.

In fact, as already mentioned in several of the previous points, price personalisation is mentioned in Recital 45 and Article 4 of the Modernisation Directive as a possibility put at

⁶² As noted in the European consumer market study – cit. 35, p. 92. Additionally, this behaviour was empirically observed on the trends emerging from the survey with lusophone consumers detailed in point 2.5 of Chapter 2.

the traders' disposal, granted it is carried out in a transparent manner, and certain informational requirements are met, both on the data protection and the consumer law fronts. These mechanisms, although at play during distinct moments from the individual's point of view, have similar goals, which will be the object of scrutiny further on; namely, on the next topic and Chapter, respectively.

Therefore, the conclusion reached is that in and of itself, the purpose of collecting and processing consumers' personal data for personalising the prices of the offers that will then be presented to them is, in theory, legitimate under data protection law, as it is not forbidden – having established that, the question of what lawfulness grounds under which the actual operation will take place arises. Later on, the matter of legitimacy (theoretical) and compliance with the applicable data protection rules (practical) will also be relevant for consumer law rules, in particular those related to unfair commercial practices, as examined under point 4.4 of the present work.

In other words, the matter of legitimacy is assessed in a previous, theoretical moment, and the conclusion reached is that because there is no prohibition in the legal framework, the collection, and processing of consumers' data to estimate their reservation price is legitimate. In a subsequent moment, a concrete situation must be evaluated, in order to ascertain whether or not a particular processing purpose possesses an appropriate lawfulness ground to take place. Moving even further in the timeline, the adherence to data protection principles and rules will bear direct consequences in the assessment of a commercial practice under consumer law rules, particularly those concerning unfairness.

Consequently, the following subheading is dedicated to inspecting what are the options made available by the GDPR to the traders wishing to integrate this pricing strategy in their business, in terms of ensuring their data processing is based on solid lawful grounds.

3.3. Lawful grounds for data processing for price personalisation

The business wishing to personalise its services' or products' prices through the application of consumers' personal data processing – this being the specified and explicit purpose of the operation – must do so on the basis of one of the grounds described in the extensive list from Article 6 of the GDPR.

In the context of personalised pricing – namely, in a commercial, trader-consumer relationship – three out of the six possible hypotheses have more relevance than the others. This is because it is unlikely to envisage a situation where data processing with the goal of devising a pricing strategy corresponds to a legal obligation or is carried out for the protection of vital interests of the data subject or another natural person, or even conducted within the public interest or exercising official authority vested in the controller.

Therefore, it results that the remaining three possible lawfulness grounds – namely, the consent of the data subject for one or more specific purposes; the necessity for the performance of a contract and the legitimate interests pursued by the controller or by a third party – need to be analysed, to ascertain which is better delineated for the purpose of estimating and setting the highest price the consumer is inclined to pay.

3.3.1. Processing necessary for the performance of a contract

In the case of processing necessary for contract performance, the European Data Protection Board (hereinafter, the EDPB) issued guidelines about the applicability of the provision in the context for online services, in which the notions of “necessity” and “necessary for the performance of a contract with the data subject”⁶³ were explored.

In its above-mentioned guidelines, the EDPB states that “it is important to note that the concept of what is ‘necessary for the performance of a contract’ is not simply an assessment of what is permitted by or written into the terms”, but rather relates to the specified purpose of the processing. There must be a nexus with what is objectively necessary for that particular contract’s performance⁶⁴.

According to De Streel and Florian, two conditions must be fulfilled to achieve lawfulness in the operation: (i) the data subject must be a party to a contract and (ii) the data processing must be necessary for its performance⁶⁵. The first condition is readily satisfied, as, depending on the business model, the trader and the data subject are parties at least of a contract for the purchase of a good or a service; at the same, it is not so easy to verify the

⁶³ EDPB – *Guidelines 2/2019 on the processing of personal data under Article 6(1)(b) GDPR in the context of the provision of online services to data subjects*, 2019, p. 9

⁶⁴ EDPB – cit. 63, p. 10

⁶⁵ DE STREEL, A. & FLORIAN, J. – *Personalised pricing and EU Law*, 2019, p. 11

second one. Said authors go on to highlight that the threshold of the necessity test is a high one, as the A29WP is of the opinion that it must be interpreted narrowly⁶⁶.

The authors Poort and Zuiderveen Borgesius go even further, saying that “it is unlikely that personal data processing for personalised pricing could be based on this legal basis (...). The fact that a company sees personal data processing as useful or profitable does not make the processing necessary”⁶⁷, but rather merely useful for its purpose of achieving the highest level of profit possible, by means of extracting the entirety of the consumer’s surplus.

As the hypothesis now examined does not seem favourable for the purpose at hand, and having in mind that the ultimate reason for employing price personalisation techniques is indeed to maximise a business’ profit and not an essential condition for performing a contract with a consumer, it is necessary to analyse the legitimacy of this interest for the purposes of the next lawfulness ground for personal data processing, especially in relation to the interests or fundamental rights of the data subject.

3.3.2. Legitimate interests of the controller or a third party

In the case of processing carried out for the sake of the legitimate interests pursued by the controller or by a third party, it is essential to note that a balance must be struck, as these can be overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data. Similarly, the preceding lawfulness ground, this hypothesis also encompasses a necessity test, as highlighted by the A29WP in its Opinion 06/2014 on the notion of legitimate interests of the data controller⁶⁸.

The author Steppe⁶⁹ notes that the A29WP, in its Opinion 1/2008 on data protection issues related to search engines, “considered it difficult to find a legitimate ground for personalised advertising (comparable to price discrimination in the sense that both techniques target consumers with personalised offers to increase corporate revenues) if users have not signed in on the basis of specific information regarding the processing purpose”.

⁶⁶ A29WP – *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679*, 2018, p. 13

⁶⁷ POORT, J. & ZUIDERVEEN BORGESIOUS, F. J. – *Online Price Discrimination and EU Data Privacy Law*, 2017, p. 360

⁶⁸ A29WP – *Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC No. 844/14/EN*, 2014, p. 29

⁶⁹ STEPPE, R. – cit. 56, p. 780

Furthermore, said author mentions that the Court of Justice of the European Union (hereinafter, the “CJEU”) “similarly derived, from a significant impact on the fundamental rights to privacy and protection of personal data, the inability to argue for justifications based on mere economic interests”⁷⁰.

It is relevant to summon to mind the fact that while the freedom to conduct business is valued by the Charter of Fundamental Rights of the European Union, the protection of personal data is also treasured in its Article 8. In this context, while seeking commercial success by profiling the consumer to assess their reservation price is, at first glance, a legitimate interest, when put into perspective compared to the individual’s right to the protection of their personal data, it does not hold true as a viable alternative to substantiate the lawfulness of data processing on its own.

Lastly, as the scope for both of the hypotheses detailed above appears to be significantly narrow, the lawfulness ground for processing that holds the most promise for price personalisation purposes is the data subject’s consent, subsequently analysed.

3.3.3. Consent – freely given, specific, informed and unambiguous

As none of the other possibilities brought by Article 6 of the GDPR quite fit the phenomenon of price personalisation, the option to carry out data processing based on the data subject’s consent appears to be the sole viable alternative. The authors Poort and Zuiderveen Borgesius are of the opinion that “[i]n sum, the data subject’s consent seems the only legal basis available in GDPR for personalising prices (...). If the consumer does not consent (and the company cannot rely on another legal basis), personal data processing is not allowed”⁷¹, a view to which this work subscribes.

Bearing the above in mind, it is crucial to consider the elements that constitute valid consent, enunciated by Recital 32 and Article 7 of the GDPR⁷². In this respect, the A29WP issued guidelines on the subject that were later endorsed and updated by the EDPB,

⁷⁰ Case C-131/12, *Google Spain SL and Google Inc. v Agencia Española de Protección de Datos (AEPD) and Mario Costeja González* EU:C:2014:317 [2017] 3 C.M.L.R. 50, paras 80–81

⁷¹ POORT, J., & ZUIDERVEEN BORGESIUS, F. J. – cit. 67, p. 361

⁷² In addition, the notion of what is comprised as valid consent is complemented specially by the interpretative guidance of Recitals 42 and 43 to the GDPR.

highlighting that it must be (i) freely given, (ii) specific, (iii) informed and (iv) unambiguous⁷³.

The first requirement determines that consent must be freely given, which in turn has different levels of meaning. On one level, it entails that the data subject must have a real choice of whether or not to consent, without associated detriment. From another angle, the focus lies on conditionality, as in the analysis of whether or not it is formulated as a prerequisite to enter into a contract with the data processor, either in a situation “bundling” or “tying” or yet, in a circumstance in which the personal data is supplied in exchange for something (digital content, for instance).

Article 7(4) and Recital 43 to the GDPR provide pertinent insight, especially the latter’s final part: “consent is presumed not to be freely given (...) if the performance of a contract, including the provision of a service, is dependent on the consent despite such consent not being necessary for such performance”. This presumption is justified because it is evident that, when a trader conditions the access to a certain deal to the individual’s supply of consent to the processing of their personal data, it can be reasonably inferred that said consent was given out of the wish not to be denied service (detriment), thus not being given in a free manner.

From another point of view, if the envisioned data processing is strictly necessary for the performance of a contract, the appropriate lawfulness ground under which it can take place should be Article 6(b) and not 6(a). If it extrapolates the scope of what is necessary (thus, failing the previously mentioned “necessity test”), then consent may be considered as the better option. In addition to an adequate choice of lawfulness grounds, the EDPB is of the opinion that “the GDPR ensures that the processing of personal data for which consent is sought cannot become directly or indirectly the counter-performance of a contract”⁷⁴, as it would then be presumed to be not freely given.

The issue of personal data as a counter-performance in the context of consumer contracts has gained further contours with the advent of the Digital Content Sales Directive, which would merit a much more detailed analysis that falls outside the scope of the present work. Nonetheless, the fact that the provision of personal data occurs precisely in exchange

⁷³ EDPB, *Guidelines 5/2020 on consent under Regulation 2016/679*, 2020, p. 7

⁷⁴ EDPB – cit. 73, p. 10

for the supply of digital content or services seems to demonstrate that, in such situations, the consent granted for its processing cannot possibly be “freely given”.

In case a business seeks the data subject’s consent for processing decoupled from the possibility of entering into a contract (thus not “tied” or “bundled” to it), in addition to the data itself not constituting a counter-performance to the trader’s contractual instalment, even then the consent will only be inherently free in case there is no detriment for the individual if they refuse, including assurance of the possibility of still entering into the agreement with the trader despite not giving consent to their data being processed.

In the specific case of price personalisation, a refusal by the data subject entails the impossibility of offering them a personalised price (simply because it is not possible to estimate it, due to the lack of insight), but would compel the trader to conclude the deal nonetheless, otherwise being at risk of invalidating its lawful grounds for data processing. Within a business model that includes multiple transactions between the same parties, this would be particularly relevant for maintaining the trader’s compliance with data protection regulations. To better illustrate this notion, we return to the online language school example. In case it combines a “social network” element to its teaching methods (“sharing” the progress in the course, learning with friends etc.) and a student denies their consent to the processing of their data for price personalisation purposes, the business will then not be able to use it to estimate how much they are willing to pay, but will be required to sell them a course nevertheless.

Having analysed what is comprised within the notion of “freely given” consent to a certain extent, the following prerequisites for valid consent aim at balancing the informational asymmetry that exists between the data controller and processor, on the one side, and the data subject, on the other. We argue that these are another one of the materialisations of the transparency principle from Article 5(a) of the GDPR, and it dictates that at least certain aspects must be communicated to the individual prior to the processing, such as the controller’s identity, the processing purpose for which consent is sought, among others.

In this sense, the second and third requirements for consent are inherently connected and are related to the data subject’s knowledge (“informed”) of what exactly (“specific”) he or she is consenting that their personal data is processed for. This is a particular stress point for data processing with the purpose of estimating consumers’ willingness to pay, as there is

empirical evidence that people may find price personalisation unfair and unacceptable⁷⁵. Additionally, as the Modernisation Directive refers to price personalisation based on profiling, there is yet another layer to the trader's obligation to inform the individual about the possible outcomes and consequences of said profiling, as indicated by Recitals 60 and 63 to the GDPR, as it configures a particularly intense form of processing.

Considering it is highly unlikely that an individual grants their consent to the processing of data with the specific purpose of setting the highest price they would be willing to pay, whether it is formulated under the guise of a discount or not, it then becomes a veritable challenge of legal meandering to comply with these provisions for obtaining valid consent. Nonetheless, despite the rigorous nature of the GDPR's conditions, the typical consumer behaviour of hurriedly browsing through "terms and conditions" and "privacy policy"⁷⁶, allied with a lack of foresight regarding the potential implications and repercussions of data processing, lead to the scenario in which it is entirely compliant (from a purely technical point of view) to obtain valid consent for the purpose of personalising prices.

Lastly, consent must be unambiguous to be considered valid, in the form of affirmative action from the data subject. Thus, it is not sufficient to merely offer no resistance to a specific data processing or collection, but it rather entails confirmation on the part of the individual that they, in fact, express their consent for a particular purpose.

After evaluating what option is a better fit for ensuring the lawfulness of an operation aimed at estimating the consumer's reservation price, the attention will now be directed to a specific form of data processing, undeniably more extensive and intruding: profiling. The emphasis is justified by the explicit mention to the practice made by Recital 45 of the Modernisation Directive, along with the caveat about the potential risks it may bring for the consumers' purchasing decisions.

⁷⁵ As mentioned in the preceding Chapter, in the study published by POORT, J., & ZUIDERVEEN BORGESIU, F. J. [cit. 38], more than 80% of the respondents perceived online price discrimination as unacceptable and unfair (p. 7). Nonetheless, the trend that emerged from the survey carried out with lusophone consumers seems to point at a different direction, as the responses to the question about the unfairness of the practice were split, with the most-chosen answer (44%) being that it is not unfair, as long as the consumer is informed about it

⁷⁶ As noted in the European consumer market study – cit. 35, p. 92. 92. Additionally, this behaviour was empirically observed on the trends emerging from the survey with lusophone consumers detailed in point 2.5 of Chapter 2

3.4. Profiling and predictive algorithms for setting a personalised price

The definition of profiling within European Law is essentially given by Article 4(4) of the GDPR, as briefly discussed at the beginning of this Chapter. It bears sizable relevance to the matter of price personalisation, considering that as mentioned above, Recital 45 to the Modernisation Directive makes explicit reference to this form of data processing when elucidating the content of the new information requirement to be included in the CRD, along with automated decision-making.

The author Hildebrandt defined profiling as a process aimed at detecting correlations between different data points and databases, which can be then turned into representations of human or nonhuman subjects (an individual or a group) and applied to identify said subjects as members of a group or category, in addition to providing a kind of prediction, based on past behaviour. These predictions stand for a probability that certain events will have similar outcomes in the future, based on the correlations drawn from the data⁷⁷. To depict this notion, one could think about how their purchasing history may reveal what brands they prefer or how often they re-stock on toothpaste, for example. Then, applying correlations to these (and other) data may unveil when they are more likely to pick up this item from the grocery store.

In its Guidelines later endorsed during the EDPB's first meeting, the A29WP expands the notion contained in the GDPR, stating it is comprised of three elements: it has to be an automated form of processing; it has to be carried out concerning personal data, and its objective must be to evaluate particular aspects about a natural person⁷⁸. The A29WP went on to say that "profiling is a procedure which may involve a series of statistical deductions. It is often used to make predictions about people, using data from various sources to infer something about an individual, based on the qualities of others who appear statistically similar"⁷⁹.

The potential relationship between profiling and personalised prices is self-evident – not only deriving from it being mentioned in the Recital regarding the new information duty

⁷⁷ HILDEBRANDT, M. – Defining Profiling: A New Type of Knowledge? In: *Profiling the European Citizen*, 2008, p. 19

⁷⁸ A29WP – *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679*, 2018, p. 6

⁷⁹ A29WP – cit. 78, p. 7

to be added to the CRD but also because, as previously highlighted, in order to estimate a consumer's (or a group of consumers') willingness to pay, the controller carries out an analysis of the personal data (input) to assess correlations and identify characteristics of present or future behaviour (output), which can include the reservation price to guarantee the acquisition of a particular item or service.

Nonetheless, considering the fleeting environment of online shopping, “merely” profiling a customer to predict at what price they are more likely to conclude a purchase is not enough. There must be a mechanism to almost instantaneously act upon this knowledge by displaying the right price to the right individual or group, without the delay that would have been caused by human intervention. As indicated previously in Chapter 2 when discussing the technological aspects that enable personalisation practices online, such necessity for celerity leads to the following topic: automated decision-making, and more specifically, pricing algorithms programmed to reflect the insight derived from the consumers' behaviour profiling.

Profiling and automated decision-making may take place separately or jointly. For example, returning to the language school previously discussed. The business could employ an algorithm to perform automated decisions about how much to charge different customers based on readily-observable characteristics (for example, browser and device used), without relying on extensive profiling to conduct price discrimination. Alternatively, it could purchase a database regarding potential customers from a data broker – who merely gathered the data and built the profiles, without performing any sort of automated decision-making. Then, the language school could apply the pertinent statistical deductions to this database and, in the same processing context, run an algorithm to set different prices according to the profiles – thus utilising profiling and automated decision-making concurrently.

As noted earlier, profiling and automated decision-making merit an enhanced level of care and transparency. This is demonstrated by the contents of Recitals 60 and 63 to the GDPR, and determined by the specific commands to make individuals aware in case these forms of data processing take place, in accordance to Articles 13(2)(f) and 14(2)(g), which expressly refer to the provision of “meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject”.

The importance of being made aware of the anticipated repercussions is also mirrored by the Modernisation Directive's Recital 45 when it acknowledges the potential risks it

might represent to the consumers' purchasing decisions. This is because this form of processing (profiling), particularly when allied with robust pricing algorithms, carry the ability to exacerbate the knowledge gap that exists between the individual and the data processor, making it abysmal and allowing the trader to go beyond predicting consumer behaviour, and actually start to manipulate it, as noted by Seele and others in their literature review on the issue⁸⁰.

Particularly regarding price personalisation powered by consumer profiling and operationalised by automated decision-making (pricing algorithms), since this practice consists essentially in a form of discrimination, the danger of it turning out to be based on a protected characteristic or, in other words, special categories of personal data in the sense of Recital 71 to the GDPR, is not dismissible. This danger holds true even in a situation where the data points evaluated are not sensitive by themselves, as the correlations involved in the process may end up revealing hidden biases, as pointed out by Drechsler and Sánchez⁸¹.

For this reason and with the aim at minimising the potential drawbacks that hidden biases may inflict upon this pricing strategy, a step towards enhancing the transparency of the whole operation may be to compel the trader to disclose the main profiling parameters and their relative importance in the personalisation of the offer – similarly to what the Modernisation Directive has brought to the ranking of offers presented as a result of a search query, and as already implied by Articles 13(2)(f) and 14(2)(g) of the GDPR. Additionally, it even seems to be one of the details consumers would like to have included in the mandated disclosure for an adequate level of information, as it was observed within the survey carried out with lusophone consumers described in Chapter 2.

Once again highlighting the connection between data protection and consumer law, and as the Modernisation Directive Recital 45 refers explicitly to automated decision-making and profiling in relation to the subject-matter examined here, these topics were analysed, and their potential risks were outlined, along with possible avenues for mitigation. Subsequently, the right not to be subject to a decision based solely on automated processing and its pertinence (or lack thereof) to price personalisation will be investigated.

⁸⁰ SEELE, P. [et.al.] – cit. 31, p. 6

⁸¹ DRECHSLER, L. & SÁNCHEZ, J. C. B. – *The Price Is (Not) Right: Data Protection and Discrimination in the Age of Pricing Algorithms*, 2018, p. 3

3.5. Outline of the right not to be subject to a decision based solely on automated processing – applicability and effectiveness in regard to price personalisation

Article 22(1) of the GDPR states that “the data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her”. At first glance, this might seem promising for the individual (concurrently data subject and consumer) who wishes to avoid being subject to price personalisation. However, it is necessary first to examine its applicability to the situation at hand and, then, the possible exceptions enumerated in the Article’s following paragraph.

The threshold set by this provision is, in fact, relatively high: (i) the decision must be fully automated (without human intervention at any stage of its rendering); (ii) it must produce legal effects upon the person concerned or (iii) affect them in a similarly significant manner. For instance, it is debatably enough that a human reviews the consumer profiles before the setting of personalised prices to jeopardise the possibility of the individual affected by it to object based on Article 22(1).

Despite the GDPR not expressly defining what qualifies as “legal” or “similarly significant”, the requirement related to the effects of the automated decision upon the individual is stringent, as the interpretation results that the right to object only extends to situations in which they are substantial. To ascertain whether or not price personalisation fits the bill for the exercise of this right, it arguably depends on the cost-range of a particular item. For instance, if the price of a costlier item is personalised, then it is reasonable to suppose that the automated decision involved in the process notably affects the consumer, given the sheer cost of the purchase.

However, a different perspective leads to the conclusion that price personalisation has a significant impact on the individual without so much regard for the cost range of the items involved. This is because the very premise behind setting a price as close as possible to the consumer’s willingness to pay is to coax them into finalising the purchase, thus significantly affecting the behaviour or choices of the individual concerned⁸². From this point of view, the economic value of the transaction is not the most relevant point, but rather the

⁸² A29WP – cit. 78, p. 21

manipulation of human will in the face of an automated decision that set the price in a manner as to induce a purchase.

Nonetheless, perhaps the single greatest hurdle to the applicability of this right to price personalisation instances is Article 22(2), which excludes the preceding paragraph in some instances – notably when the decision reached solely through automated processing is based on the data subject’s explicit consent. This is because recalling the proposition drawn previously within this Chapter (that the individual’s consent is the most likely option as regards lawful grounds for data processing for the purposes of personalising prices), it results that Article 22(2) significantly impairs the prospect of the data subject’s insurgence against the practice based on this legal provision, as the processing was supposedly based on their consent in the first place.

In case an individual that had previously given their consent for the processing of their data would later wish not to be subject to an offer personalised based on it, considering that the right not to be subject to a decision based solely on automated processing cannot assist them, he or she would likely need to follow a sinuous procedure to avoid said offer, as described by Esposito⁸³. First, they would need to withdraw their consent under Article 7(3); to subsequently exercise the right to be forgotten from Article 17(1)(b) and only then, he or she would need to begin their relationship with the trader anew, this time denying consent to data processing. In addition to the expected lengthiness of this procedure, in case the consumer is not effectively aware of the logic behind the personalisation employed by the trader and its envisaged consequences, it is not clear that the individual would decide to defy it in the first place.

In this Chapter, having first ascertained the applicability of data protection rules to the processing intended for price personalisation purposes, in particular, the GDPR; then having examined its framework with an emphasis on what we argue is the sole viable option for assuring the lawfulness of the operation (the individual’s consent) and, after that, having analysed profiling, automated decision-making, and how to avoid being subject to it, the present work will now turn more distinctively to the scrutiny of the issue at hand from the perspective of consumer law. This division is made for methodological reasons only, as these legal disciplines act in concert.

⁸³ ESPOSITO, F. – *Making personalised prices pro-competitive and pro-consumers*, p. 30 – forthcoming in CeDIE Working Papers 2020/02

4. PERSONALISED PRICING UNDER EUROPEAN CONSUMER LAW

This Chapter aims at establishing the normative foundation for the analysis of personalised pricing practices in the European Union Digital Single Market, from a consumer law perspective. Additionally, it focuses on the constraints and requirements that must be observed by businesses wishing to employ big data analytics for this purpose, as well as the protection offered to individuals as consumers.

The previous Chapter focused on data protection law. It explored the issue from a prerequisite point of view, considering that personal data processing is what enables first- or third-degree price personalisation in the first place. Now the focal point is shifted and narrowed towards consumer law and the role it plays in the context of a business practice consisting in setting the product or service's price as close as possible to the consumer's assessed willingness to pay for it.

First, some of the principles that permeate European consumer law are highlighted, followed by an outline of the "consumer" concept within this legal system. Subsequently, the emphasis is relocated to the digital element, specifically towards online consumer contracts and their particularities. Later, there is a study of potential unfair commercial practices in relation to price personalisation. The analysis is carried out, bearing in mind that the year of 2019 brought new additions to the existing European consumer law framework, one of which (the Modernisation Directive) expressly addresses this work's central matter.

In particular, the emphasis is placed on said Modernisation Directive as it is marked by the literal reference to price personalisation. This Directive addresses the topic in its Recital 45 and also Article 4(4)(a)(ii), where it amends Article 6(1) of the CRD by means of adding a pre-contractual information duty for distance and off-premises contracts where the price was personalised on the basis of automated decision-making.

One issue is explored: the potential interplay between price personalisation and price reduction rules, as, after all, both topics merited new provisions added by the same legal document. Such clash deserves a detailed investigation, especially in light of above-mentioned Modernisation Directive, which on the one hand, dictates a new information duty when the price is personalised on the basis of automated decision-making, and on the other, establishes rules on the transparency of price reductions and the indication of the prior price applied to a particular good or service. When and if the two things are juxtaposed, how to assure compliance with the consumer protection rules regarding both? Meaning that, for

example, when a price is personalised for each consumer, what is the reference point for the application of the price reduction? Would it be the absolute lowest price offered to any given individual, even though this may seem excessive? And how to ensure transparency is maintained in this case, if the general idea of personalised prices is that they are offered only to a certain individual or group of consumers? The present work does not suppose to answer any of these inquiries definitively but rather to offer an additional point of view to the matter.

4.1. Principles derived from European Consumer Law

In a nutshell, consumer law in general concerns itself with the adequate protection of the individual within the context of a consumer relationship with a trader acting in a professional capacity. Despite much earlier signs of interest in regulating consumer protection⁸⁴, the beginning of the subject as it is viewed today was marked by the emblematic speech given by John F. Kennedy in 1962, in which he said the following:

*All of us are consumers. All of us deserve the right to be protected against fraudulent or misleading advertisements and labels – the right to be protected against unsafe or worthless drugs and other products – the right to choose from a variety of products at competitive prices. (...) Consumers, by definition, include us all. They are the largest economic group in the economy, affecting and affected by almost every public and private economic decision. (...) But they are the only important group in the economy who are not effectively organised, whose views are often not heard.*⁸⁵

Building upon these notions, in a European context, the consumer protection theme has evolved during the last decades of the previous century and into the current one, now consisting in a shared competence between the Union and the Member States⁸⁶. These developments mainly focused on two intertwined approaches: the functioning of the internal market and the protection of the individual.

While consumer law is highlighted as one of the areas in which the approximation of laws aims for a high level of protection within the Union, there are other values taken into account, such as the freedom to conduct business. Article 38 of the Charter of Fundamental

⁸⁴ CARVALHO, J. M. – *Manual de direito do consumo*, 2019, p. 21

⁸⁵ KENNEDY, J. F. – *Special message to congress on protecting consumer interest*, 1962, p. 1

⁸⁶ Articles 4, 169 and others from the Treaty on the Functioning of the European Union (hereinafter, “TFEU”)

Rights of the European Union recognises the former and Article 16 advocates the latter, as mentioned in the preceding Chapter.

As consumer protection is not, by any means, the solitary goal pursued by European Law, the paradigm has been mainly focused on maximum harmonisation tools⁸⁷, which restrict the possibility of the Member States introducing more stringent provisions to ensure a different level of consumer protection. For this reason, the principles that help structure the legal framework reflect the fact that while the attainment of a high level of protection is the goal, there are other values concurrently at stake.

With that said, it is vital to recognise the prominent place occupied by transparency in the European consumer law framework, as this standard informs the legal structure as a whole. As the following sub-topics set out to demonstrate, transparency bears more than one significance and may manifest itself in the protection of the weaker party and also in relation to private autonomy (through empowering the individual with awareness about the potential economic consequences of their choices, for instance). Additionally, it is also relevant in regards to non-discrimination, mainly where automated-decision making based on the processing of personal data that affect consumers is at stake, as it must be made clear upon which data such decision was built on and the logic behind the process, and consequently, whether or not it creates a disadvantage based upon a certain protected characteristic.

4.1.1. Protection of the weaker party

The notion that the relationship between the consumer and the trader is not one between equals sets the tone on the legal framework. As stated by the case-law of the CJEU, “the consumer is in a weaker position vis-à-vis the seller or supplier, as regards both his bargaining power and his level of knowledge”⁸⁸. In this sense, there is an essential imbalance; an asymmetry in the level of information each party has, which is directly related to the very concept of who is a consumer under European Law (explored in a subsequent topic) – essentially, while the trader is acting in a professional capacity, the consumer is not.

⁸⁷ Such is the case of the following Directives, for example: UCPD (Recital n. 15); CRD (Article 4); Digital Content Sales Directive (Article 4); Directive 2019/771/EU on certain aspects concerning contracts for the sale of goods (Article 4).

⁸⁸ Case C-147/16 *Karel de Grote* – ECLI:EU:C:2018:320, para. 54

This realisation might also be translated and correlated to data protection law. As examined in the previous Chapter, Recital 43 to the GDPR signals towards a presumption that consent is not freely given in cases “where there is a clear imbalance between the data subject and the controller”, particularly if it is sought as a condition to enter into a contract, despite not being necessary for its performance.

As an example of the embodiment of this principle within consumer law, one can mention certain provisions from the Directive 93/13/EEC on unfair terms in consumer contracts (hereafter, the “Unfair Contract Terms Directive” or, simply, the “UCTD”)⁸⁹. For instance, this legal document limits the customary contractual freedom that informs private law, while also deviating from the usual *pacta sunt servanda*. This is evident from the obligation set upon the Member States by Article 6(1) to, within their national law, determine that unfair terms in a contract between a consumer and a trader not be binding upon the former.

Another materialisation of the effort to bridge the gap between the parties of a business-to-consumer relationship are information obligations, a self-evident pull towards transparency. Authors Seizov and others even go on to say that “conversely, as of the 1990s information obligations became a standard part of drafting European consumer protection measures and found their way into such legal acts as (...), most recently, the Consumer Rights Directive (the CRD)”⁹⁰. Additionally, similar mechanisms are not exclusively used by consumer law – for example, as discussed before, they are employed by data protection law as well⁹¹.

The imbalance in knowledge between the trader and the consumer is accentuated in the context of Big Data analytics and its use to generate business intelligence, translated into actionable insights about consumers’ behaviour and how it can be influenced. There are even those who claim that “the internet knows you better than your spouse does”⁹². The

⁸⁹ Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts

⁹⁰ SEIZOV, O. [et.al.] – *The transparent trap: A multidisciplinary perspective on the design of transparent online disclosures in the EU*, 2019, p. 153

⁹¹ For example, Article 12(1) of the GDPR states: “The controller shall take appropriate measures to provide any information referred to in Articles 13 and 14 (...)”

⁹² The quote is credited to cybersecurity expert Bruce Schneier, and the complete citation is: “I used to say that Google knows more about what I’m thinking of than my wife does. But that doesn’t go far enough. Google knows more about what I’m thinking of than I do, because Google remembers all of it perfectly and forever”. Scientific American published a piece titled *The Internet Knows You Better Than Your Spouse Does* in 2019.

Netherlands Authority for Consumers & Markets has also recently manifested itself in this sense, pointing out that due to technological advances allowing for the prediction of consumer behaviour, businesses might know these individuals better than themselves⁹³.

The author Bar-Gill points out that the knowledge asymmetry discussed above allows the trader to explore not only the consumers' preferences but also their misperceptions, in a way that over-projects his or her willingness to pay. In this demand-inflating scenario, the consumer is led to spending more than they would have under a more equitable setting⁹⁴. This is particularly alarming in case the correlations established through behavioural profiling go beyond predicting future choices and start to aim at influencing the individual's behaviour, as discussed in Chapter 3.

Faced with the possibility that not only consumers' characteristics and preferences are taken into account, but also that their misperceptions might be exploited and even their behaviour might fall prey to undue commercial prodding, we argue that it is not sufficient to impose a duty to merely inform that price personalisation based on automated decision-making took place, as the plain wording of new information requirement brought by the Modernisation Directive seems to indicate.

Instead, we hold that it is also necessary to empower the individual with some level of understanding of how the personalisation took place, as well as a real and readily-available choice to accept it or not. Pointedly, as already mentioned here, another new transparency obligation brought by the new Directive (regarding the ranking of products presented as a result of a search query) dictates that the main parameters and their relative importance must be made known to the consumer.

A similar command would be advantageous for price discrimination, by means of providing a broader perception of what data points were analysed and how they relate to other variables, thus ensuring that the consequences from the behavioural profiling do not stem from protected grounds. This would be a positive increment to the consumer acquis, as the party that is customarily considered to be in a less knowledgeable position than the trader. Furthermore, as previously stated here, information about the "main/general parameters according to which prices will vary based on the user's data" was deemed relevant by more

⁹³ ACM – *Guidelines on the Protection of the online consume: Boundaries of online persuasion*, 2020, p. 18

⁹⁴ BAR-GILL, O. – *Algorithmic Price Discrimination When Demand Is a Function of Both Preferences and (Mis)perceptions*, 2019, p. 230

than half of the participants in the survey carried out with lusophone consumers described in Chapter 2.

Having looked at this first aspect, the focus will now be shifted towards what the legal framework enables the parties (traders and consumers) to do in the context of their commercial relationship.

4.1.2. Private Autonomy

Another guiding principle present in European consumer law relates to the freedom to conduct business, assured by the European Union's framework, albeit under the circumscription of the applicable legal instruments (consumer law among them, accompanied by competition law, contract law, health and safety regulations, amongst others). This bears similarity to the legitimacy of personal data processing, as analysed in the previous Chapter, as long as the trader complies with the regulations concerning their businesses practices, they are free to pursue their goals however they deem fit.

Building upon the preceding paragraph, one extent of this principle pertains to the trader's ability to structure and carry out their commercial practices whichever way they prefer (as long as in observance of the law). However, there is yet another dimension to it, concerning the individual and their right to make informed decisions while playing the role of a consumer.

In relation to the second magnitude, this principle also manifests by the already mentioned widespread use of information duties by European Law, which is also closely related to the preceding topic, as they simultaneously aim at closing the informational gap between trader and consumer and also at empowering the individual to choose consciously. By way of illustration, this is the case of the pre-contractual information requirements brought by the CRD, to which the Modernisation Directive has added the new one related to price personalisation herein discussed.

In other words, the theoretical idea behind the information duty mechanism is to bridge the knowledge asymmetry between the parties⁹⁵ (consumer and trader within the context of consumer law) in order to ensure the possibility of a conscious choice by the individuals. However, similarly to what takes place in the realm of informed consent before personal

⁹⁵ SEIZOV, O. [et.al.] – cit. 90, p. 167

data processing, theory and practice are not always in alignment, especially taking into account the general consumer behaviour of quickly scanning through the usually lengthy “terms and conditions”⁹⁶ section prior to bounding him or herself to a contract.

The case-law of the CJEU emphasises transparency as a means to facilitate the individual’s agency, meaning that before being bound by an agreement with a trader, the consumer must be made aware of the economic consequences of its terms: “it must be highlighted that the information, before concluding a contract, on the terms of the contract and the consequences of concluding it is of fundamental importance for a consumer. It is on the basis of that information in particular that the consumer decides whether he wishes to be bound by the terms previously drawn up by the seller”⁹⁷.

Specifically speaking about price personalisation, this is precisely the approach chosen by the Modernisation Directive, as made evident by the context within which it added the command regarding this commercial practice. As previously mentioned more than once in the present work, this Directive’s Article 4 inserts a new item within the context of Article 6(1) of the CRD, which regulates the pre-contractual information requirements for distance and off-premises contracts. Pointedly, this new subheading determines the obligation to inform the consumer “where applicable, that the price was personalised on the basis of automated decision-making”.

As advocated in the preceding Chapter, the understanding of what economic consequences will be brought by certain contract terms is linked with the awareness about exactly what personal data was processed by the trader and what was the general criterion utilised to generate a personalised price, along with the envisaged consequences of such automated decision-making and profiling towards the individual⁹⁸. Comprehension of these issues would be pivotal in supporting the consumer’s private autonomy. Nonetheless, whether or not the consumer takes advantage of the information the trader is obliged to provide either under data protection or consumer law is more closely related to efficacy.

Finally, turning back to the very incentive behind the trader’s decision to implement a pricing strategy oriented towards reflecting the consumer’s willingness to pay, it is none

⁹⁶ As noted in the European consumer market study – cit. 35, p. 92. 92. Additionally, this behaviour was empirically observed on the trends emerging from the survey with lusophone consumers detailed in point 2.5 of Chapter 2

⁹⁷ Case C-310/15, *Deroo-Blanquart*, ECLI:EU:C:2016:633, para. 40

⁹⁸ Especially following Articles 13(2)(f) and 14(2)(g) of the GDPR

other than inciting the conclusion of a purchase and thus, making a profit. This premise brings consequences to the individual's autonomy, notably concerning how the nudge is perceived by the one affected by it⁹⁹ and, consequently, how they are impacted in a practical sense.

Despite the earlier statement that there would be no marked distinction between situations in which the trader advertises the possibility of applying personalised discounts and those where the communication limits itself to the indication that prices may be personalised, the contrast amid the two is crucial in regards to the consumer's self-determination. Thinking about the former (namely, advertisement of personalised discounts), following their empirical study previously mentioned in Chapter 2, authors van Boom and others concluded their data indicated that "as the behavioural pricing information was more in line with self-interest, the intention to purchase increased"¹⁰⁰. This also seems to be the direction towards which the survey carried out with lusophone consumers points at (in this sense, Figure 5, which indicates that more than a third of the participants' intention to purchase would be positively impacted by the information that the price of their offer could only be personalised in the form of a discount).

Bearing in mind the above – that price personalisation practices may quite possibly lead the consumer to take a transactional decision that he or she would not have taken otherwise (particularly when profiling extrapolates the realm of behaviour prediction and enters into the sphere of influencing it), the present work undertakes to further explore this in sub-heading 4.4 of the present Chapter. For the time being, the analysis will now pass on to the next materialisation of transparency within consumer law that is significant to the matter at hand – namely, about non-discrimination commands.

4.1.3. Non-discrimination

Equality and non-discrimination are highly regarded values in the Charter of Fundamental Rights of the European Union, figuring in its Title III. Notwithstanding, they

⁹⁹ In an article containing a review of the book "*Nudge and the Law. A European Perspective*", edited by Alemanno and Sibony, Hacker highlights that behaviourally informed interventions (something which we argue a personalised price is) have a significance in terms of transparency and autonomy. HACKER, P. *Nudge 2.0: The Future of Behavioural Analysis of Law in Europe and Beyond*, 2016, p. 308

¹⁰⁰ VAN BOOM, W. H. [et.al.] – cit. 46, p. 12

require further substantiation in order to apply to concrete situations, especially between private parties. Despite their importance, the legal framework is uneven, as it relies mainly on sectorial legal acts¹⁰¹, such as racial and ethnic origin and sex.

In general, European Law prohibits both direct and indirect discrimination. Direct discrimination occurs when a person is treated less favourably on grounds of a protected characteristic than another is, has been, or would be treated in a comparable situation¹⁰². On the other hand, indirect discrimination takes place where an apparently neutral provision, criterion, or practice would put persons with a certain protected characteristic at a particular disadvantage compared with others; unless that provision, criterion or practice is objectively justified by a legitimate aim and the means of achieving that aim are appropriate and necessary¹⁰³.

At first glance, automated decision-making carried out using algorithms and artificial intelligence seems to eliminate human prejudice from the process, thus privileging non-discrimination, but that is not necessarily true. Drechsler and Sánchez highlight that “it must be kept in mind that algorithms are not neutral, since they are programmed by people for people”¹⁰⁴.

As noted by Seele and others in their literature review on the subject, “algorithmic discrimination based on gender, ethnicity... or disability might not be readily apparent or purposefully coded, but the result of (biased) machine learning, arising even without bad intention on part of programmers or firms”¹⁰⁵. As highlighted in Chapter 3, even if profiling is employed to assess seemingly harmless data points (not sensitive data, thus not readily revealing protected characteristics related racial or ethnic origin or sexual orientation, for example), the results may still turn out to infringe a non-discrimination command, as an effect of the hidden biases either in the dataset or in the algorithm itself.

The example given by author Vale is a helpful illustration of the potential for resulting in indirect discrimination carried by profiling practices. Taking, for instance, an individual’s personal mobile phone location history between 11 pm and 7 am over a month, it is

¹⁰¹ For example, the Directive 2000/43/EC on racial and ethnic origin and the Directive 2004/113/EC implementing the principle of equal treatment between men and women in the access to and supply of goods and services.

¹⁰² For example: Article 2(a) of Directive 2004/113/EC

¹⁰³ For example: Article 2(b) of Directive 2004/113/EC

¹⁰⁴ DRECHSLER, L. & SÁNCHEZ, J. C. B. – cit. 81, p. 3

¹⁰⁵ SEELE, P. [et.al.] – cit. 31, p. 19

reasonable to infer where they live. Moving on from this inference, in case the specific area is known for a high habitational concentration of a specific ethnic group, it is subsequently deduced that said individual is likely a member of that group. If a pricing algorithm processing this seemingly not sensitive data regarding the mobile phone's location history resulted in a disadvantage for the particular consumer, it could be concluded that what was effectively at stake was their ethnicity, thus resulting in a prohibited discrimination under Article 2(2) of Directive 2000/43/EC¹⁰⁶.

Specifically regarding price personalisation in the digital era, as it essentially consists in a form of discrimination, there is an added layer of intricacy, related to the inner workings of the algorithms used to estimate an individual's willingness to pay and also to the datasets built for this reason, as the "black box" effect may mask the presence of a hidden bias in either one of these elements. This hidden bias could, in turn, result in a prohibited discrimination such as the one from the example above, depending on which protected characteristic the personalised price ended up being most likely based on. However, in practice, said effect might result in prices where it is virtually impossible to discern on which grounds they were personalised, and subsequently if there was an instance of prohibited direct or indirect discrimination¹⁰⁷.

Additionally, the consumer population's collective notion of "fairness" (intrinsically associated with those of "equality" and "discrimination") is of high relevance for the issue of price personalisation. The researchers involved in the European consumer market study note that "[a]n important restraint on price personalisation is consumers' distaste of practices that they feel are unfair. A clear example is Amazon's famous experiment with price personalisation, which led to strong consumer backlash"¹⁰⁸. Such is the weight of the public opinion, in the sense that practices that are perceived as discriminatory may harm a business's profit.

While the issue of non-discrimination in relation to the profiling of consumer behaviour admittedly merits a more detailed examination, this falls outside the scope of the

¹⁰⁶ VALE, S. B. – *The Omnibus directive and online price personalization: a mere duty to inform?* 2020, n. 21

¹⁰⁷ DRECHSLER, L. & SÁNCHEZ, J. C. B. – cit. 81, p. 3

¹⁰⁸ EC, European consumer market study – cit. 35, p. 264. Nonetheless, the trend that emerged from the survey carried out with lusophone consumers seems to point at a different direction, as the responses to the question about the unfairness of the practice were split, with the most-chosen answer (44%) being that it is not unfair, as long as the consumer is informed about it

present work. However, bringing back the attention towards what was already mentioned in the previous Chapter regarding profiling, it is advocated here that the transparency concerning the main parameters and their relative importance in the personalisation of the offer is a goal worth pursuing, as it has the potential to curb the possibility of price personalisation turning out to be a prohibited discrimination, in case it is based on a protected characteristic, even if initially masked by the algorithmic “black box” effect.

Having looked at transparency from different points of view from within consumer law, namely concerning the protection of the weaker party, the maintenance of private autonomy and lastly, the importance of a clear indication regarding what exactly are the variables considered for personalisation purposes in order to avoid prohibited discrimination, the analysis will now move on towards the notion of “consumer”, as it is crucial for the scope of the new information requirement introduced by the Modernisation Directive, and more broadly, for the consumer law framework as a whole.

4.2. Concept of the consumer in the context of European Law

In order to benefit from the provisions contained in European consumer law, it is first necessary to ascertain if an individual, in a given contractual context, fits the legal concept of “consumer”. Similarly, to analyse the price personalisation phenomenon in light of this particular legal framework, it is indispensable to delimitate the contours of said concept beforehand, to only then move on to more concrete scrutiny of how it may take place.

While each normative text brings its own particular definitions, the consumer law Directives follow a pattern when characterising the consumer as “any natural person who is acting for purposes which are outside his trade, business, craft or profession”¹⁰⁹. This concept can be broken down into requirements that must be fulfilled for a specific commercial relationship to be subject to consumer law. These relate to the subjective, objective, and teleological elements, with an additional relational aspect.

¹⁰⁹ In this sense, see for example: UCPD – Article 2(a); CRD - Article 2(1) and UCTD – Article 2(b)

The subjective element customarily determines that any natural person can be considered a consumer (granted the other factors are equally present), thus limiting the possibility that a legal person might fit into the definition¹¹⁰.

In its turn, the objective element concerns the applicability scope of the legal act in question. For example, taking into consideration Directive (EU) 2019/771 on certain aspects concerning contracts for the sale of goods, its Article 3(1) determines it applies to “sales contracts between a consumer and a seller”. Thus, it is reasonable to conclude that the objective element regarding this Directive, concerning a service contract, would not be fulfilled.

Next, there is the teleological element, related to the purpose for which the individual enters into the commercial relationship, which cannot be linked to his or her profession. This element merits a case-by-case analysis, as there is an infinite number of situations in which the purchase of the same item could relate to one’s profession, while being alien to someone else’s.

Finally, the relational aspect associates the concepts of “consumer” and “trader”, signalling that an individual may be considered a consumer in the context of a commercial relationship with a trader as a counterpart. Incidentally, the “trader” is “any natural person or any legal person, irrespective of whether privately or publicly owned, who is acting, including through any other person acting in his name or on his behalf, for purposes relating to his trade, business, craft or profession”¹¹¹.

Bearing in mind the context within which the Modernisation Directive inserts the new provision regarding price personalisation – namely, into Article 6 of the CRD, which contains the information requirements for distance and off-premises contracts concluded between traders and consumers and having already reviewed the notion of the latter, the next point of relevance is precisely this type of contract, more precisely in their digital form, which is the subject of the following topic.

¹¹⁰ As an informative note, the exclusion of legal persons from the scope of the “consumer” concept is not the sole legislative approach possible. For example, the Brazilian Consumer Defense Code (Law No. 8,078 of September 11th, 1990), in its Article 2 establishes that “[c]onsumer is any physical or legal person that acquires or uses a product or service as a final user”

¹¹¹ In accordance with Article 2(2) of the CRD. Other designations applied throughout European consumer law are “seller” or “supplier” – Article 2(b) of the UCTD); Article 2(3) of Directive (EU) 2019/771, for example

4.3. Online consumer contracts

Having first looked at some of the principles that inform European consumer law in terms of transparency and then at the concept of the consumer within this legal framework, the analysis will now concentrate on the primary instrument upon which the consumer relationships are based: the contract between the parties. Narrowing down the scope, the focus is placed upon online consumer contracts, as these bear more considerable significance for the issue of price personalisation.

As defended herein, the increasing permeation of the digital component in people's daily lives – and the accompanying accumulation of vast amounts of data about their preferences and behaviours online – is precisely one of the enabling factors behind the possibility of personalising prices to an individual level, through the processing of this data in order to establish correlations that reveal patterns and for the prediction of future behaviour, and that may even work towards influencing said behaviour.

For this reason, online consumer contracts are of crucial importance to the matter. They are part of a retro-feeding cycle, in which the consumer shops online leaving data points that are then processed along with others, with the aim at estimating his or her future willingness to pay for other items or services, which will, in turn, be liable to be price-personalised. This is particularly relevant for business models that include multiple transactions between the same parties, granted the consent for data processing is not sought as a condition for entering into the agreement, despite not being necessary for it – because, as seen in the previous Chapter, this would lead to the presumption that said consent was not freely given.

Consumer contracts concluded via the Internet are a kind of distance contract, as there is no physical proximity between the parties involved¹¹². As such, they are subject to a specific set of rules that include reinforced pre-contractual information requirements and the right of withdrawal¹¹³. With particular relevance to price personalisation are the information requirements related to the display of the price, contained mostly in Article 6(1)(e) of the

¹¹² “Distance contract” is defined by Article 2(7) of the CRD as “any contract concluded between the trader and the consumer under an organised distance sales or service-provision scheme without the simultaneous physical presence of the trader and the consumer, with the exclusive use of one or more means of distance communication up to and including the time at which the contract is concluded”

¹¹³ Article 9 and onward of the CRD

CRD. According to this provision, before the consumer is bound by a distance contract, the trader shall communicate the total price of the goods or services inclusive of taxes or the manner in which the price is to be calculated (where the nature of the products or services is such that the price cannot reasonably be calculated in advance), along with any applicable accessory charge.

As already vastly mentioned here, currently awaiting transposition to the Member States' legal regimes¹¹⁴, the pre-contractual information requirements were modified by the Modernisation Directive, and a new one was added to the trader's obligations regarding distance contracts. This new information requirement is pointedly about price personalisation, indicating that it is imperative to communicate to the consumer when this practice took place based on automated decision-making.

The addition of the new mandated disclosure to the list from Article 6 of the CRD is ostensibly a substantiation of the transparency that must inform the relationship between consumer and trader, bearing in mind the considerations from the beginning of the present Chapter – that there is an inherent knowledge imbalance between these parties. Therefore, this is particularly linked with the consumer's prerogative of being made aware of the potential economic consequences of the term, as highlighted in the CJEU case-law¹¹⁵ – namely, being potentially charged more or less, depending on the estimation of their willingness to pay.

After looking at the general instrument that operationalises the relation between the consumer and the trader, we will now move on towards the scrutiny of possible unfairness that may take place in this context, especially in regards to commercial practices involving personalised prices.

¹¹⁴ According to Article 7 of the Modernisation Directive, Member States have until 28 November 2021 to adopt and publish the measures necessary to comply with the Directive

¹¹⁵ Case C-186/16 – cit. 121, para. 44 and 45

4.4. Unfairness in relation to commercial practices involving personalised pricing

4.4.1. Unfair Contract Terms Directive

As mentioned earlier in the Chapter, the relationship between the consumer and the trader is not one in which the knowledge levels are usually balanced. For this reason, the consumer protection legislation concerns itself with preventing and sanctioning practices that are deemed unfair towards the consumer, especially in matters related to lack of transparency.

The UCTD refers to contractual terms that may be considered unfair according to its standards when concluded between a business (seller, trader) and a consumer. Its relevance to the issue of price personalisation may seem limited at first, as it states in Article 4(2) that “the assessment of the unfair nature of the terms shall [not] relate (...) to the adequacy of the price and remuneration, on the one hand, as against the services or goods supplied in exchange, on the other, in so far as these terms are in plain intelligible language”.

However, the case-law of the CJEU has considerably widened the requirement of transparency of contractual terms brought by the UCTD within this formulation, which must be understood in a broad sense, going well beyond what is formally and grammatically intelligible language, but rather, conveying the notion that the consumer must be made aware of the potential economic consequences of the term¹¹⁶, as already pointed out in the previous topics.

Bearing in mind the jurisprudentially extended scope of the transparency required by this Directive, coupled with the fact that the European legislator deemed it relevant enough to introduce a new mandated disclosure to the CRD to compel traders to inform the consumer whenever the price was personalised on the basis of automated decision-making within the Modernisation Directive, it is reasonable to conclude that if a personalised price fails to be deemed transparent, it is thus liable to be subject to the unfairness assessment from Article 4(1) of the UCTD.

However, it is necessary to reinforce what we defend consists in a “transparent personalised price”, that would assure the practice would fall under the shield of Article 4(2).

¹¹⁶ Case C-186/16, *Andriuciu and Others*, ECLI:EU:C:2017:703, para. 44 and 45, as referred to by ESPOSITO, F. [cit. 83]

As the interpretation of consumer law determines that the individual must be made aware of the economic consequences of their choices, in addition to the command from data protection rules that the subject has to be informed about the envisaged repercussions of the profiling carried out with their data, in order to be fully transparent, we argue that a personalised price must be accompanied by meaningful information regarding the general parameters and criteria involved in the automated decision-making process, and around which the price may vary, according to the individual's characteristics. This is also justified by being a potentially powerful tool to curb biases that may hide beneath the "black box" effect related to algorithmic pricing, as mentioned on topic 3.4.

On yet another exception to the otherwise undifferentiated treatment dispensed by the present work to the situations where the personalised offer is devised either as a discount or as an increase in relation to what would be the uniform price, it is admitted here that when the trader derives an insight from the consumer's behaviour profiling that they will probably only be persuaded to make a purchase in case they are offered a discount, said trader has a clear marketing interest in disclosing the fact that the individual is being presented with a lowered, personalised price.

Nonetheless, we highlight that even in the circumstances such as this (in which the trader has an added incentive to disclose extra details regarding the personalised offer), it may not yet be a sufficiently transparent situation. Turning back once again to the empirical observations described in Chapter 2, in particular to the instance in which the lusophone participants were asked to answer a multiple-choice question about what they thought was an appropriate level of information to be provided in case of price personalisation, we highlight that more than half selected they would like to know the main parameters used for their data's evaluation, and an even larger proportion also chose the option that included a disclosure regarding the extent to which the price had been adjusted to the particular consumer.

In other words, despite the concise articulation of the information requirement regarding price personalisation brought by the Modernisation Directive, this work maintains that in order for this practice to be deemed transparent – and thus not subject to the unfairness test from Article 4(1) of the UCTD, the consumer that is given a personalised offer should be made aware of the meaningful logic behind their data processing and the resulting economic consequences, in order to be able to make a conscious purchasing decision.

Having reviewed the possibility of applying the unfairness test from the UCTD to personalised prices that fail to be transparent, the examination will move forward in relation to the wider scope of unfair commercial practices.

4.4.2. Unfair Commercial Practices Directive

Besides the hypothesis of subjecting a personalised price to the unfairness assessment from Article 4(1) of the UCTD if it is deemed not to be transparent, there is also the broader concept of unfair commercial practices to consider, essentially given by the UCPD, which covers misleading or aggressive actions and omissions, and also bears significance to the matter discussed here – namely, the personalisation of prices to reflect consumers’ reservation price.

This full harmonisation Directive determines a practice shall be considered unfair if it is contrary to the requirements of professional diligence and materially distorts (or is likely to do so) the economic behaviour of the average consumer (or the average member of the group, when the commercial practice is addressed to a particular group of consumers, according to Article 5(2)).

Regarding misleading actions, Article 6(1)(d) is particularly relevant for traders wishing to engage in price personalisation, as it determines that a commercial practice shall be regarded as misleading if it is deceitful to the average consumer and is likely to cause him to take a transactional decision that he would not have taken otherwise, especially in relation to the price or the manner in which the price is calculated (or the existence of a specific price advantage).

Following the reasoning of Bar-Gill, according to whom “sellers and service providers design their products, contracts, and pricing schemes to create or enhance misperceptions that increase consumers’ willingness to pay”¹¹⁷, the fact that a price personalisation strategy may be developed by the trader with the intent to materially distort the economic behaviour of the average consumer is concerning. If it can be established that this practice led the customer to take a transactional decision that they would not have taken otherwise – namely,

¹¹⁷ BAR-GILL, O. – cit. 94, p. 230

purchasing a product because of a demand-inflating misperception¹¹⁸ – it could, in turn, lead to the categorisation of an unfair commercial practice.

In its Guidance on the Implementation and Application of Directive 2005/29/EC On Unfair Commercial Practices, the EC noted that “under the UCPD traders are free to determine their prices if they duly inform consumers about the prices or how they are calculated”¹¹⁹, but also that “personalised pricing [and] marketing could be combined with unfair commercial practices in breach of the UCPD”¹²⁰. Nonetheless and bearing in mind the possibility of distorting the consumers’ economic behaviour by enhancing demand-inflating misperceptions, as each potential scenario of personalised pricing is unique, it should be tested on a case-by-case basis against the criteria set by the UCPD, for the verification or not of an unfair commercial practice.

When a business wishing to personalise its prices relies on profiling and automated decision-making (such as pricing algorithms), there are enhanced duties in relation to personal data processing. This is especially relevant, bearing in mind the interplay between the provisions from the UCPD with data protection rules. A failure to inform the consumer that their data “will be used for commercial purposes going beyond the transaction at hand could qualify as a misleading omission of material information”¹²¹, thus rendering the price personalisation into an unfair commercial practice.

Data protection rules are essential in assessing the “fairness” of a personalised pricing strategy in light of the UCPD’s provisions. As advocated in the preceding Chapter, consent seems to be the most appropriate lawfulness ground for data processing aimed at establishing personalised prices. Thus, a flaw in the premise (defective consent) will lead to the conclusion that the operation violates the UCPD’s prohibition of unfair commercial practices. For example, when a data subject grants consent while not adequately informed about the ramifications of the data processing (premise), one of which is precisely price personalisation (consequence), this constitutes a violation of the Directive.

Additionally, it is worth looking back into instances in which profiling extrapolates the plane of making predictions about what choices they may take in the future, and outright

¹¹⁸ BAR-GILL, O. – cit. 94, p. 242

¹¹⁹ EC – *Guidance on the Implementation/Application of Directive 2005/29/EC on Unfair Commercial Practices*, 2016, p. 134

¹²⁰ EC – cit. 119, p. 135

¹²¹ EC – cit. 120, p. 63

strives to influence or even materially distort the economic behaviour that was previously merely observed, causing the consumer to take transactional decisions that he or she would not have taken otherwise, in what could also be understood as a misleading action on the part of the trader engaging in such practice. This is relevant for price personalisation insofar as it carries to potential to prod the individual into finalising a purchase by means of making them the exact offer, they “cannot” refuse.

After investigating the potential dark side of personalised prices, namely their relationship with the two primary Directives from consumer law that regulate unfair contract terms and commercial practices, the analysis will subsequently progress towards another subject addressed in the Modernisation Directive – the rules concerning an announcement of a price reduction and their possible interplay with the matter at hand.

4.5. Price reduction rules potential interactions with personalised pricing practices

4.5.1. Changes brought to the Directive 98/6/CE in 2019

The matter of price indication in consumer contracts in the European Union is essentially regulated by Directive 98/6/EC¹²². Differently than several other consumer law texts (as mentioned in point 4.1.), this Directive does not prevent Member States “from adopting or maintaining provisions which are more favourable as regards consumer information and comparison of price”¹²³, thus not constituting a maximum harmonisation instrument.

Particularly regarding the indication of price reductions, Portugal, for example, had adopted its own rules in Decree-Law no. 70/2007 (hereinafter, “DL no. 70/2007”), later modified by DL no. 10/2015 and DL no. 109/2019. According to this legal act, three types of commercial practices of this nature may be implemented by traders, as defined in its Article 3: sales, promotions and clearance (“*saldos*”, “*promoções*” and “*liquidação*” in the original Portuguese).

¹²² Directive 98/6/EC of the European Parliament and of the council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers (hereafter, the “Price indication Directive” or, simply, “PID”)

¹²³ Article 10 of said Directive

Notably, in the Portuguese regime, importance is given to the reference price¹²⁴ to be taken into account for the evaluation of the genuineness of the price reduction in question. The concept of ‘reference price’ is associated with the lowest price previously practised by the same trader during the 90-day period prior to the price reduction in question, except in case of another, eventual price reduction¹²⁵. To some extent, this constitutes an anticipation of the changes brought to the PID by the Modernisation Directive.

Returning to the broader European framework, Article 2 of the Modernisation Directive determines the inclusion of a new Article 6a to the Price Indication Directive, precisely on the matter of price reduction practices. Here, in place of reference price, the term used is simply “prior price”, meaning “lowest price applied by the trader during a period not shorter than 30 days prior to the application of the price reduction”¹²⁶, with an exception similar to that granted by Portuguese Law in case of progressively increasing price reductions¹²⁷, albeit considering the shortened time-frame.

In summary, it can be reasonably concluded that the rules applicable to the announcement of price reduction practices bear a close relationship to the general transparency duty and information requirements imposed upon traders that wish to contract with consumers. This is so as to reduce the knowledge asymmetry between the parties, leaving the consumer in a position to compare prices and, ultimately to make a better-informed decision, as Recitals 1, 6, and 12 to the PID make evident.

In other words, as the trader is performing their professional activity, their knowledge about the product or service and its price is presumably far greater than the consumer’s; therefore, the legal rules determine that there must be transparency when said price is reduced in an effort to nudge the consumer to enter into the contract, so as to not mislead him or her into believing the price reduction is more sizable than it effectively is. As appropriately highlighted by the author Esposito, it is crucial to bear in mind that the PID and its new article regarding the announcement of price reductions are part of the broader European consumer law framework, which equally includes the UCTD and the UCPD

¹²⁴ Article 5 of DL no. 70/2007

¹²⁵ Article 3(2)(a) of DL no. 70/2007

¹²⁶ Article 6a(2) of the PID

¹²⁷ Article 6a(5) of the PID

previously discussed. For this reason, the consumer must be made aware of the economic consequences of this term (namely, the reduced price)¹²⁸.

As previously mentioned, the Modernisation Directive has brought innovations regarding both price reduction rules and personalised prices. For this reason and following the logical structure of the analysis carried herein about price personalisation, the question that now puts itself is how (if possible) to conciliate said price reduction rules with potentially personalised prices and the implications that may arise from situations where both practices could be simultaneously employed, which is the subject of the following topic.

4.5.2. Reference price where personalisation took place

As advocated in the first Chapters, first- or third-degree price discrimination was thought to be unattainable in the past. But, in the Digital Era, where an ever-increasing portion of people's lives happen online, the personalisation of a price to a certain individual can be achieved relatively easily through the collection and processing of data accumulated about that person, particularly by profiling their behaviour online.

As this phenomenon can happen on a granular level, one person may be presented with a certain price while visiting their favourite shop's website, while at the same time, their neighbour sees a radically different, lower price, based on some obscure interpretation derived from an algorithm that processed their personal data. In another example, someone is given a personal coupon to subscribe to a certain service with a discount applied to the fee, while this specific price reduction is not advertised to the general public.

Differently than the treatment dispensed to the ranking of offers within the additions brought to the UCPD by the Modernisation Directive, concerning information on the parameters determining the products' order of presentation being considered 'material' for the purposes of verifying whether or not a practice constitutes a misleading omission¹²⁹, there is neither an explicit imposition related the disclosure of any of the analytical framework through which the consumer's data is subjected with the aim of assessing their willingness to pay nor in regard as to how this translates into a personalised offer.

¹²⁸ ESPOSITO, F. – cit. 83, p. 34

¹²⁹ Article 3(4)(b) of the Modernisation Directive, which determines the addition of a new paragraph to Article 7 of the UCPD

It is equally omitted if the disclosure of a personalised price should automatically entail the necessity of providing the consumer with a “reference price”, understood here differently than the concept brought by the Portuguese DL no. 70/2007, but rather as the parameter or criterion in relation to which the personalisation occurred – or, in other words, the uniform price. This appears to go on the contrary direction of what is consumers’ opinion about an adequate level of information¹³⁰.

Although both price personalisation and price reductions are approached by the modifications brought by the Modernisation Directive – albeit to be included within different instruments of European consumer law, respectively, the CRD and the PID, the new legal act does not elaborate about the possibility of the two overlapping. So, the inquiries herein formulated might be summarized into one: can a personalised discount be understood as a “personalised price reduction”, and thus have to abide by the rules from Article 6a?

In other words, even though these commands emerge within the same legal document, it is relevant to indicate that the Modernisation Directive does not appear to anticipate any instance within which the two phenomena might have an interplay, even though both carry the possibility of similar effects. For example, these similar effects could arguably consist in the consumer paying a lower price – either because they received a personalised offer that was less expensive than the uniform price or as a result of a general price reduction.

Once again, excepting the default uniform approach employed herein to personalised offers that are either lower (discount) or higher (surcharge) in relation to a uniform price, in the face of the laconic information requirement concerning price personalisation on the basis of automated decision-making, it is necessary to evaluate whether a lower price or discount offered solely to one consumer (or restricted group of consumers) shall abide by the standard contained in the new Article 6a added to the PID regarding price reductions.

One of the key inflection points in the examples of the neighbours being shown different prices and the unique discount coupon offered to a particular customer to incentivise subscription is the reach of the prices (and price reductions) presented by the trader to the consumers. Consequently, the matter of how to legally qualify these prices (or,

¹³⁰ As previously pointed out, in the survey carried out with the lusophone consumers detailed in Chapter 2, more than half of the participants indicated that they would like to know the main parameters used for their data’s evaluation, and an even larger proportion also chose the option that included a disclosure regarding the extent to which the price had been adjusted to the particular consumer

more broadly, these commercial practices) poses issues that must be considered in conjunction with the system of European consumer law, but also in light of the guiding notion of transparency, which is essential to the well-functioning of the internal market and the empowerment of consumers through enabling them to take mindful purchasing decisions.

In the first example, what gives rise to the difference between prices may bear significance. As it is feasible that a person visiting their favourite shop's website can be estimated to be willing to pay more, they might be shown a personalised surcharge. However, it is equally conceivable that their neighbour might actually be shown a personalised discount, in case it is assessed from their data that they'd only complete a purchase at a lower cost (for instance, because they've bought similar items from other vendors in the past). In sum, one may be facing either a "personalised surcharge" or a "personalised discount", being the latter more relevant to the current analysis.

Under the disclaimer from Chapter 2, the intrinsic and extrinsic characteristics, as well as the benefits and detriments of either "type" of personalised price (surcharge and discount)¹³¹ are not central to the present work. Instead, we reiterate that the focus now lies upon identifying whether or not a personalised discount might be subject to the new Article 6a of the PID. The wording of this new provision refers specifically to an "announcement" of a price reduction, thus being relevant to spell out the scope of what exactly is to announce something, and whether or not being offered a personalised price may be considered as such. As the Modernisation Directive does not contain a Recital on the matter, we resort to the lexical meaning of the verb "to announce", which is to make known publicly.

Suppose an announcement is taken as synonymous with a public advertisement, as price personalisation practices are intrinsically aimed at being communicated on a one-on-one basis by their very nature. In that case, it becomes more challenging to submit a personalised discount to the rules regarding price reductions from Article 6a of the PID, as these presuppose the existence of an announcement about the practice.

Despite the caveat of the previous paragraph, in case an individual is shown a lower, personalised price that could be qualified as a price reduction under the meaning of the PID, what would then be the scope of the information requirement related to price personalisation? At the outset, it would necessarily have to include the prior price applied

¹³¹ This problematic is discussed in detail in ESPOSITO, F. – cit. 83

by the trader by force of Article 6a – however, what exactly would be considered as the prior price? The second paragraph of the Article makes a temporal reference (“lowest price applied by the trader during a period not shorter than 30 days prior to the application of the price reduction”), but in case of these commercial practices overlapping, it may subsequently become unclear what should be taken as the lowest price – whether it is the uniform price (if it even exists), the average charged to different consumers in the preceding period, or yet, the absolute lowest amount asked by the trader during the relevant time-frame.

Extrapolating the point, in relation to the second example (individualised discount coupon), it would seem grotesque if an eventual general price reduction should be affected by the personalised discount offered to that particular consumer, in the form of the “lowest price applied by the trader” during the preceding period for the purpose of Article 6a(2), bearing in mind that the coupon in question was not advertised to the general public.

As outlined in the previous point 4.5.1., one of the goals behind the rules applicable to the announcement of price reduction practices is to assure transparency in the trader’s conduct and to allow the consumer to ascertain the genuineness of the price reduction in question. As demonstrated by these two examples, in a situation with these two variables are involved – namely, price personalisation and price reduction practices, it becomes increasingly difficult to verify if the announced price reduction was, in fact, in compliance with the legal requirements.

One manner to tentatively work out the dichotomies pondered above that could bring about even more complications by means of impairing the possible positive impacts of price personalisation upon consumers’ economic welfare, as discussed in Chapter 2 (point 2.3), would be to relativize the importance of the publicity associated with the notion of an “announcement”, while concurrently qualifying personalised prices that are lower than the uniform one as “personalised price reductions”, in order to apply Article 6a of the PID. Under this perspective, although consumer law is usually concerned with the protection of the individual consumer in relation to the trader, a collective approach is argued for, based on the reasons described below.

Recapping the wording of Article 6a, it is essential to note that the legal provision makes no exclusion to the singular consumer-trader relationship. In other words, the text is clear in its reference to the (absolute) lowest price applied by the trader, regardless if it is offered only to one customer. From this point of view, to assess compliance with the rules

from Article 6a, the absolute lowest price applied by the trader must be taken into account, regardless if presented to one single customer in the form of a personalised price and not advertised to the general public by any means.

It is evident that this position entails foreseeable implementation difficulties, granted the granular nature of personalised prices, but it seems to be aligned with a radical approach towards the transparency principle that guides European consumer law. Additionally, by considering the prior price for the purposes of Article 6a(2) as the lowest price applied by the trader within the context of a personalised price reduction, the general consumer population will be made aware of how particular discounts benefitted other customers and would gain an overall clearer notion of the price personalisation practices previously carried out, thus informing their future economic behaviour towards that specific trader.

Admittedly, such perspective may add up to an insurmountable obstacle to the employment of price personalisation by businesses, by the simple reason of preventing that a personalised discount is offered to a singular individual, given it would then potentially turn into the “lowest price applied by the trader” within the meaning of Article 6a(2) and thus forcefully informing all sort of other price reductions the business may wish to implement. This “hollowing” of the commercial practice surely was not the intent of the European legislator, considering the Modernisation Directive brought its first explicit mention to the field of consumer law.

While the present work limits itself to remarking that a possible interplay between price personalisation and price reduction rules would not be a straightforward one, in addition to pondering about what conceivably undesirable results a drastic approach might yield, it is recognised that the matter would merit more detailed scrutiny in case it turns out to be relevant for a particular business model, once the Modernisation Directive is transposed to the Member States’ legal regimes by November 2021. Having said that, the next topic serves the purpose of offering conclusive remarks to the considerations herein developed.

5. CONCLUSIVE REMARKS

5.1. Key elements of the legal framework regarding price personalisation moving forward

This work has aimed at establishing a correlation between the collection and processing of an individual's personal data (prerequisite) and the extraction of actionable insights about themselves to determine their reservation price for products or services (objective). Thus, the legal issue of price personalisation was primarily analysed from the data protection and consumer law points of view – under the understanding that these legal disciplines are not severed from one another, the analysis was nonetheless carried out sequentially for the sake of methodological reasons.

Emphasis was granted to the vital role played by transparency within the European legal framework under scrutiny, as shown by its widespread influence in terms of empowering the individuals to make their own informed decisions, both in regards to how their data is used and also in relation to their purchases as consumers. In this sense, it was noted that the European legislator relies heavily on information duties as a way to bridge the knowledge gap between said individuals (herein, data subjects and consumers) and the entities with whom they develop commercial relationships within the digital environment (traders, data brokers, processors, among others). This legislative and policy-shaping choice results from many reasons, some of which mentioned by Seizov and others: “disclosure is effective, widely supported across party lines, and costs almost nothing to implement and enforce, since the costs of these activities usually land onto third parties”¹³².

Following the advent of the new information requirement about price personalisation brought by the Modernisation Directive, the analysis herein developed started by building upon the conceptual structure and the premise established in Chapter 2 regarding the practice's benefits and disadvantages from an economic point of view and also according to the consumers' opinion about it, as empirically observed.

Moving forward from this base and having established in Chapter 3 that consent is the most likely lawfulness grounds for data processing for which the purpose is that of personalising prices, we highlight its informational aspect, as it is one of the essential requirements for the validity of said consent¹³³. In an even broader approach, bearing in mind

¹³² SEIZOV, O. [et.al.] – cit. 90, p. 151

¹³³ Article 4(11), GDPR

the principles laid out by the GDPR (transparent, purposeful processing), the data subject should be conscious about the potential implications of the operation – namely, the personalisation of prices to match their willingness to pay.

Additionally, considering that the Modernisation Directive refers to a specific form of personal data processing – namely, automated decision-making and the profiling of consumer behaviour, the connection between these two facets that an individual may inhabit is highlighted. Thus, as a data subject that is concurrently a consumer, he or she is entitled to receive meaningful information about the logic involved in the operation so that they can take it into account the potential risks in their purchasing decision.

This also bears relevance to a point of view more akin to consumer law, once it is remarked upon the context within which the new mandated disclosure regarding price personalisation is inserted – precisely the CRD, along with other pre-contractual information duties for distance and off-premises contracts. Advancing to the expansion of the notion of transparency through the case-law of the CJEU, it is reasonable to conclude that the consumer must be made aware of the economic consequences that it is likely to bring upon them, otherwise chancing the configuration of an unfair situation.

Lastly, while the practice of personalising prices towards consumers does not seem to be overly widespread yet, as highlighted in Chapter 2, it undoubtedly possesses a considerable growth potential, bearing in mind the contemporary tendency towards digitalisation of people's lives. Thus, despite the conciseness of the treatment dispensed to this matter by the legal discipline, in addition to it not yet being entirely clear how the interaction with other rules will play out, especially as examined in the last part of Chapter 4, it holds a latent perspective to affect consumers' quotidian.

5.2. Information asymmetry in the information era – efficient disclosures in the case of personalised prices

Notwithstanding the nominal value of the information duties provisions from data protection and consumer law, especially in regards to increasing transparency for individuals' sake in relation to businesses wishing to extract the maximum possible profit, this tool may not be sufficiently empowering in terms of safeguarding against manipulation of consumer behaviour – at least not if implemented in an isolated, formalistic fashion. This

appears to be the general opinion held in relation to the matter, as only a small parcel of the participants from the survey carried out with lusophone consumers indicated that a minimum level of information was adequate (in this sense, Figure 3 points that only approximately a tenth of the responses was in this direction).

As argued by Seizov and others, “whilst they are well-intentioned, some recent research suggests that it is, at best, unclear whether current information obligation practices achieve their purposes. At worst, excessive disclosure requirements may even have a detrimental effect as they do little to educate and empower but create compliance costs for traders that in competitive markets will be passed on to consumers”. For this reason, we argue that this mechanism must be interpreted and implemented in ways aimed at attaining its maximum effectiveness. In order to “boost” mandated disclosures that relate to online behavioural-nudging commercial techniques (such as personalised pricing and the akin practices of targeted advertising and personalised ranking of offers), it is necessary to go beyond “unhelpful general descriptions, such as mandating traders to use ‘clear and comprehensible’ language, without additional elaboration, attention to context, or examples”¹³⁴.

In this sense, we argue that it is necessary to provide clear, meaningful information about the approximate logic behind how the personalisation works; the extent to which the price was personalised (pre-supposing here the disclosure regarding the price range within which the personalised price is inserted) as well as a real choice to opt-out of it.

The broadening of the scope of the information to be shared in case of price personalisation based on behavioural profiling – namely, going beyond the simple literal content of the provision, in favour of an understanding similar to that contained in Recital 23 to the Modernisation Directive (regarding the ranking of offers presented to the consumer), is justified by the close nature shared by these two behavioural commercial practices. This is because both are rooted in extensive personal data processing and comparably aimed at coaxing the individual into a certain economic action – either preferring one offer over another, ranked lower; or, concluding a purchase as a result of being presented with “just the right discount”.

In this regard, the amplified scope of the disclosure regarding price personalisation to include the general parameters and criteria involved in the automated decision-making

¹³⁴ SEIZOV, O. [et.al.] – cit. 90, p. 153 & 158

process, and around which the price may vary according to the individual's characteristics, in addition to the extent to which the adjustment was made, can prove to be a useful mechanism to safeguard the individual's interests, while at the same time not impairing the businesses' capabilities to engage in the commercial practice.

In other words, knowing the general logic involved in the profiling of their behaviour, while ensuring compliance with the business' obligations under data protection law, also act towards preventing that hidden biases in the algorithm result in prohibited discrimination against the individual. Moreover, by way of making the consumer aware about the extent to which the price was adjusted to them enables their foresight regarding the economic consequences it will bring upon them while taking it into account for the assessment of the risks involved in their purchasing decision.

In sum, it is argued here that through the dilation of the information requirement to encompass these relevant details, it will be possible to achieve a high level of protection of the individuals (data subjects and consumers), while concurrently not hindering the functioning of the Digital Single Market.

Finally, addressing Shakespeare's inquiry from "As You Like It" on whether "can a person ever have too much of a good thing?", while bridging the knowledge gap between the trader and the consumer leads the empowerment of the latter to make better-informed decisions and is thus a worthwhile goal to be pursued, it is also true that information overload is a real problem in the 21st century¹³⁵.

For this reason, compliance with the new point 6(1)(ea) added to the CRD by the Modernisation Directive should translate into a practical improvement of the consumers' acquis, consubstantiated by accessible and straightforward nuggets about the approximate parameters involved in determining the personalisation, in a similar fashion to the ranking of offers. Namely, this would equally entail the disclosure of what is the spectrum within which the personalised price is located so that the individual may situate themselves within it.

¹³⁵ GORMAN, S. & GORMAN, J. M., *Is Information Overload Hurting Mental Health?* 2020

REFERENCES

Bibliography

BAR-GILL, Oren – Algorithmic Price Discrimination: When Demand Is a Function of Both Preferences and (Mis)perceptions. *The University of Chicago Law Review*. 86:2 (2019), pp. 217-254. [Last visited on 25th October 2020] Available at WWW: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3184533> ISSN 1939-859X

BENITO SANCHEZ, Juan Carlos; DRECHSLER, Laura – The Price Is (Not) Right: Data Protection and Discrimination in the Age of Pricing Algorithms. *European Journal of Law and Technology*. 9:3 (2018), pp. 1-23. [Last visited on 25th October 2020] Available at WWW: <<http://hdl.handle.net/2078.1/213141>> ISSN 2042-115X

BOURREAU, Marc; DE STREEL; Alexandre – The regulation of personalised pricing in the digital era. DAF/COMP/WD (2018) 150. OECD, 2018. [Last visited on 25th October 2020] Available at WWW: <<http://dx.doi.org/10.2139/ssrn.3312158>>

CARRIÈRE-SWALLOW, Yan; HAKSAR, Vikram – *The economics and implications of data: an integrated perspective*. Washington, DC: International Monetary Fund, 2019. ISBN 978-1513511436

CARVALHO, Jorge Morais – *Manual de direito do consumo*. 6 ed. Coimbra: Almedina, 2019. ISBN 978-972-40-7833-5

DE STREEL, Alexandre; & FLORIAN, Jacques – *Personalised pricing and EU Law*. Calgary: International Telecommunications Society (ITS), 2019. Presented at the 30th European Conference of the International Telecommunications Society (ITS): “Towards a Connected and Automated Society”, Helsinki, Finland, 16th-19th June, 2019. [Last visited on 25th October 2020] Available at WWW: <<http://hdl.handle.net/10419/205221>>

ESPOSITO, F., *Making personalised prices pro-competitive and pro-consumers*, forthcoming in CeDIE Working Papers 2020/02

EZRACHI, Ariel; STUCKE, Maurice E. – *Virtual Competition: the promise and perils of the algorithm-driven economy*. Cambridge: Harvard University Press, 2016. ISBN 9780674241589

HACKER, Philipp – Nudge 2.0: The Future of Behavioural Analysis of Law in Europe and Beyond. *European Review of Private Law*. 24:2 (2016), pp. 297-322. [Last visited on 25th October 2020] Available at WWW: <<https://kluwerlawonline.com/JournalArticle/European+Review+of+Private+Law/24.2/ERPL2016019>> ISSN 1875-8371

HELBERGER, Natali; ZUIDERVEEN BORGESIUS, Frederik J.; REYNA, Agustin – The Perfect Match? A Closer Look at the Relationship between EU Consumer Law and Data Protection Law. *Common Market Law Review*. 54:5 (2017), pp. 1427-1465. [Last visited on 25th October 2020] Available at WWW: <<https://kluwerlawonline.com/JournalArticle/Common+Market+Law+Review/54.5/COLA201711>> ISSN 1875-8320

HILDEBRANDT, Mireille – Defining Profiling: A New Type of Knowledge? In HILDEBRANDT, Mireille; GUTWIRTH, Serge (eds) – *Profiling the European Citizen*. Dordrecht: Springer, 2008. pp. 17-45 [Last visited on 25th October 2020] Available at WWW: <https://doi.org/10.1007/978-1-4020-6914-7_2> ISBN 978-1-4020-6914-7

JABŁONOWSKA, Agnieszka; KUZIEWSKI, Maciej; NOWAK, Anna Maria; MICKLITZ, Hans-W.; PAŁKA, Przemysław; SARTOR, Giovanni – *Consumer Law and Artificial Intelligence: Challenges to the EU Consumer Law and Policy Stemming from the Business' Use of Artificial Intelligence*. San Domenico di Fiesole: European University Institute, 2018. (Final report of the ARTSY project, EUI Department of Law Research Paper No. 2018/11) [Last visited on 25th October 2020] Available at WWW: <<http://dx.doi.org/10.2139/ssrn.3228051>> ISSN 1725-6739

KAMP, Meike; KÖRFFER, Barbara; MEINTS, Martin – Profiling of Customers and Consumers - Customer Loyalty Programmes and Scoring Practices. In HILDEBRANDT, Mireille; GUTWIRTH, Serge (eds) – *Profiling the European Citizen*. Dordrecht: Springer, 2008. pp. 201-211 [Last visited on 25th October 2020] Available at WWW: <https://doi.org/10.1007/978-1-4020-6914-7_11> ISBN 978-1-4020-6914-7

MAGGIOLINO, Mariateresa – *Personalized Prices in European Competition Law*. Bocconi Legal Studies Research Paper No. 2984840 (2017). [Last visited on 25th October 2020] Available at WWW: <<https://dx.doi.org/10.2139/ssrn.2984840>>

ODLYZKO, Andrew – Privacy, Economics, and Price Discrimination on the Internet. In CAMP, L. Jean; LEWIS, Stephen (eds) – *Economics of Information Security*. Advances in Information Security, vol. 12. Boston: Springer, 2004. pp. 187-211 [Last visited on 25th October 2020] Available at WWW: <https://doi.org/10.1007/1-4020-8090-5_15> ISBN 978-1402080890

PIGOU, Arthur Cecil – *The economics of welfare*. 4 ed. London: Palgrave Macmillan, 2013. ISBN 978-0-230-24931-8

POORT, Joost; ZUIDERVEEN BORGESIUS, Frederik J. – Does everyone have a price? Understanding people’s attitude towards online and offline price discrimination. *Internet Policy Review*. 8:1 (2019), pp. 1-20. [Last visited on 25th October 2020] Available at WWW: <<https://policyreview.info/articles/analysis/does-everyone-have-price-understanding-peoples-attitude-towards-online-and-offline>> ISSN 2197-6775

POORT, Joost; ZUIDERVEEN BORGESIUS, Frederik J. – Online Price Discrimination and EU Data Privacy Law. *Journal of consumer policy*. 40:3 (2017), pp. 347-366. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.1007/s10603-017-9354-z>> ISSN 0168-7034

SEELE, Peter; DIERKSMEIER, Claus; HOFSTETTER, Reto; SCHULTZ, Mario D. – Mapping the Ethicality of Algorithmic Pricing: A Review of Dynamic and Personalized Pricing. *Journal of Business Ethics*. (2019), p. 1-23. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.1007/s10551-019-04371-w>> ISSN 1573-0697

SCHOFIELD, Alex – Personalized pricing in the digital era. *Competition Law Journal*. 18:1 (2019), pp. 35-44. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.4337/clj.2019.01.05>> ISSN 2516-5771

SCHNEIER, Bruce – *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*. New York: WW Norton & Company, 2015. ISBN 978-0393352177

SEARS, Alan M. – The Limits of Online Price Discrimination in Europe. *Columbia Science and Technology Law Review*. 21:1 (2019), pp. 1-42. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.7916/stlr.v21i1.5761>> ISSN 1938-0976

SEIZOV, Ognyan; WULF, Alexander J.; LUZAK, Joasia – The transparent trap: A multidisciplinary perspective on the design of transparent online disclosures in the EU.

Journal of Consumer Policy. 42:1 (2019), pp. 149-173. [Last visited on 25th October 2020]
Available at WWW: <<https://doi.org/10.1007/s10603-018-9393-01>> ISSN 0168-7034

STEPPE, Richard – Online price discrimination and personal data: A General Data Protection Regulation perspective. *Computer law & security review*. 33:6 (2017), pp. 768-785. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.1016/j.clsr.2017.05.008>> ISSN 0267-3649

VALE, Sebastião Barros – The Omnibus directive and online price personalization: a mere duty to inform? *European Journal of Privacy Law & Technologies*. 2 (2020) [Last visited on 25th October 2020] Available at WWW: <http://www.ejplt.tatodpr.eu/Article/Archive/index_html?ida=213&idn=7&idi=-1&idu=-1> ISSN 2704-8012

VAN BOOM, Willem H.; VAN DER REST, Jean-Pierre I.; VAN DEN BOS, Kees; DECHESNE, Mark – Consumers Beware: Online Personalized Pricing in Action! How the Framing of a Mandated Discriminatory Pricing Disclosure Influences Intention to Purchase. *Social Justice Research*. 33 (2020), pp. 331-351. [Last visited on 25th October 2020] Available at WWW: <<https://doi.org/10.1007/s11211-020-00348-7>> ISSN 0885-7466

ZUIDERVEEN BORGESIUUS, Frederik J. – Price Discrimination, Algorithmic Decision-Making, and European Non-Discrimination Law. *European Business Law Review*. 31:3 (2020), pp. 401-422. [Last visited on 25th October 2020] Available at WWW: <<https://kluwerlawonline.com/journalarticle/European+Business+Law+Review/31.3/EULR2020017>> ISSN 1875-841X

Legal texts

Brazilian Consumer Defense Code (Law No. 8,078 of 11 September 1990) [Last visited on 25th October 2020] Available at WWW: <http://www.planalto.gov.br/ccivil_03/leis/18078compilado.htm>

Charter of Fundamental Rights of the European Union [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012P/TXT&from=EN>>

Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union Consolidated version of the Treaty on European Union Consolidated

version of the Treaty on the Functioning of the European Union Protocols Annexes to the Treaty on the Functioning of the European Union Declarations annexed to the Final Act of the Intergovernmental Conference which adopted the Treaty of Lisbon, signed on 13 December 2007 [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12016ME/TXT&qid=1602969334704&from=EN>>

Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31993L0013&from=EN>>

Directive 98/6/EC of the European Parliament and of the Council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31998L0006&from=en>>

Council Directive 2000/43/EC of 29 June 2000 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32000L0043&from=EN>>

Council Directive 2004/113/EC of 13 December 2004 implementing the principle of equal treatment between men and women in the access to and supply of goods and services [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32004L0113&from=en>>

Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council (“Unfair Commercial Practices Directive”) [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32005L0029&from=EN>>

Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32011L0083&from=EN>>

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>>

Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019L0770&from=EN>>

Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019L0771&from=EN>>

Directive (EU) 2161/2019 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019L2161&from=EN>>

Portuguese Decree-Law no. 70/2007 bearing the modifications from Decree-Law no. 10/2015 and Decree-Law no. 109/2019 [Last visited on 25th October 2020] Available at WWW: <http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?artigo_id=selected&nid=1069&abela=leis&pagina=1&ficha=1&nversao=>>

Documents

ARTICLE 29 WORKING PARTY – *Opinion 4/2007 on the concept of personal data*. 2007 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2007/wp136_en.pdf>

ARTICLE 29 WORKING PARTY – *Opinion 2/2010 on online behavioural advertising*. 2010 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2010/wp171_en.pdf>

ARTICLE 29 WORKING PARTY – *Opinion 03/2013 on purpose limitation*. 2013 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2013/wp203_en.pdf>

ARTICLE 29 WORKING PARTY – *Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC*. 2014 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2014/wp217_en.pdf>

ARTICLE 29 WORKING PARTY – *Guidelines on Transparency under Regulation 2016/679*. 2018 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=622227>

ARTICLE 29 WORKING PARTY – *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679*. 2018 [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=612053>

EUROPEAN COMMISSION – *Commission staff working document: Guidance on the Implementation/Application of Directive 2005/29/EC on Unfair Commercial Practices*. 2016 [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016SC0163&from=EN>>

EUROPEAN COMMISSION – *Communication from the Commission: Completing a trusted Digital Single Market for all – The European Commission’s contribution to the Informal EU Leaders’ meeting on data protection and the Digital Single Market in Sofia on 16 May 2018*. 2018 [Last visited on 25th October 2020] Available at WWW: <<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52018DC0320&from=en>>

EUROPEAN COMMISSION – *Commission notice: Guidance on the interpretation and application of Council Directive 93/13/EEC on unfair terms in consumer contracts*. 2019 [Last visited on 25th October 2020] Available at WWW: <[https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019XC0927\(01\)&qid=1602971938693&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019XC0927(01)&qid=1602971938693&from=EN)>

EUROPEAN DATA PROTECTION BOARD – *Guidelines 2/2019 on the processing of personal data under Article 6(1)(b) GDPR in the context of the provision of online services to data subjects*. 2019 [Last visited on 25th October 2020] Available at WWW: <https://edpb.europa.eu/sites/edpb/files/files/file1/edpb_guidelines-art_6-1-b-adopted_after_public_consultation_en.pdf>

EUROPEAN DATA PROTECTION BOARD – *Guidelines 5/2020 on consent under Regulation 2016/679*. 2020 [Last visited on 25th October 2020] Available at WWW: <https://edpb.europa.eu/sites/edpb/files/files/file1/edpb_guidelines_202005_consent_en.pdf>

EUROPEAN DATA PROTECTION SUPERVISOR – *Opinion 4/2015 Towards a New Digital Ethics*. 2015 [Last visited on 25th October 2020] Available at WWW: <https://edps.europa.eu/sites/edp/files/publication/15-09-11_data_ethics_en.pdf>

EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES – *Big Data and Differential Pricing*. 2015 [Last visited on 25th October 2020] Available at WWW: <https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/docs/Big_Data_Report_Nonembargo_v2.pdf>

IPSOS, LONDON ECONOMICS & DELOITTE – *Consumer market study on online market segmentation through personalised pricing/offers in the European Union*. Final Report, 2018. [Last visited on 25th October 2020] Available at WWW: <https://ec.europa.eu/info/sites/info/files/aid_development_cooperation_fundamental_right_s/aid_and_development_by_topic/documents/synthesis_report_online_personalisation_study_final_0.pdf> ISBN 978-92-9200-929-8

NETHERLANDS AUTHORITY FOR CONSUMERS & MARKETS – *Guidelines on the Protection of the online consumer: Boundaries of online persuasion*. 2020 [Last visited on 25th October 2020] Available at WWW: <<https://www.acm.nl/sites/default/files/documents/2020-02/acm-guidelines-on-the-protection-of-the-online-consumer.pdf>>

OECD – *Personalised Pricing in the Digital Era: Background Note by the Secretariat*. DAF/COMP (2018) 13. [Last visited on 25th October 2020] Available at WWW: <[https://one.oecd.org/document/DAF/COMP\(2018\)13/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)13/en/pdf)>

PRESIDENT’S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY – *Report to the President: Big Data and Privacy: A Technological Perspective*. 2014 [Last visited on 25th October 2020] Available at WWW: <[https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_big_data_and_privacy - may 2014.pdf](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_big_data_and_privacy_-_may_2014.pdf)>

PwC Study – *Global Consumer Insights Survey*. 2020 [Last visited on 25th October 2020] Available at WWW: <<https://www.pwc.com/gx/en/consumer-markets/consumer-insights-survey/2020/pwc-consumer-insights-survey-2020.pdf>>

UK OFFICE OF FAIR TRADING (now the Competition and Markets Authority) – *Personalised Pricing: Increasing Transparency to Improve Trust*. 2013 [Last visited on 25th October 2020] Available at WWW: <https://webarchive.nationalarchives.gov.uk/20140402165101/http://oft.gov.uk/shared_of/markets-work/personalised-pricing/oft1489.pdf>

UK OFFICE OF FAIR TRADING (now the Competition and Markets Authority) – *The economics of online personalised pricing*. 2013 [Last visited on 25th October 2020] Available at WWW: <https://webarchive.nationalarchives.gov.uk/20140402154756/http://oft.gov.uk/shared_of/research/oft1488.pdf>

Jurisprudence

CJEU (2014). Case C-131/12 *Google Spain SL and Google Inc. v Agencia Española de Protección de Datos (AEPD) and Mario Costeja González*. ECLI:EU:C:2014:317

CJEU (2016). C-310/15 *Vincent Deroo-Blanquart v Sony Europe Limited*. ECLI:EU:C:2016:633

CJEU (2017). Case C-186/16 *Ruxandra Paula Andriciuc and Others v Banca Românească SA*. ECLI:EU:C:2017:703

CJEU (2018). Case C-147/16 *Karel de Grote – Hogeschool Katholieke Hogeschool Antwerpen VZW v Susan Romy Jozef Kuijpers*. ECLI:EU:C:2018:320

Journalistic and multimedia content

ANALYTICS SOFTWARE & SOLUTIONS INSTITUTE – *Machine Learning: What it is and why it matters*. 2020 [Last visited on 25th October 2020] Available at WWW: <https://www.sas.com/pt_pt/insights/analytics/machine-learning.html>

AVAST – *What is an IP Address?* 2020 [Last visited on 25th October 2020] Available at WWW: <<https://www.avast.com/c-what-is-an-ip-address>>

GORMAN, Sarah; GORMAN, Jack M. – *Is Information Overload Hurting Mental Health?* 2020 [Last visited on 25th October 2020] Available at WWW: <<https://www.psychologytoday.com/us/blog/denying-the-grave/202006/is-information-overload-hurting-mental-health>>

KENNEDY, John F. – *Special message to congress on protecting consumer interest*. Speech given on 15 March 1962. [Last visited on 25th October 2020] Available at WWW: <<https://www.jfklibrary.org/asset-viewer/archives/JFKPOF/037/JFKPOF-037-028>>

LUERWEG, Frank – *The Internet Knows You Better Than Your Spouse Does*. 2019 [Last visited on 25th October 2020] Available at WWW: <<https://www.scientificamerican.com/article/the-internet-knows-you-better-than-your-spouse-does/>>

MARR, Bernard – *Here's Why Data Is Not The New Oil*. 2018 [Last visited on 25th October 2020] Available at WWW: <<https://www.forbes.com/sites/bernardmarr/2018/03/05/heres-why-data-is-not-the-new-oil/>>

NORTON – *What are cookies?* 2019 [Last visited on 25th October 2020] Available at WWW: <<https://us.norton.com/internetsecurity-privacy-what-are-cookies.html>>

TECHOPEDIA – *Algorithm definition*. 2020 [Last visited on 25th October 2020] Available at WWW: <<https://www.techopedia.com/definition/3739/algorithm>>

THE ECONOMIST – *The world's most valuable resource is no longer oil, but data*. 2017 [Last visited on 25th October 2020] Available at WWW: <<https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data>>

WEISS, Tod R. – *Amazon apologizes for price-testing program that angered customers.*
2000 [Last visited on 25th October 2020] Available at WWW:
<<https://www.computerworld.com/article/2588337/amazon-apologizes-for-price-testing-program-that-angered-customers.html>>

ANNEXE: TRANSCRIPT OF THE SURVEY CARRIED OUT WITH LUSOPHONE

CONSUMERS

Português	English
Introdução – Personalização de preços (introdução)	Introduction – Price personalisation (introduction)
<p>Qual é a sua opinião sobre preços personalizados? Temos muito interesse em saber.</p> <p>Pode disponibilizar-nos 5 minutos do seu tempo?</p> <p>A sua opinião ajudar-nos-á a perceber melhor como é possível proteger todos os consumidores contra os perigos da personalização dos preços, bem como beneficiar das suas vantagens.</p> <p>QUEM SOMOS: Fabrizio Esposito (Professor da NOVA School of Law) Leonor Bettencourt (Investigadora em Psicologia na Universidade NOVA de Lisboa) Elisa Arruda (Mestranda da NOVA School of Law) Jorge Morais Carvalho (Professor da NOVA School of Law) Maria Miguel Oliveira da Silva (Mestre pela NOVA School of Law) Membros do NOVA Consumer Lab, o centro de investigação da NOVA School of Law focado no Direito do Consumo.</p> <p>OS SEUS DADOS ESTÃO PROTEGIDOS Os dados recolhidos são anónimos e serão tratados confidencialmente. Os resultados serão apresentados de forma agregada, impedindo a sua identificação.</p> <p>Para quaisquer esclarecimentos contacte-nos através dos seguintes meios: https://novaconsumerlab.fd.unl.pt https://www.instagram.com/novaconsumerlab https://www.facebook.com/novaconsumerlab/novaconsumerlab@novalaw.unl.pt</p> <p>Muito obrigado!</p>	<p>What is your opinion on personalised pricing? We are very interested in knowing.</p> <p>Can you give us 5 minutes of your time?</p> <p>Your opinion will help us to better understand how it is possible to protect all consumers against the dangers of price personalisation, as well as how to benefit from its advantages.</p> <p>WHO WE ARE: Fabrizio Esposito (Professor at NOVA School of Law) Leonor Bettencourt (Psychology Researcher at Universidade NOVA de Lisboa) Elisa Arruda (Master student at NOVA School of Law) Jorge Morais Carvalho (Professor at NOVA School of Law) Maria Miguel Oliveira da Silva (Master by NOVA School of Law) Members of NOVA Consumer Lab, the research centre of NOVA School of Law focused on Consumer Law.</p> <p>YOUR DATA IS PROTECTED The data collected is anonymous and will be treated confidentially. The results will be presented in an aggregated form, preventing their identification.</p> <p>For any clarifications, contact us through the following means: https://novaconsumerlab.fd.unl.pt https://www.instagram.com/novaconsumerlab https://www.facebook.com/novaconsumerlab/novaconsumerlab@novalaw.unl.pt</p> <p>Thank you!</p>
<p>Por favor, informe-nos se é maior de 18 anos: <input type="checkbox"/> Sim <input type="checkbox"/> Não</p>	<p>Please let us know if you are over 18: <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Após a leitura da informação disponibilizada acima, aceita participar neste estudo e dá a sua permissão para que os resultados sejam utilizados num contexto de investigação científica? <input type="checkbox"/> Sim <input type="checkbox"/> Não</p>	<p>After having read the information provided above, do you agree to participate in this study and give your permission for the results to be used in a context of scientific research? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Seção 1 – Análise demográfica	Section 1 – Demographic analysis

Género () Feminino () Masculino () Prefiro não dizer	Gender () Female () Male () Prefer not to say
Idade () 18-24 () 25-39 () 40-60 () 60 ou mais	Age () 18-24 () 25-39 () 40-60 () 60 or more
País onde reside () Portugal () Outro (por favor, especificar a seguir)	Country of residence () Portugal () Other (please specify below)
Concelho onde reside (se não reside em Portugal, por favor, selecione “OUTRO”) [Lista contendo os 308 municípios existentes em Portugal e a opção “Outro”]	Municipality where you live (if you do not live in Portugal, please select “OTHER”) [List containing the 308 Portuguese municipalities and the option “Other”]
Local onde reside (caso tenha respondido “outro” nas perguntas anteriores) [Pergunta aberta]	Place of residence (if you answered “other” in the previous questions) [Open-ended question]
Habilitações literárias () Ensino básico () Ensino secundário () Curso tecnológico, profissional ou outro () Bacharelato () Licenciatura () Pós-graduação () Mestrado () Doutoramento () Prefiro não informar	Literary abilities () Basic education () High school () Technological, professional or other course () Bachelor’s Degree () Graduate’s Degree () Postgraduate studies () Master’s Degree () Doctorate () Prefer not to say
Quantas pessoas compõem o seu agregado familiar, contando consigo? () 1-2 () 3-5 () Mais de 5 pessoas () Prefiro não informar	How many people make up your household, counting with you? () 1-2 () 3-5 () More than 5 people () Prefer not to say
Tem um perfil nas seguintes redes sociais ou utiliza os seus serviços? (múltipla escolha) () Instagram () Facebook () Twitter () LinkedIn () WhatsApp () Conta de e-mail pessoal () Outro:	Do you have a profile on the following social networks or use their services? (multiple choice) () Instagram () Facebook () Twitter () LinkedIn () WhatsApp () Conta de e-mail pessoal () Outro:
Seção 2 – Hábitos de consumo	Section 2 – Consumption habits
1. Por favor, indique-nos se tem o hábito de efetuar compras através da Internet. Efetuou pelo menos uma compra online durante os últimos seis meses? () Sim () Não	1. Please let us know if you are in the habit of making purchases over the Internet. Have you made at least one purchase online during the past six months? () Yes () No
2. Por favor, indique-nos com que frequência costuma efetuar compras através da Internet () Pelo menos uma vez a cada seis meses () Pelo menos uma vez a cada três meses () Pelo menos uma vez a cada mês () Pelo menos uma vez a cada 15 dias () Todas as semanas	2. Please tell us how often you shop online () At least once every six months () At least once every three months () At least once a month () At least once every 15 days () Every week

<p>3. Quando se inscreve num serviço ou numa loja virtual, pense no que costuma fazer quando se depara com a informação sobre os “Termos e Condições” e a “Política de Privacidade”. Por favor, numa escala de 1 a 7, indique-nos até que ponto concorda com a seguinte afirmação: Costumo apenas percorrer rapidamente a página para poder ter acesso ao conteúdo rapidamente.</p> <ul style="list-style-type: none"> • Responder numa escala de 1 a 7, em que 1 significa “discordo totalmente” e 7 significa “concordo totalmente” 	<p>3. When you sign up for a service or at an online store, think about what you usually do when you are faced with information about the “Terms and Conditions” and the “Privacy Policy”. Please, on a scale of 1 to 7, tell us to what extent you agree with the following statement: I usually just scroll through the page quickly so that I can access the content faster.</p> <ul style="list-style-type: none"> • Answer on a scale from 1 to 7, where 1 means “strongly disagree” and 7 means “strongly agree”
<p>4. Tendo em mente a questão anterior e a informação sobre os “Termos e Condições” e a “Política de Privacidade”, por favor, numa escala de 1 a 7, indique-nos até que ponto concorda com a seguinte afirmação: Leio sempre a informação integralmente, antes de finalizar a minha inscrição.</p> <ul style="list-style-type: none"> • Responder numa escala de 1 a 7, em que 1 significa “discordo totalmente” e 7 significa “concordo totalmente” 	<p>4. Bearing in mind the previous question and the information on the “Terms and Conditions” and the “Privacy Policy”, on a scale of 1 to 7, please tell us to what extent you agree with the following statement: I always read the information in full, before completing my registration.</p> <ul style="list-style-type: none"> • Answer on a scale from 1 to 7, where 1 means “strongly disagree” and 7 means “strongly agree”
<p>Seção 3 – Percepção acerca da personalização dos preços</p> <p>As lojas virtuais podem ajustar os preços com base nos dados de um determinado utilizador da Internet, como o país em que está, o horário em que visita a loja virtual ou o seu histórico de compras anterior. Estes dados sobre uma pessoa ou sobre um grupo específico podem ser observados pela própria loja ou, em alternativa, podem ser adquiridos a intermediários. Isto possibilita que duas pessoas que visitem a mesma loja virtual ao mesmo tempo vejam preços diferentes para o mesmo produto.</p>	<p>Section 3 – Perception about price personalisation</p> <p>Virtual stores can adjust prices based on data from a particular Internet user, such as the country they are in, the time they visit the virtual store or their previous purchase history. This data about a person or a specific group can be observed by the store itself or, alternatively, can be acquired from intermediaries. This makes it possible that two people who visit the same online store at the same time may end up seeing different prices for the same product.</p>
<p>1. Acredita que já lhe foi proposto um preço personalizado? Nomeadamente, acredita que o preço de um produto ou serviço foi ajustado para si, com base nos seus dados?</p> <p>() Sim () Não () Talvez</p>	<p>1. Do you believe that you have already been offered a personalised price? In particular, do you believe that the price of a product or service has been adjusted for you based on your data?</p> <p>() Yes () No () Maybe</p>
<p>2. Numa escala de 1 a 7, com que frequência considera que a personalização dos preços com base nos dados do utilizador acontece durante as transações online? (Escala: a opção “4” corresponde a “em algumas ocasiões”)</p> <ul style="list-style-type: none"> • Responder numa escala de 1 a 7, em que 1 significa “em nenhuma ocasião” e 7 significa “em todas as ocasiões” 	<p>2. On a scale of 1 to 7, how often do you think that personalisation of prices based on user data occurs during online transactions? (Scale: option “4” corresponds to “sometimes”)</p> <ul style="list-style-type: none"> • Answer on a scale of 1 to 7, where 1 means “none of the time” and 7 means “every time”
<p>3. Imagine que decidiu comprar um produto online (por 10€). O website informa-lhe que “este preço foi personalizado para si, com base no seu perfil digital”. Acredita que:</p> <p>() O preço aumentou () É mais provável que o preço tenha aumentado, mas também é possível que tenha diminuído () É mais provável que o preço tenha diminuído, mas também é possível que tenha aumentado () É igualmente possível que o preço tenha aumentado ou diminuído () Não sei</p>	<p>3. Imagine that you decided to buy a product online (for 10€). The website informs you that “this price has been personalised for you, based on your digital profile”. Do you believe that:</p> <p>() The price increased () It is more likely that the price has increased, but it is also possible that it has decreased () It is more likely that the price has decreased, but it is also possible that it has increased () It is equally possible that the price has increased or decreased () Do not know</p>

<p>4. Imagine que decidiu comprar um produto online (por 10€). O website transmite-lhe a informação de que “este preço foi personalizado para si, com base no seu perfil digital”. Que atitude tomaria?</p> <p><input type="checkbox"/> Prosseguir com a compra neste website</p> <p><input type="checkbox"/> Procurar pelo produto ou por um similar noutros websites</p> <p><input type="checkbox"/> Procurar no mesmo website, mas utilizando o navegador em modo anónimo, após limpar as cookies</p> <p><input type="checkbox"/> Outro:</p>	<p>4. Imagine that you decided to buy a product online (for 10€). The website informs you that “this price has been personalised for you, based on your digital profile”. What action would you take?</p> <p><input type="checkbox"/> Proceed with the purchase on this website</p> <p><input type="checkbox"/> Search for the product or similar on other websites</p> <p><input type="checkbox"/> Search the same website, but using the browser anonymously, after clearing cookies</p> <p><input type="checkbox"/> Other:</p>
<p>5. Acredita que a personalização dos preços é injusta e portanto deverá ser proibida?</p> <p><input type="checkbox"/> Sim, deverá ser proibida em todas as circunstâncias</p> <p><input type="checkbox"/> Sim, deverá ser proibida, mas somente quando ocorrer em detrimento do consumidor</p> <p><input type="checkbox"/> Não, basta que o consumidor seja informado acerca da personalização do preço</p> <p><input type="checkbox"/> Não, é uma prática justa e não deverá ser proibida em nenhuma circunstância</p>	<p>5. Do you believe that price personalisation is unfair and therefore should be prohibited?</p> <p><input type="checkbox"/> Yes, it should be prohibited in all circumstances</p> <p><input type="checkbox"/> Yes, it should be prohibited, but only when it occurs to the detriment of the consumer</p> <p><input type="checkbox"/> No, it is enough that the consumer is informed about the price personalisation</p> <p><input type="checkbox"/> No, it is a fair practice and should not be prohibited under any circumstances</p>
<p>6. Perante a personalização dos preços, na sua opinião, qual é o nível de informação adequado que se deve obrigar o website a fornecer? Pode seleccionar uma ou mais opções.</p> <p><input type="checkbox"/> É suficiente informar que os preços serão ajustados com base nos dados do utilizador</p> <p><input type="checkbox"/> O website deve informar quais os parâmetros principais/gerais segundo os quais os preços irão variar com base nos dados do utilizador</p> <p><input type="checkbox"/> O website deve informar qual é a faixa geral de preço do produto ou serviço em questão (parâmetros dentro dos quais o preço poderá ser personalizado)</p> <p><input type="checkbox"/> O website deve informar até que ponto o preço foi personalizado para o consumidor em questão, em termos de quanto foi o aumento ou o desconto</p>	<p>6. In view of price personalisation, in your opinion, what is the appropriate level of information that the website should be obliged to provide? You can select one or more options.</p> <p><input type="checkbox"/> It is sufficient to inform that prices will be adjusted based on the user’s data</p> <p><input type="checkbox"/> The website must inform the main/general parameters according to which prices will vary based on the user’s data</p> <p><input type="checkbox"/> The website must inform the general price range of the product or service in question (within which the price can be personalised)</p> <p><input type="checkbox"/> The website should inform the extent to which the price has been personalised for the consumer in question, in terms of how much the increase or discount was</p>
<p>7. Além do dever de informação discutido na questão anterior, na sua opinião, que medidas complementares serão pertinentes adotar, de modo a fazer face à personalização dos preços? A seguir, são elencadas medidas, desde a menos até à mais restritiva para o vendedor. Pode seleccionar uma ou mais medidas.</p> <p><input type="checkbox"/> A personalização dos preços é sempre aceitável e não carece de medidas adicionais</p> <p><input type="checkbox"/> Os consumidores devem ter o direito de optar por um preço não personalizado</p> <p><input type="checkbox"/> O vendedor poderá apenas oferecer descontos personalizados</p> <p><input type="checkbox"/> O vendedor poderá apenas oferecer descontos personalizados E os consumidores devem ter o direito de optar por um preço não personalizado</p> <p><input type="checkbox"/> A personalização dos preços é uma prática injusta e não deverá ser permitida em nenhuma circunstância</p>	<p>7. In addition to the information duty discussed in the previous question, in your opinion, what complementary measures will be pertinent to adopt, in order to face price personalisation? Next, measures are listed, from the least to the most restrictive for the seller. You can select one or more options.</p> <p><input type="checkbox"/> Price personalisation is always acceptable and does not require additional measures</p> <p><input type="checkbox"/> Consumers should have the right to opt for a non-personalised price</p> <p><input type="checkbox"/> The seller can only offer personalised discounts</p> <p><input type="checkbox"/> The seller can only offer personalised discounts AND consumers must have the right to opt for a non-personalised price</p> <p><input type="checkbox"/> Personalising prices is an unfair practice and should not be allowed under any circumstances</p>
<p>Seção 4 – Impacto da personalização dos preços sobre os hábitos de consumo</p>	<p>Section 4 - Impact of price personalisation on consumption habits</p>

<p>1. Imagine que decidiu comprar um produto online (por 100€). O website presta a informação de que “o preço foi aumentado em 5% com base no seu perfil digital”. Que atitude tomaria?</p> <p><input type="checkbox"/> Prosseguir com a compra neste website</p> <p><input type="checkbox"/> Procurar pelo produto ou por um similar noutros websites</p> <p><input type="checkbox"/> Procurar no mesmo website, mas utilizando o navegador em modo anónimo, após limpar as cookies</p> <p><input type="checkbox"/> Outro:</p>	<p>1. Imagine that you decided to buy a product online (for 100€). The website informs you that “the price has been increased by 5% based on your digital profile”. What action would you take?</p> <p><input type="checkbox"/> Proceed with the purchase on this website</p> <p><input type="checkbox"/> Search for the product or similar on other websites</p> <p><input type="checkbox"/> Search the same website, but using the browser anonymously, after clearing cookies</p> <p><input type="checkbox"/> Other:</p>
<p>2. Se o website indicasse que somente seria possível uma redução do preço com base nos seus dados, como é que isso afetaria a sua atitude?</p> <p><input type="checkbox"/> Positivamente: a mera possibilidade do desconto aumentaria a minha vontade de comprar</p> <p><input type="checkbox"/> Negativamente: não saber se fui ou não beneficiado pelo desconto diminuiria a minha vontade de comprar</p> <p><input type="checkbox"/> Indiferente: um possível desconto com base nos meus dados não interfere na minha vontade de comprar</p> <p><input type="checkbox"/> Outro:</p>	<p>2. If the website indicated that only a price reduction would be possible based on your data, how would that affect your attitude?</p> <p><input type="checkbox"/> Positively: the mere possibility of a discount would increase my desire to buy</p> <p><input type="checkbox"/> Negatively: not knowing whether or not I benefited from the discount would decrease my desire to buy</p> <p><input type="checkbox"/> Indifferent: a possible discount based on my data does not interfere with my desire to buy</p> <p><input type="checkbox"/> Other:</p>
<p>3. Se o website indicasse que seria possível tanto uma redução como também um aumento do preço com base nos seus dados, como é que isso afetaria a sua atitude?</p> <p><input type="checkbox"/> Positivamente: a possibilidade quer de aumento quer de desconto aumentaria a minha vontade de comprar</p> <p><input type="checkbox"/> Negativamente: a possibilidade quer de aumento quer de desconto diminuiria a minha vontade de comprar</p> <p><input type="checkbox"/> Indiferente: a possibilidade quer de aumento quer de desconto não interfere na minha vontade de comprar</p> <p><input type="checkbox"/> Outro:</p>	<p>3. If the website indicated that either a reduction or an increase in price would be possible on the basis of your data would be possible, how would that affect your attitude?</p> <p><input type="checkbox"/> Positively: the possibility of either an increase or a discount would increase my desire to buy</p> <p><input type="checkbox"/> Negatively: the possibility of either an increase or a discount would decrease my desire to buy</p> <p><input type="checkbox"/> Indifferent: the possibility of either an increase or a discount does not interfere with my desire to buy</p> <p><input type="checkbox"/> Other:</p>
<p style="text-align: center;">Seção 5 – Situações em que existe a personalização dos preços</p> <p>Nesta seção, ser-lhe-ão apresentados exemplos práticos da personalização dos preços em ação. Por favor, numa escala de 1 a 7, indique-nos o quão aceitável ou não acredita ser cada uma das situações.</p> <ul style="list-style-type: none"> • Responder numa escala de 1 a 7, em que 1 significa “Absolutamente inaceitável/injusto” e 7 significa “Absolutamente aceitável/justo” 	<p style="text-align: center;">Section 5 – Situations where price personalisation takes place</p> <p>In this section, you will be presented with practical examples of price personalisation in action. Please, on a scale of 1 to 7, tell us how acceptable or disagreeable each situation is.</p> <ul style="list-style-type: none"> • Answer on a scale of 1 to 7, where 1 means “absolutely unacceptable/unfair” and 7 means “absolutely acceptable/fair”
<p>Exemplo 1: Um supermercado oferece descontos a todos os clientes portadores do seu cartão-fidelidade</p>	<p>Example 1: A supermarket offers discounts to all customers that are also loyalty cardholders</p>
<p>Exemplo 2: Um supermercado oferece descontos personalizados a alguns clientes portadores do seu cartão-fidelidade, com base nos hábitos de consumo revelados pelo histórico individualizado de compras</p>	<p>Example 2: A supermarket offers personalised discounts to some customers with their loyalty card, based on the consumption habits revealed by the individualized purchase history</p>
<p>Exemplo 3: Um museu privado oferece descontos a cidadãos reformados e a estudantes</p>	<p>Example 3: A private museum offers discounts to senior citizens and students</p>
<p>Exemplo 4: Produtos vendidos em versões “familiares” / “poupança” (maior quantidade) têm o</p>	<p>Example 4: Products sold in “bulk” / “savings” (higher quantity) versions cost less per unit / weight</p>

preço por unidade / peso / volume menor do que produtos vendidos em versões tradicionais de tamanho	/ volume than products sold in traditional size versions
Exemplo 5: Companhia aérea que aumenta os preços das passagens em voos próximos da lotação máxima	Example 5: Airline that raises ticket prices on flights close to maximum passenger capacity
Exemplo 6: Companhia aérea que altera os preços das passagens com base no histórico individualizado de viagens de um passageiro frequente	Example 6: Airline that changes its ticket prices based on the individualized travel history of a frequent flyer
Exemplo 7: Vivenda na praia mais cara durante as férias de verão do que em outras épocas do ano	Example 7: Beach villa that is more expensive during summer holidays than at other times of the year
Exemplo 8: Chapéu de chuva mais caro quando está a chover e o stock do vendedor está próximo do fim	Example 8: Umbrella that is more expensive when it is raining and the seller's stock is near the end
Exemplo 9: Chapéu de chuva mais caro quando está a chover, sem que o stock do vendedor esteja próximo do fim	Example 9: Umbrella that is more expensive when it is raining without the seller's stock being near the end
Exemplo 10: Supermercado que pratica preços mais altos numa localidade em que os valores das rendas são maiores e preços mais baixos noutra, na qual as rendas são mais baratas	Example 10: Supermarket that practices higher prices in one location where rent is higher and lower prices in another, where rent is cheaper
Exemplo 11: Restaurante fast-food que pratica preços mais altos na unidade localizada no aeroporto, mesmo que os custos sejam semelhantes aos de outras unidades	Example 11: Fast-food restaurant that practices higher prices in the franchise located at the airport, even though the costs are similar to those of other franchises
Exemplo 12: Hotel que cobra valores mais altos a utilizadores que acedem ao website através de dispositivos Apple do que àqueles que acedem através de dispositivos Android ou Windows	Example 12: Hotel that charges higher fees from users who access the website through Apple devices than those who access via Android or Windows devices
Exemplo 13: Escola de idiomas online que varia os preços dos cursos com base no perfil digital de cada aluno (localidade, dispositivo, idade, aspirações profissionais, etc)	Example 13: Online language school that varies course prices based on the digital profile of each student (location, device, age, professional aspirations, etc.)
Exemplo 14: Uma rede social que oferece acesso de maneira alegadamente gratuita, mas que recolhe dados pessoais dos utilizadores, para depois os revender e, assim, obter lucro	Example 14: A social network that offers access for allegedly free of charge, but which collects users' personal data, to then resell them and thus make a profit